UNIVERSIDADE ESTADUAL DE CAMPINAS

FACULDADE DE EDUCAÇÃO FÍSICA

LEVANTAMENTO BIBLIOGRÁFICO DE PERIÓDICOS INTERNACIONAIS DA BIBLIOTECA DA FACULDADE DE EDUCAÇÃO FÍSICA - UNICAMP

TEMA: EDUCAÇÃO FÍSICA ADAPTADA E DEFICIENTES

PEDRO MIKAHIL NETO RA 911048

CAMPINAS, JULHO DE 1995

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TRABALHO APRESENTADO COMO EXIGÊNCIA PARCIAL DA DISCIPLINA MH207 - INTRODUÇÃO À ED. FÍSICA ESPECIAL, SOB RESPONSABILIDADE DOS PROFS. ANA ISABEL DE FIGUEIREDO FERREIRA E JOSÉ LUÍS RODRIGUES.

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I-INTRODUÇÃO

Este trabalho visa efetuar um levantamento de todas as publicações relacionadas a Educação Física Adaptada e Deficientes existentes nos periódicos internacionais disponíveis na Biblioteca da Faculdade de Educação Física (FEF) da UNICAMP.

Adicionalmente a este objetivo básico, considerou-se ainda desejável a inclusão de pelo menos alguns *abstracts* destas publicações.

Para o levantamento da coleção disponível de cada periódico da biblioteca, optou-se inicialmente pela utilização do UNIBIBLI. Verificou-se, porém, que esta base de dados está incompleta, já que referenciou a Biblioteca da FEF / UNICAMP como possuindo apenas 51 periódicos (nacionais e internacionais).

Decidiu-se, portanto, pela utilização manual do fichário de periódicos catalogados para levantamento dos periódicos e das coleções disponíveis.

Devido ao elevado número de publicações internacionais disponíveis na Biblioteca da FEF/UNICAMP, verificou-se que uma pesquisa puramente manual de todos os trabalhos seria muito mais suscetível a falhas na seleção de artigos pertinentes à área e inviabilizaria a inclusão dos resumos (*abstracts*) de pelo menos parte dos arquivos, devido ao intenso trabalho de digitação. Foi levantada, portanto, a viabilidade de utilização de bases de dados indexadas.

Verificou-se que a coleção indexada que melhor atenderia à área de pesquisa seria o SportSearch. A pesquisa em CD-ROM facilitaria extremamente a tarefa; porém, verificou-se que das três universidades estaduais paulistas, a Biblioteca da FEF/UNICAMP é a única que possui esta coleção, disponível apenas na forma de fascículos.

Por outro lado, embora a coleção Sport Search cubra praticamente todos os periódicos relacionados a Educação Física, Esportes e Lazer, ela só abrange os artigos publicados a partir de 1985 e, mesmo assim, não cobre todos os periódicos da Biblioteca da FEF.

A coleção indexada MedLine também foi consultada. A pesquisa foi efetuada na Biblioteca da Faculdade de Ciências Médicas (FCM) da UNICAMP que possui a coleção em CD-ROM no período de 1982 a junho de 1995.

Levantou-se a possibilidade de utilização do Science Citation Index (SCI), coleção que cobre os artigos mais citados internacionalmente, disponível na Biblioteca do Instituto de Física (IF) da UNICAMP desde o primeiro volume. Infelizmente, apenas as coleções de 91 a 95 estão disponíveis em CD-ROM. Além disso, esta base de dados não cobre todos os artigos de uma determinada coleção, e sim, apenas os artigos mais consultados, fugindo do escopo do presente trabalho.

Para os periódicos e artigos que não se enquadravam na pesquisa indexada, foi necessária a pesquisa manual dos periódicos disponíveis.

O presente trabalho, portanto, consistiu de três processos distintos para o levantamento bibliográfico. Cada um destes processos foram aqui denominados *Técnicas de Pesquisa (TP)*, classificadas em SportSearch (SS), Medline (ML) e Pesquisa Manual (PM).

II-METODOLOGIA

Após levantamento dos periódicos e coleções disponíveis, efetuou-se uma classificação dos periódicos de acordo com a técnica de pesquisa (TP) mais viável para o trabalho.

Para os periódicos indexados na base de dados MEDLINE com coleção igual ou posterior ao ano de 1982, a pesquisa foi efetuada em CD-ROM na Biblioteca da Faculdade de Ciências Médicas (FCM). Esta técnica de pesquisa foi denominada ML (MedLine).

Para os periódicos indexados no SPORTSEARCH com coleção igual ou superior ao ano de 1986, a pesquisa foi efetuada a partir dos periódicos disponíveis na Biblioteca da Faculdade de Educação Física (FEF). Esta técnica de pesquisa foi denominada SS (SportSearch).

Para os volumes dos periódicos indexados na base de dados MEDLINE com coleção inferior a 1982 e no SPORTSEARCH com coleção inferior a 1986, e para os demais periódicos internacionais, a pesquisa foi efetuada fascículo por fascículo verificando se o título do trabalho relacionava-se com Educação Física Adaptada ou Deficientes. Esta técnica de pesquisa foi denominada Pesquisa Manual (PM).

Técnica de Pesquisa MedLine (ML)

Esta TP analisou os trabalhos indexados em CD-ROM na Biblioteca da FCM para o período de 1982 a junho de 1995.

Os periódicos selecionados da Biblioteca da FEF que possuiam coleções neste período foram:

Periódico (nome completo)	Periódico (abreviação Medline)
American Journal of Physical Medicine & Rehabilitation	Am J Phys Med Rehabil
Brazilian Journal of Medical and Biological Research	Braz J Med Biol Res
European Journal of Applied Physiology and Occupational Physiology	Eur J Appl Physiol
Journal of Sports Medicine and Physical Fitness	J Sports Med Phys Fitness
Journal of Sports Sciences	J Sports Sci
Medicine and Science in Sports and Exercise	Med Sci Sports Exerc
Research Quarterly for Exercise and Sport	Res Q Exerc Sport

Optou-se pela restrição da pesquisa a apenas os títulos disponíveis na Biblioteca da FEF, já que a base de dados Medline é muito grande e uma pesquisa em todos os periódicos desta base de dados geraria uma quantidade muito grande de artigos. Além disto, os artigos dos demais periódicos tendem a ser muito mais direcionados à medicina em si do que à educação física propriamente dita, fugindo do escopo principal desta pesquisa.

As palavras chave utilizadas para seleção dos artigos foram: HANDICAP*; DISABLED; MENTAL-RETARDATION

Os artigos selecionados que se relacionavam a Educação Física Especial ou a Deficientes foram classificados em ordem decrescente por ano de publicação e são apresentados no capítulo "Resultados" no sub-item "Técnica de Pesquisa Medline".

A descrição mais completa de cada artigo, incluindo o *abstract* e campos adicionais como idioma, país de publicação e outros, é apresentada no "Apêndice I". Os artigos foram classificados pelo título do trabalho e os campos selecionados para apresentação foram:

Campo	Descrição
TI:	título
AU:	autor
AD:	*address* (endereço)
SO:	*source* (fonte ou nome do periódico)
ISSN:	índice ISSN
PY:	ano de publicação
LA:	*language* (idioma utilizado no artigo)
CP:	país da publicação
AB:	*abstract* (resumo)
MESH:	*Medical Subject Heading* (palavra chave de assunto)
PT:	*paper type* (tipo de publicação)

Técnica de Pesquisa SportSearch (SS)

Esta TP analisou todas as publicações encontradas na coleção SPORTSEARCH (85-95) disponível na Biblioteca da FEF indexadas pelos títulos *DISABLED* e *DISABLED-MENTAL RETARDATION*.

Todos os artigos, incluindo os *abstracts* disponíveis, foram selecionados, independentemente deles pertencerem ou não a volumes ou periódicos disponíveis na biblioteca da FEF. Optou-se por este critério, já que os artigos não disponíveis podem ser encontrados em outras bibliotecas ou solicitados pelo COMUT via Biblioteca Central da Unicamp.

Partindo-se da coleção SportSearch mais recente (1995) para a mais antiga (1985), os artigos foram classificados pelo título do trabalho.

Este artigos são apresentados no capítulo "Resultados" no sub-item "Técnica de Pesquisa SportSearch (SS)".

Técnica Pesquisa Manual (PM)

Esta TP analisou os artigos contidos em periódicos indexados na base de dados MEDLINE com coleção inferior a 1982 e no SPORTSEARCH com coleção inferior a 1986, e todos os demais periódicos internacionais.

Com exceção dos periódicos *Leicht Athletik, Sports & Leisure, Stadium, Spiridon* e *Sportdokumentation*, a pesquisa em todos os demais foi efetuada fascículo por fascículo verificando se o título do trabalho relacionava-se com Educação Física Adaptada ou Deficiências. Os artigos selecionados foram classificados em ordem decrescente por ano de publicação e são apresentados no capítulo "Resultados" no sub-item "Técnica de Pesquisa Manual: Fascículos".

O *Sports & Leisure* é um periódico indexado contendo *abstracts* de artigos de revistas relacionadas a esporte e lazer. Para a coleção disponível na Biblioteca da FEF (89-90) foram selecionados todos os artigos relacionados ao título chave *HANDICAPPED*. Os artigos selecionados foram classificados pelo índice próprio da coleção *Sports & Leisure* em ordem decrescente (23928 a 21753). Os artigos selecionados com os respectivos *abstracts* são apresentados no capítulo "Resultados" no sub-item "Técnica de Pesquisa Manual: Índice do *Sports & Leisure*"

Para a revista *Stadium*, foram selecionados todos os artigos relacionados pela obra intitulada "*Índice da Revista Stadium n^{os} 1 a 120 (nov 66 a dez 86)*", 1988, elaborada por Leopoldo Gil Dúlcio Vaz e Laércio Elias Pereira, sob título chave *DEFICIENTES*. Os artigos selecionados foram incorporados àqueles obtidos pela pesquisa manual fascículo por fascículo.

Já os periódicos *Leicht Athletik, Spiridon* e *Sportdokumentation* possuem seus artigos escritos em alemão e, portanto, não foram pesquisados (referenciados na planilha como Não Pesquisados - NP).

Planilha de Periódicos Pesquisados

A planilha das páginas 6 a 11 contém todos os periódicos internacionais disponíveis na Biblioteca da FEF/UNICAMP com suas respectivas coleções. Adicionalmente, informa a base de dados ao qual cada periódico encontra-se indexado e a técnica de pesquisa utilizada no presente trabalho.

A descrição das colunas da planilha encontra-se na tabela abaixo:

Coluna	Descrição da Coluna
Núm	número de indexação interno da Biblioteca FEF/UNICAMP
Nome do Periódico (curto)	nome do periódico abreviado
Nome do Periódico (longo)	nome completo do periódico
País	país do periódico
Coleção	coleção disponível do periódico expressa em anos das publicações
Técnica	técnica de pesquisa utilizada: MedLine (ML), SportSearch (SS), Pesquisa Manual (PM) ou Não Pesquisado (NP)
Base de Dados	indica em qual base de dados o periódico está indexado: SportSearch (SS), MedLine (ML) ou UniBibli (UB)
Abreviação Medline	abreviação utilizada pela indexação Medline

Núm	Nome do Periódico (curto)	Nome do Periódico (longo)
291	ADAPTED PHYS. ACTIVITY Q.	ADAPTED PHYSICAL ACTIVITY QUARTERLY
278	AM. J. PHYS. MED. & REHAB.	AMERICAN JOURNAL OF PHYSICAL MEDICINE & REHABILITATION
096	ARCH. MED. DEPORTE	ARCHIVOS DE MEDICINA DEL DEPORTE
097	ARCH. SOC. CHIL. MED. DEPORTE	ARCHIVOS DE LA SOCIEDAD CHILENA DE MEDICINA DEL DEPORTE
046	ATLETICA	ATLETICA
179	ATLETICA LEGGERA	ATLETICA LEGGERA
223	ATLETICASTUDI	ATLETICASTUDI: Ricerca scientifica & technica applicata allatletica leggera
306	BIOLOGY OF SPORT	BIOLOGY OF SPORT
226	BOL. CIENT. TÉC. INDER/CUBA	BOLETIN CIENTIFICO TÉCNICO INDER/CUBA
262	BOL. ED. FISICA	BOLETIN DE EDUCACION FISICA: Mudou para revista chilena de educacion fisica
009	BOL. FED. INT. ED. FIS.	BOLETIN DE LA FEDERACION INTERNATIONAL DE EDUCACION FISICA. Antes FIEP Bulletin
289	BOLETIM	BOLETIM - Universidade do Porto
051	BRAZ. J. MED. AND BIOL. RES.	BRAZILIAN JOURNAL OF MEDICAL AND BIOLOGICAL RESEARCH
090	BRITISH J. PHYS. ED.	BRITISH JOURNAL OF PHYSICAL EDUCATION
095	BRITISH J. SPORTS MED.	BRITISH JOURNAL OF SPORTS MEDICINE
218	BUL. FED. INT. SPORT UNIVERSIT.	BULLETIN DE LA FEDERATION INTERNATIONALE DU SPORT UNIVERSITAIRE
091	BUL. PHYS. ED.	BULLETIN OF PHYSICAL EDUCATION
295	CAN. J. HIST. SPORT	CANADIAN JOURNAL OF HISTORY OF SPORT
139	CINÉSIOLOGIE	CINÉSIOLOGIE: Revue pratique et scientifique du sport et de mediine de leffort
094	CITIUS, ALTIUS, FORTIUS	CITIUS, ALTIUS, FORTIUS: Estudios deportivos
011	COACH & ATHLETE	COACH & ATHLETE: The magazine for coaches, players, trainers, officials
117	ED. PHYS. SPORT (EPS)	EDUCATION PHYSIQUE ET SPORT (EPS)
228	EL DEPORTE	EL DEPORTE: derecho del pueblo
	EUROP. J. APPLIED PHYSIOL.	EUROPEAN JOURNAL OF APPLIED PHYSIOLOGY AND OCCUPATIONAL PHYSIOLOGY
168	GIANTI DEL BASKET	GIANTI DEL BASKET
165	GINNASTA	IL GINNASTA
099	GYMNASTIQUE VOLONTAIRE	LA GYMNASTIQUE VOLONTAIRE
221	GYMNICA	GYMNICA (Supplemento de Il Ginnasta)
017	HANDBALL	HANDBALL
063	HEALTH ED.	HEALTH EDUCATION
100	INT. J. PHYS. ED.	INTERNATIONAL JOURNAL OF PHYSICAL EDUCATION
019	INT. J. SPORT PSYCHOLOGY	INTERNACIONAL JOURNAL OF SPORT PSYCHOLOGY

Núm	Nome do Periódico (curto)	Nome do Periódico (longo)
020	INT. J. SPORTS CARDIOLOGY	INTERNACIONAL JOURNAL OF SPORTS CARDIOLOGY
105	INT. J. SPORTS MEDICINE	INTERNATIONAL JOURNAL OF SPORTS MEDICINE
	INT. REVIEW SOCIOLOGY SPORT	INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT
132	J. BIOMECHANICS	JOURNAL OF BIOMECHANICS
219	J. HUMAN MOVEMENT STUDIES	JOURNAL OF HUMAN MOVEMENT STUDIES
133	J. LEISURE RESEARCH	JOURNAL OF LEISURE RESEARCH
224	J. MOTOR BEHAVIOR	JOURNAL OF MOTOR BEHAVIOR
	J. PHILOSOPHY SPORT	JOURNAL OF THE PHILOSOPHY OF SPORT
021	J. PHYS. ED.	JOURNAL OF PHYSICAL EDUCATION
102	J. PHYS. ED. RECREATION DANCE	JOURNAL OF PHYSICAL EDUCATION AND RECREATION AND DANCE (JOPERD)
022	J. SPORTS MED. PHYS. FITNESS	JOURNAL OF SPORTS MEDICINE AND PHYSICAL FITNESS
312	J. SPORTS SCIENCES	JOURNAL OF SPORTS SCIENCES
103	LEICHT ATHLETIK	LEICHT ATHLETIK
104	LOISIRS SANTÉ	LOISIRS SANTÉ: La revue de la gymnastique volontaire
084	LUDENS	LUDENS: Revista trimestral do ISEF
202	MED. DELLO SPORT	MEDICINA DELLO SPORT
067	MED. SCIENCE SPORTS EXERC.	MEDICINE AND SCIENCE IN SPORTS AND EXERCISE
106	MÉD. SPORT	MÉDECINE DU SPORT
050	NATATION	NATATION
281	OUTSIDE	OUTSIDE
305	PARKS RECREATION	PARKS AND RECREATION
	PERFILES	PERFILES
	PERFILLES	PERFILLES
300	PHYSICIAN SPORTSMED.	PHYSICIAN AND SPORTSMEDICINE
280	PLAY & CULTURE	PLAY & CULTURE
279	QUEST	QUEST
115	RES. Q. EXERCISE SPORT	RESEARCH QUARTERLY FOR EXERCISE AND SPORT (antes: Research Quarterly)
209	REV. PORT. MED. DESPORTIVA	REVISTA PORTUGUESA DE MEDICINA DESPORTIVA
113	REVUE DE L'ED. PHYSIQUE	REVUE DE L'EDUCATION PHYSIQUE
169	SANTÉ ET SPORT	SANTÉ ET SPORT
116	SCHOLASTIC COACH	SCHOLASTIC COACH
265	SCHOLE	SCHOLE: A journal of leisure studies and recreation education

Núm	Nome do Periódico (curto)	Nome do Periódico (longo)
256	SOCIETY LEISURE	SOCIETY AND LEISURE
288	SOCIOLOGY SPORT J.	SOCIOLOGY OF SPORT JOURNAL
060	SPIRIDON	SPIRIDON
110	SPORT INT.	SPORT INTERNATIONAL
287	SPORT PSYCHOLOGIST	SPORT PSYCHOLOGIST
222	SPORTDOKUMENTATION	SPORTDOKUMENTATION
258	SPORTS & LEISURE	SPORTS & LEISURE: A journal of social science abstracts
151	SPORTSEARCH	SPORTSEARCH: The contents of current journls
037	STADIUM	STADIUM
085	SUPER BASKET	SUPER BASKET
047	SWIM. WORLD JUNIOR SWIM.	SWIMMING WORLD AND JUNIOR SWIMMER
	TENNIS DE FRANCE	TENNIS DE FRANCE
164	TENNISTA	IL TENNISTA: la piu diffusa rivista de tennis
038	TRACK & FIELD Q. REVIEW	TRACK & FIELD QUARTERLY REVIEW
053	TRACK FIELD NEWS	TRACK AND FIELD NEWS
270	WORLD LEISURE & RECREATION	WORLD LEISURE & RECREATION
086	WORLD TENNIS	WORLD TENNIS

Núm	Nome do Periódico (curto)	PUBL.	País	Coleção (anos)	Técnica de Pesquisa	Base de Dados	Abreviação MEDLINE
291	ADAPTED PHYS. ACTIVITY Q.	INT	USA	91-92;94-95	SS	SS, UB	
278	AM. J. PHYS. MED. & REHAB.	INT	USA	91-95	ML	ML,UB	Am J Phys Med Rehabil
096	ARCH. MED. DEPORTE	INT	ESP	84-87	PM		
097	ARCH. SOC. CHIL. MED. DEPORTE	INT	CHILE	73-77;79-84	PM,SS	SS	
046	ATLETICA	INT	ITA	89-95	PM	UB	
179	ATLETICA LEGGERA	INT	ITA	82	PM		
223	ATLETICASTUDI	INT	ITA	87-94	PM	UB	
306	BIOLOGY OF SPORT	INT	USA	85-90	PM		
226	BOL. CIENT. TÉC. INDER/CUBA	INT	CUBA	87-89	PM		
262	BOL. ED. FISICA	INT	CHILE	37-38;40-50	PM		
009	BOL. FED. INT. ED. FIS.	INT	ESP	75-76	PM		
289	BOLETIM	INT	PORT	91	PM		
051	BRAZ. J. MED. AND BIOL. RES.	INT	BRA	81-95	ML	ML	Braz J Med Biol Res
090	BRITISH J. PHYS. ED.	INT	ING	93;95	SS	SS	
095	BRITISH J. SPORTS MED.	INT	ING	74;76-77;81	PM,SS	ML,SS	Br J Sports Med
218	BUL. FED. INT. SPORT UNIVERSIT.	INT	BELG	84-85	PM		
091	BUL. PHYS. ED.	INT	ING	92;94	SS	SS,UB	
295	CAN. J. HIST. SPORT	INT	CAN	91-92	SS	ML,SS,UB	Can J Hist Sport
139	CINÉSIOLOGIE	INT	FR	86-95	SS	SS,UB	
094	CITIUS, ALTIUS, FORTIUS	INT	ESP	73-74	PM		
011	COACH & ATHLETE	INT	USA	78-79	PM	UB	
117	ED. PHYS. SPORT (EPS)	INT	FR	67;70;73;78;80;87-95	PM,SS	SS,UB	
228	EL DEPORTE	INT	CUBA	87-90	PM		
	EUROP. J. APPLIED PHYSIOL.	INT	USA	76-82;85-86	PM,ML,SS	ML,SS,UB	Eur J Appl Physiol
168	GIANTI DEL BASKET	INT	ITA	86	PM	UB	
165	GINNASTA	INT	ITA	87-94	PM	UB	
099	GYMNASTIQUE VOLONTAIRE	INT	FR	76-81	PM		
221	GYMNICA	INT	ITA	87-94	PM		
017	HANDBALL	INT	USA	75-77;83-84	PM,SS	SS,UB	
063	HEALTH ED.	INT	USA	82-83	PM		
100	INT. J. PHYS. ED.	INT	ALE	76-77;86	PM,SS	SS	
019	INT. J. SPORT PSYCHOLOGY	INT	ITA	71-77;87-95	PM,SS	SS,UB	

Núm	Nome do Periódico (curto)	PUBL.	País	Coleção (anos)	Técnica de Pesquisa	Base de Dados	Abreviação MEDLINE
020	INT. J. SPORTS CARDIOLOGY	INT	ITA	84-88	PM		
105	INT. J. SPORTS MEDICINE	INT	USA	85-86	PM,SS	ML,SS	Int J Sports Med
	INT. REVIEW SOCIOLOGY SPORT	INT	ALE	92	PM,SS	SS	
132	J. BIOMECHANICS	INT	ING	79-82	PM	ML	J Biomech
219	J. HUMAN MOVEMENT STUDIES	INT	ING	87-94	SS	SS,UB	
133	J. LEISURE RESEARCH	INT	USA	71-72;74;76;79-83;85	PM		
224	J. MOTOR BEHAVIOR	INT	USA	87-94	SS	SS,UB	
	J. PHILOSOPHY SPORT	INT	USA	90-92	PM,SS	SS,UB	
021	J. PHYS. ED.	INT	USA	77-78	PM		
102	J. PHYS. ED. RECREATION DANCE	INT	USA	79-80;87-95	PM,SS	SS,UB	
022	J. SPORTS MED. PHYS. FITNESS	INT	ITA	61;67;71-72;76-94	PM,ML,SS	ML,SS,UB	J Sports Med Phys Fitness
312	J. SPORTS SCIENCES	INT	ING	91-95	ML,SS	ML,SS,UB	J Sports Sci
103	LEICHT ATHLETIK	INT	ALE	75-78	NP		
104	LOISIRS SANTÉ	INT	FR	84-86	PM		
084	LUDENS	INT	PORT	80;83;85;88	PM		
202	MED. DELLO SPORT	INT	ITA	77-80;82-83;85	PM		
067	MED. SCIENCE SPORTS EXERC.	INT	USA	86-95	ML,SS	ML,SS,UB	Med Sci Sports Exerc
106	MÉD. SPORT	INT	FR	72;76-80;82-86;91-93	PM,SS	SS	
050	NATATION	INT	FR	86-91	PM	UB	
281	OUTSIDE	INT	USA	90-91	PM		
305	PARKS RECREATION	INT	USA	88-91	PM		
	PERFILES	INT	ESP	94-95	PM		
	PERFILLES	INT	FR	94	PM		
300	PHYSICIAN SPORTSMED.	INT	USA	88-95	SS	SS,UB	
280	PLAY & CULTURE	INT	USA	91-92	SS	SS,UB	
279	QUEST	INT	USA	91-95	SS	SS,UB	
115	RES. Q. EXERCISE SPORT	INT	USA	79;82;87-94	PM,ML,SS	ML,SS,UB	Res Q Exerc Sport
209	REV. PORT. MED. DESPORTIVA	INT	PORT	83,86	PM		
113	REVUE DE L'ED. PHYSIQUE	INT	BÉLG	91	PM,SS	SS	
169	SANTÉ ET SPORT	INT	FR	86	PM,SS	SS	
116	SCHOLASTIC COACH	INT	USA	47-48	PM,SS	SS	
265	SCHOLE	INT	USA	89	PM		

Núm	Nome do Periódico (curto)	PUBL.	País	Coleção (anos)	Técnica de Pesquisa	Base de Dados	Abreviação MEDLINE
256	SOCIETY LEISURE	INT	TCHE	73-74	PM		
288	SOCIOLOGY SPORT J.	INT	USA	91-95	SS	SS,UB	
060	SPIRIDON	INT	ALE	76	NP		
110	SPORT INT.	INT	BÉLG	63;66;69;74	PM		
287	SPORT PSYCHOLOGIST	INT	USA	91-95	SS	SS,UB	
222	SPORTDOKUMENTATION	INT	ALE	78-91	NP		
258	SPORTS & LEISURE	INT	ING	89-90	PM,SS	SS,UB	
151	SPORTSEARCH	INT	CAN	85-95	SS	SS,UB	
037	STADIUM	INT	ARG	73-91	PM	UB	
085	SUPER BASKET	INT	USA	86-92	PM		
047	SWIM. WORLD JUNIOR SWIM.	INT	USA	74-75;80;86-91	PM,SS	SS,UB	
	TENNIS DE FRANCE	INT	FR	86-92	SS	SS,UB	
164	TENNISTA	INT	ITA	86	PM		
038	TRACK & FIELD Q. REVIEW	INT	USA	76-82;84	PM,SS	SS,UB	
053	TRACK FIELD NEWS	INT	USA	73;86-93	PM,SS	SS,UB	
270	WORLD LEISURE & RECREATION	INT	ING	85;88;90-93	PM		
086	WORLD TENNIS	INT	USA	77-79;84-86	PM,SS	SS	

III-RESULTADOS

Técnica de Pesquisa Manual: Fascículos (Classificado por Ano de Publicação)

Título	Autor	Periódico	Ano, núm, pág.
Baloncesto In Silla De Ruedas	<Editorial>	Perfiles: Revista de La Once	1995, n. 105, p. 37-37
Paralisis Cerebral: Multiples Discapacidades, Multiples Posibilidades	Martinez, Bego Izarra	Perfiles: Revista de La Once	1995, n. 105, p. 27-33
Campeonato Del Mundo De Atletismo De Minusvalidos, Berlin	<Editorial>	Perfiles: Revista de La Once	1994, n. 99, p. 35-41
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Camping Therapy: It's Uses In Psychiatry And Rehabilitation (Book Review)	Lowry, Thomas Power	Journal of Leisure Research	1974, v. 6, n. 4, p. 319-321

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23902 **Greenwood, C Michael; Dzewaltowski, David A; French, Ron**
Self-Efficacy and Psychological Well-Being of Wheelchair Tennis Participants and Wheelchair Nontennis Participants. (20 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 7(1):12-21. 1990.

Studies the importance of self-efficacy as a cognitive mediator of wheelchair-mobile individuals' psychological well-being. Assesses the mood and self-efficacy of competitive wheelchair tennis participants and wheelchair nontennis participants toward performing tennis and general wheelchair mobility tasks. Tennis participants exhibit an iceberg profile of positive well-being and are higher than the Profile of Mood States norm on vigor and lower than the norm on tension, anger, depression, fatigue, and confusion. Also, wheelchair mobility self-efficacy significantly correlates with wheelchair tennis self-efficacy. Both self-efficacy measures correlate significantly with vigor for the tennis participants, and wheelchair mobility self-efficacy correlates significantly with each mood factor except depression for the nontennis participants. Concludes that wheelchair mobile individuals participating in tennis may be more confident about performing tennis skills and general wheelchair mobility tasks than are nonparticipants.
SIRLS Document AL659

23903 **Brasile, Frank M**
Wheelchair Sports: A New Perspective on Integration. (26 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 7(1):3-11. 1990.

Explores the potential of a new technique for integrating the disabled and the nondisabled, in which the disabled individual and disability-specific programs serve as the integrating agent. For example, nondisabled, or able-bodied, individuals would participate in wheelchair sports. Hypothesizes that such integration will lead to a deeper commitment to, as well as a keener insight into, the plight of the disabled individual in regard to the attitudinal and architectural barriers that are still so prevalent. Emphasizes the need to focus on the ability of the participant, rather than the disability.
SIRLS Document AL660

23928 **Politino, Virginia; Smith, Sarah L**
Attitude Toward Physical Activity and Self-Concept of Emotionally Disturbed and Normal Children. (26 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 6(4):371-378. 1989.

Investigates the relationship between attitude toward physical activity and self-concept of emotionally disturbed (n=80), and normal (n=390) boys and girls aged 8 to 13 years. Collects data through the Children's Attitude Toward Physical Activity Inventory (CATPA), and the Piers-Harris Self-Concept Scale. Finds significant differences between emotionally disturbed and normal children, and between boys and girls on the CATPA. Reveals a significant difference in self-concept between emotionally disturbed and normal children, and between self-concept and the CATPA subscales of social experience, thrill, and release of tension. Concludes that normal children have a more positive attitude toward physical activity and self-concept than emotionally disturbed children.
SIRLS Document AL678

23851 **Archie, Valerie Williams; Sherrill, Claudine**
Attitudes Toward Handicapped Peers of Mainstreamed and Nonmainstreamed Children in Physical Education. (9 refs.) PERCEPTUAL AND MOTOR SKILLS 69(1):319-322. 1989.

Examines the influence of contact with handicapped students (mainstreamed or nonmainstreamed) and gender on the attitudes of fifth- and sixth-grade students toward handicapped children in physical education. Students enrolled in a mainstreamed school (n=143) and those attending a nonmainstreamed school (n=86) respond to the Children's Attitudes Toward Handicapped Scale. Mean responses are subjected to a 2x2 analysis of variance, which indicates no significant differences by contact or sex. Chi-square analysis of individual items indicates some significant differences, favouring contact, on two items: 'are fun' and 'are interesting'. Offers suggestions for further research.
SIRLS Document AL613

23895 **Silliman, Lisa M; Sherrill, Claudine**
Self-Actualization of Wheelchair Athletes. (35 refs.) CLINICAL KINESIOLOGY 43(3):77-82. 1989.

Explores the use of a self-actualization inventory with physically-disabled athletes, and examines self-actualization of elite wheelchair athletes in relation to able-bodied adults (the normative group). National Wheelchair Athletic Association athletes (n=43) and National Wheelchair Basketball Association athletes (n=25) complete the Personal Orientation Inventory (POI), and individual and group profiles are constructed. Statistical analyses indicate no significant difference between genders on the 12 scales of the POI. Identifies and discusses similarities and differences among wheelchair athletes, test manual norms, and able-bodied athletes. Concludes that wheelchair and able-bodied athletes have common strengths (spontaneity, self-regard, and self-actualizing value) and common weaknesses (self-acceptance and existentiality) that distinguish them from the test manual reference group.
SIRLS Document AL652

23897 **Ewart, Craig K**
Psychological Effects of Resistive Weight Training: Implications for Cardiac Patients. (20 refs.) MEDICINE AND SCIENCE IN SPORTS AND EXERCISE 21(6):683-688. 1989.

Explains how self-efficacy perceptions are formed, and how they shape exercise adherence. Presents a practical model for measuring and modifying self-perceived physical abilities to promote safe and effective exertion in people with essential hypertension or coronary artery disease. Shows how participation in resistive weight training can promote adherence to safe and effective exercise. Reviews data showing how exercise contributes to emotional wellbeing, and reports changes in self-efficacy and negative affect that have recently been found to accompany strength gains achieved in circuit weight training.
SIRLS Document AL654

23798 **Stark, Richard W; Rogers, Marion; Johnson, Jean-Michel; Chiasson, Gilles, (eds.)**
SPORT AND RECREATION FOR THE DISABLED: A BIBLIOGRAPHY 1984-1989. Gloucester, Ontario: Sport Information Resource Centre. 209 pp. 1990.

Presents an update of an index first published in 1979, and again in 1984. Contains almost 4,000 references to information on all aspects of sport and recreation for the disabled published in journals, books, conference proceedings, and as theses between 1984 and 1989. Includes the following topics: administration, biography, biomechanics, competitive sports, specific disabilities, accessibility to facilities, availability of equipment and facilities, history, motor ability, philosophy, physical fitness, physiology, professional development, sociology and psychology, programs, individual activities, reference tools, sports medicine, and therapeutic recreation.
SIRLS Document S0920

23831 **Wall, Albert E**
Fostering Physical Activity among Canadians with Disabilities. CAHPER JOURNAL 56(1):28-31. 1990.

Examines some of the current thoughts, actions, and plans to encourage physical activity among Canadians with disabilities. Assesses the progress that has been made and the problems faced. Discusses the 1986 symposium held in Jasper, Alberta, that brought together delegates from across Canada to examine the current situation, acknowledge past achievements, and generate strategies for change. Focuses on the three themes of the conference: 1) program development and evaluation, 2) professional education and leadership training, and 3) delivery systems. Lists the objectives, goals, and priorities outlined in BLUEPRINT FOR ACTION (1988), a national action plan developed by the Advisory Committee on Physical Activity for Canadians with Disabilities established by Fitness Canada. Outlines recent initiatives that reflect the commitment of Canadians to the field of adapted physical activity and recreation.
SIRLS Document AL593

03

23832 **DePauw, Karen P**
PE and Sport for Disabled Individuals in the U.S. (6 refs.) CAHPER JOURNAL 56(1):32-35. 1990.

Explains the origins of formal physical activity programs for disabled persons in the rehabilitation needs of war veterans. Notes the official beginnings of adapted physical education in the schools in 1952, and describes four major pieces of federal legislation regarding disabled persons that were enacted originally in the 1970s: Education of All Handicapped Children Act, Rehabilitation Act, Developmental Disabilities Assistance Act, and Amateur Sports Act. Shows how

behaviour observations and peer ratings, but not between behaviour observations and self-ratings, or peer and self-ratings. A behavioural approach to measuring self-concept across situations appears to be more indicative of the multidimensionality of the self than sole reliance on self-report. Concludes that self-concept measurement requires increased sensitivity to a) definition of, saliency of, and vacillation within a domain, b) the reference group used for social comparison, and c) the impact of previous experiences on current views of self.
SIRLS Document AL609

23647 **Jarvis, Katherine Chaput**
Attitudes of Physical Educators Toward the Integration of Handicapped Students. (9 refs.) M.A. Thesis. Texas Woman's University. Microform Publications, 1989, Order No. PSY 1365f. 306 pp. 1987.

Assesses the effectiveness of a two-day inservice workshop in enhancing and maintaining the attitudes of elementary and secondary school physical educators toward the integration of handicapped students. Matches experimental subjects (n=26) with a control group by gender, grade level taught, and years of teaching experience. Subjects respond to the Learning Handicapped Integration Inventory (Watson and Hewett, 1976) as adapted by Jansma and Schultz (1982), before the workshop, immediately after the workshop, and approximately four months later. Although the mean score of the experimental group indicates slight positive shifts in attitudes, no significant differences are evident. Concludes that the workshop is ineffective in promoting positive attitudes toward the integration of handicapped students in regular classes.
SIRLS Document AL419

23691 **Stafford, Ian**
Every Body Active: A Sports Council National Demonstration Project in England. (7 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 6(2):100-108. 1989.

Points out the implication of the 1981 Education Act that English school children with special needs should be taught in an integrated setting, provided certain conditions are satisfied. Explains that in 1982, the English Sports Council set up national demonstration projects to promote mass participation in sport throughout all sectors of the community. Looks at the Every Body Active demonstration project, based at Sunderland Polytechnic, which addresses the participation and integration of young people (11-24 years) who have physical or sensory disabilities in community sport and recreation and school physical education. Focuses on the physical education scheme, and the research findings that precede its formation. Describes a scheme that encompasses a special school for students with physical disabilities, its physical education program, and links with mainstream schools and external community sport and recreation agencies.
SIRLS Document AL460

04

23701 **Morisbak, Inge**
Adapted Physical Education: An Overview of the Field. SCANDINAVIAN JOURNAL OF SPORTS SCIENCES 10(2/3):73-78. 1988.

Describes adapted physical education as a multidisciplinary domain. Discusses the academic field of adapted physical education in light of trends related to the situation of the disabled in society. Looks at the influence of the traditional medical model, and the development towards a more comprehensive service delivery. Exemplifies current issues such as international collaboration, adapted physical education in developing countries, competitive sports for the disabled, and technical developments. Explains innovative features developed in Norway: 1) the 'health sports' concept, which places great emphasis on regular and vigorous participation in physical activities for handicapped individuals as preventive health care, and 2) the education of adapted physical education teachers.
SIRLS Document AL470

23617 **Sneegas, Janiece J**
Social Skills: An Integral Component of Leisure Participation and Therapeutic Recreation Services. (39 refs.) THERAPEUTIC RECREATION JOURNAL 23(2):30-40. 1989.

Reviews the research that has examined the social aspects of leisure activity, and observes that the importance of social involvement as a motivator to participate in leisure, and as a source of leisure satisfaction, is obvious. Discusses the construct of social competence, and considers the importance of addressing social skills in therapeutic recreation services. Looks at documentation of deficiencies in social skills among individuals with chemical dependency, individuals with mental retardation, residents of long-term care facilities, clients in psychiatric settings, as well as children with learning disabilities. Shows how social skills play an important role in all three components of Peterson and Gunn's (1984) Therapeutic Recreation Service Model: therapy, leisure education, and recreation participation. Describes two approaches to social skill development: one based on cognitive problem skills training, and the other focused on the performance aspects of social behaviour.
SIRLS Document AL390

23618 **Caldwell, Linda; Adolph, Susan**
Economic Issues Associated with Disability: And Then There is Leisure. (7 refs.) JOURNAL OF LEISURABILITY 16(2):19-24. 1989.

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Examines the leisure and social life-styles of individuals who have been discharged from a rehabilitation hospital. Surveys former patients (n=155) of Lyndhurst Hospital in Toronto, Canada, concerning their occupations prior to injury, and currently. Collects data regarding their income. Subjects also rate the importance of work and leisure. Compares their answers across three groups: full-time employed, part-time employed, and unemployed. Finds that availability of money is seen by all three groups as only a low to moderate barrier to participation in leisure activities. Findings suggest that individuals who have sustained spinal cord injuries have difficulty re-entering the labour force, and that almost half are unemployed, relying on sources of income other than employment. Discusses the implications of this study for leisure providers.
SIRLS Document AL391

23619 **Bridge, N J; Gold, Deborah**
An Analysis of the Relationship Between Leisure and Economics. (10 refs.) JOURNAL OF LEISURABILITY 16(2):10-14. 1989.

Presents an overview of the classic economic theory of a capitalist state. Discusses the effect of economics on the expression of leisure in Canada today, and its subsequent effect on the formation of leisure attitudes. Considers how these forces affect the leisure choices of Canadians who are in economic poverty. Focuses on individuals who are impoverished due to disability, but also includes those who are poor as a result of single parenting responsibilities, age or retirement, the inflated housing market, or workplace exploitation. Contends that it is the competitive economic system which perpetuates poverty for many people: since personal control is based on the possession of money, those without it will be denied a range of choices in their leisure. Emphasizes that change must occur in the environments and social programs that systematically deny people the opportunity to participate by placing heavy emphasis on the cost.
SIRLS Document AL392

23611 **Crawford, Cameron**
A View from the Sidelines: Disability, Poverty and Recreation in Canada. (12 refs.) JOURNAL OF LEISURABILITY 16(2):3-9. 1989.

Addresses the issue of recreation and leisure services for the disabled in Canada. States that the disabled are generally poor and that funding programs do not always help those most in need. Argues that the tendency for funding agencies to target specialized groups gives the public the impression that disabled people ought to be separated from the rest of society. Explains that disabled people are often not aware of the full realm of leisure possibilities, which include more than just activities funded for the disabled. Uses the term 'habilitation bias' for programs which have an intense focus on skills development and remediation, and cautions that these programs are not for everyone. Observes that persons who do not appear to possess 'habilitable' qualities are excluded from recreation and leisure programs. Concludes that the economics of disability raise challenges for society on how we think about the place of each person in society, and how the 'game' can be played without excluding anyone.
SIRLS Document AL384

23612 **Hourcade, Jack J**
Special Olympics: A Review and Critical Analysis. (22 refs.) THERAPEUTIC RECREATION JOURNAL 23(1):58-65. 1989.

Identifies the perceived limitations of the Special Olympics for individuals with mental retardation as the following: 1) the principle of normalization is not adhered to by the segregating nature of the activity, 2) the skills learned are not of practical utility in normalizing the individual, 3) instructional time is inefficiently utilized, 4) the child-like atmosphere can elicit inappropriate behaviours from participants and an inaccurate perception of the mentally retarded by the public, 5) labelling and stigmatization, 6) patronization of participants, 7) sympathy, pity, and charity are evoked, 8) competitiveness is emphasized, and 9) the program has failed to provide empirically verifiable benefits. States that benefits include additional attention for the individuals, public awareness of mental retardation, and potential gains in physical skills. Outlines ways in which the Special Olympics could be modified to address the limitations.
SIRLS Document AL385

06

23613 **McLean, Daniel D; Smith, S Harold; Larsen, John K**
Winter Recreation in Large North American Communities - A Study. (5 refs.) JOURNAL OF PHYSICAL EDUCATION, RECREATION AND DANCE 60(8):52-57. 1989.

Surveys 61 'winter cities' (having an average temperature of 0 degrees celsius for at least one month annually) in North America to determine the availability of outdoor and indoor winter-related facilities. Looks at five distinct areas: 1) availability of winter facilities for recreation (outdoor, indoor), 2) availability of winter recreation programs (instructional, competitive, special events), 3) availability of resources for special populations, 4) participation levels, and 5) budgetary commitments. Finds that the most often available outdoor facility is the ice rink, followed by cross-country ski trails and sledding hills, and that indoor facilities are more prevalent in Canada than the United States. Canadian agencies offer more programs of all types than their American counterparts, and 81% of Canadian agencies make provisions for special populations, while the corresponding level in the U.S. is 33%. Notes that both Canadian and U.S. respondents report an increase in participation in winter activities in recent years, and reports that respondents are unable to provide a budgetary breakdown for winter recreation. Surmises that differences between the two countries in their perceptions of winter may be due to cultural differences in how people perceive and deal with winter.
SIRLS Document AL386

23574 **Luckner, John L**
Effects of Participation in an Outdoor Adventure Education Course on the Self-Concept of Hearing-Impaired Individuals. (28 refs.) AMERICAN ANNALS OF THE DEAF 134(1):45-49. 1989.

Investigates the effectiveness of using an outdoor adventure education program as a method of intervention for enhancing the self-concept of the hearing-impaired. Assesses whether, if gains do occur, they are maintained for a period of two months after participation in the program. Eight female and two male hearing-impaired individuals participate in the course, and respond to the Culture-Free Self-Esteem Inventory and the Semantic Differential Scale of Self-Concept before, immediately after, and two months following the course. A control group matched for sex, age, ethnicity, degree of hearing loss, age of onset, parental hearing status, and lack of a secondary handicapping condition also complete the self-concept measures. Results indicate that participation in an outdoor adventure education course has a significant positive effect on the self-concept of the experimental group, and that the gains are maintained for a two-month period.
SIRLS Document AL353

22880 **Zoerink, Dean A**
Effects of a Short-Term Leisure Education Program upon the Leisure Functioning of Young People with Spina Bifida. (27 refs.) THERAPEUTIC RECREATION JOURNAL 22(3):44-52. 1988.

Explores the effects of a short-term leisure education program, using value clarification strategies, on the leisure functioning of 14- to 21-year olds with spina bifida. Uses the Leisure Diagnostic Battery, Long Form Version A, to collect pretest and posttest data from four subjects who are involved in a six-week leisure education program. Considers the data using visual inspection techniques. Findings reveal that these individuals function adequately with respect to leisure, are cognizant of the barriers prohibiting involvement in recreation activities, are knowledgeable about various aspects related to recreation activity involvement, and prefer social and physical recreation experiences.
SIRLS Document AK611

07

22940 **Schleien, Stuart J; Ray, M Tipton**
COMMUNITY RECREATION AND PERSONS WITH DISABILITIES: STRATEGIES FOR INTEGRATION. Baltimore, Maryland: Paul H Brookes Publishing Co. 277 pp. 1988.

Establishes the rationale and philosophical basis for the provision of community leisure services and for the inclusion, or integration, of persons with disabilities into these programs. Presents a program planning process that systematically produces guidelines for planning these services. Outlines an integrated community services planning and

implementation model that defines the roles and responsibilities of professionals, care providers, and other 'key players'. Explains the use of an Environmental Analysis Inventory for studying environments and for overcoming obstacles to participation in community recreation programs. Addresses teaching procedures, instructional arrangements, and special considerations that have proven effective in the provision of integrated community services. Looks at participant and program evaluation. Provides a series of case studies that illustrate the application of the concepts and approaches discussed in a community setting.

23376 **Barnett, Lynn A, (ed.)**
RESEARCH ABOUT LEISURE: PAST, PRESENT, AND FUTURE. Champaign, Illinois: Sagamore Publishing. 220 pp. 1988.

Presents papers from the tenth anniversary of the annual Leisure Research Symposium, held in connection with the U.S. National Recreation and Park Association. Encompasses numerous topics related to structural, functional, and pragmatic aspects of leisure, with a strong emphasis on methodological as well as substantive content concerns. Papers address past, present, and future directions in a) the history, philosophy, sociology, and social psychology of leisure, b) global perspectives on the state of leisure, c) programs and services for older adults and special populations, d) tourism and commercial recreation, e) statistical and methodological issues in leisure research, and f) planning, management, and evaluation of leisure programs and resources.

23519 **Watkinson, E J; Calzonetti, K**
Physical Activity Patterns of Physically Disabled Women in Canada. (20 refs.) CAHPER JOURNAL 55(6):21-26. 1989.

Describes the involvement of physically disabled women in the opportunity options of Canada's physical activity delivery system, and explores the developmental processes of physical activity for this group. Subjects (n=186) chosen randomly among individuals affiliated with a disabled sport association or with a generic disability association respond to questionnaires designed to gather data concerning a) patterns of physical activity of disabled women, including frequency and specific nature of activities, b) attitudes toward activity, c) concerns about the provision of programs for their particular disability, and d) factors that respondents think would increase their level of activity. Finds that disabled women do not appear to be participating in either the full range of activity options or environments available in the Canadian delivery system. Suggests reasons for this lack of participation.
SIRLS Document AL301

08

23531 **Lahtinen, Ulla M**
Sporting Behavior of Special Groups in Finland. (9 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 6(2):159-169. 1989.

Describes several Finnish studies of the sporting behaviour of persons on disability pension, war veterans, the chronically ill or disabled, the mentally handicapped, and the visually impaired. Compares their sporting habits with those of the rest of the population. Identifies important factors influencing sporting behaviour of special population groups, including time at their disposal, interests, earlier practices, age, gender, and state of health. Notes that on the one hand, poor health or a disability limits sports and physical activity, while on the other, it encourages sport with conditioning or rehabilitative aims. Points out features of sport for special groups that need to be developed.
SIRLS Document AL313

23547 **Riordan, James**
Soviet Sport and Perestroika. (43 refs.) JOURNAL OF COMPARATIVE PHYSICAL EDUCATION AND SPORT (CROSS-CULTURAL AND INTERNATIONAL STUDIES) 11(2):6-18. 1989.

Addresses the changes that have taken place in Soviet sport since President Gorbachov launched his 'perestroika' policy. Reviews the major trends that have emerged in the latter part of the 1980s: 1) precedence of sport-for-all over elite sport, 2) the acceptance of independent sport clubs by the authorities, 3) broadened opportunities for women, 4) increased opportunities for disabled persons, 5) changes in the image of Soviet sport, 6) questioning of the morality of sport, and 7) convergence of some facets of Soviet and Western sport. Concludes that the extent to which sport in the U.S.S.R. will change in the future will depend on the initiative of the Soviet people themselves, as they fight for the right to their own personality and physical culture.
SIRLS Document AL326

23286 **Porter, Ann; Pemberton, Cynthia L; Humphries, Charlotte A; Parker, Melissa**
The Relationship Between Cardiovascular Fitness Training and Self-Concept of Mentally Retarded Adults. North American Society for the Psychology of Sport and Physical Activity. Annual Meeting. Kent, Ohio: Kent State University. (June 1-4, 1989). Unpublished. 17 pp. 1989.

Studies the relationship between cardiovascular fitness and self-concept, particularly self-worth, in mentally handicapped adults. Eight 21- to 36-year-old mentally handicapped persons participate in a 10-week walking program. Subjects complete pre- and post-training measures of cardiovascular fitness (Rockport Fitness Walking Test) and self-concept (Harter Scale). Five of the eight subjects improve their fitness level. Six of the eight subjects, including the four with improved fitness, maintain or show increases in perceived physical competence. Examines and compares individual psychological and physical profiles, and makes recommendations for the development of a competence scale specifically for use with mentally handicapped adults.
SIRLS Document AL085

23293 **Jones, Grant**
Physical Education in New Zealand Schools. FIEP BULLETIN 58(4):14-16. 1989.

Looks at recent developments in physical education in New Zealand schools: 1) the revision of the syllabus for both primary and secondary programs, 2) the development of a prescription for national awards in Form 6 and Form 7 (the last two years of secondary school) physical education, 3) the introduction of 'Kiwi Sport' (modified sports programs for children), 4) the development of physical education programs for early childhood (under five years of age), and 5) a research project on the mainstreaming of physically disabled students in regular physical education programs.
SIRLS Document AL091

09

23340 **Stensrud, Carol J**
I Didn't Recognize Your Face: Two Decades of Change in Therapeutic Recreation Service. (12 refs.) LEISURE INFORMATION QUARTERLY 15(4):8-9. 1989.

Discusses the drastic changes in the field of therapeutic recreation in the United States over the last two decades. Looks at two major catalysts that have influenced the Therapeutic Recreation Service (TRS) in the United States: legislative policies, and changes in images and attitudes related to individuals with disabilities. Overviews five selected programmatic changes in the TRS that have resulted from the action of these catalysts: 1) the leisurability model, 2) individualized clinical treatment plans, and the blending of therapeutic recreation and community-based leisure opportunities, 3) leisure education, 4) mainstreamed leisure opportunities, and 5) consumer rights. Concludes that more progressive legislative action, professional cooperation, advocacy, public awareness, and determined program development are needed in an effort to bring a qualitative TRS to all who can benefit.
SIRLS Document AL138

23272 **Searle, Mark S**
The Effects of Selected Socio-economic Factors on the Leisure Behaviour of Disabled and Non-disabled Older Adults. (38 refs.) JOURNAL OF LEISURABILITY 15(4):21-27. 1988.

Examines disabled and non-disabled older adults to determine if certain socio-economic factors have differential effects on the two groups. Collects data by means of a mail questionnaire (n=632 responses, 155 reporting a disability, 477 reporting no disability). Selects age, sex, years residing in the same home, income, education, type of dwelling, and perceived health status as independent variables, and leisure behaviour as the dependent variable. Analyzes data using a stepwise multiple regression technique. Finds that: 1) there is no distinct difference in the socio-economic factors influencing the leisure behaviour of the two groups, 2) education accounts for a substantial portion of the variance, 3) income has no real effects for the disabled group, 4) perceived health status has a significant effect on both groups, 5) the type of dwelling one lives in is not a factor of any proportion, and 6) the issue of gender is not a factor to any great extent for either group. Concludes that some differences do exist in the way socio-economic factors influence leisure behaviour for disabled and non-disabled older adults.
SIRLS Document AL071

23279 **D'Urso, Mary; Logue, Gary**
Competitive Adapted Sports for Impaired Older Adults. (15 refs.) THERAPEUTIC RECREATION JOURNAL 22(4):56-64. 1988.

Reports that the disabled elderly have few physically stimulating program options. Suggests that barriers to developing such programs are: 1) stereotyping of the abilities of functionally impaired elderly adults, 2) the negative connotation of competition, 3) failure of program planners to try new things, 4) insufficient staff or space, and 5) participant safety. Describes the development of an adapted sports program for functionally impaired elderly in five Northern Virginia adult day health care centers. Using the sport of volleyball, explains how the game was introduced gradually to the participants, how competitive leagues were formed, how the league tournament was arranged, and how the coaches were crucial to the success of the games. States that formative evaluation, in which evaluation occurs within every component of the process through feedback, was utilized. Observes that the benefits of the program were not only physical, but also psychosocial. Suggests that further research, of an empirical nature, should be done, and more objective measures for evaluation should be employed.
SIRLS Document AL078

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23153 Mastro, James Vincent; Hall, Margery M; Canabal, Marla Y
Cultural and Attitudinal Similarities - Female and Disabled Individuals in Sports and Athletics. (36 refs.) JOURNAL OF PHYSICAL EDUCATION, RECREATION AND DANCE 59(9):80-83. 1988.

Finds that cultural sanctions and social attitudes toward females and disabled individuals in sports and athletics are similar. Blames, in part, the early childhood socialization process which negatively reinforces participation in sports for both groups. States that the cultural guidelines for achievement motivation are different for female and disabled athletes. Suggests that lack of strong motivation to succeed in sports may also be part of the problem. Observes that negative social attitudes have limited sport choices and opportunities for women and disabled individuals. Notes that women and the disabled have been stereotyped as frail and prone to injury. Recommends that performance standards for able-bodied men, women, and disabled athletes should not be compared, and that rules and standards should coincide with performance levels appropriate to the group of competitors.
SIRLS Document AK857

23026 **Brasile, Frank D**
Psychological Factors That Influence Participation in Wheelchair Basketball. (10 refs.) PALAESTRA: THE FORUM OF SPORT, PHYSICAL EDUCATION AND RECREATION FOR THE DISABLED 4(3):16-27. 1988.

Identifies reasons for participation in wheelchair basketball, and investigates how these reasons might be related to two disability-specific considerations: 1) onset of disability and 2) National Wheelchair Basketball Association classification levels. Individuals (n=60) attending wheelchair basketball tournaments respond to a questionnaire. All of the respondents report that they enjoy participating in wheelchair basketball. Assesses the relative importance of six categories of incentives: ego, task, social, socialization, fitness, and equipment. Finds that the three primary motivations include competition, socialization, and fitness. Results indicate no differences in incentive levels with regard to sex and years of experience. However, there do appear to be differences with regard to age of onset and disability classification levels, particularly in the fitness, task, and socialization categories. Class I athletes report higher enjoyment incentives for participation than Class II and III athletes.
SIRLS Document AK745

23116 **Nixon, Howard L**
Integration of Disabled People in Mainstream Sports: Case Study of a Partially Sighted Child. (26 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 6(1):17-31. 1989.

Considers the nature, structural conditions, and implications of appropriate integration of disabled and able-bodied people into mainstream sports. Uses a case study of a partially sighted boy's experiences in different mainstream sport settings to show how integration efforts can be complicated by 1) the ambiguity of an invisible impairment, 2) the pressures on disabled persons and their families to ignore or deny impairment and disability, and 3) a mismatching of structural aspects of sports and the abilities of participants with disabilities. Points out that inappropriate integration merely reinforces the image of incompetence that disabled people seek to escape. Emphasizes that opportunities for disabled people to participate in sport should match the performance and social abilities of a disabled person with the performance and interaction expectations of a situation.
SIRLS Document AK827

23117 **Gibbons, Sandra L; Bushakra, Frank B**
Effects of Special Olympics Participation on the Perceived Competence and Social Acceptance of Mentally Retarded Children. (24 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 6(1):40-51. 1989.

Examines changes in perceived competence of participants and nonparticipants of a Special Olympics track and field meet. Obtains pre- and posttest measures of the physical, cognitive, peer acceptance, and maternal acceptance subscales of the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children from participants (n=24) and nonparticipant controls. A test of homogeneity of variance for pretest scores reveals that both groups are equivalent on the perceived competence and social acceptance measures. Conducts a MANOVA to compare gain scores on all four measures between the two groups. Results indicate that both groups differ significantly with respect to perceived competence and peer acceptance. Discusses the implications of the results for the planning of adapted physical education programs.
SIRLS Document AK828

22832 **Zoerink, Dean A**
Activity Choices: Exploring Perceptions of Persons with Physical Disabilities. (30 refs.) THERAPEUTIC RECREATION JOURNAL 23(1):17-23. 1989.

Ascertains whether or not differences exist between adult men with congenital orthopedic disabilities, adult men with acquired orthopedic disabilities, and nondisabled adult men, with respect to their preferences for recreation and free-time activities. Collects data by means of a structured interview with 20- to 40-year-old males (n=173), of whom 53 have congenital orthopedic disabilities, 60 have acquired orthopedic disabilities, and 60 are able-bodied. Analyzes the data using one-way analysis of variance. Findings reveal that the groups hold similar perceptions with respect to recreation and leisure-time activities. The only significant finding is that subjects with congenital disabilities, in contrast to the others, believe that recreation programs should be integrated.
SIRLS Document AK565

22834 **Malkin, Marjorie J; Howe, Christine Z; Del Rey, Patricia**
Psychological Disability and Leisure Dysfunction of Female Suicidal Psychiatric Clients. (35 refs.) THERAPEUTIC RECREATION JOURNAL 23(1):36-46. 1989.

Investigates the interrelationships between psychological disability and leisure dysfunction in a sample of psychiatric inpatients. Suicidal adult women (n=22) and depressed, nonsuicidal women (n=11) act as subjects. Phase I of the two-part study is quantitative and descriptive.

Subjects provide demographic data and respond to instruments measuring depression, hopelessness, perceived freedom in leisure, and the relationship between leisure and life satisfaction. Finds that leisure dysfunction increases, and leisure satisfaction and perceived freedom in leisure decrease, as severity of psychological disability increases. Phase II comprises case study interviews with three modal subjects. Notes low levels of perceived control and cognitive dissonance between real and ideal concepts of sex-role among these subjects.
SIRLS Document AK567

22848 **Sherrill, Claudine; Gilstrap, Tamara; Richir, Kenneth; Gench, Barbara E; Hinson, Marilyn**
Use of the Personal Orientation Inventory with Disabled Athletes. (14 refs.) PERCEPTUAL AND MOTOR SKILLS 67(1):263-266. 1988.

Conducts two studies to examine the appropriateness of oral presentation of items in the Personal Orientation Inventory when gathering data from disabled athletes. In Study 1, sighted, able-bodied high school and college athletes (n=25) respond to the inventory in the standard manner, as well as orally. Study 2 estimates the test-retest reliability of the inventory when statements are presented and responded to orally by blind elite male athletes (n=15) and cerebral palsied elite male and female athletes (n=15). Concludes that the inventory, administered orally, may be appropriately used with disabled athletes.
SIRLS Document AK580

22749 **Churton, Michael W**
Federal Law and Adapted Physical Education. (10 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(4):278-284. 1988.

Comprehensively reviews national legislation that affects the delivery of adapted physical education services in the United States. Presents direct and indirect references to physical education in the Education of the Handicapped Act, the Rehabilitation Act, and the Developmental Disabilities Assistance and Bill of Rights Act. Also describes an overview of the legislative process. Discusses advocacy pertinent to the responsibilities of the profession and the professional for ensuring the implementation of statutory language.
SIRLS Document AK490

22750 **Labanowich, Stan**
A Case for the Integration of the Disabled Into the Olympic Games. (15 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(4):264-272. 1988.

Reviews the federal legislation that has been enacted during the past quarter century in the United States to establish and maintain the civil and human rights of individuals with disabilities. Describes how sports programs for the physically disabled have been institutionalized - programs are organized on the basis of the etiology of the disability, rather than the ability of the athlete. Looks at wheelchair sports as an integrative concept to counteract institutionalization. Shows how the International Olympic Committee has contributed unwittingly to this institutionalization phenomenon. Points out four occasions on which the IOC has sanctioned the inclusion of the disabled in the Olympic Games, but argues that these demonstration events do not meet the fundamental needs of the disabled in competitive sport. Contends that, according to the criteria established by the IOC, certain sports reserved exclusively for the disabled can be made eligible for inclusion in the Olympic Games as medal events.
SIRLS Document AK491

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22752 **Hopper, Chris A**
Self-Concept and Motor Performance of Hearing Impaired Boys and Girls. (53 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(4):293-304. 1988.

Presents a pilot study which tests a self-concept measuring instrument for hearing impaired students, and relates the results to motor performance. Students (n=32) from the Washington State School for the Deaf in Vancouver respond to six subscales of the Harter Self-Perception Profile: scholastic competence, social acceptance, athletic competence, physical appearance, behavioural conduct, and global self-worth. Assesses motor performance with the 9-minute run, sit-ups, sit-and-reach, Bass stick test, long jump, shuttle run, and catching a ball. Results indicate that students score highest in the scholastic domain and lowest in the social acceptance domain. The physical appearance scale is most related to global self-worth. Students who view themselves as athletically capable perform best in the 9-minute run. Finds that girls score higher than boys in athletic competence, physical appearance, and social acceptance domains.
SIRLS Document AK493

22726 **Stewart, C Craig**
Modification of Student Attitudes Toward Disabled Peers. (11 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(1):44-48. 1988.

Assesses the effects of the presence of two disabled university students on the attitudes of nondisabled students enrolled in a weight training course. Participants in two university weight training classes (treatment, n=15, and control, n=19) respond to the Attitude Toward Disabled Persons Scale on the second day of class and at the end of the school term (ten weeks). T-tests and an analysis of covariance reveal a significant improvement in the attitudes of students who were in the class with the disabled students. Concludes that peer interaction appears to have a positive significant effect on the attitudes of nondisabled students toward disabled individuals.
SIRLS Document AK467

22727 **DePauw, Karen P**
Sport for Individuals with Disabilities: Research Opportunities. (68 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(2):80-89. 1988.

Notes that recent investigations into disabled sports have become a) sport specific, b) disability specific, c) performance enhancing, and d) discipline oriented (e.g. sociology, exercise physiology). Presents a synthesis and summation of the results of disabled sport research to date. Contends that sport research on individuals with disabilities is still in its infancy. Identifies five areas on which the research should be focused: movement efficiency, sport performance, sport initiation, effects of sport, and influences upon sport. Points out four prerequisites for adequately addressing specific research questions: team research effort, interagency cooperation, computer simulation/mathematical modeling, and an information link. Includes a comprehensive bibliography of relevant research.
SIRLS Document AK468

22741 **Lathen, Calvin W; Stoll, Sharon Kay; Hyder, Martha**
Do Physically Disabled Individuals Desire Participation in Risk Sports? (22 refs.) PALAESTRA: THE FORUM OF SPORT, PHYSICAL EDUCATION AND RECREATION FOR THE DISABLED 4(2):19-23. 1988.

Studies the desires of disabled persons to participate in risk sport activities. Physically disabled high school students (n=60) respond to a mail survey. Respondents choose rafting as the most desired risk sport (63.6%), followed by bicycling, backpacking, winter camping, and canoeing. Results indicate that iceclimbing is the least desired activity (13%) followed by orienteering, sky jumping, mountaineering, and hanggliding. With regard to past participation in risk sport, respondents rank bicycling and backpacking highest. Notes that desires for risk sport participation seem to be positively related to past participation, immediate family participation, and knowledge of other participating physically disabled people. Suggests that the desires of physically disabled persons to participate in risk sport are similar to those of society in general.
SIRLS Document AK482

22541 **Shoebridge, Michele**
WOMEN IN SPORT: A SELECT BIBLIOGRAPHY. London, England: Mansell Publishing Limited. 231 pp. 1987.

Presents a compilation of references to the literature related to women's participation in sport. Includes the following categories of material: 1) monographs and conference proceedings published from 1900 onward, written in English, French, German, Finnish, Norwegian, and Spanish, 2) articles in the English language only, published from 1970 onward, and 3) theses. Addresses the following main subject areas: general, philosophy, history, Olympic Games, comparative sport, sociological aspects, the disabled, ethnic groups, the aged, social psychology, motor learning psychology, physiological aspects, sports medicine, biomechanics, coaching, training, and sports equipment. Also includes references to the literature covering specific sports in which women participate. Lists biographies of prominent sportswomen, serials published in the area of women's sports, and organizations of sportswomen.

22682 **Rizzo, Terry L; Wright, Rollin G**
Physical Educators' Attitudes Toward Teaching Students with Handicaps. (8 refs.) MENTAL RETARDATION 26(5):307-309. 1988.

Investigates the relationship between the attitudes of high school educators and a) their gender, b) the highest degree earned, c) their age, d) courses completed dealing with the physical education of handicapped students, e) non-physical education courses about students with handicaps, f) their experience in teaching students with handicaps, and g) their perceived competence in teaching students with handicaps. Physical educators (n=136) from a large American midwestern urban school district respond to the Physical Educators' Attitude Toward Teaching Handicapped Students Instrument. Uses Pearson correlations to estimate the relationship between the selected attributes and teachers' attitudes. Finds that, of the seven attributes examined, only one - perceived competence - influenced teacher attitude.
SIRLS Document AK423

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22720 **Sherrill, Claudine; Rainbolt, Wanda Jean**
Self-Actualization Profiles of Male Able-Bodied and Elite Cerebral Palsied Athletes. (37 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(2):108-119. 1988.

Examines the self-actualization profiles of athletes based on existing research, and extends this research to male cerebral palsied athletes. Plots self-actualization profiles for college-age able-bodied male athletes (n=265) and elite cerebral palsied male athletes (n=30), all of whom are international competitors. Analyzes these profiles in relation to one another and in relation to two normative groups, one consisting of adults and the other of college students. Results indicate that able-bodied and cerebral palsied athletes have similar self-actualization profiles. Finds that cerebral palsied athletes are significantly less self-actualized than normal adults in the areas of time competence, existentiality, self-acceptance, nature of man, and synergy. Finds also that able-bodied college-age male athletes are generally more self-actualized than other male college students.
SIRLS Document AK461

22380 **Mastro, James Vincent**
Psychological Mood Profiles of Sighted and Unsighted Beep Baseball Players. (11 refs.) RESEARCH QUARTERLY FOR EXERCISE AND SPORT 59(3):262-264. 1988.

Compares the psychological characteristics of sighted and unsighted beep baseball players. Unsighted (n=81) and sighted (n=46) players from American teams participating in the 1985 World Series of Beep Baseball respond to the Profile of Mood States within 24 hours of playing their first game. Finds no significant overall differences among psychological mood dimensions of unsighted and sighted beep baseball players. Multivariate analyses reveal that unsighted players have higher tension and depression scores than sighted players.
SIRLS Document AK138

22407 **Zoerink, Dean A**
Attitudes Toward Leisure: Persons with Congenital Orthopedic Disabilities Versus Able-Bodied Persons. (28 refs.) JOURNAL OF REHABILITATION 54(2):60-64. 1988.

Ascertains whether or not differences in leisure attitudes exist between young adults with congenital orthopedic disabilities and able-bodied young adults. Persons with congenital disabilities (n=31) and able-bodied young adults (n=35) complete a measure of leisure attitudes, as well as the Leisure Ethic Scale. Finds that the able-bodied group responds more positively to the 'liking leisure' factor than the congenitally disabled group. Analysis of the factor, 'positive spontaneity', indicates that persons with congenital disabilities see themselves as being less spontaneous. The composite score reveals that the disabled group evidences a lower leisure attitude score.
SIRLS Document AK164

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21751 **Sherrill, Claudine, (ed.)**
SPORT AND DISABLED ATHLETES. The 1984 Olympic Scientific Congress Proceedings. Volume 9. Eugene, Oregon. (July 19-26, 1984). Champaign, Illinois: Human Kinetics. 297 pp. 1986.

Presents selected proceedings from a congress which focused on the theme of sport, health, and well-being. Papers address topics from the subdisciplines of sport science - sport medicine, biomechanics, sport psychology, sport sociology, and sport philosophy - pertaining to the participation of disabled athletes in sport. Also addresses the many and varied systems for equalizing performance.

21752 **Sherrill, Claudine**
Social and Psychological Dimensions of Sports for Disabled Athletes. (45 refs.) In Sherrill, Claudine (ed.). SPORT AND DISABLED ATHLETES. THE 1984 OLYMPIC SCIENTIFIC CONGRESS PROCEEDINGS. VOLUME 9. Eugene, Oregon. (July 19-26, 1984). Champaign, Illinois: Human Kinetics. pp. 21-33. 1986.

Discusses the problems confronted by disabled athletes, focusing on three issues in particular: stigmatization, stereotyping, and prejudice. Gathers data from interviews with approximately 200 cerebral palsied athletes, and 100 blind athletes. Reviews the research that has been carried out on the psychosocial dimensions of sport for disabled athletes under the broad topics of motivation theory, participation theory, and social learning theory. Points out the paucity of spectators at the 1984 International Games for the Disabled, and questions if the general public will ever consider the body and/or movement of a disabled athlete to be beautiful, and thus worthy of being included in the Olympics.

SIRLS Document AJ470

22177 **Tripp, April**
Comparison of Attitudes of Regular and Adapted Physical Educators Toward Disabled Individuals. (4 refs.) PERCEPTUAL AND MOTOR SKILLS 66(2):425-426. 1988.

Compares the attitudes toward disabled persons expressed by physical education teachers (n=38) with those of adapted physical education teachers (n=47). Teachers respond to the Attitude Toward Disabled Persons Scale, and rank ten types of disabling conditions. Finds that the attitudes of both groups of teachers toward the disabled are below the scale median. Both groups of teachers are more accepting of individuals with physical disabilities (such as amputees, harelip, epilepsy) than individuals who are mentally retarded, cerebral palsied, or emotionally disturbed.
SIRLS Document AJ853

22201 **Nixon, Howard L**
Getting Over the Worry Hurdle: Parental Encouragement and the Sports Involvement of Visually Impaired Children and Youths. (11 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 5(1):29-43. 1988.

Examines how parents encourage or discourage sports involvement by their visually impaired offspring. Looks at the types of sports involvement pursued by these children, as well as the effects of parental encouragement on sports involvement. Collects data from interviews of parents of eighteen partially sighted and totally blind children who attend public schools. Obtains additional data through interviews with fourteen professionals and volunteers from various fields who have sports-related experiences or observations of visually impaired children and their families. Identifies four major forms of parental behaviour - strong encouragers, weak encouragers, tolerators, and discouragers - and observes the predominance of the latter three. Considers the implications of these findings for mainstreaming and appropriate integration.
SIRLS Document AJ877

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22257 **Brannan, Steve A**
Leisure Education for Handicapped Students: Current Perspectives. (49 refs.) In Pueschel, Siegfried M (ed.). THE YOUNG PERSON WITH DOWN SYNDROME: TRANSITION FROM ADOLESCENCE TO ADULTHOOD. Baltimore, Maryland: Paul H. Brookes. pp. 93-108. 1988.

Proposes that strategies for preparing youths with Down syndrome for successful postschool adjustment are similar to those required for the majority of handicapped youths. Suggests that traditional concepts of appropriate transitioning need to be re-examined in terms of current societal requirements and the unique needs of persons who have disabilities. Discusses issues and trends related to transitioning that support leisure preparation and its importance in providing a more appropriate education for handicapped youths.
SIRLS Document AK032

22280 **Heinemann, Allen W; Colorez, Anastasia; Frank, Susan; Taylor, Derrald**
Leisure Activity Participation of Elderly Individuals with Low Vision. (16 refs.) THE GERONTOLOGIST 28(2):181-184. 1988.

Investigates the relationship between vision loss and leisure activity participation in aging. Randomly-selected older adults (n=63) who visit a low vision clinic undergo telephone interviews. Respondents report how often they currently engage in six kinds of activity: 1) active crafts, 2) sedentary crafts, 3) recreational travel, 4) participatory sports, 5) television and radio, and 6) social activities. Participants also indicate whether or not their leisure activities have been affected by vision problems and, if so, in what way. Finds significant declines in five of the six activity categories. Results indicate that age is unrelated to participation in any activity, whereas prior activity participation is related to current participation only for active crafts, participatory sports, and social activities. Decline in participation from recalled levels at low vision onset was reported for two of the six activity categories: sedentary and active crafts.
SIRLS Document AK054

21904 **Schleien, Stuart J; Krotee, March L; Mustonen, Theresa; Kelterborn, Bonnie; Schermer, Anita D**
The Effect of Integrating Children with Autism Into a Physical Activity and Recreation Setting. (25 refs.) THERAPEUTIC RECREATION JOURNAL 21(4):52-62. 1987.

Investigates the behaviour patterns of severely handicapped autistic children who have been integrated into a physical activity and recreational milieu. Assesses whether there were significant changes in the social, leisure, and adaptive behaviour skills of the subjects as a result of the physical activity program. Also examines the attitudes toward the severely handicapped subjects held by their nonhandicapped peers. Two severely handicapped autistic children are assessed by a trained observer using the Social Interaction Observation System. Results reveal some positive and significant increases in the amount of appropriate behaviour, as well as significant decreases in inappropriate behaviour, after the physical activity treatment. Finds that attitudes held toward the autistic children by their nonhandicapped peers reveal positive, but not significant, change.

SIRLS Document AJ607

21905 **Lord, John; Hutchison, Perry; Hearn, Cheryl**
Impact of Deinstitutionalization on Community Living and Leisure. (21 refs.) JOURNAL OF LEISURABILITY 14(3):4-12. 1987.

Describes a qualitative study of the closure of a Canadian institution for people with handicaps. Presents the views of residents, parents, and staff in order to illustrate the impact of deinstitutionalization on community living and leisure. Highlights the differences between institutional living and community living. Results show that residents, parents, and service providers perceive life and leisure in the community to be more positive and involve more choices than life in the institution. Discusses the implications of these findings for the care of people with disabilities.

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SIRLS Document AJ608

21909 **Smith, Ralph W**
Leisure of Disabled Tourists: Barriers to Participation. (51 refs.) ANNALS OF TOURISM RESEARCH 14(3):376-389. 1987.

Examines some of the barriers that disproportionately affect disabled tourists. Organizes these barriers into three categories: 1) intrinsic (resulting primarily from the tourist's own levels of cognitive, physical, and psychological functioning), 2) environmental (consisting of externally imposed limitations), and 3) interactive (resulting from the reciprocal interaction between the tourist and the immediate milieu). Looks at the potential effects of these barriers on tourists with disabilities, and outlines specific implications for leisure. Hypothesizes that the combined effect of these barriers may reduce the amount of leisure satisfaction derived from tourism by disabled persons.

SIRLS Document AJ612

21753 **Mastro, James Vincent; French, Ron**
Sport Anxiety and Elite Blind Athletes. (22 refs.) In Sherrill, Claudine (ed.). SPORT AND DISABLED ATHLETES. THE 1984 OLYMPIC SCIENTIFIC CONGRESS PROCEEDINGS. VOLUME 9. Eugene, Oregon. (July 19-26, 1984). Champaign, Illinois: Human Kinetics. pp. 203-208. 1986.

Analyzes the trait and state anxiety levels of elite, male, blind athletes (n=33). Uses the State Trait Anxiety Inventory to determine precompetition anxiety on two occasions: six days and one day prior to the start of competition. Compares the level of anxiety between athletes who have congenital or adventitious visual impairments. Also compares the state anxiety of high and low 'trait anxious' blind athletes. Finds that subjects fall easily within the range expected in the general population in both trait and state anxiety. Results indicate no significant differences in levels of state anxiety between athletes who have congenital versus adventitious visual impairments, and no significant differences between state anxiety scores of blind athletes classified as high and low 'trait anxious'. Concludes that blind athletes exhibit anxiety levels similiar to those of the general population, and specifically to those of sighted athletes.

SIRLS Document AJ471

21803 **Brandmeyer, Gerard A**
Some Sociological Issues in Wheelchair Sports for Disabled Youth. (12 refs.) North American Society for the Sociology of Sport. Eighth Annual Meeting. Edmonton, Alberta. (November 4-7, 1987). Unpublished. 16 pp. 1987.

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Explores the potential benefit of an examination of the general sport sociology literature to the study of sport for the disabled. Focuses on sport for orthopedically impaired youths aged 6 to 18, and considers three topics: informal play and games, formal sport, and dropouts. Finds that the wheelchair factor limits access to informal play activity. However, the differences between the experiences of able-bodied and disabled athletes tend to disappear in the area of formal sport. Explains why a somewhat lessened propensity for disengagement from sport can be expected among disabled youth.

SIRLS Document AJ520

21860 **Dummer, Gail M; Ewing, Martha E; Habeck, Rochelle V; Overton, Sara R**
Attributions of Athletes With Cerebral Palsy. (16 refs.) ADAPTED PHYSICAL ACTIVITY QUARTERLY 4(4):278-292. 1987.

Assesses the use of attributions by athletes with cerebral palsy (n=147) who participated in the 1985 National Cerebral Palsy/Les Autres Games. Collects three types of data: performance scores, post-event explanations of performance, and satisfaction with performance. Preliminary analysis takes into account the issues of gender differences and degree of disability. Finds no significant differences in the use of attributions by gender, but results indicate differences across disability classification. Disabled winners use both internal and external explanations to a greater degree than losers. Satisfaction with performance is associated with demonstration of positive qualities (such as using the right strategy and ability), with realistic assessment of ability, and with enjoying competition.

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Título	Autor	Periódico	Ano, num., pág.
Conceptual basis of outcome measures.	Keith-RA	Am-J-Phys-Med-Rehabil	1995 Jan-Feb; 74(1): 73-80
A computer-aided walking rehabilitation robot.	Siddiqu-NA; Ide-T; Chen-MY; Akamatsu-N	Am-J-Phys-Med-Rehabil	1994 Jun; 73(3): 212-6
Predicting depression and psychological distress in persons with spinal cord injury based on indicators of handicap.	Tate-D; Forchheimer-M; Maynard-F; Dijkers-M	Am-J-Phys-Med-Rehabil	1994 Jun; 73(3): 175-83
Physical strain in daily life of wheelchair users with spinal cord injuries.	Janssen-TW; van-Oers-CA; van-der-Woude-LH; Hollander-AP	Med-Sci-Sports-Exerc	1994 Jun; 26(6): 661-70
Physical medicine and rehabilitation as a primary care specialty. Commentary.	Bockenek-WL; Currie-DM	Am-J-Phys-Med-Rehabil	1994 Feb; 73(1): 58-60
The "value" of functional independence measure scores.	Bunch-WH; Dvonch-VM	Am-J-Phys-Med-Rehabil	1994 Feb; 73(1): 40-3
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Determining differences in post discharge outcomes among catastrophically and noncatastrophically sponsored outpatients with spinal cord injury.	Tate-DG; Forchheimer-M; Daugherty-J; Maynard-F	Am-J-Phys-Med-Rehabil	1994 Apr; 73(2): 89-97
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Differences in activation patterns in elbow flexor muscles during isometric, concentric and eccentric contractions.	Nakazawa-K; Kawakami-Y; Fukunaga-T; Yano-H; Miyashita-M	Eur-J-Appl-Physiol	1993; 66(3): 214-20
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of sports movements: a review.			379-448
Cardiac precautions for non-acute inpatient settings.	Fletcher-BJ; Dunbar-S; Coleman-J; Jann-B; Fletcher-GF	Am-J-Phys-Med-Rehabil	1993 Jun; 72(3): 140-3
Recommended guidelines for admission of candidates with disabilities to medical school.	Developed by the Association of Academic Physiatrists.	Am-J-Phys-Med-Rehabil	1993 Feb; 72(1): 45-7
Transcutaneous oxygen pressure. An effective measure for prosthesis fitting on below-knee amputations.	Casillas-JM; Michel-C; Aurelle-B; Becker-F; Marcer-I; Schultz-S; Didier-JP	Am-J-Phys-Med-Rehabil	1993 Feb; 72(1): 29-32
Issues concerning medical school admission for students with disabilities [editorial]	Meier-RH 3d	Am-J-Phys-Med-Rehabil	1993 Dec; 72(6): 341-2
Anthropometric and physiological profiles of active blind Malaysian males.	Singh-R; Singh-HJ	J-Sports-Med-Phys-Fitness	1993 Dec; 33(4): 378-82
Introduction: exercise capacities and adaptations of people with chronic disabilities--current research, future directions, and widespread applicability.	Pitetti-KH	Med-Sci-Sports-Exerc	1993 Apr; 25(4): 421-2
Physiological aspects of swimming performance for persons with disabilities.	Chatard-JC; Lavoie-JM; Ottoz-H; Randaxhe-P; Cazorla-G; Lacour-JR	Med-Sci-Sports-Exerc	1992 Nov; 24(11): 1276-82
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An analysis of least restrictive environment placement variables in physical education.	Jansma-P; Decker-JT	Res-Q-Exerc-Sport	1992 Jun; 63(2): 171-8
Voluntary and electromyostimulation forces in trained and untrained men.	Hortobagyi-T; Lambert-NJ; Tracy-C; Shinebarger-M	Med-Sci-Sports-Exerc	1992 Jun; 24(6): 702-7
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The injury experience of the competitive athlete with a disability: prevention implications.	Ferrara-MS; Buckley-WE; McCann-BC; Limbird-TJ; Powell-JW; Robl-R	Med-Sci-Sports-Exerc	1992 Feb; 24(2): 184-8
Coping by individuals with physical disabilities with perceived challenge in physical activity: are people consistent?	Bouffard-M; Crocker-PR	Res-Q-Exerc-Sport	1992 Dec; 63(4): 410-7
UDS report. The Uniform Data System for Medical Rehabilitation Report of First Admissions for 1990.	Granger-CV; Hamilton-BB	Am-J-Phys-Med-Rehabil	1992 Apr; 71(2): 108-13
Peak oxygen uptake and maximal power output of Olympic wheelchair-dependent athletes.	Veeger-HE; Hadj-Yahmed-M; van-der-Woude-LH; Charpentier-P	Med-Sci-Sports-Exerc	1991 Oct; 23(10): 1201-9
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The use of contextual interference trials by mildly mentally handicapped children.	Porretta-DL; O'Brien-K	Res-Q-Exerc-Sport	1991 Jun; 62(2): 240-4
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The use of transdermal scopolamine to control drooling. A case report.	Dreyfuss-P; Vogel-D; Walsh-N	Am-J-Phys-Med-Rehabil	1991 Aug; 70(4): 220-2
Starting out. The first six months posthospital for spinal cord-injured veterans.	Pilsecker-C	Am-J-Phys-Med-Rehabil	1990 Apr; 69(2): 91-5
Temperature regulation during upper body exercise: able-bodied and spinal cord injured.	Sawka-MN; Latzka-WA; Pandolf-KB	Med-Sci-Sports-Exerc	1989 Oct; 21(5 Suppl): S132-40
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rehabilitation giving rise to important new (and old) ethical issues and concerns.		Rehabil	7-11
Manual wheelchair propulsion: effects of power output on physiology and technique.	van-der-Woude-LH; Hendrich-KM; Veeger-HE; van-Ingen-Schenau-GJ; Rozendal-RH; de-Groot-G; Hollander-AP	Med-Sci-Sports-Exerc	1988 Feb; 20(1): 70-8
Comparison of plastic/metal and leather/metal knee-ankle-foot orthoses [published erratum appears in Am J Phys Med Rehabil 1988 Oct;67(5):210]	Krebs-DE; Edelstein-JE; Fishman-S	Am-J-Phys-Med-Rehabil	1988 Aug; 67(4): 175-85
Continuity of care. A teaching model.	Klingbeil-GE; Fiedler-IG	Am-J-Phys-Med-Rehabil	1988 Apr; 67(2): 77-81
Physical work capacity and effect of endurance training in visually handicapped boys and young male adults.	Shindo-M; Kumagai-S; Tanaka-H	Eur-J-Appl-Physiol	1987; 56(5): 501-7
Activity in the spinal cord-injured patient: an epidemiologic analysis of metabolic parameters.	Dearwater-SR; LaPorte-RE; Robertson-RJ; Brenes-G; Adams-LL; Becker-D	Med-Sci-Sports-Exerc	1986 Oct; 18(5): 541-4
Benefits of aerobic exercise for the paraplegic: a brief review.	Cowell-LL; Squires-WG; Raven-PB	Med-Sci-Sports-Exerc	1986 Oct; 18(5): 501-8
Assessment of physical activity in inactive populations.	Dearwater-SR; LaPorte-RE; Cauley-JA; Brenes-G	Med-Sci-Sports-Exerc	1985 Dec; 17(6): 651-5
Field testing: assessment of physical fitness of disabled adults.	Kofsky-PR; Davis-GM; Shephard-RJ; Jackson-RW; Keene-GC	Eur-J-Appl-Physiol	1983; 51(1): 109-20
Physical work capacity and daily physical activities of handicapped and non-handicapped children.	Dresen-MH; de-Groot-G; Corstius-JJ; Krediet-GH; Meijer-MG	Eur-J-Appl-Physiol	1982; 48(2): 241-51
Personality profiles of disabled individuals in relation to physical activity patterns.	Goldberg-G; Shephard-RJ	J-Sports-Med-Phys-Fitness	1982 Dec; 22(4): 477-84

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Administration guidelines. Hardin, K.D. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 167-175.* LEVEL:B

Aerobic dance exercise. Normansell, K.F. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 149-164.* LEVEL:B

Chair & chair alike? Axelson, P. *Sports 'n spokes (Phoenix, Ariz.) 21(2), Mar/Apr 1995, 26-40;42;44-48;50;52-58;60-61.* 1995 survey of the lightweights. Thirteenth annual survey. LEVEL:I

Disability awareness: considerations for the exercise leader. Bullock, C.C. Mahon, M.J. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 3-10.* LEVEL:B

Effect of body training position on outcomes of an aerobic training study on individuals with quadriplegia. McLean, K.P. Skinner, J.S. *Archives of physical medicine and rehabilitation (Philadelphia) 76(2), Feb 1995, 139-150.* LEVEL:A

The use of the supine training position to enhance aerobic training was evaluated in a 10-week upper-body exercise study. Fourteen subjects with quadriplegia (QD) were matched on initial peak power output (PO) values and then randomly assigned to either a supine (SUP, n= 7) or sitting (SIT, n = 7) training group. Peak VO2 and PO were measured pretraining and posttraining in both the supine and sitting positions. There were significant (p is less than .01) increases in peak VO2 (720 to 780 mL.min-1) and PO (29.3 to 33.3 W) with training. Although the SIT group exhibited a small training effect size (0.1), while the SUP group exhibited a moderate effect size (0.6), the interaction between time and training group failed to reach significance (p = .07) because of a large injury level-related variation in VO2. The training effect achieved by the SUP generalized to the sitting position, as their peak VO2 increasd 80 mL.min-1 in the sitting position. Endurance improved (p is less than .0001) in all subjects, with time to exhaustion increasing from 52 min to 135 min over the 10 weeks of training. The sum of 4 skinfolds decreased from 67.5 to 61.0 mm. the lack of change in stroke volume at rest and at 50 percent of peak PO suggests that an inotropic adaptation of the heart, commonly observed in subjects without SCI, did not occur in this population. However, a 4.7 bpm increase (p is less than .010 in resting heart rate (HR) and a near significant increase (p = .07) in peak HR from pretraining to posttraining suggests a training-induced chronotropic adaptation of the heart. Although improvements in aerobic capacity can be achieved by training in either supine or sitting positions, the training effect size was larger in the supine position. Improvements in SV were not observed in either training position; this may be because of low absolute workloads were used. Central cardiovascular adaptation may occur in subjects with QD but changes are reflected as chronotropic and not inotropic adaptations.

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Effects of social reinforcement and self-recording on exercise duration in middle school students with moderate mental retardation. Deener, T.M. Horvat, M. *Clinical kinesiology (Toledo, Ohio) 49(1), Spring 1995, 29-33.* LEVEL:A

The purpose of this investigation was to determine the effects of social reinforcement and social reinforcement combined with self-recording on the run/walk distances completed by adolescents with moderate mental retardation. Eleven middle school students from an original sample of 13 (3 females, 8 males) aged 11 to 16 years (M = 13 years) completed an exercise program which incorporated running/walking as the aerobic activity. All subjects received social reinforcement (praise) at a similar ratio during the run/walk portion of each session and were encouraged to improve by increasing their number of laps completed on a 200m track. Seven of the 13 students also participated in self-recording in addition to receiving praise, using motivational stickers and receiving gold stars for improvements. Based on analyses of variance between and within groups each group improved its run/walk distance completed. The praise plus self-recording group increased its distance to a greater extent than the praise only group. It was concluded that behavior management strategies such as praise and praise coupled with self-recording can increase the duration of exercise among adolescents with moderate mental retardation.

Exercise prescription: adapting principles of conditioning. Figoni, S.F. Lockette, K.F. Surburg, P.R. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 67-77.* LEVEL:B

Exercises for developing muscular fitness. DiRocco, P.J. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 119-147.* LEVEL:B

Fitness programming and physical disability. A publication for national handicapped sports. Miller, P.D. *Champaign, Ill.: Human Kinetics Publishers, c1995.* x, 222 p. : ill. A publication for Disable Sports USA. Includes bibliographical references (p. 214-216) and index. ISBN: 0-87322-434-5 LC CARD: 94-4961 LEVEL:B

Flexibility training: program design. Surburg, P.R. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 101-112.* LEVEL:B

Maximal aerobic exercise of individuals with multiple sclerosis using three modes of ergometry. Ponichtera-Mulcare, J.A. Mathews, T. Glaser, R.M. Gupta, S.C. *Clinical kinesiology (Toledo, Ohio) 49(1), Spring 1995, 4-13.* LEVEL:A

The study examined metabolic and cardiopulmonary responses during maximal effort exercise in persons with multiple sclerosis (MS) using arm cranking (ARM), leg cycling (LEG), and combined arm/leg cycling (LEG/ARM). Ten individuals with MS were matched to ten, non-MS persons. Peak oxygen uptake (VO2peak) was determined via a leg/arm ergometer on 3 separate days. VO2peak was significantly higher for the non-MS group for the ARM and the LEG/ARM tests, but not for the LEG test. Heart rate (HR) at peak exercise for the MS group was 80, 86, and 91 percent of age predicted maximal HR during ARM, LEG,and LEG/ARM exercise, respectively. The non-MS group was able to reach 96 percent of its age-predicted HRmax during all protocols. The additive physiologic responses during combined arm/leg ergometry could be advantageous for fitness training for persons with MS by dispersing the exercise over a larger muscle mass, placing less stress on any one group. This may translate into improved endurance for ambulation and/or performance of activities of daily living.

Medical conditions associated with physical disabilities: intervention and emergency procedures. Kub, C. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 177-181.* LEVEL:B

Nutrition and the spinal cord injured individual. Rice, H.B. Ponichtera-Mulcare, J.A. Glaser, R.M. *Clinical kinesiology (Toledo, Ohio) 49(1), Spring 1995, 21-27.* LEVEL:A

Nutrition contributes directly to physical and mental health as well as to resistance to infection and disease. This review will aid in the understanding of how nutrition plays an important role in the rehabilitation process and how it can prevent further debilitation of the spinal cord injured individual. In general, this review discusses secondary complications that occur due to a spinal cord injury and how nutrition can aid healing and/or manage the condition. Specifically, this review discusses energy expenditure and intake related to obesity, ramifications of overfeeding/underfeeding, and specific nutrient deficiencies, (i.e. anemia, osteoporosis, medication interference, and gastrointestinal problems). In addition, recommendations for proper intervention/therapy and possible future research will be introduced.

Physical disabilities: general characteristics and exercise implications. DiRocco, P.J. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 11-34.* LEVEL:B

Physical education least restrictive environment continua used in the United States. Decker, J. Jansma, P. *Adapted physical activity quarterly (Champaign, Ill.) 12(2), Apr 1995, 124-138* LEVEL:A

For over 15 years it has been public policy to educate students with disabilities, to the maximum extent possible, in the least restrictive environment (LRE) alongside their peers without disabilities. However, scarce empirical data exist documenting nationwide efforts to comply with the LRE mandate. The purpose of this study was to determine what types of LRE continua are in use in physical education personnel in 452 schools throughout the United States. Data were collected regarding the usage of physical education LRE placement continua across enrollment level, grade range, metro status, and geographic region. Results indicate that while numerous (N = 26) physical education LRE continua were used during the 1988-89 school year, in most cases students with disabilities received physical education in a regular class setting with little or no access to adapted physical education. These results indicate that the ability of traditional physical education LRE placement continua may be suspect.

Physiological correlates of simulated wheelchair racing in trained quadriplegics. Bhambhani, Y.N. Burnham, R.S. Wheeler, G.D. Eriksson, P. Holland, L.J. Steadward, R.D. *Revue canadienne de physiologie appliquee/Canadian journal of applied physiology (Champaign, Ill.) 20(1), mars/Mar 1995, 65-77.* LEVEL:A

This study examined the physiological responses during a 7.5-km simulated wheelchair race (SR) performed on rollers by 8 male quadriplegic marathon racers and analyzed the factors associated with SR time. Cardiac output (q) was estimated during the SR using carbon dioxide rebreathing, from which stroke volume (SV) and (a-v)O2 diff were calculated. Subjects raced at 90 and 93 percent of peak oxygen uptake (VO2) and peak heart rate, respectively. SR time was inversely related to peak VO2, and VO2, Q, and SV during the SR, but not (a-v)O2 diff, age, and lesion level. Multiple regression analysis included only absolute SR VO2 in the equation to predict SR time: Y = -29.7X plus 65.9; SE = 5.8. SR VO2 was significantly related to Q and SV but not to (a-v)O2 diff. These descriptive data suggest that SR performance in trained male quadriplegics might be limited by central, as opposed to peripheral, factors that determine VO2.

Les ajustements physiologiques de 8 marathoniens quadriplegiques sont evalues au cours d'une epreuve simulee sur un rouleau d'entrainement; les facteurs relies au temps de performance sont egalement analyses. Le debit cardiaque est estime par la methode de reinspiration du CO2 et la valeur otenue permet de determiner le volume d'ejection systolique et la difference arterio-veineuse d'oxygene. Au cours de l'epreuve, la consommation d'oxygene atteint 90 pourcent de la consommation d'oxygene de pointe et la frequence cardiaque, 93 pourcent de la frequence cardiaque de pointe. Le temps de performance est inversement relie au VO2 de pointe et a la consommation d'oxygene, au debit cardiaque et au volume d'ejection systolique au cours de l'epreuve; le temps de performance n'est par contre pas relie a la difference arterio-veineuse d'oxygene ni a l'age et au niveau de lesion. Une analyse de regression multiple n'incorpore finalement que le VO2 absolu dans l'equation d'estimation du temps de performance: Y = 65,9 - 29,7 X (Syx = 5,8). Le VO2 au cours de l'epreuve est significativement relie au debit cardiaque et au volume d'ejection systolique mais pas a la difference arterio-veineuse d'oxygene. D'apres ces observations, le temps de performance chez des quadriplegiques entraines apparait limite par des facteurs centraux et non des facteurs peripheriques, qu'on retrouve dans l'equation de la consommation d'oxygene.

1B

Physiology of aerobic exercise. Figoni, S.F. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 51-63.* LEVEL:B

The pocket reference - a tool for fostering inclusion. Block, M.E. Etz, K. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 66(3), Mar 1995, 47-51.* LEVEL:B

Racing chair lingo. Cooper, R.A. *Sports 'n spokes (Phoenix, Ariz.) 21(2), Mar/Apr 1995, 71-78.* Updated version of the article published in, Sports 'n spokes Mar/Apr 1988. LEVEL:B

Relationship between the level of physical impairment and sports performance in elite wheelchair basketball athletes. Vanlandewijck, Y.C. Spaepen, A.J. Lysens, R.J. *Adapted physical activity quarterly (Champaign, Ill.) 12(2), Apr 1995, 139-150.* LEVEL:A

Fifty-two male elite wheelchair basketball athletes, classified into four functional ability classes, were studied to determine whether overall wheelchair basketball performance in a game situation is related to the functional ability level of the participant. To determine the quality of the individual's game performance, 18 championship games were videotaped and analyzed by means of the Comprehensive Basketball Grading System. Physical fitness parameters (propulsive force and aerobic power) were determined in specific laboratory conditions. Force application on the wheelchair handrims was measured by means of an ergodyn device. Finally, the subjects, while in their wheelchairs, performed a maximal exercise capacity test on a motor driven treadmill. The analyses indicated significant differences in field performance and aerobic power between Class I and the rest of the classes. However, isometric and dynamic force application on the handrims could not be proven to be functional ability dependent. In conclusion, reducing the number of classes to improve fair and equitable competition in wheelchair basketball was considered viable.

Resistance training with stretch bands: modifying for disability. Baxter, K.F. Lockette, K.F. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 91-100.* LEVEL:B

Resistance training: program design. Lockette, K.F. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 79-90.* LEVEL:B

Running risks: New Jersey's high school association gets a lesson in ADA litigation. Cohen, A. *Athletic business (Madison, Wis.) 19(3), Mar 1995, 16;18.* LEVEL:B

RX for fitness, Part 1: but I can't sweat to the oldies. *Paraplegia news (Phoenix, Ariz.) 49(4), Apr 1995, 48-54.* First of a three-part series. This article is adapted from, Conditioning with physical disabilities; Champaign, Ill.: Human Kinetics. LEVEL:B

Skeletal muscle physiology and anaerobic exercise. Miller, P.D. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 37-49.* LEVEL:B

Static stretching: modifying for disability. Surburg, P.R. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 113-118.* LEVEL:B

Use of rating of perceived exertion (RPE) to prescribe exercise intensity for wheelchair-bound children and adults. Ward, D.S. Bar-Or, O. Longmuir, P. Smith, K. *Pediatric exercise science (Champaign, Ill.) 7(1), Feb 1995, 94-102.* LEVEL:A

Seventeen individuals (ages 11-30 years), all wheelchair users, were classified as active or sedentary. Peak mechanical power, heart rate (HR), and rating of perceived exertion (RPE) were determined during continuous, incremental all-out arm ergometry. Subjects were asked to wheel on an oval track at prescribed speeds, and one month later they repeated this task. All subjects could distinguish among prescriptions, as judged from HR and wheeling velocities. However, the active subjects chose higher speeds (by 0.8-1.3 m/s), a wider range of speeds, and could better distinguish among sequential RPE levels than did the sedentary subjects. All subjects chose wheeling velocities higher than expected from their originally established HR-on-RPE regression. One-month retention was high and similar between groups. Individuals who use wheelchairs can discriminate among wheeling intensities as prescribed using the RPE scale and have excellent retention for at least one month.

Wheelchairs and transfers. Huss, D. *In, Miller, P.D. (ed.), Fitness programming and physical disability, Champaign, Ill., Human Kinetics Publishers, c1995, p. 183-192.* LEVEL:B

Age difference and physical fitness levels of mentally retarded and nonretarded individuals. Kioumourtzoglou, E. Batsiou, S. Theodorakis, Y. *International journal of physical education (Schorndorf) 32(1), 1st Quarter 1995, 24-28.* LEVEL:A

The aim of this study was to examine differences between retarded and nonretarded groups on measures of physical fitness. The sample consisted of three groups. The first one of 23 mentally retarded adolescents of chronological ages from 16.1 to 30.2 years. The second consited of 22 nonretarded persons of the same mental age, and the third one consisted of 20 nonretarded persons of the same-chronological ages. The results showed that scores on the physical fitness tests that were used (cardiovascular endurance, flexibility, leg strength, sit-ups and ball throwing), were considerable lower for the retarded persons than for nonretarded persons of the same chronological age. Results also revealed no significant differences in endurance, throwing, sit-ups and longjump between retarded and non retarded individuals of the same mental age. Discriminant analysis among the three groups showed differences in a greater number of variables which appeared to discriminate the subjects. These findings supported information processing interpetation differences in motor performance between retarded and nonretarded persons.

Cardiovascular fitness as related to leg strength in adults with mental retardation. Pitetti, K.H. Boneh, S. *Medicine and science in sports and exercise (Indianapolis, Ind.) 27(3), Mar 1995, 423-428.* LEVEL:A

The purpose of this study was to compare cadiovascular fitness to leg strength of young adults (mean age = 25.2 yr) with mental retardation (MR) with and without Down syndrome (DS) and to determine whether a relationship exists. Thirteen adults (9 males, 4 females) with DS and 24 adults (16 males, 8 females) with MR but without DS participated in this study. Cardiovascular capacity (VO2peak) for each subject was determined by a treadmill test (GXT) and isokinetic knee flexion and extension strength (peak torque and average power) were determined by isokinetic dynamometry. Results generally demonstrated significant positive relationships (P less than 0.05) between VO2peak and isokinetic leg strength (r=0.61), with the relationship being substantial mainly for subjects with Down syndrome (r=0.84). The results of this study suggest that leg strength may be an important contributor to VO2peak for persons with mental retardation.

All is not as it seems in disabled sport. Moore, D. *Sport report (Canberra, Aust.) 14(4), Summer 1994, 8-9.* LEVEL:B

Americans with Disabilities Act: its impact on youth sports. Block, M.E. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 66(1), Jan 1995, 28-32.* This paper is based on a presentation conducted by the author at the AAHPERD National Convention in Denver, Co. LEVEL:B

Biomechanics of wheelchair propulsion during fatigue. Rodgers, M.M. Gayle, G.W. Figoni, S.F. Kobayashi, M. Lieh, J. Glaser, R.M. *Archives of physical medicine and rehabilitation (Philadelphia, Penn.) 75, 1994, 85-92.* LEVEL:A

Disabled sport : where to now. Moore, D. *Sport report (Canberra, Aust.) 14(3), Spring 1994, 22-24.* LEVEL:B

Disables students: the law and how to implement a program in elementary schools. Holland, S. *Pennsylvania journal of health, physical education, recreation and dance (State College, Pa.) 64(3), Summer 1994, 7-8.* LEVEL:B

Exercise programmes in the treatment of children with learning disabilities. Bluechardt, M.H. Wiener, J. Shephard, R.J. *Sports medicine (Auckland, N.Z.) 19(1), Jan 1995, 55-72.* References: p. 68-72. LEVEL:A

Learning disability is characterized by a discrepancy between achievement and assessed intellectual ability. Children with this problem commonly (but not invariably) show impaired motor proficiency, as assessed by such instruments as the Bruininks-Oseretsky Test of motor proficiency. It has been hypothesised that poor motor performance and/or poor social skills lead to exclusion from games, creating a vicious cycle of decreasing participation, decreasing competence, a deterioration of self-worth and increasing social maladjustment. Attempts to break the vicious cycle with programmes designed to enhance motor proficiency has been uniformly unsuccessful. There is limited experimental evidence to support the view that structured physical activity programmes with an embedded social skills training component can be an effective method of enhancing both actual motor ability and self-perception of physical and academic competence. However, a controlled comparison with small-group, academic instruction has shown that, from the educational perspective, a physical activity based intervention is no more effective than other forms of special attention. The main argument for delivering social skills training through physical activity programme lies not in a unique impact upon learning disability, but rather in terms of the other well-established long term health benefits of exercise.

Including children with disabilities in PE. Downs, P. *Aussie sport action (Canberra, Aust.) 5(4), Spring 1994, 7-9.* LEVEL:B

Influence of video and music reinforcement on strength exercise performance by nonambulatory children who are profoundly mentally retarded. Landrieu-Seiter, M. French, R. Silliman, L.M. Tynan, D. *Clinical kinesiology (Toledo, Ohio) 48 (4), Winter 1995, 69-82.* LEVEL:A

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The purpose of this study was to examine the influence of video and music reinforcers on the performance of an upper-body strengthening exercise program on the preferred arm of six nonambulatory youth, ages 10 to 15 years who were profoundly mentally retarded. An ab1b2 design was used to determine the difference in performance of the exercise under the baseline condition of no reinforcement (N=6); and under the three treatment conditions of verbal praise only (N=2); preferred video and music reinforcement only (N=2); and verbal praise plus preferred video and music reinforcement (N=2). Based on visual inspection of the data and use of the split-middle technique, subjects receiving verbal praise only or verbal praise plus video or music reinforcement improved their exercise performance over time. The two subjects receiving video and music reinforcement only, however, declined in performance after the baseline phase and demonstrated no improvement over time.

Local cooling in wheelchair athletes during exercise-heat stress. Armstrong, L.E. Maresh, C.M. Riebe, D. Kenefick, R.W. Castellani, J.W. Senk, J.M. Echegaray, M. Foley, M.F. *Medicine and science in sports and exercise (Indianapolis, Ind.) 27(2), Feb 1995, 211-216.* LEVEL:A

Wheelchair athletes with spinal cord injuries (WA) face challenges to thermal homeostasis, including reduced cutaneous vasoaction and sweat production. The purpose of this study was to evaluate the efficacy of local cooling to reduce heat strain in WA. Six elite, endurance-trained male WA (33 plus/minus 3 yr, 64 plus/minus 4 kg) performed three strenuous exercise tests in a hot-humid environment (32.9 plus/minus 0.1 degrees C, 75 plus/minus 3 percent RH) by pushing a racing chair on a stationary roller (30 min, 16.5 km.h-1, 704-766 W metabolic heat) while wearing shorts and socks. The three treatments involved an ice-packet vest (V) 0.14 m2 of skin surface), a refrigerated headpiece (H) (0.16 m2), or no cooling (C) (control). The vest and headpiece offered potential cooling of 388 W and 266 W.

Mean body heat storage for trials V (117 plus/minus 26 W), H (117 plus/minus 22 W), and C (164 plus/minus 40 W) were statistically similar, partly because V (117 plus/minus 47 W) and H (75 plus/minus 59 W) cooled inefficiently (30 and 28 percent, respectively). Repeated measure ANOVA indicated no significant between-treatment differences for any variable in trials V, H, and C. We concluded that local cooling during V and H was ineffective because heat storage decreased, but was not prevented.

Physical education for children with disabilities : some practical considerations. Hanrahan, S. *Active and healthy magazine (Adelaide, Aust.) 1(3), Spring 1994, 5-6.* LEVEL:B

Research in adapted physical activity and the case study. Weber, R.C. Thorpe, J.L. *Clinical kinesiology (Toledo, Ohio) 48(4), Winter 1995, 86-92.* LEVEL:A

A need for the use of the Case Study method in Adapted Physical Education exists because the samples are often unique. Large samples are rarely possible to obtain. The Case Study is appropriate for use when maximum information is needed about a particular unit. The purpose of the present study was to explore, through the bibliographical technique, definitions of the Case Study, examples of the use of Case Studies in various physical education settings and other disciplines. Sources were cited, and criteria for conducting case studies were presented. As more children are mainstreamed, sample sizes and generalizations to a parent population are not possible. The case approach is also needed for studying certain rare genetically disabled persons. Certain aspects of analyzing the data should include the use of statistics, particularly to establish objectivity, reliability, and validity of data. In courses devoted to the methods of research, it is important that the Case Study receive greater emphasis than it has received in the traditional approach. The greater emphasis should be practical in nature.

The role of aquatic programs in facilities serving children with physical disabilities. McHugh, E. *Clinical kinesiology (Toledo, Ohio) 48(4), Winter 1995, 83-85.* From the field. LEVEL:A

The purpose of this investigation was to examine the role of aquatic programs in hospital facilities that serve children with disabilities. Out of 163 surveys mailed to institutions listed in Hospital School Programs: Directory (1987) and Hospital School Programs: Guidelines (1981), 95 were returned. Less than half of those responding indicated that they had an aquatics program, and for most, traditional rehabilitation was the primary focus. The character of the programs, identity of service personnel, type of clients served, perceived benefits, and factors preventing establishment of programs were also examined. It was concluded that, despite the wide range of disabilities and ages for which aquatics is deemed beneficial, a shortage of programs among the institutions surveyed is evident. More education of administrators, medical professionals, parents, and the general public is necessary to expand the role of aquatics in facilities providing rehabilitation programs for children with disabilities.

La vie active par l'education physique: multiplier les possibilites offertes aux eleves en fauteuil roulant. Wood, L. *Gloucester, Ont.: Association canadienne des sports en fauteuil roulant, c1994.* 1 binder (Integration en mouvement.) Titre de la couverture. LEVEL:B

Amateur athletes with handicaps or physical abnormalities: who makes the participation decision? Mitten, M.J. *In. 20th annual sports lawyers conference, May 19-21, 1994. Scottsdale, Anzona, s.l., Sports Lawyers Association, 1994, I. 987-1032. Sports Lawyers Conference (20th : 1994 : Scottsdale, Anz.).* LEVEL:I

Dynamic alignment of a lower-limb prosthesis by computational analysis of gait force-time data. Sanders, J.E. Reed, R.D. Marks, R.J. *In, Herzog, W. (ed.) et al, Proceedings of the Canadian Society for Biomechanics VIIIth biennial conference. Calgary, Canadian Society of Biomechanics, 1994, p. 50-51. Canadian Society for Biomechanics. Conference (8th : 1994 : Calgary, Alta.).* LEVEL:A

The effect of an integrated adapted physical education setting on the motor performance of preschool children with developmental delays. Zittel, L.L. *Eugene, Ore.: Microform Publications, Int'l Institute for Sport and Human Performance, Univ. of Oregon, 1994.* 2 microfiches (120 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Oregon State University, 1993; includes bibliography (l. 84-88). LEVEL:A

The purpose of this study was to investigate the effect of an integrated adapted physical education setting on the motor performance of preschool children with developmental delays. Subjects in this study participated in segregated and integrated adapted physical education classes. During the integrated conditions, same-age peers without delays participated in activities as "proximity peers" (Jenkins, Speltz & Odom, 1985). Child-directed activities were presented in each class and subjects were observed practicing locomotor and object control skills. The quality of each performance was analyzed to determine the number of critical elements present in the performance and the level of teacher or peer prompt required to initiate and complete each performance. A single subject reversal design (A-B-A-B) was used in this investigation. Four children with developmental delays were filmed within an eight-week school schedule while practicing two fundamental gross motor skills during segregated and integrated conditions. The level and trend of the data was calculated to describe the quality of each child's motor performance within each condition, between conditions, and across segregated and integrated conditions. The results of this study provide evidence that children with developmental delays are able to maintain their level of gross motor skill and independence within an integrated adapted physical education setting. Although day to-day variability was calculated for each subject, overall skill level remained stable and their level of independence was not compromised in the integrated setting. Recommendations for future research are made based upon the results of this investigation.

Hall, hall, the gang's all here...methods for facilitating inclusion. Davis, R. Davis, T. *In, Teaching today - meeting tomorrow's outcomes: preparing children to be physically active in the 21st century, La Crosse, Wis., Human Kinetics, Council on Physical Education for Children of the National Association for Sport and Physical Education, 1994, p. 1-7. National Conference of Teaching Elementary Physical Education (1994 : La Crosse, Wis.).* LEVEL:B

How to fully include children with disabilities into regular physical education. Vogler, B. *In, Teaching today - meeting tomorrow's outcomes: preparing children to be physically active in the 21st century, La Crosse, Wis., Human Kinetics, Council on Physical Education for Children of the National Association for Sport and Physical Education, 1994, p. 1-7. National Conference of Teaching Elementary Physical Education (1994 : La Crosse, Wis.).* LEVEL:B

Inclusion: teaching all students with disabilities in regular elementary physical education. Webster, G. Callen, M. Vogler, B. Davis, R. Tarr, S. Mallett, M. *In, Teaching today - meeting tomorrow's outcomes: preparing children to be physically active in the 21st century, La Crosse, Wis., Human Kinetics, Council on Physical Education for Children of the National Association for Sport and Physical Education, 1994, p. 1-5. National Conference of Teaching Elementary Physical Education (1994 : La Crosse, Wis.).* LEVEL:B

Kinematics of wheelchair propulsion in adults and children with spinal cord injury. Bednarczyk, J.H. Sanderson, D.J. *Archives of physical medicine and rehabilitation (Philadelphia) 75(12), Dec 1994, 1327-1334.* This work was supported by Grant 91-78 from the Medical Services Foundation of British Columbia. LEVEL:A

This study examined the kinematic features of wheelchair propulsion in two neurologically matched groups of adults and children with uncomplicated spinal cord injury. The average mass and age of the pediatric group was much smaller than the adult group (37.4kg and 11.3 years vs 68.5kg and 33.5 years). Each subject propelled his/her own chairs and new, low-mass wheelchairs at a steady, nominal speed of 2 m/sec across a level surface. Three dimensional video analysis determined the movement of upper body angles (elbow, shoulder, trunk, and shoulder abduction) based on reflective markers placed on the subjects' shoulder, elbow, wrist, and hip joints. Analysis of the temporal factors showed that although the average group overground velocities of the adult group (2.4m/sec) were significantly greater than the pediatric group (2.3m/sec), the two groups spent comparable proportions of the wheeling cycle in propulsion (24 percent). Analysis of the angular kinematics (elbow, shoulder, and shoulder abduction angular changes over a time normalized wheeling cycle) showed that whereas the pediatric group did show significant absolute angular differences from the adult group, the angular changes over time were the same in both groups. The implications of this work are that, for the first time, it can be said that children propel their wheelchairs in the same manner as adults. In addition, these data were similar to those previously reported in athletic adult populations. We conclude that published data from adult wheelchair users may be applied to pediatric wheelchair users, thus providing a basis for pediatric wheelchair prescription. Further studies using kinetic measurements over longer time periods may be necessary to elucidate other potential similarities between the adult and pediatric wheeling style.

Mainstreaming: strategies for success. Tarr, S. Reeves, L. *In, Teaching today - meeting tomorrow's outcomes: preparing children to be physically active in the 21st century, La Crosse, Wis. Human Kinetics, Council on Physical Education for Children of the National Association for Sport and Physical Education, 1994, p. 1-7. National*

Goal directed movement in infants with Down Syndrome. Collier, D.H. *Eugene, Ore.: Microform Publications, Int'l Institute for Sport and Human Performance, Univ. of Oregon, 1994.* 3 microfiches (196 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Indiana University, 1993; vita; includes bibliography (l. 138-151). LEVEL:A

Seven infants with DS and seven motor-age matched controls (12-24 weeks) were divided equally into two groups to examine whether the introduction of a goal directed component to movement would increase the rate of supine leg movement and alter selected kinematic variables when compared to spontaneous leg movement. Data collection took place in the home while the infant lay supine on a crib. After observing a stationary mobile (2 minutes) all subjects received conjugate reinforcement via the overhead mobile (10 minutes). An extinction phase followed (2 minutes). Following the experimental protocol, anthropometric data was recorded. Results demonstrated that leg movement rate did not differ between groups but that conjugate reinforcement resulted in a significant increase in movement rate over baseline for both groups. Group differences in the peak velocity, amplitude and duration of leg movements were not found. Group differences in the peak velocity, amplitude and duration of leg movements across experimental conditions were not found. Examination of rate data and kinematic profiles of subjects acquiring the contingency revealed substantial individual differences in peak velocity, amplitude and duration over experimental conditions. Results supported the dynamic systems principle that introducing specific task demands results in the modification of movements on a highly individual basis.

Video fluoroscopy as a method of detecting occipitoatlantal instability in Down's syndrome for Special Olympics. Shaff, A.M. *Chiropractic sports medicine (Baltimore, Md.) 8(4), Nov 1994, 144-147.* LEVEL:A

Able-bodied athletes. Adaptive recreation programs provide a wealth of activities for the physically challenged. Willis-Kistler, P. *American fitness (Sherman Oaks, Calif.) 12(4), July/Aug 1994, 52-53.* LEVEL:B

Accessibility. Do your facilities meet A.D.A. specs? Gillentine, A. *Scholastic coach (Jefferson City, Mo.) 64(3), Oct 1994, 5.* LEVEL:B

Clean up your act. Ball, M. *Sports 'n spokes (Phoenix, Ariz.) 20(2), July/Aug 1994, 20.* Performance pointers. LEVEL:B

Ergonomie du deplacement en fauteuil roulant chez le traumatise medullaire. (Ergonomics of displacement in wheelchairs among spinal cord injured subjects.) Bernard, P.L. *STAPS. Revue des sciences et techniques des activites physiques et sportives (Grenoble) 15(35), oct 1994, 77-93.* LEVEL:I

In spinal cord injured persons using wheelchairs, such as paraplegic and quadriplegic, searching for autonomy implies to consider at once their functional capacities and the conditions of upper limb propulsion in a sitting position. Directing subjects towards suitable sports activities requires precise knowledge of the characteristics of a man-wheelchair couple, in order to determine adapted physical activities and to meet the defined health objectives. It is necessary to define first the paraplegic's functional profile as well as the various factors characterizing wheelchair propulsion. The first part of our article is devoted to neuroanatomical, functional and biological characteristics of the spinal cord injured person. His remaining physical capacities are the first point to consider when researching an optimal adaptation of the man-wheelchair system. In second part, we present the wheelchair technical adjustments, the factors influencing the propulsion efficiency and effects of wheelchair adaptations on muscular body exercise responses. Chez le paraplegique et le tetraplegique en fauteuil roulant, la recherche d'autonomie passe par l'association de leurs capacites fonctionnelles et des exigences de la propulsion en position assise. L'orientation vers les activites physiques et sportives adaptees necessite alors la connaissance precise des caracteristiques du couple homme-fauteuil afin d'atteindre les objectifs de sante fixes. Dans un premier temps, cet article presente le traumatise medullaire d'un point de vue neuro-anatomique, fonctionnel et biologique. Les capacites physiques dont il dispose represente en effet le premier facteur a prendre en compte dans la recherche d'adaptation optimale de la personne a ses activites quotidiennes. Les reglages du fauteuil roulant, les facteurs influencant l'efficacite de la propulsion ainsi que les effets des reglages du fauteuil roulant sur les reponses a l'exercice musculaire sont presentes dans un second temps.

Etude isoçinetique des muscles de l'epaule de sportifs paraplegiques. (Isometric study of shoulder muscles in paraplegic athletes.) Bernard, P.L. Pocholle, M. Codine, P. *Annales de kinesitherapie (Paris) 21(5), 1994. 227-234.* LEVEL:A

Cette etude cherche a determiner l'influence du niveau neurologique sur les couples et les puissances musculaires de sportifs paraplegiques. Deux groupes de six sportifs paraplegiques de niveau neurologique different (SPH et SPB) et un groupe de 6 sportifs valides (SV) ont participe a un test d'evaluation isocinetique des couples et des puissances developpees par l'articulation de l'epaule. Le test de flexion-abduction/extension-adduction de type concentrique-concentrique etait effectue aux trois vitesses de 60, 120 et 210 degres/sec sur le cote droit puis sur le cote gauche. Nous avons retenu les variables de travail et de puissance et complete cette analyse par l'etude par la determination du ratio agoniste/antagoniste des muscles de l'epaule. Les resultats des tests isocinetiques montrent que 1) les sportifs paraplegiques avec une absence de muscles abdominaux et de capacites de stabilisation en position assise, montrent des valeurs de couples et de puissances statistiquement superieures et significatives que les sportifs paraplegiques de niveau dorsal haut (SPH) et que les valides; 2) le niveau neurologique et la propulsion en fauteuil roulant ont une influence sur les puissances musculaires isocinetiques developpees par la ceinture scapulaire. La comparaison entre SPH et SPB durant les mouvements d'extension montrent en effet des differences significatives de travail maximal par repetition, que de travail total et de puissance; 3) la propulsion en fauteuil roulant entraine un developpement musculaire specifique pour les paraplegiques en fauteuil roulant qui disposent de leurs capacites d'equilibration et de stabilisation en position assise; 4) por le ratio agoniste/antagoniste, les trois parametres de travail maximal par repetition, de travail total et de puissance, montrent le plus souvent des valeurs comprises entre 30 et 40 pourcent, voir meme inferieure a 30 pourcent dans certaines conditions de test. Ces rapports sont observes chez les trois groupes de sujets et correspondent a un desequilibre des muscles de l'articulation de l'epaule et a un facteur favorable au developpement de douleurs et de traumatismes. Nous pensons que de futures recherches devront necessairement approfondir les connaissances des capacites fonctionnelles des personnes traumatisees medullaires et les facteurs favorables a la prevention des risques lies aux pratiques intensives en fauteuil roulant.

IE

Journee ethique et sport. (Ethics and sport workshop.) Harichaux, P. *Cinesiologie (Paris) 33(157), sept/oct 1994. 166-170.* LEVEL:I

Junior sports flourish. Hilborn, L. *Sports 'n spokes (Phoenix, Ariz.) 20(4), Nov/Dec 1994. 59-61.* LEVEL:B

The legend. Freeman, H. *Sports 'n spokes (Phoenix, Ariz.) 20(4). Nov/Dec 1994, 16-21.* People in sports. LEVEL:B

Medical activity during an international sporting competition for the physically disabled: Saint-Etienne World Handicapped Sport Championships. Calmels, P. Genevrier, M. Braize, C. Chometon, E. Olagnier, H. Piera-Andres, J.B. Minaire, P. *Disability and rehabilitation (Basingstoke, England) 16(2), Apr/June 1994. 80-84.* LEVEL:A

Physical activity for all. Canadian Wheelchair Sports Association. Active Living Alliance for Canadians with a Disability. *Gloucester, Ont.: Canadian Wheelchair Sports Association, c1994.* 1 v. (various paging) : ill. (Active living through physical education: maximizing opportunities for students who use a wheelchair.) Bibliography: p. 13.2-13.5. LEVEL:B

Le sport, moyen de communication et d'integration sociale chez les deficients visuels. (Sport: a means of communication and integration for the visually impaired.) Danthinne, C. *Sport (Bruxelles) 37(3). 3eme trimestre 1994, 147-159.* LEVEL:I

This dissertation intends to prove the important role played by sport in the life of the blind and partially sighted. It is illustrated by videotaped interviews, comments and sports events for blind people. The videotaped part deals with the integration and communication problems the blind and the partially sighted have to face. The written part is more theoretical: it is about sport psychology, handicap and integration, facilities for the partially sighted...The two parts complement each other: they help us to understand those handicapped human beings better by opening our eyes...

Quel est le veritable role du sport pour un deficient visuel? Etablit-il une reelle communication entre l'handicape et la societe, tout en favorisant son integration? C'est un reportage video de vingt minutes qui va tenter de repondre a ces questions. Vingt minutes d'images sportives, d'interviews et de commentaires sur la vie des deficients visuels. Le support ecrit permet, lui, une approche plus theorique du sujet: psychologie du sport, handicap et integration, structures d'aide aux deficients visuels...Le tout pour une informaiton plus complete sur le sujet et une meilleure comprehension des difficultes, des joies et des peines de ceux qu'on ne devrait plus faire semblant de ne pas voir...

Sports and recreation for the disabled. 2nd ed. Paciorek, M.J. Jones, J.A. Sagamore Publishing, 1995. 452 p. ISBN: 1-884125-04-2 LEVEL:I

Total inclusion or least restrictive environment? Stein, J.U. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(9), Nov/Dec 1994, 21-25.* LEVEL:B

Active living through physical education: maximizing opportunities for students with a disability. Active Living Alliance for Canadians with a Disability. Canadian Amputee Sports Association. Canadian Association for Disabled Skiing. Canadian Association for Health, Physical Education and Recreation. Canadian Cerebral Palsy Sports Association. Canadian Council of the Blind. Canadian Deaf Sports Association. Canadian Hard of Hearing Association. Canadian Special Olympics. Canadian Wheelchair Sports Association. *Gloucester, Ont.: Active Living Alliance for Canadians with a Disability, 1994.* 1 binder Also available in French under the title: La vie active par l'education physique: multiplier les possibilites offertes aux eleves ayant un handicap. Cover title. Contens: 9 booklets: Introduction. - Amputation. - Skiing. - Multiple disabilities. - Cerebral palsy. - Visual impairment. - Deaf & hard of hearing. - Intellectual disability. - Wheelchair. LEVEL:B

Catecholamine response to exercise and training in individuals with spinal cord injury. Bloomfield, S.A. Jackson, R.D. Mysiw, W.J. *Medicine and science in sports and exercise (Indianapolis, Ind.) 26(10), Oct 1994, 1213-1219.* LEVEL:A

It is unknown whether the catecholamine (CAT) response to acute exercise and prolonged training in humans with spinal cord injury (SCI) is similar to that of neurologically intact man. Plasma samples were collected from seven subjects with chronic SCI (level of injury C5-T7) at rest and during voluntary arm-crank ergometry (ACE) before and after 6 months of training with functional electrical stimulation cycle ergometry (FES-CE). Similar plasma collections were made during one FES-CE exercise training session after 6 months of training. Norepinephrine (NE) and epinephrine (EPI) were measured by HPLC. After FES-CE training, resting NE decreased 37 percent (950 plus/minus 150 vs 1510 plus/minus 350 pmol.l-1 pretraining) (P less than 0.05 by paired t-tests). No significant changes were observed in group means after training for the CAT response to submaximal ACE; however, five of seven subjects exhibited greater increments in plasma NE with ACE after FES-CE training. Acute FES-CE exercise elicited a 55-844 percent increase in NE, and a 35-350 percent increase in EPI above resting values with power outputs eliciting heart rates of 90-146 bpm. These data provide evidence for a systemic CAT response in subjects with SCI during acute FES-CE and reduced resting CAT following 6 months of training with FES-CE.

1F **Coaching challenged athletes.** *Olympic coach (Colorado Springs, Colo.) 4(3), Summer 1994, 2-5.* LEVEL:B

Coaching children with a disability or medical condition. Goodman, S. *Aussie sport action (Canberra, Aust.) 5(2), Autumn 1994, 12-13.* LEVEL:B

Dilemma of educational placement for students with severe disabilities. Grineski, S. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 20-22.* LEVEL:B

An editor's response. Stein, J.U. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 23-24.* LEVEL:B

The Fighting Chance Games. Jones, R.E. *Palaestra (Macomb, Ill.) 10(3), Spring 1994, 37-40.* LEVEL:B

Guarding against pitfalls in multivariate analysis. An illustration from fitness testing of the spinally-injured. Noreau, L. Shephard, R.J. *Journal of sports medicine and physical fitness (Torino) 34(2), June 1994, 192-198.* LEVEL:A

Potential pitfalls in the multivariate analysis of data, and methods of overcoming such problems, are illustrated by reference to recent research that has examined relationships between fitness variables and overall productivity in a population of young male paraplegics. Particular attention is directed to the need for residual analysis, tests of multiple collinearity, and a cautious approach to interpreting the theoretical meaning of individual coefficients in multiple regression equations.

National standards adapted physical education: a project of the National Consortium for Physical Education and Recreation for Individuals with Disabilities in accordance with its mission to serve the profession. Kelly, L.E. *Salt Lake City, Utah: National Consortium for Physical Education and Recreation for Individuals with Disabilities, c1994.* 219 p. A special project funded by the United States Department of Education, Office of Special Education and Rehabilitation Services, Division of Personnel Preparation: #H029K20092. Cover title: Adapted physical education national standards. LEVEL:I

Net energy cost of stair climbing and ambulation in subjects with hemiplegia. Shephard, R.J. Kavanagh, T. Campbell, R. Lorenz, B. *Sports medicine, training and rehabilitation (Yverdon) 5(3), Sept 1994, 199-210.* LEVEL:A

Physical education for college students with physical disabilities. Almekinders, S.V. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 34-35,42.* LEVEL:I

Play skills of preschool children with speech and language delays. Shepherd, J.T. Brollier, C.B. Dandrow, R.L. *Physical & occupational therapy in pediatrics (Binghamton, N.Y.) 14(2), 1994, 1-18.* Rita L. Dandrow's thesis (M.Sc.) - Virginia Commonwealth University, Richmond, Virginia. Appendix (p. 19-20) - Sample categories from the Preschool Play Scale. LEVEL:A

Point of view: physical education for all - a question of attitudes? Burrows, L. *Journal of physical education New Zealand (Wellington) 27(2), Winter 1994, 2-3.* LEVEL:B

Pre-event education programs for athletes who compete in wheelchairs. Mangus, B.C. Busser, J.A. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 43-45.* LEVEL:B

The profession speaks out on total inclusion. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 16.* LEVEL:B

La vie active par l'education physique: multiplier les possibilites offertes aux eleves ayant un handicap. Cote, S. *Gloucester, Ont.: Alliance de vie active pour les canadiens/canadiennes ayant un handicap, 1994.* 1 binder Egalement disponible en anglais sous le titre: Active living through physical education: maximizing opportunities for students with a disability. Titre de la couverture. Contenu: 9 booklets: Introduction. - Paralysie cerebrale. - Fauteuil roulant. - Amputation. - Deficiences multiples. - Ski. - Aourds ou malentendants. - Deficience visuelle. - Deficience intellectuelle. a LEVEL:B

The effects of three testing and training modalities on exercise independence and sit-ups performance among children with severe mental retardation. Wallstrom, T.J. *Ann Arbor, Mich.: University Microfilms International, 1994.* 3 microfiches (245 fr.) Thesis (Ph.D.) - The Ohio State University, 1993. Includes bibliography. DISS. ABST: AAD94-01380 LEVEL:A

The X Paralympic Games: will Atlanta equal the success of Seoul and Barcelona? Huber, J.H. *Palaestra (Macomb, Ill.) 10(4), Summer 1994, 64.* LEVEL:B

Conditioning with physical disabilities. Lockette, K.F. Keyes, A.M. *Champaign, Ill.: Human Kinetics Publishers, 1994.* 304 p. Includes index. ISBN: 0-87322-614-3 LC CARD: 93-47605 LEVEL:B

Deaf sports in Australia : directory 1994. Australian Deaf Sports Federation. *East Melbourne, Vic.: The Federation, 1994.* 33 p. ; 30 cm. ISBN: 8000147556 LEVEL:B

Integrating the physically challenged into strength training facilities. Kroll, B. *Strength and conditioning (Champaign, Ill.) 16(4), Aug 1994, 64-65.* LEVEL:B

Integration of the hearing impaired student into regular physical education: tips for success. Szalapski, E. *Journal - Wisconsin Association for Health, Physical Education, Recreation and Dance (Milwaukee, Wis.) 23(1), Apr 1994, 7-9.* LEVEL:B

La representation du handicap mental sportif chez les sportifs et les non-sportifs. (Representation of the mental handicap among athletes and non-athletes.) Bruant, G. Genolini, J.P. *STAPS: Revue des sciences et techniques des activites physiques et sportives (Grenoble) 15(34), mai 1994, 55-66.* LEVEL:A

The research is about the manner sportsmen and non sportsmen represent themselves the mentally handicapped sportsman with regard to the sportsman on one hand and to the mentally handicapped on the other hand. Experimental results show that, as for features's personality, the mentally handicapped sportman is at midway between the sportsman and the mentally handicapped. At the level of psychological organisation, we can see that sportsmen answers differ from those of non sportsmen. According to sportsmen, the profit that mentally handicapped person can get from practising sports only influences secondary areas of the sportman's personality which in represented by a general dynamism, both psychological and physical. For the non sportsmen, when mentally handicapped practise a sport, this one seems to be exempt from the failings which are often the causes why they are no interested in sport. Therefore, the mentally handicapped sportsman's representation allows sportsmen to categorize the mentally handicapped and non sportsmen to categorize the sportman.

La recherche porte sur la facon dont les sportifs et les non-sportifs se representent le sportif handicape mental comparativement aux representations du sportif d'une part et du handicap mental d'autre part. Les resultats montrent que le sportif handicape mental est evalue, en ce qui concerne les traits de personnalite, a mi-chemin entre le sportif et le handicape. Au niveau de l'organisation des traits, les reponses des sportifs se distinguent de celles des non-sportifs. Pour les sportifs le benefice qu'une personne handicapee mentale retire de la pratique sportive reste limite a des secteurs qui ne touchent pas le fondement de la personnalite du sportif: personnalite qui releve d'un dynamisme general, a la fois psychologique et physique. Pour les non-sportifs, le sport du handicape mental apparait purifie des defauts qui sont a l'origine de leur rejet du sport. La representation du sportif handicape mental permet ainsi aux sportifs de categoriser le handicape mental et aux non-sportifs de categoriser le sportif.

Adapted physical activity in African countries. De Potter, J.C. *Physical education review (Manchester) 17(1), Spring 1994, 68-74.* Includes abstracts in French, German and Spanish. LEVEL:I

Adapted physical activity: present and future. DePauw, K.P. Sherrill, C. *Physical education review (Manchester) 17(1), Spring 1994, 6-13.* Includes abstracts in French, German and Spanish. LEVEL:I

Adapted physical education, health and fitness in Asian countries. Yabe, K. Ja Hong, Y. *Physical education review (Manchester) 17(1), Spring 1994, 58-67.* Includes abstracts in French, German and Spanish. LEVEL:I

Anaerobic power output and propulsion technique in spinal cord injured subjects during wheelchair ergometry. Dallmeijer, A.J. Kappe, Y.J. Veeger, D.H.E.J. Janssen, T.W.J. van der Woude, L.H.V. *Journal of rehabilitation research and development (Baltimore, Md.) 31(2), 1994, 120-128.* LEVEL:A

In order to investigate the influence of the level of the spinal cord injury (SCI) on anaerobic or short-term power production and propulsion technique, 23 male SCI subjects performed a 30-second sprint test on a stationary wheelchair ergometer. Kinematic parameters were studied both inter- and intra-individually. Subjects with a cervical lesion showed a lower mean power output (21.5 Watt, one-sided) than the other subjects; whereas, no differences were found between subjects with a thoracic or lumbar injury (46.9, 63.7, and 49.1 Watt, one-sided). Unexpectedly, no differences were found for the effectiveness of the force applied on the rim between subjects with a cervical injury and the other subjects. It is suggested that the high hand rim velocity reached by subjects with a lower injury cause coordination problems. Reduced arm functionality of subjects with a cervical lesion appeared to cause a higher inward directed force. Arm functionality and rim velocity may have a compensating effect with respect to the effectiveness of force. The kinematics of subjects with a cervical lesion differed strongly from subjects with a lower lesion. Propulsion technique appeared to be intra-individually consistent, which is reflected in the consistency of the force curves, the power output curves, and the movement patters. Large inter-individual differences in propulsion technique were found. It is concluded that the large diversity in capacity of the SCI population should be taken into account with respect to guidelines and rquirements for the environmental space of the SCI population.

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Atteindra t-on le plafond des records? Moreau, N. *Athletisme et course sur route (Montreal) 2(4), janv/fev 1994, 24.* LEVEL:B

Attitudes of university students and teachers towards integrating students with disabilities in regular physical education classes. Schmidt-Gotz, E. Doll-Tepper, G. Lienert, C. *Physical education review (Manchester) 17(1), Spring 1994, 45-57.* Includes abstracts in French, German and Spanish. LEVEL:A

Biomechanics of wheelchair propulsion by able-bodied subjects. Ruggles, D.L. Cahalan, T. An, K.N. *Archives of physical medicine and rehabilitation (Philadelphia) 75(5), May 1994, 540-544.* LEVEL:A

The mechanical parameters of wheelchair propulsion was measured using 10 able-bodied participants. A roller system connected to a Cybex Isokinetic Machine was designed for measurement of the torque and angular displacement of the wheels during propulsion. The peak torque, angular displacement, work, and angular impulse were measured and calculated. Three types of wheelchairs, one from each of the following categories based on popularity, were evaluated: (1) lightweight, collapsible, nonadjustable Everest and Jennings Premier II (EJ); (2) lightweight, collapsible, adjustable Quickie II (Q2); and (3) lightweight, rigid-framed, adjustable Quickie GPV (Q1). Significant differences were found in certain mechanical parameters with propulsion of the three different types of wheelchairs. The work performed by each single stroke and the angular impulses are higher for the Q2 and Q1 than those of the EJ. These findings support the concept that wheelchair design and dimensions relative to the anthropometry of the user have great influence on the characteristics of wheelchair propulsion.

Drag and sprint performance of wheelchair basketball players. Coutts, K.D. *Journal of rehabilitation research and development (Baltimore, Md.) 31(2), 1994, 138-143.* LEVEL:A

The purpose of this study was to measure the wheelchair drag and maximal sprint performance abilities of wheelchair basketball players and to make comparisons between male and female players. A group of nine male and eight female wheelchair basketball players attending a national training camp consented to serve as subjects. Each subject completed six coast-down trials at speeds from a walking pace (1 to 1.5 m./s) to maximal for determining wheelchair drag and then performed four maximal sprint trials from a stationary start over the length (35 m) of the gymnasium floor. A portable computer that recorded the time to the nearest 0.001 second of each half revolution of a rear wheel was attached to the wheelchair of each subject. The drag force during the coast-down trials and the power output during the sprint trials were determined form the recorded data. Differences between the genders in a number of subjects and trail variables were evaluated by t-tests using the 0.05 level of significance. There were no significant differences between the means of the male and female groups in age (27 vs. 28 yrs), wheelchair mass (12.0 vs. 11.61 kg), or regression predicted drag forces at speeds of 2 m/s (5.3 vs. 5.5 N) and 5 m/s (16.7 vs. 13.5 N). The male subjects were significantly heavier (78.3 vs. 59.1 kg) and had a higher tire pressure (123 vs.94 psi). In the sprint trial results, the males exhibited a significantly higher maximal speed (4.75 vs. 4.08 m/s), higher peak acceleration (1.32 vs. 1.03 m/s/s), and a higher peak power output (530 vs. 264 w).

Implications of current research on adapted physical activities for children with cerebal palsy. Vermeer, A. Rintala, P. *Physical education review (Manchester) 17(1), Spring 1994, 25-32.* Includes abstracts in French, German and Spanish. LEVEL:I

Inclusion of children with disabilities: can we meet the challenge? Miller, S.E. *Physical educator (Indianapolis, Ind.) 51(1), Late Winter 1994, 47-52.* LEVEL:B

Inclusion of students with disabilities into elementary physical education. Coreless, K. Franklin, N. *CAHPERD journal/times (Sacramento, Calif.) 56(8), May 1994, 13;32.* LEVEL:B

Mislabeled as disabled. Crawford, C. Randall, S. *Olympian (Colorado Springs, Colo.) 20(7), May/Jun 1994, 21-23.* LEVEL:B

Modelling the propulsion characteristics of a standard wheelchair. Hofstad, M. Patterson, P.E. *Journal of rehabilitation research and development (Baltimore, Md.) 31(2), 1994, 129-137.* LEVEL:A

Recent wheelchair modelling work has focused on the efficiency of the human-racing wheelchair interaction. This paper builds on this work, investigating the development of a model appropriate for those using standard wheelchairs. A wheelchair racing model was initially used as the starting point for the generation of a number of model variations. Force predictions from these variations were compared to load cell data taken from an instrumented wheelchair during propulsion. Additional models where then developed, based on the characteristics of the models that performed best, and used to predict the forces in a second group of subjects. The analysis procedure was originally based on the calculation of a model index as a mathematical estimation of the theoretical closeness each model prediction had with the observed force. Visual comparisons of the force versus time were then incorporated into the procedure for evaluating the physical appearances of the profiles. The combination of the statistical and visual analysis led to selection of the final models for estimating the starting, constant, and stopping phases of wheelchair propulsion. The resulting models provide insight into the effects of a variety of factors on efficiency during propulsion in a standard chair.

Physical strain in daily life of wheelchair users with spinal cord injuries. Janssen, T.W.J. Van Oers, C.A. Van Der Woude, L.H. Hollander, A.P. *Medicine and science in sports and exercise (Indianapolis, Ind.) 26(6), Jun 1994, 661-670.* LEVEL:A

Forty-three men (age 33 plus/minus 9 yr) with spinal cord injuries (SCI) were observed during a normal workday while heart rate was recorded continuously. Physical strain was estimated using the heart rate response expressed relative to the individual heart rate reserve (percent HRR). The mean physical strain during the day for group I (C4-C8, N = 9), II (T1-T5, N = 6), III (T6-T10, N = 15), and IV (T10-L5, N = 13) was 38 plus/minus 8, 29 plus/minus 12, 22 plus/minus 8, and 23 plus/minus 5 percent HRR, respectively. Prolonged periods (greater than 15 min) of high strain (greater than 60 percent HRR) that might maintain or improve physical capacity were not identified during activities of daily life (ADL), but only during sports activities. The analysis of activity-related strain revealed that specific ADL such as making transfers, entering/leaving car, and negotiating environmental barriers, provoked high levels of strain, especially in those with quadriplegia. Periods of peak strain (greater than 60 percent HRR, less than 3 min) occurred frequently, also predominantly in those with quadriplegia. It was concluded that the physical strain during ADL is related to the level of lesion and is not of a magnitude and duration that would maintain or improve physical capacity. The periods of peak strain might restrict the mobility and independence of persons with SCI, and, therefore, reduce their quality of life.

Physiological aspects of physical activity for children with disabilities. Shephard, R.J. *Physical education review (Manchester) 17(1), Spring 1994, 33-44.* Includes abstracts in French, German and Spanish. LEVEL:I

Position statement for adapted physical education. *CAHPERD journal/times (Sacramento, Calif.) 56(8), May 1994, 33.* LEVEL:B

Practicum experiences and journal writing in adapted physical education: implications for teacher education. Connolly, M. *Adapted physical activity quarterly (Champaign, Ill.) 11(3), July 1994, 306-328.* LEVEL:A

The central concern of this paper is how an adapted physical education practicum and the journal writing of that experience affected the lives of the students involved. The paper uses as its resource material the fieldwork journals of physical education students who were involved in practicum experiences with people of varying abilities and disabilities. The stories in the journals disclose something of what it is like to come to terms with others and with oneself in the 'adapted' teaching-learning adventure. These disclosures will be presented thematically, the themes describing a journey through an adapted physical education practicum. The thematic composite of this journey is based upon content, critical, and thematic analyses of the data, coupled with the experiences and insights of the student collaborators. The potential of these kinds of experiences in physical education and teacher education is discussed.

Relationship of sport classification and gender to injury for the athlete with cerebral palsy. Ferrara, M.S. Davis, R.W. *Sports medicine, training and rehabilitation (Yverdon) 5(2), 1994, 115-120.* LEVEL:A

Sociological perspectives on sport and disability: structural-functionalism. Williams, T. *Physical education review (Manchester) 17(1), Spring 1994, 14-24.* Includes abstracts in French, German and Spanish. LEVEL:I

03

Teaching children with disabilities : a movement education approach. Jobling, A. *Active and healthy (Adelaide, Aust.) 1(1), Autumn 1994, 4-5.* LEVEL:B

Tennis for students in & out of wheelchairs. Ellery, P.J. *Strategies (Reston, Va.) 7(8), June 1994, 5-8.* LEVEL:B

Testosterone, cortisol and catecholamine responses to exercise stress and autonomic dysreflexia in elite quadriplegic athletes. Wheeler, G. Cumming, D. Burnham, R. Maclean, I. Sloley, B.D. Bhambhani, Y. Steadward, R.D. *Paraplegia (Scotland) 32(5), 1994, 292-299.* LEVEL:A

Ventilatory threshold and peak exercise response in athletes with CP during treadmill and cycle ergometry. Dwyer, G.B. Mahon, A.D. *Adapted physical activity quarterly (Champaign, Ill.) 11(3), July 1994, 329-334.* LEVEL:A

Little is known about the responses to graded exercise in athletes with cerebral palsy (CP). This study compared the ventilatory threshold (VT) and peak VO2 among athletes with CP during treadmill and cycle ergometry exercise. Six (4 men, 2 women) track athletes with CP volunteered to participate in the study. Graded exercise tests on a treadmill and cycle ergometer were performed on separate days to assess VT and peak VO2. Paired t tests were used to compare the two exercise modes. The VT, expressed as a percentage of peak VO2, was significantly higher on the cycle ergometer than on the treadmill. The absolute VO2 at the VT was similar during both testing modes, and peak VO2 was significantly higher on the treadmill than on the cycle ergometer. Similar to responses seen in able-bodied individuals, the VO2 at VT was similar during both modes of exercise, while the peak VO2 was 10 percent lower on the cycle than on the treadmill. Cycle ergometer peak VO2 in these athletes was higher than previous reports of individuals with CP for the cycle ergometer.

Wheelchair stability and maneuverability: effect of varying the horizontal and vertical position of a rear-antitip device. Kirby, R.L. Thoren, F.A.V. Ashton, B.D. Ackroyd-Stolarz, S.A. *Archives of physical medicine and rehabilitation (Philadelphia) 75(5), May 1994, 525-534.* LEVEL:A

Although properly adjusted rear-antitip devices on wheelchairs prevent rear-tipping accidents, many wheelchair users do not use them because they limit manueverability. This study evaluated the use and effectiveness of antitip devices, particularly the effect of the devices' position on rear stability and maneuverability. In an epidemiologic study of the use of antitip devices, using a database of noninstitutionalized users of manually propelled chairs, we found no significant difference in the incidence or nature of rear-tipping accidents between the 167 who used antitip devices and the 399 who did not. We also evaluated seven common manually propelled wheelchairs, occupied by an anthropomorphic test dummy, with and without antitip devices. The added stability provided by the antitip devices varied considerably (from -1.0 to 27.1 degrees) depending on the type of chair, the configuration of the chair and the position of the antitip device. A representative wheelchair was then equipped with an adjustable antitip device that allowed us to test 68 combinations of vertical and horizontal positions. The relationships between the position of the antitip device and both the measured rear-stability and maneuverability values could be expressed by significant regression equations, and correlated highly with the values predicted by a theoretical model that we developed. These relationships should assist clinicians, users and wheelchair designers in finding appropriate compromises between safety and maneuverability.

Armchair aerobics for the cognitively impaired. Payten, A. Porter, V. *Activities, adaptation & aging (Binghamton, N.Y.) 18(2), 1994, 27-39.* LEVEL:I

Athletes with disabilities. Removing medical barriers. Commentary. Peck, D.M. McKeag, D.B. *Physician and sportsmedicine (New York) 22(4), Apr 1994, 59-62.* LEVEL:I

For the most part, active people who are disabled require medical care for typical sports-related cuts, sprains, and strains. However, disability-related conditions such as bladder problems or pressure sores require specialized management to make activity safe.

Awakenings: the 1993 World Games for the Deaf. Stewart, D.A. Ammons, D. *Palaestra (Macomb, Ill.) 10(2), Winter 1994, 26-31.* LEVEL:B

Community adjustment of young adults with mental retardation: overcoming barriers to inclusion. Part two. Ittenbach, R.F. Abery, B.H. Larson, S.A. Spiegel, A.N. Prouty, R.W. *Palaestra (Macomb, Ill.) 10(2), Winter 1994, 32-36;38-39;41-42.* Second in a two-part series. Concluded from Palaestra 9(4), Summer 1993, 19-24. LEVEL:I

Coordination problems and anaerobic performance in children. O'Beirne, C. Larkin, D. Cable, T. *Adapted physical activity quarterly (Champaign, Ill.) 11(2), Apr 1994, 141-149.* LEVEL:A

Generally, children with coordination problems lack fitness and muscular strength. This study was designed to identify whether these children differed from age-matched controls on measures of anaerobic performance. Twenty-four boys who were poorly coordinated, from three age groups, 7, 8, and 9 years, were compared to 24 coordinated controls (N= 48). The McCarron (1982) Assessment of Neuromuscular Development (MAND) was used to confirm levels of coordination. Anaerobic performance was estimated with the Wingate Anaerobic Test (WAnT) and a 50-m run. The poorly coordinated group's performance on the WAnT was significantly lower than the performance of the controls for measures of peak power normalized for body weight, absolute and normalized mean power, and the fatigue index. The subjects who were poorly coordinated were also significantly slower performing the 50-m sprint. There was a significant relationship between power measured on the WAnT and coordination measured by the MAND gross motor score. For this population, coordination problems were considered among the factors that may interfere with the measurement of anaerobic performance.

Digest Commentary. (Response) Pitetti, K. McCubbin, J. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 100-103.* A response to a critique of an article entitled Isokinetic arm and leg strength of adults with Down syndrome : A comparative study, appearing in Archives of Physical Medicine and Rehabilitation, vol. 73, p. 847-850. Includes a response from the author of the critique. LEVEL:A

Disability sport socialization and identity construction. Williams, T. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 14-31.* LEVEL:I

The subject of this paper is the sport socialization of athletes with disabilities; the object is to contribute to research and praxis through a review of the relevant sociological literature on the subject. The majority of the research, which uses structural-functionalism, is seen as a set of pioneering attempts to generate reliable information. However, the resulting information is too simplistic and theoretically deficient. The minority of the research, which uses interactionism, is seen as complementing the structural-functionalist studies by focusing on different aspects of the socialization experiences of athletes with disabilities. This research is insightful but it is collectively unsystematic. It is concluded that the study of disability sport socialization is in its infancy and is in urgent need of an adequate theoretical foundation. Three theoretical suggestions are offered to provide such a foundation, together with substantive suggestions for focusing on the themes of institutionalized physical activity and sport, social relationships, social configurations, and social control.

Equal-status relationships in the gym. Sherrill, C. Heikinaro-Johansson, P. Slininger, D. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 27-31;56.* LEVEL:B

Evidence of disinhibition in learning disabilities: The associated movement phenomenon. Lazarus, J.C. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 57-70.* LEVEL:A

A modified version of Fog's clip-pinching task developed by Todor and Lazarus (1986) was used to assess associated movement or motor overflow in children with and without learning disabilities (LD). Children with LD as a group displayed greater overflow at all levels of active limb force than their age-equivalent nondisabled peers. Children with LD who also have attention deficit hyperactivity disorder were variable in their ability to consciously inhibit overflow while children with LD without attention deficit hyperactivity disorder were able to override overflow given verbal cues to do so. Results indicate that children with LD, as a group, tend to be more affected by the force output requirement of this task due to other factors such as attention and inhibition that differ in degree from nondisabled age-matched control subjects, or at least that persist for a longer period of time in development. The degree to which the regulation of attention interacts with the regulation of force differs for the two subgroups of children with LD, those with and without attention deficit hyperactivity disorder.

Implications of inclusion for physical education. Craft, D.H. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 54-55.* LEVEL:B

Inclusion in regular classes: breaking from traditional curricula. Rizzo, T.L. Davis, W.E. Toussaint, R. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 24-26,47.* LEVEL:B

Inclusion in regular physical education: the research base. Block, M.E. William Vogler, E. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 40-44.* LEVEL:B

Inclusion: physical education for all. Craft, D.H. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 22-23.* LEVEL:B

Inclusive elementary and secondary physical education. Heenan, J. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 48-50.* LEVEL:B

An inclusive preschool Physical Education Program. McCall, R. *JOPERD - The journal of physical education, recreation & dance (Reston, Va.) 65(1), Jan 1994, 45-47.* LEVEL:B

Integrating children with special needs in physical education: A school district assessment model from Finland. Heikinaro-Johansson, P. Sherrill, C. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 44-56.* LEVEL:A

The purpose was to develop a model to guide assessment for physical education planning for integration and inclusion at the school district level. A secondary goal was to determine if teachers' gender, age, education, and experience of teaching children with special needs are associated with beliefs about barriers to integration. To test the model, data were collected from physical education specialists and classroom teachers in central Finland. The survey instruments were three scales: (a) Awareness of Individual Differences Survey, (b) Survey of Adaped Physical Education Needs- Finnish modivication (SAPEN-F),and (c) Teacher Beliefs About Physical Education Integration Scale. Results indicated that Finnish teachers know they have students with special needs. PE specialists and classroom teachers share many common beliefs about priority needs. Teachers believe that the most important barrier that hinders physical education integration is attitude. The model described herein worked in Finland and is ready for further testing by other countries.

Physical activity for children with Apert syndrome. Weber, R.C. *Palaestra (Macomb, Ill.) 10(2), Winter 1994, 13-18.* LEVEL:I

04 **Physical activity of children and adolescents with a disability: methodology and effects of age and gender.** Longmuir, P.E. Bar-Or, O. *Pediatric exercise science (Champaign, Ill.) 6(2), May 1994, 168-177.* This project was made possible through the financial support of the Hospital for Sick Children Foundation, the Ontario ministry of Tourism and Recreation, and the Canadian Fitness and Lifestyle Research Institute. LEVEL:A

To date, very little published information has been available on the physical activity participation of disabled youth. A questionnaire, which was modified from the Canada Fitness Survey, was distributed by mail to physically disabled, sensory impaired, and chronically ill children and adolescents in Ontario, Canada. Nine hundred eighty-seven responses were collected from subjects 6 to 20 years of age, with a response rate of 58 percent. Twenty-nine percent of physically challenged youth were found to be sedentary, and 39 percent were active. Activity levels were significantly related to age (p less than .01), with a marked decline in the second decade of life. Activity levels were not significantly influenced by gender, but the data suggest that girls have lower activity levels and a faster and earlier decline in activity than boys. Overall, the data collected provide baseline information on the role of physical activity in the lives of Ontario youth with physical disabilities, sensory impairment, and chronic illnesses.

Physiological effects of a 13-week physical fitness program on Down Syndrome subjects. Dyer, S.M. *Pediatric exercise science (Champaign, Ill.) 6(1), Feb 1994, 88-100.* LEVEL:A

The purpose of this study was to evaluate the effects of a 13-week health-related fitness program on 10 Down syndrome subjects aged 8 to 18. An A-B-A time-series design was used, with data collected every 6 weeks for 43 weeks: The preintervention phase included four data collection points, and the intervention and postintervention phases included two data collection points each. Data obtained included resting heart rate, blood pressure, and results of a step test designed to measure cardiovascular fitness. Analyses of results revealed significant positive changes for resting heart rate (p less than .0005), blood pressure (p less than .01), and step test (p less than .0001). Motivation and the type of program implemented were identified as particular reasons for positive outcomes. It was concluded that participation in regular physical activity may be beneficial for Down syndrome subjects, particularly because poor fitness levels have been closely associated with health risks such as cardiovascular disease.

Power output and technique of wheelchair athletes. Roeleveld, K. Lute, E. Veeger, D. Gwinn, T. van der Woude, L. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 71-85.* LEVEL:A

To assess power output, force application, and kinematics of wheelchair propulsion in peak exercise, nine wheelchair athletes with medical lesion levels of T8 or lower performed a 30-s sprint test on a stationary wheelchair ergometer. Mean power output, calculated for the right wheel only, was 59.4 plus/minus 8.5 W. The ratio between effective force and total propulsive force was 60 plus/minus 6 percent. A negative torque around the hand and a not tangentially directed total force accounted for this low effectiveness. Since the subject group was highly trained, their technique was considered to be optimal for the given circumstances. Therefore, athletes who want to improve power output by increasing effectiveness should keep in mind the existence of a nontangential propulsive force and a braking torque applied by the hands onto the hand rim surface. It is likely that both aspects will be influenced by the geometry of the wheelchair, for example, hand rim dimension or seat position.

Reflections - the human experience: people with challenges. Ratto, L.L. *Palaestra (Macomb, Ill.) 10(2), Winter 1994, 55.* LEVEL:B

Student attitudes toward integration of people with disabilities in activity settings: A European comparison. Downs, P. Williams, T. *Adapted physical activity quarterly (Champaign, Ill.) 11(1), 1994, 32-43.* LEVEL:A

This study examines, in a comparative context, the attitudes of undergraduate students toward the integration of people with disabilities in activity settings. The Physical Educators' Attitudes Toward Teaching the Handicapped instrument was used to test preservice physical education undergraduates (N = 371) from universities in England, Denmark, Belgium, and Portugal on attitude variables previously found significant in North American research. Mann-Whitney U analysis revealed significant attidudinal differences between the variables of gender, previous or learning disability); between cross-cultural influences of the Belgian sample and the English, Danish, and Portuguese samples; and between the English and the Danish samples.

The wheelchair athlete and other forms of adaptive exercise. Brasile, F.M. *In, Mellion, M.B. (ed.), Sports medicine secrets, Philadelphia, Hanley & Belfus, Inc., c1994, p. 52-56.* LEVEL:B

Wheelchair sports deserve fair play. (Guest editorial) Ford, O. Goodenow, M. Shaver, L. *NCAA news (Overland Park, Kan.) 31(10), 9 Mar 1994, 4-5;19.* LEVEL:B

The 'Active & Able' Project : the fitness, health and independence project for people with moderate to severe physical disabilities. Wishart, L. *In, Reaching for the top : proceedings ; recreation and sport, vol. 2, Adelaide, ACHPER, 1993, p. 1-11. Australian Council for Health, Physical Education and Recreation. National/International Biennial Conference (1993 : Darwin, Aust.).* LEVEL:I

Amateur athletes with handicaps or physical abnormalities: who makes the participation decision? Mitten, M.J. *Nebraska law review (Lincoln, Neb.) 71(4), Fall 1992, 987-1032.* LEVEL:I

Disability, empowerment and physical education. Barton, L. *In, Evans, J. (ed.), Equality, education and physical education, London, Falmer, 1993, p. 43-54.* LEVEL:I

The effect of Special Olympics participation on community integration. Wilhite, B. Kleiber, D.A. *Therapeutic recreation journal (Arlington, Va.) 26(4), Fourth Quarter 1992, 9-20.* LEVEL:I

Involvement with organized competitive sports by individuals with mental retardation, particularly Special Olympics, has been thought to contribute to well-being in a variety of ways. In the current investigation, differential impacts on community integration, depending on the severity of the disability, are indicated. Individuals with moderate to severe mental retardation showed a positive association between competitive sport involvement and general involvement in the community, while for those with mild retardation, the relationship was somewhat negative. These findings are discussed with respect to programmatic implications.

The effects of regular exercise programs for visually impaired and sighted schoolchildren. Blessing, D.L. McCrimmon, D. Stovall, J. Williford, H.N. *Journal of visual impairment & blindness (New York) 87, 1993, 50-52.* LEVEL:I

Functional motor skills and the developmentally disabled. Young, M.J. *Eugene, Ore.: Microform Publications, Int'l Institute for Sport and Human Performance, University of Oregon, 1993.* 2 microfiches (139 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.A.) - California State University, Long Beach, 1991; Includes bibliography (l. 120-126). LEVEL:A

Hiring concerns impacting the sport practitioner. Miller, L.K. Fielding, L.W. Pitts, B.G. *Journal of legal aspects of sport (Waco, Tex.) 3(2), Fall 1993, 3-15.* LEVEL:I

Improving integration outcomes for children with and without severe disabilities through cooperatively structured recreation activities: a synthesis of research. Rynders, J.E. Schleien, S.J. Meyer, L.H. Vandercook, T.L. *Journal of special education 26(4), Winter 1992, 386-407.* LEVEL:I

Physical activity patterns of children with movement difficulties. Bouffard, M. Thompson, L.P. Watkinson, E.J. *Gloucester, Ont.: Canadian Fitness and Lifestyle Research Institute, Nov 1992.* 80 p. (Canadian Fitness and Lifestyle Research Institute. Technical Report no. 0095-7109-3044.) Cover title. LEVEL:A

In this project, four interrelated studies were conducted to test the activity deficit hypothesis with children experiencing movement difficulties. This hypothesis states that children with movement difficulties are less physically active than children without movement difficulties. In two observational studies, data were collected on children with movement difficulties and children without movement difficulties during a regular physical education class and recess time at school. During regular physical education, children with movement difficulties were more often (a) not motor engaged when they are supposed to be and (b) engaged in a motor activity but in the wrong activity for the task. During recess time, it was found that children with movement difficulties were (a) less often vigorously active, (b) less often playing with large playground equipment (requiring a higher level of movement proficiency), (c) not observable for significantly more time, and (d) spent less time in positive social interactions with others of their own gender. A free leisure-time pursuit was administered during the third study. Overall, no major differences were found between children with and without movement difficulties. Finally, in the fourth study the exercise intensity level of children with movement difficulties was compared to that of children without movement difficulties during one weekend day. The intensity of physical activity was estimated by continuous monitoring of minute-by-minute heart rates using the Sport Tester PE 3000, a self-contained computerized telemetry system. No significant differences were found between both groups of children. Overall, it was found that the best setting to test the activity deficit hypothesis was a relatively free, unstructured play situation, in which the participants were free to choose participation. The setting having most of these characteristics was recess time. Accordingly, we suggest that the anecdotal evidence and current data support the activity hypothesis which is based on recent motivational theories. Children with movement difficulties have, on the average, developed a dangerous lifestyle. They have developed a style that puts skill development, social interaction, health and fitness at risk. Implications of these results for fitness and lifestyle as well as future research needs are presented.

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Au moyen de quatre etudes, le but de ce projet etait de verifier si dans la vie courante l'hypothese d'hypoactivite chez les enfants maladroits est supportee. Selon cette hypothese, les enfants maladroits evitent plus souvent les situations de mouvement que leurs pairs du meme age n'ayant pas de problemes de justesse motrice. pendant deux etudes observationnelles, des enfants maladroits ainsi que des enfants n'ayant pas de problemes de justesse motrice furent observes pendant une periode d'education physique a l'ecole ainsi que pendant la recreation. Les resultats de nos observations pendant la periode d'education physique indiquerent que les enfants maladroits, comparativement aux enfants temoin, (a) accomplissaient moins souvent la tache demandee, et (b) modifiaient la tache de facon telle qu'une autre tache etait accomplie. La seconde etude indiqua que pendant la periode de recreation les enfants maladroits (a) participaient moins souvent a des activites vigoureuses, (b) jouaient moins souvent avec de grosses pieces d'equipement situe sur le terrain de jeu, (c) etaient moins souvent visibles, et (d) passaient moins de temps en interactions positives avec leurs pairs du meme sexe. Un questionnaire portant sur les activitees pratiquees durant les loisirs fut administre lors de la troisieme etude. Dans l'ensemble, ce questionnaire n'a pas revele de differences significatives entre les goupes. Finalement, la quatrieme etude compara l'intensite de la participation de ces enfants durant une journee de fin de semaine. L'intensite de l'activite fut mesuree a l'aide du Sport Tester PE 3000. Nous n'avons pas obtenu de differences significatives entre ces groupes. Dans l'ensemble, nous croyons que le meilleur environement pour tester l'hypothese d'hypoactivite etait la recreation. C'est dans ce milieu non structure que les enfants etaient libres de choisir ce qu'ils desiraient faire ainsi que l'entensite de leur participation. Consequemment, nous concluons, en accord avec de nombreuses anecdotes ainsi que de recentes theories de la motivation, que l'hypothese d'hypoactivite fut supportee dans ce projet. Les enfants maladroits ont, en general, developpe un style de vie dangereux pour l'apprentissage de gestes, l'interaction sociale, ainsi que leur sante et leur condition physique.

Les implications de ces resultats pour la condition physique et le mode de vie ainsi que les recherches ulterieures sont presentes.

Physical education within special educational provision - equality and entitlement. Halliday, P. *In, Evans, J. (ed.), Equality, education and physical education, London, Falmer, 1993, p. 205-216.* LEVEL:I

Physical fitness and adults with mental retardation: an overview of current research and future directions. Pitetti, K.H. Rimmer, J.H. Fernhall, B. *Sports medicine (Auckland) 16(1), July 1993, 23-56.* LEVEL:I

The deinstitutionalisation movement of the past 25 years has focused on the placement of people with mental retardation into community-based settings. There is a need for exercise- and health-related professionals to demonstrate a thorough understanding of the term mental retardation and all of the intellectural and behavioural ramifications that coexist with this condition before addressing the 'how to' of fitness evaluation. Therefore, the article outlines the range of intellectual and behavioural characteristics of this population, based on the level of retardation. Many researchers investigating body composition have reported that a disproportionate number of adults with mental retardation carry a percentage of body fat that would be considered unhealthy. Many attempts of researchers to control weight in adults with mental retardation through caloric restriction, exercise, and a combination of diet and exercise, have had a varied outcome. Cardiovascular capacity is considered by most exercise physiologists as the major physiological indicator for overall fitness. The majority of researchers who have evaluated the cardiovascular fitness levels of adults with mental retardation have reported fitness levels representative of a very sedentary population. Therefore, one would expect a keen sense of urgency among researchers to develop training regimens targeted specifically for people with mental retardation. Many have been developed, but to date only 2 cardiovascular training regimens have been reported that specifically describe the necessary components of an exercise programme that would allow for reproducibility - a stationary bicycle routine using the Schwinn "Air-Dyne' ergometer and a run/walk programme. Of these, only the programme using the Schwinn 'Air-Dyne' ergometer reported significant improvements in cardiopulmonary fitness. Researchers have demonstrated that there is a need for appropriate evaluation procedures for determing the muscular strength and endurance of people with mental retardation. Future research on the fitness status of people with mental retardation should include questions such as: What will be the effect of obesity on general health status? Can high risk profiles for cardiovascular and metabolic diseases because of poor fitness and high incidences of obesity be altered through lifestyle modifications in this poulation? These issues are important for people with mental retardation, as well as professionals who care for them.

Psychological skills training for competitive wheelchair and amputee athletes. Hanrahan, S. *In, Reaching for the top : proceedings ; recreation and sport, vol. 2, Adelaide, ACHPER, 1993, p. 1-4. Australian Council for Health, Physical Education and Recreation. National/International Biennial Conference (1993 : Darwin, Aust.).* LEVEL:I

Responses of subjects with spinal cord injuries to maximal wheelchair exercise: comparison of discontinuous and continuous protocols. Rasche, W. Janssen, T.W.J. Van Oers, C.A.J.M. Hollander, A.P. Van der Woude, L.H.V. *European journal of applied physiology and occupational physiology (Berlin, FRG) 66(4), Apr 1993, 328-331.* LEVEL:A

Six male subjects with spinal cord injuries (SCI) participated in this investigation to compare peak values of oxygen uptake (VO2), heart rate (fc), ventilation (VE), respiratory exchange ratio (R) and power output (W) obtained using a discontinuous (DP) and a continuous jump max protocol (JMP) in a maximal wheelchair exercise test on a treadmill. The W increments were achieved by imposing an extra mass upon the wheelchair through a pulley system. The DP involved exercise periods of 3 min separated by 2-min intervals at relative rest. Increments in W consisted of 0.10 or 0.15 W.kg-1 total mass. During the rest intervals no mass was imposed on the wheelchair. The JMP involved an increase in W each minute. Increments and velocity in the JMP were the same as during the exercise periods for DP. Mean peak values for W (99.5 (SD 13.6) W), VO2 (2.13 (SD 0.27) 1.min-1, standard temperature and pressure, dry), R (1.25 (SD 0.16)) and VE (82.8 (SD 11.2) 1.min-1, body temperature and pressure, saturated) in DP were not different from values observed for W (103.5 (SD 13.1)), Vo2 (2.18 (SD 0.31) 1.min-1), R (1.17 (SD 0.16)) and VE (78.9 (SD 16.0) 1.min-1) in the JMP. The only significant differnece was observed for fc: 198 (SD 11) beats.min-1 in DP and 187 (Sd 11) beats.min-1 in JMP. The higher values for fc elicited using DP have been discussed. It was concluded that both a DP and a JMP seem to be equally appropriate in determining peak VO2 and peak W in SCI persons. In terms of time saving, JMP would seem to be a more favourable protocol.

Special Olympics: an evaluation by professionals and parents. Klein, T. Gilman, E. Zigler, E. *Mental retardation (Washington, D.C.) 31(1), Feb 1993, 15-23.* LEVEL:I

Spine instability and the Special Olympics. Goldberg, M.J. *Clinics in sports medicine (Philadelphia, Pa.) 12(3), July 1993, 507-515.* LEVEL:I

There is a broad array of abnormalities of the upper cervical spine in people with Down syndrome, with an increased alantodens interval being the best known. Most patients are asymptomatic. The natural history, however, is not known, and therefore, treatment recommendations are based on important clinical determinants.

We'll cross that hurdle when we get to it: teaching athletic performance within adaptive physical education. Cameron, M.J. Cappello, M.J. *Behavior modification (Beverley Hills, Calif.) 17(2), Apr 1993, 136-147.* LEVEL:I

Sport program effects on participants with mental retardation. Riggen, K.J. *Eugene, Ore.: Microform Publications, Int'l Institute for Sport and Human Performance, University of Oregon, 1993.* 2 microfiches (162 fr.) : negative; 11 x 15 cm. Thesis (P.E.D.) - Indiana University, 1992; vita; includes bibliography (l. 117-138). LEVEL:A

Advances in biomechanical analysis of the physically challenged child: cerebral palsy. Holt, K.G. Jeng, S.F. *Pediatric exercise science (Champaign, Ill.) 4(3), Aug 1992, 213-235.* Special issue: The physically challenged child. LEVEL:A

This paper presents some of the ways we are attempting to understand why physically challenged children adopt the movement patterns they do. It focuses on the skill of walking and compares nonneurologically disabled persons with children with cerebral palsy. A multidisciplinary approach is advocated in which the tools of biomechanics, physiology, and dynamical systems theory are explored. Traditional biomechanics of children with cerebral palsy tend to be descriptive in nature. More recent methods include both traditional biomechanical and dynamical systems approaches to understand why physically challenged children adopt the gait patterns they do. The concept of self-optimization is introduced as a way to motivate the investigations. Mechanical energy conservation, minimal metabolic cost, normality, and stability are discussed as some of the potential optimality criteria. Optimality criteria measurement including several methods of analysis of stability are discussed, and preliminary results of findings in the three groups are reported.

Anaerobic threshold and maximal oxygen consumption during arm cranking exercise in paraplegia. Lin, K.H. Lai, J.S. Kao, M.J. Lien, I.N. *Archives of physical medicine and rehabilitation (Philadelphia, Pa.) 74(5), May 1993, 515-520.* LEVEL:A

The major purpose of this investigation was to compare the anaerobic threshold (AT) and maximal cardiopulmonary responses to arm exercise between persons with paraplegia and the able-bodied. The locomotive stress on the heart in paraplegic subjects was also examined. Thirty-nine paraplegic subjects (T1-L4 lesions) and 32 able-bodied subjects completed a continuous, progressive, resisted arm cranking exercise test. The AT was determined from the ventilatory parameters. At the AT, the mean values of VO2/body weight (BW) for class II (T1-T5, N-9), III (T6-T10, N-11), and IV (T11-L4, n-19) paraplegic subjects were 10.9, 13.2, and 13.5 mL/kg/min, respectively, and only class II had significantly lower value than the able-bodied (14.4 mL/kg/min). During maximal exercise, the mean values of maximal oxygen consumption per body weight (VO2max/BW) for class II and III paraplegics were 17.4 and 17.7 mL/kg/min, respectively, which were significantly lowere than that of class IV (21.3 mL/kg/min) and the able-bodied (28.2 mL/kg/min). The heart rate (HR) during wheelchair-propelling (119 bpm, n-37) was significantly less than that at the AT (134 bpm), but the HR during crutch-walking (151 bpm, n-17) was significantly higher. The results indicate that both submaximal and maximal cardiopulmonary functions in high-lesion paraplegics were less than that of the able bodied. Furthermore, the intensity of wheelchair-propelling at comfortable speed is not enough for improving the cardiopulmonary functions.

06

An assessment of the contribution of electroyographic biofeedback as an adjunct therapy in the physical training of spinal cord injured persons. Klose, K.J. Needham, B.M. Schmidt, D. Broton, J.G. Green, B.A. *Archives of physical medicine and rehabilitation (Philadelphia, Pa.) 74(5), May 1993, 453-456.* LEVEL:A

This study tested the efficacy of biofeedback when administered in conjunction with physical rehabilitation therapy to chronic C5-7 quadriplegics. Triceps brachii, biceps brachii, wrist extensors, and wrist flexors were tested. The studied muscles were compromised by the injury to varying degrees, but were often still useful to these subjects. An exercise regimen was given to all subjects. In addition, subjects were separated into two groups: those who received biofeedback training and those who did not. Two measures of performance were tested: manual muscle scores and functional activities scores. Both groups scored significantly higher on both measures after 12 weeks of rehabilitation therapy. We found no evidence that biofeedback generally increased the amount of improvement seen. These results do not support the routine use of biofeedback in the treatment of chronic spinal cord injury, but rather further stress the importance of exercise therapy for such injuries.

Biofeedback treatment for cerebral palsy in children and adolescents: a review. James, R. *Pediatric exercise science (Champaign, Ill.) 4(3), Aug 1992, 198-212.* Special issue: The physically challenged child. LEVEL:A

This article reviews the role of augmented biofeedback as a treatment aid for selected neuromuscular problems in children and adolescents with cerebral palsy. Neuromuscular dysfunction often prevents those inflicted with cerebral palsy from performing even simple tasks of daily activity. Research has evaluated the role of augmented biofeedback in reducing this neuromuscular dysfunction. Augmented feedback, on the whole, has been successful in improving head and neck posture, reducing hypertonicity, and improving weight-bearing during gait, hand-eye coordination, sitting posture, and drooling. However, most studies have shown that the carry-over without feedback was limited. Moreover, the generalization to real-life situations often was not demonstrated. The sample size in most studies was very small. Future research should address the adequate number of training sessions needed to produce an improvement and consider the mode and type of feedback appropriate for a given subject. Augmented biofeedback appears to have important implications in the treatment of those with cerebral palsy.

Biomechanical analysis of wheelchair propulsion for various seating positions. Masse, L.C. Lamontagne, M. O'Riain, M.D. *Journal of rehabilitation research and development (Washington, D.C.) 29(3), Summer 1992, 12-28.* LEVEL:A

The pattern of propulsion was investigated for five male paraplegics in six seating positions. The positions consisted of a combination of three horizontal rear-wheel positions at two seating heights on a single-purpose-built racing wheelchair. To simulate wheelchair propulsion in the laboratory, the wheelchair was mounted on high rotational inertia rollers. For three trials at each seating position, the subjects propelled the designed wheelchair at 60 percent of their maximal speed, which was determined at the beginning of the test session. At each trial, the propulsion technique of the subject was filmed at 50 Hz with a high-speed camera for one cycle, and the raw electromyographic (EMG) signal of the biceps brachii, triceps brachii, pectoralis major, deltoid anterior, and deltoid posterior muscles were simultaneously recorded for three consecutive cycles. The digitized film data were used to compute the angular kinematics of the upper body, while the EMG signals were processed to yield the linear envelope (LE EMG) and the integrated EMG (IEMG) of each muscle. The kinematic analysis revealed that the joint motions of the upper limbs were smoother for the Low positions - since they reached extension in a sequence (wrist, shoulder, and elbow), when compared to the High positions. Also, the elbow angular velocity slopes were found to be less abrupt for the Backward-Low position. It was observed that in lowering the seat position, less IEMG was recorded and the degrees of contact were lengthened. Among the seat positions evaluated, the Backward-Low position had the lowest overall IEMG and the Middle-Low position had the lowest pushing frequency. It was found that a change in seat position caused more variation in the IEMG for the triceps brachii, pectoralis major, and deltoid posterior. The trunk angular momentum was not found to be affected by a change in seat position which may be related to the variability among the subject's technique of propulsion or to a posture compensation.

Coaching athletes with disabilities : general principles. Goodman, S. *Canberra: Australian Sports Commission , 1993.* vii, 215 p. ISBN: 0642188203 LEVEL:B

The contribution of selected anthropometric and physiological variables to 10K performance of wheelchair racers: a preliminary study. Cooper, R.A. *Journal of rehabilitation research and development (Washington, D.C.) 29(3), Summer 1992, 29-34.* LEVEL:A

The purpose of this study was to determine the relationship between selected anthropometric and physiological variables and 10K time. Eleven male wheelchair athletes with spinal cord injuries in training for national competition performed continuous progressive exercise tests on a wheelchair ergometer to determine maximal metabolic and cardiorespiratory values. Anthropometric data were also collected. The laboratory data were analyzed for correlation with the best 10K time of each subject during the test period. The subjects averaged 27 min 30 sec for their 10K races, 2.49 L.min-1 for VO2max and 35 percent for maximal gross mechanical efficiency during submaximal exercise. Speed at peak oxygen consumption (r = -0.66), gross mechanical efficiency (r = -0.56), and body density (r = -0.57) was found to be significantly (p is less than 0.10) correlated with 10K time. The results show very little correlation between VO2max and 10K time (r = 0.02). Further study is indicated for the relationship between gross mechanical efficiency, speed at maximal oxygen consumption, body density, and 10K time; these variables may be useful in evaluating training programs for improving race performance.

Correlates of self-reported leisure among adults with mental retardation. Hawkins, B.A. Freeman, P.A. *Leisure sciences (London) 15(2), Apr/June 1993, 131-147.* LEVEL:A

Activity theorists propose that leisure activity is important to perceived well-being in adulthood and that many factors may influence activity patterns. Current assumptions supported by researchers in the field of disabilities are that the expression of personal preferences and interests increases perceptions of self-worth and independence in adults with mental retardation. Empirical evidence that sytematically describes the leisure activity patterns of adults with mental retardation, however, is not widely available. This article presents the findings from a study of self-reported participation in, preferences for, and interests in 18 leisure activities by a sample of 121 adults with moderate mental retardation. The relationships of age, sex, and functional competence to these self-report measures were explored using logistic regression analysis. Selected results are consistent with patterns of involvement in the general adult population (e.g., decreased expected probabilities of participation in physical activitites with age, with the exception of walking for pleasure). Other findings show distinct patterns for individuals with developmental disabilities (e.g., a lower likelihood of dating but a higher probability of preferring to date by older adults). Recommendations for extending this line of inquiry are presented.

Developmental/adapted physical education: making ability count. 3rd ed. Eichstaedt, C.B. Kalakian, L.H. *New York ; Toronto: Macmillan : Maxwell Macmillan Canada, c1993.* xiv, 641 p. Includes bibliographical references and index. ISBN: 0023317019 LC CARD: 92-037930 LEVEL:I

The effects of exercise intensity on the stereotypic behaviors of individuals with autism. Levinson, L.J. Reid, G. *Adapted physical activity quarterly (Champaign, Ill.) 10(3), July 1993, 255-268.* LEVEL:A

The effects of exercise intensity on the stereotypic behaviors of three subjects with autism were examined. Two exercise programs of different intensities were implemented. The mild exercise program involved 15 min of walking, and the vigorous program involved 15 min of jogging. The frequency of stereotypic behavior was measured prior to exercise, immediately following exercise, and 90 min following exercise. The results indicated that significant reductions in stereotypic behaviors occurred as a function of the vigorous exercise condition only. The mean reduction of stereotypic behaviors between prejogging and postjogging was 17.5 percent. However, the duration of these reductions was temporary. Increases to preexercise levels were noted in stereotypic behaviors 90 min after exercise. The stereotypic behaviors of subjects were categorized into three components: motor, vocal/oral, and other. The motor component was most common. The mild exercise condition had little effect on the motor component; the vigorous condition resulted in a mean reduction of 17 percent.

The effects of fixed and hinged ankle foot orthoses on gait myoelectric activity and standing joint alignment in children with cerebral palsy. Lough, L.K. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1993.* 3 microfiches (226 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - University of Iowa, 1990; includes bibliography (l. 164-175). LEVEL:A

Effects of midline crossing on reaction time and movement time with adolescents classified as mildly mentally retarded. Eason, B.L. Surburg, P.R. *Adapted physical activity quarterly (Champaign, Ill.) 10(3), July 1993, 269-280.* LEVEL:A

07

Students with mild mental retardation (MMR) often demonstrate reluctance, confusion, or performance deterioration when required to perform tasks that require looking, reaching, or stepping across the body's midline. Sensory integration theorists contend that midline crossing is a predictor of bilateral integration. However, in factor analysis studies, very little variance is accounted for by midline crossing data. The present study viewed midline crossing as a function of information processing and utilized a temporal assessment process rather than the usual spatial assessment process. Results indicated that subjects classified as MMR experienced slower choice reaction time (CRT) and movement time (MT) for stimuli placed across the body's midline. However, higher functioning subjects with MMR performed equally well on CRT for ipsilateral and crosslateral tasks. The data provide evidence for a developmental hypothesis as an explanation for midline crossing problems.

A longitudinal study of children with Down syndrome who experienced early intervention programming. Connolly, b.H. Morgan, S.B. Russell, F.F. Fulliton, W.L. *Physical therapy (Alexandria, Va.) 73(3), Mar 1993, 170-179.* LEVEL:A

The long-term motor, cognitive, and adaptive functioning of a sample of adolescents with Down syndrome who experienced an early intervention program was examined in this descriptive study. Ten children with Down syndrome (7 girls, 3 boys) who had participated in an early intervention program constituted the early intervention (EI) group. An age-matched group of children with Down syndrome (6 girls, 4 boys) who had not experienced an early intevention program served as a comparison group. The EI group's motor functioning was compared with that of a normative sample used in the development of the Bruininks-Oseretsky Test of Motor Proficiency. The cognitive and adaptive skills of the EI group were compared with those of the comparison group. The children were assessed using the Stanford-Binet Intelligence Scale, the Vineland Social Maturity Scale, and the Bruininks-Oseretsky Test of Motor Proficiency. The EI group subjects fell below their chronological age levels in gross and fine motor skills; however, their mean gross motor skill levels exceeded their mean fine motor skill levels. The specific deficits in gross motor and fine motor skills, which were documented in a previous follow-up study on the same sample, continued to be areas of deficits (visual motor coordination, running speed, balance, and reaction time). The EI group subjects had significantly higher scores on measures of intellectual and adaptive functioning than did the children in the comparison group. The EI group subjects did not show the decline typically seen with age in adaptive functioning in individuals with Down syndrome. Because of the design limitations, the differences between the groups should be interpreted with caution. (PTh)

Metabolic and hemodynamic responses to concurrent voluntary arm crank and electrical stimulation leg cycle exercise in quadriplegics. Hooker, S.P. Figoni, S.F. Rodgers, M.M. Glaser, R.M. Mathews, T. Suryaprasad, A.G. Gupta, S.C. *Journal of rehabilitation research and development (Washington, D.C.) 29(3), Summer 1992, 1-11.* LEVEL:A

This study determined the metabolic and hemodynamic responses in eight spinal cord injured (SCI) quadriplegics (C5-C8/T1) performing subpeak arm crank exercise (ACE) alone, subpeak functional electrical stimulation leg cycle exercise (FES-LCE) alone, and subpeak FES-LCE concurrent with subpeak ACE (hybrid exercise). Subjects completed 10 minutes of each exercise mode during which steady-state oxygen uptake (VO2), pulmonary ventilation (VE), heart rate (HR), cardiac output (CO), stroke volume (SV), mean arterial pressure (MAP), arteriovenous oxygen difference (a-v O2 diff), and total peripheral resistance (TPR) were determined. Although mean VO2 for both ACE alone and FES-LCE alone was matched at 0.66 1/min, individualized power outputs ranged from 0-30 W (mean = 19.4 plus/minus 1.3) and 0-12.2 W (mean = 2.3 plus/minus 0.6), respectively. Hybrid exercise elicited significantly higher VO2 (by 54 percent), VE (by 39-53 percent), HR (by 19-33 percent, and CO (by 33-47 percent), and significantly lower TPR (by 21-34 percent) than ACE or FES-LCE performed alone (P is less than or equal to 0.05). Stroke volume was similar between hybrid exercise and FES-LCE alone, and these two exercise modes evoked a significantly higher SV (by 41-56 percent) than during ACE alone. These data clearly demonstrate that hybrid exercise creates a higher aerobic metabolic demand and cardiac-volume load in SCI quadriplegics than either subpeak levels of ACE or FES-LCE performed separately. Therefore, hybrid exercise may provide more advantageous central cardiovascular training effects in quadriplegics than either ACE or FES-LCE alone.

The need for vision in teaching orientation and mobility. Wiener, W.R. Bliven, H.S. Bush, D. Ligammari, K. Newton, C. *Journal of visual impairment and blindness (New York) 86(1), Jan 1992, 54-57.* Special issue on Low vision. LEVEL:A

Optimizing the involvement and performance of children with physical impairments in movement activities. Burton, A.W. Davis, W.E. *Pediatric exercise science (Champaign, Ill.) 4(3), Aug 1992, 236-248.* Special issue: The physically challenged child. LEVEL:A

An ecological model of motor behavior presented by Davis and Burton (12) suggests that the qualitative and quantitative aspects of motor behavior for all persons emerge form three sets of constraints: performer, environmental, and task. The involvement and performance of movement activities by children with physical impairments may be optimized by carefully manipulating one or more of these three types of constraints, and by recognizing and accepting that the optimal movement patterns used by these children with unique performer constraints may differ from those exhibited by other children.

Return to work after spinal cord injury: the potential contribution of physical fitness. Noreau, L. Shephard, R.J. *Paraplegia (Edinburgh) 30(8), Aug 1992, 563-572.* LEVEL:A

Subcutaneous hemorrhage in a patient on Coumadin: an isokinetic exercise complication. Richter, K.J. *Journal of sport rehabilitation (Champaign, Ill.) 1(3), Aug 1992, 264-266.* LEVEL:A

A 57-year-old patient who was on Coumadin was placed on a very vigorous sports medicine rehabilitation program for a left hemiparesis. His prothrombin was stable at 16 seconds with a control of 12.4 seconds. After doing knee flexion and extension exercises on an isokinetic machine, he developed an extensive posterior thigh ecchymosis. Rehabilitation clinicians need to be aware of the possiblity of such a complication in an anticoagulated patient.

Two motor control approaches that may help to identify and teach children with motor impairments. Sveistrup, H. Burtner, P.A. Woollacott, M.H. *Pediatric exercise science (Champaign, Ill.) 4(3), Aug 1992, 249-269.* Special issue: The physically challenged child. LEVEL:A

Children in physical education classes, special education classes, and rehabilitation programs have extremely varied abilities and deficits in motor tasks. Among the problems faced by the teachers, therapists, and other specialists is the identification of the underlying mechanisms that produce the problems observed in these children. In addition, teachers and others must design an appropriate intervention strategy. This paper discusses two approaches being used to study the underlying systems and computations that contribute to the control and regulation of movement. The systems approach focuses on the problems that children with specific pathologies have in regulating their balance and equilibrium. The computational or modular approach addresses the motor deficits observed in certain children in terms of three possible computational units: timing, force production, and motor sequencing. These approaches may provide additional techniques for identifying the pathology underlying the behavioral deficits of children with motor impairment. Also, with these tools it may be possible to design alternative programs that will address the causes as well as the effects of the deficits observed in certain groups of children.

Disability, empowerment and physical education. Barton, L. *In, Evans, J. (ed.), Equality, education and physical education, London, Falmer, 1993, p. 43-54.* LEVEL:I

The effects of fixed and hinged ankle foot orthoses on gait myoelectric activity and standing joint alignment in children with cerebral palsy. Lough, L.K. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1993.* 3 microfiches (226 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - University of Iowa, 1990; includes bibliography (l. 164-175). LEVEL:A

Embracing the ADA: how one Y developed a compliance plan. Sullivan, P.C. *Perspective (Bloomington, Minn.) 19(1), Jan 1993, 25-27.* LEVEL:B

The need for vision in teaching orientation and mobility. Wiener, W.R. Bliven, H.S. Bush, D. Ligammari, K. Newton, C. *Journal of visual impairment and blindness (New York) 86(1), Jan 1992, 54-57.* Special issue on Low vision. LEVEL:A

Physical education within special educational provision - equality and entitlement. Halliday, P. *In, Evans, J. (ed.), Equality, education and physical education, London, Falmer, 1993, p. 205-216.* LEVEL:I

Physical fitness and adults with mental retardation: an overview of current research and future directions. Pitetti, K.H. Rimmer, J.H. Fernhall, B. *Sports medicine (Auckland) 16(1), July 1993, 23-56.* LEVEL:I

The deinstitutionalisation movement of the past 25 years has focused on the placement of people with mental retardation into community-based settings. There is a need for exercise- and health-related professionals to demonstrate a thorough understanding of the term mental retardation and all of the intellectural and behavioural ramifications that coexist with this condition before addressing the 'how to' of fitness evaluation. Therefore, the article outlines the range of intellectual and behavioural characteristics of this population, based on the level of retardation. Many researchers investigating body composition have reported that a disproportionate number of adults with mental retardation carry a percentage of body fat that would be considered unhealthy. Many attempts of researchers to control weight in adults with mental retardation through caloric restriction, exercise, and a combination of diet and exercise, have had a varied outcome. Cardiovascular capacity is considered by most exercise physiologists as the major physiological indicator for overall fitness. The majority of researchers who have evaluated the cardiovascular fitness levels of adults with mental retardation have reported fitness levels representative of a very sedentary population. Therefore, one would expect a keen sense of urgency among researchers to develop training regimens targeted specifically for people with mental retardation. Many have been developed, but to date only 2 cardiovascular training regimens have been reported that specifically describe the necessary components of an exercise programme that would allow for reproducibility - a stationary bicycle routine using the Schwinn "Air-Dyne' ergometer and a run/walk programme. Of these, only the programme using the Schwinn 'Air-Dyne' ergometer reported significant improvements in cardiopulmonary fitness. Researchers have demonstrated that there is a need for appropriate evaluation procedures for determing the muscular strength and endurance of people with mental retardation. Future research on the fitness status of people with mental retardation should include questions such as: What will be the effect of obesity on general health status? Can high risk profiles for cardiovascular and metabolic diseases because of poor fitness and high incidences of obesity be altered through lifestyle modifications in this poulation? These issues are important for people with mental retardation, as well as professionals who care for them.

08

Spine instability and the Special Olympics. Goldberg, M.J. *Clinics in sports medicine (Philadelphia, Pa.) 12(3), July 1993, 507-515.* LEVEL:I

There is a broad array of abnormalities of the upper cervical spine in people with Down syndrome, with an increased alantodens interval being the best known. Most patients are asymptomatic. The natural history, however, is not known, and therefore, treatment recommendations are based on important clinical determinants.

The Americans with Disabilities Act: a guide for health clubs and exercise facilities. Herbert, D.L. *Canton, Ohio: Professional Reports Corporation, c1992.* 111 p. ISBN: 0944183115 LC CARD: 91-068121 LEVEL:B

Can I play too? Jowsey, S.E. *London, U.K.: David Fulton Publishers, 1992.* 72 p. ISBN: 1853462179 LEVEL:B

Physical fitness and athletes with disabilities. Goodman, S. *Sports coach (Canberra, Aust.) 16(1), Jan-Mar 1993, 26-30.* LEVEL:I

Physical fitness: a guide for individuals with lower limb loss. Burgess, E.M. Rappoport, A. *Washington, D.C.: Veterans Health Administration, Department of Veterans Affairs, 1992?.* ix, 245 p. : ill. Bibliography: p. 244-245. LEVEL:B

The success of the 9th Paralympics. *Olympic review (Lausanne) 301, Nov 1992, 596-599.* LEVEL:B

Ten questions about mainstreaming. Katims, D.S. Yin, Z. *Strategies (Reston, Va.) 6(4), Jan 1993, 12-16.* LEVEL:B

Who are Americans with Disabilities under federal civil rights law? Kozlowski, J.C. *Parks and recreation (Arlington, Va.) 27(11), Nov 1992, 26-33.* LEVEL:B

Aspects of wheelchair seating comfort. Engel, P. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 163-171. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Behaviour of EMG and cardiopulmonary parameters during two-arm cranking of disabled and able-bodied men. Frauendorf, H. Kobryn, U. Gelbrich, W. Lange, T. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 191-197. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Biomechanical modelling in wheelchair propulsion. Marchetti, M. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 215-223. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Biomechanics of manual wheelchair propulsion. Veeger, H.E.J. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 201-213. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Cardiovascular aspects in spinal cord injured subjects. Hopman, M.T.E. Oeseburg, B. Binkhorst, R.A. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 103-108. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Cardiovascular regulation of bedridden patients with severe physical disabilities to orthostatic stress and lower body negative pressure. Mita, K. Akataki, K. Suzuki, N. Miyagawa, T. Tishida, N. Yamakawa, J. *Sports medicine, training and rehabilitation (New York) 3(1), 1992, 1-11.* LEVEL:A

The purpose of this investigation was to identify the cardiovascular response to an orthostatic tolerance test in severely disabled patients during prolonged recumbency in a sitting position and under lower body negative pressure. The disabled subjects were categorized into three groups according to the degree of their exposure to gravitational stress in daily living and their past history of posture and motor ability. The members of one group (ST1) were now supported in a sitting position during present daily living and were able to sit or stand independently in the past. The subjects in the second group (ST2) were never able to sit or stand independently but were also supported in an orthostatic posture during daily living as were ST1 group members. The third group (BR) was bedridden fully from birth and had no experience, ever, or orthostatic forces during daily living. A marked decrease in photoplethysmogram of the big toe in the change from the resting supine to the sitting condition, which represented a reduction in peripheral blood flow and concomitant venous return, was observed in all the disabled groups compared with the response of normal subjects to the same procedure. A compensatory increase in heart rate was observed in the ST1 and ST2 groups but the BR group did not show this. Mean blood pressure in the normal group remained unchanged, whereas the disabled groups demonstrated a progressive decrease in mean blood pressure.

Clinical aspects of wheelchair racing. Grunze, M.F. Mulligan, M.S. Kaiser, R. Schuler, G. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 109-126. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Cooperative relations. DePauw, K. *Palaestra (Macomb, Ill.) 9(2), Winter 1993, 10.* LEVEL:B

Counseling athletes with permanent disabilities. Henschen, K.P. Shelley, G.A. *In, Pargman, D. (ed.), Psychological bases of sport injuries. Morgantown, W.V., Fitness Information Technology, c1993, p. 251-263.* LEVEL:I

Croft original. Moggridge, M. *Leisure manager (Redhill, Eng.) 10(12/1), Dec/Jan 1993, 32;34.* This issue combines volumes 10 and 11. LEVEL:B

The determination of optimum wheel configurations for wheelchair users. Bardsley, G.I. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 57-60. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Down but not out. Hunt, R. *Leisure manager (Redhill, Eng.) 11(2), Feb 1993, 22-23.* LEVEL:B

Drag forces in wheelchairs. Frank, T.G. Abel, E.W. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 255-267. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Environmental requirements for the wheelchair user. Philippen, D.P. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 303-330. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Ergonomic design of the hand-machine-interface for wheelchairs. Traut, L. Schmauder, M. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 335-348. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Ergonomics of manual wheelchair propulsion. State of the art. van der Woude, L.H.V. Meijs, P.J.M. van der Grinten, B.A. de Boer, Y.A. *Milano : Amsterdam: Edizioni Pro Juvente : IOS Press, 1993.* 365 p. : ill. *International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam)* ISBN: 88-85936-12-1 90-5199-118-5 LEVEL:I

Group techniques to facilitate staff development pursuant to IDEA. Loovis, E.M. Melogurano, V. *Adapted physical activity quarterly (Champaign, Ill.) 10(2), Apr 1993, 97-103.* LEVEL:I

Staff development is essential for physical educators who teach students with disabilities in the regular program. In the past, in-service providers were primarily concerned with assessment procedures, curriculum content, and teaching methodology. These same professionals failed to acknowledge the importance of various issues and concerns (e.g., school district policies, procedures, and practices) when planning and conducting staff development. Content covered in this paper includes (a) issues and concerns that affect what teachers learn in staff development programs, (b) use of established group process techniques (Nominal Group Technique and Interpretive Structural Modeling) to identify issues and concerns that influence teachers' abilities to comply with the Individuals with Disabilities Education Act (IDEA), and (c) differences between teachers' and administrators' perceptions concerning which issues and concerns are important.

Hemodynamic and hormonal changes during lower body negative pressure in bedridden disabled patients. Mita, K. Akataki, K. Itoh, K. Ishida, Y. Suzuki, N. Shinoda, T. *Sports medicine, training and rehabilitation (New York) 3, 1992, 147-156.* LEVEL:A

Hemodynamic responses and hormonal changes induced by lower body negative pressure (LBNP) were measured in bedridden patients with severe disabilities to identify their cardiovascular function. After a control period of 5 minutes supine, each subject underwent a LBNP test of -20mmHg for 5 minutes. Diskabled patients were classified into two groups:Group H1 consisted of the members who had a blood pressure response to LBNP exposure similar to normal control subjects, and group H2 patients displayed a greater reduction in blood pressure than the normal response. Both disabled groups demonstrated a significantly higher level of resting heart rate as well as a smaller stroke volume and cardiac output than normal subjects. Exposure to LBNP in disabled patients produced a smaller decrement in stroke volume and cardiac output than in normal subjects. The expected increase in heart rate for the compensatory effect was not observed in the H1 group, and a decreased heart rate lower than resting values was measured in the H2 group. The norepinephrine response of the disabled groups was found to be insufficient compared with normal subjects. It is suggested that cardiovascular deconditioning of disabled patients is caused not only by a decrease in total blood volume, but also by impairment of baroreflex activity both centrally and peripherally due to the patient's extremely prolonged recumbency.

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Honolulu wheelchair marathon : a comparative study between American and Japanese participants. Wang, J.H. Goebert, D.A. Hartung, G.H. Quigley, R.D. *Sports medicine, training and rehabilitation (New York) 3(2), 1992, 95-104.* LEVEL:A

Little is known about the characteristics of wheelchair marathon competitors in terms of training, dietary habits, and how these factors relate to performance. Questionnaire data and finishing times were obtained from 29 wheelchair marathon racers, including 16 individuals from the United States, 12 from Japan, and 1 from New Zealand. Analysis of variance (ANOVA) and student's t-test were used to determine the statistical significance of comparisons between American and Japanese subjects. Pearson's correlation coefficients were computed among some key variables. The mean age of the subjects was 34.2 years, with a standard error (SE) of 9.5; their body mass was 61.1 kg and triceps skinfold thickness was 9.1mm. The finishing times over 42 km ranged from 119 to 357 minutes, with an average of 190.5 minutes. The athletes' training duration consisted of a mean of 360 minutes a week in 3 months prior to the competition. The usual diet of the competitors during training included 1781 Kcal of energy. Average percentages of calories from protein, carbohydrates, fat, and alcohol were 20.3, 52.9, 26.1 and 0.8 respectively. The Japanese consumed more sodium than the Americans but the difference was not significant. The Japanese group trained more using wheelchair rollers and road rolling, but did no swimming, kayaking, or weight training. The Americans spent more time training.

Human factors in wheelchair testing. Hekstra, A.C. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 45-56. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

The influence of wheelchair characteristics on the physiological responses to wheelchair ergometry. Veicsteinas, A. Sarchi, P.F. Ronchi, R. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 127-138. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Lever propulsion systems. Seeliger, K. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 293-301. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Method for biomechanical analysis of wheelchair locomotion. Ronchi, R. Ferrarin, M. Palmieri, R. Rabuffetti, M. Spagnolin, A. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 241-253. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Muscle performance and gross motor function of children with spastic cerebral palsy. Parker, D.F. Carriere, L. Hebestreit, H. Salsberg, A. Bar-Or, O. *Developmental medicine and child neurology (London) 35(1), Jan 1993, 17-23.* LEVEL:A

Participating in deaf sport: characteristics of deaf spectators. Stewart, D.A. *Adapted physical activity quarterly (Champaign, Ill.) 10(2), Apr 1993, 146-156.* LEVEL:I

Fifty-nine deaf spectators at the 1991 Winter World Games for the Deaf were surveyed to delineate biodemographic characteristics and the socialization processes that led to their attendance at the Games. Subjects ranged from 21 to 74 years of age and were initially attracted to the Games because of their interest in watching deaf individuals compete. However, their chief source of enjoyment at the Games was the opportunity to socialize. It was also revealed that American Sign Language might not be as dominant a language in the Deaf community as previously thought and that some deaf individuals do receive social gratification through their interactions with and among nondeaf individuals.

Performance characteristics of two wheelchair sprint tests. Lees, A. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 35-44. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Physical education, sport and disabled people: special needs and considerations. Whyte, I. *Scottish journal of physical education (Stirling, Scotland) 21(1), Apr 1993, 4-12.* LEVEL:B

Physical fitness and productive activity of paraplegics. Noreau, L. Shephard, R.L. *Sports medicine, training and rehabilitation (New York) 3(3), 1992, 165-181.* LEVEL:A

Sociodemographic, psychologic, life-style, and fitness variables have been measured on 74 subjects who sustained a spinal cord injury 3 or more years previously. Stepwise multiple regression and discriminant function analyses have related this information to total productivity (occupation, leisure and education). Eight variables (education, Barthel's functional index, forced expiratory flow between 25 and 75 percent vital capacity (FEF 25-75), body mass, peak power output, lean body mass, motivation, and the frequency of medical appointments) account for 64 percent of the variance in total productivity. A discriminant function based on peak power output, FEF 25-75, lean body mass, and total body mass correctly classifies 80 percent of individuals with high and low levels of total productivity. Habitual activity shows a substantial correlation with aerobic power, but little relationship to productivity. It is suggested that the component of aerobic power describing productivity may be related to muscle mass and thus the ability to negotiate barriers to mobility. If this is substantiated by longitudinal research, rehabilitation programs for paraplegics should include exercises to strengthen the shoulder muscles.

Physical strain during activities of daily living in male spinal cord injured subjects: relation to physical performance capacity. Janssen, T.W.J. van Oers, C.A.J.M. Hollander, A.P. van der Woude, L.H.V. Rozendal, R.H. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 173-190. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Physical strain during ADL in male spinal cord injured subjects: methodological aspects. van Oers, C.A.J.M. Janssen, T.W.J. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 71-75. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:A

Program quality standards. Stromer, P. *CAHPERD Journal/times (Sacramento, Calif.) 55(6), Mar 1993, 9.* LEVEL:B

Providing psychological assistance to injured and disabled college student-athletes. Etzel, E.F. Ferrante, A.P. *In, Pargman, D. (ed.), Psychological bases of sport injuries, Morgantown, W.V., Fitness Information Technology, c1993, p. 265-283.* LEVEL:I

Reponses physiologiques maximales lors d'un effort chez des sujets quadriplegiques. Simard, C. Noreau, L. Pare, G. Pomerleau, P. *Canadian journal of applied physiology/Revue canadienne de physiologie appliquee (Champaign, Ill.) 18(2), June/juin 1993, 163-174.* LEVEL:A

Devices used for the assessment of physical working capacity in quadriplegics may be determinant in terms of efficiency during maximal exercise testing. The aim of this study was to compare the physiological responses of a group of quadriplegics during graded exercise tests on arm cranking ergometer (ACE) and wheelchair ergometer (WE). Fifty subjects, age 34.1 (plus/minus 9.5) years, participated in the study. Measurements comprised heart rate, ventilation, oxygen consumption, and power output. Unlike other studies suggesting a higher physical working capacity on ACE compared with WE, no significant differences were observed in physiological measurements between the two ergometers. However, power output on ACE was 65 percent higher than that of WE (p less than or equal to 0.001). These results suggest that power output of quadriplegics on ACE is higher due to differences in mechanical patterns required to induce movements of propelling (arm cranking vs. rolling movements). The need to link the assessment results to the type of locomotion used by the spinal cord injured persons may suggest the use of WE for testing and training in such individuals.

Le type d'appareillage utilise dans le cadre de l'evaluation de la capacite physique et de la mesure de certaines valeurs physiologiques des quadriplegiques peut etre determinant au niveau de leur rendement lors de tests a l'effort. Le but de cette etude etait de comparer les reponses physiologiques maximales d'un groupe de quadriplegiques, lors de tests d'effort progressifs effectues sur pedalier manuel (PME) et sur fauteuil roulant ergometrique (FRE). Cinquante sujets quadriplegiques ages de 34,1 plus ou moins 9,5 ans participerent volontairement a cette recherche. Les variables mesurees durant le test etaient la frequence cardiaque, la ventilation pulmonaire, la consommation d'oxygene et le regime de travail. Contrairement aux ecrits qui ont suggere une meilleure capacite physiologique sur le PME comparativement au FRE, aucune difference significative entre les deux ergometres ne fut observee au niveau des divers parametres physiologiques. Toutefois, le travail externe produit sur le PME etait superieur de 65 pourcent a celui produit sur le FRE. Ces resultats suggerent que la performance au niveau de la production de travail des quadriplegiques sur le PME est meilleure pour des raisons mecaniques lors du mouvement de pedalage comparativement a un mouvement de poussee sur le FRE. Toutefois, la necessite de relier les resultats des tests au mode de locomotion employe par les blesses medullaires peut suggerer l'utilisation du FRE pour l'evaluation et l'entrainement de ces individus.

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A research programme on wheelchair use that is relevant to the user. Rozendal, R.H. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 23-33. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Results from the mobility restoration concerted action and future perspectives. Pedotti, A. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 349-358. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

A shoulder model required? van der Helm, F.C.T. Veeger, H.E.J. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 225-240. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Shoulder pain in wheelchair athletes. The role of muscle imbalance. Burnham, R.S. May, L. Nelson, E. Steadward, R. Reid, D.C. *American journal of sports medicine (Waltham, Mass.) 21(2), Mar/Apr 1993, 238-242.* LEVEL:A

Shoulder rotator cuff impingement syndrome is a common and disabling problem for the wheelchair athlete. In this study we investigated the role of shoulder strength imbalance as a factor for the development of this syndrome. Nineteen paraplegic male athletes underwent clinical and isokinetic examination of both shoulders with peak torque values measured in abduction, adduction, and internal and external rotation. Twenty athletic, able-bodied men without shoulder problems were tested as controls. Ten (26 percent) of the paraplegic athletes had rotator cuff impingement syndrome. The results of the isokinetic testing demonstrated that 1) the paraplegics' shoulders were stronger than the controls in all directions (P less than 0.05); 2) the strength ratio of abduction:adduction was higher for paraplegic athletes (P less than 0.05);3) paraplegics' shoulders with rotator cuff impingement syndrome were weaker in adduction and external and internal rotation than the paraplegic athletes without impingement syndrome (P less than 0.05); and 4) paraplegics' shoulders with rotator cuff impingement syndrome had higher abduction:adduction and abduction:internal rotation strength ratios than the shoulders of paraplegics without impingement syndrome (P less than 0.05). We concluded that shoulder muscle imbalance, with comparative weakness of the humeral head depressors (rotators and adductors), may be a factor in the development and perpetuation of rotator cuff impingement syndrome in wheelchair athletes.

The standing long jump performances of preschool children with speech impairments and children with normal speech. Merriman, W.J. Barnett, B.E. Kofka, J.B. *Adapted physical activity quarterly (Champaign, Ill.) 10(2), Apr 1993, 157-163.* LEVEL:I

This study was undertaken to investigate quantitative and qualitative differences in the standing long jump as performed by preschool children with speech impairments and those with normal speech. The subjects were 15 children with speech impairments and 15 children with normal speech, 3 to 5 years of age. The qualitative movement components of the standing long jump were measured with the Developmental Sequence of the Standing Long Jump (Van Sant, 1983). Subjects were videotaped while performing the standing long jump, and each jump was rated according to the Developmental Sequence. The quantitative variable of distance jumped was also measured. The analysis of data revealed no significant differences between the mean distance scores of the speech-impaired and normal-speech groups. However, data analysis did reveal a significant difference between the mean movement component rating scores of the two groups.

Sweat rate and rectal and skin temperatures in tetraplegic men during exercise. Gass, E.M. Gass, G.C. Gwinn, T.H. *Sports medicine, training and rehabilitation (New York) 3(4), 1992, 243-249.* LEVEL:A

Three endurance-trained tetraplegic men with spinal cord lesions complete (C) at C5/6, and incomplete (I/C) at C5/6 and C6/7 pushed their sport wheelchairs on a motor-driven treadmill at a pace simulating a competitive 5 km race. Rate of oxygen consumption, ventilation per minute, carbon dioxide output, and heart rate were measured at selected times. Rectal (Trec) and skin temperatures (Tsk), measured at head, back, chest, abdomen, thigh, and calf, were monitored throughout. Forehead sweat rate (SR) was calculated at the beginning of exercise and at 5-minute intervals. The environment was controlled at 23 degrees C dry bulb, 17 degrees C wet bulb. The heart rate response throughout the exercise indicated little evidence of cardiovascular drift. The highest Trec recorded was 37.08 degrees C and this occurred 2 minutes postexercise in the C6/7 (I/C) subject. The lowest Trec (36.50 degrees C) was also recorded in C6/7 (I/C) subject prior to exercise. The calf Tsk showed little change during the exercise for the C5/6 tetraplegic men. No sweating was observed for the C5/6 (C) and (I/C) subjects. SR of 1.1 mg min -1 cm -2 was observed at the 25th minute for the C6/7 (I/C) subject. These results suggest that hyperthermia is not a major concern when tetraplegics exercise at a competitive intensity for up to 30 minutes under neutral environmental conditions.

Technical requirements of wheelchair exercise testing in rehabilitation field research. Meijs, P.J.M. Michels, K.J. van der Woude, L.H.V. Veenbaas, R. Rozendal, R.H. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 61-70. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Technology only a part of the story as world records falls. Paciorek, M.J. *Palaestra (Macomb, Ill.) 9(2), Winter 1993, 14-17.* LEVEL:B

Terminology usage: a case for clarity. Porretta, D.L. Nesbitt, J. Labanowich, S. *Adapted physical activity quarterly (Champaign, Ill.) 10(2), Apr 1993, 87-96.* LEVEL:I

This article addresses the issue of terminology by discussing the terms adapted physical education, adapted physical recreation, adapted sport, and adapted physical activity. Reasons are presented which suggest that these terms, taken collectively, may best describe movement of a gross motor nature that pertains to individuals with disabilities. A terminology framework is then proposed that is based on both conceptual and practical programmatic considerations within the context of service delivery. This context utilizes all four of the above terms, which are presented within the notion of inclusion. The terms adapted physical education, adapted physical recreation, and adapted sport are conceptualized within the context of adapted physical activity. Within this service delivery context, adapted physical education refers to all curriculum-based instructional settings in educationally oriented environments, adapted physical recreation refers to activity in nonschool contexts, and adapted sport refers to high-level competition by elite performers under the governance of formal sport organizations.

Training students with mental retardation to self-pace while exercising. Ellis, D.N. Cress, P.J. Spellman, C.R. *Adapted physical activity quarterly (Champaign, Ill.) 10(2), Apr 1993, 104-124.* LEVEL:A

This report describes an effort to train adolescents and young adults with mental retardation to modify their rates of pedaling exercycles during 10-min self-paced exercise sessions in a public school setting using commercially available heart rate (HR) monitors. A signal sounded when participants' heart rates fell outside their predetermined cardiorespiratory conditioning ranges. During Study 1 most participants consistently avoided the alarm by pedaling at rates that maintained their HRs above their criterion levels. Study 2 included a more intensive warm-up period on the treadmill. All subjects but one consistently responded to the signal, maintaining HRs within the criterion range. Two of the participants in Study 2 were exposed to a positive reinforcement condition, with music contingent on maintaining HRs above a preset lower limit. Two subjects participated in maintenance phases and continued to exhibit relatively high HRs during exercise in the absence of signals from the HR monitor.

Upper body exercise: application for wheelchair propulsion and spinal cord injured populations. Sawka, M.N. Latzka, W.A. Pandolf, K.B. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 151-162. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

A wheelchair with two speed ratios. Ziegler, J.W. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 331-333. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:B

The wheelchair-user interface: the core of ergonomics? van der Woude, L.H.V. *In, International workshop on the ergonomics of manual wheelchair propulsion, Amsterdam, Commission of the European Communities, 1993, p. 271-292. International workshop on the ergonomics of manual wheelchair propulsion (1991 : Amsterdam).* LEVEL:I

Paralympics for the Mentally Handicapped. DePauw, K.P. Rich, S. *Palaestra (Macomb, Ill.) 9(2), Wnter 1993, 59-64.* LEVEL:B

Choices, choices, choices... Wheelchair comparison. *Sports 'n spokes (Phoenix, Ariz.) 18(6), Mar/Apr 1993, 33-40.* 11th Annual survey of the lightweights. LEVEL:B

Creating inclusive communities. Creation de collectivites ouvertes a l'integration. *Access/acces (Gloucester, Ont.) 3(1), Wnter/hiver 1993, 6-7;6-7.* First in a series of articles on the topic of creating inclusive communities. LEVEL:B

Disability doesn't equal disadvantaged. Walkley, J. *Australian runner (Melbourne, Aust.) 12(6), Mar/Apr 1993, 38-39.* LEVEL:B

HDL-cholesterol: exercise formula. Results of long-term (6-year) strenuous swimming exercise in a middle-aged male with paraplegia. Sorg, R.J. *JOSPT: Journal of orthopaedic and sports physical therapy (Baltimore, Md.) 17(4), Apr 1993, 195-199.* LEVEL:A

Paraplegic individuals are at increased risk for developing heart disease of low HDL-cholesterol levels. Exercise has been identified as an important factor in raising the HDL-cholesterol level. This case study documents the effects of long-term (6-year) strenuous exercise (2940 kcal/wk) on lipid markers in a 41-year-old white male with paraplegia. An additional 21 mg of HDL-cholesterol (84 percent increase) were observed in a paraplegic individual who swam 2100 kcal/week for 6 years. Throughout this study, serial blood samples were analyzed for total cholesterol, HDL-cholesterol, LDL-cholesterol, and triglycerides. An initial low HDL-cholesterol of 25 mg/dl was measured in the subject. This case study continued for 72 months to determine the long-term effects on various blood lipid fractions of swimming an additional 2.5 hours/week. HDL-cholesterol slowly increased over the duration of the study. After 12 months of swimming, the HDL fraction had increased from 25 mg/dl to 31 mg/dl. After 24 months and at the end of 72 months of swimming, the HDL fraction had risen to 43 mg/dl and 46 mg/dl, respectively. The estimated long-term energy cost for each additional 1 mg/dl of HDL-cholesterol above the pre-exercise HDL value was 100 kcal/week in this subject. Long-term strenuous swimming exercise has been successfully incorporated into the lifestyle of a paraplegic individual. Significant reduction in known coronary risk factors followed a marked increase in the HDL-cholesterol level.

Injury treatment in wheelchair athletics. Millikan, T. Morse, M. Hart, A. Hedrick, B. *Sports 'n spokes (Phoenix, Ariz.) 18(6), Mar/Apr 1993, 85-88.* LEVEL:B

Overtaining in wheelchair sports. Figoni, S.F. Morse, M. Hendrick, B. *Sports 'n spokes (Phoenix, Ariz.) 18(5), Jan/Feb 1993, 43-48.* LEVEL:I

Principles and methods of adapted physical education and recreation. 7th ed. Auxter, D. Pyfer J. Huettig, C. *St. Louis: Mosby-Year Book, c1993.* xi, 539 p. : ill. Includes bibliographical references and index. ISBN: 0-8016-6749-6 LC CARD: 92-030699 LEVEL:I

The resting metabolic rate of adults with mental retardation with & without Downs Syndrome : a pilot study of feasibility. Pitetti, K.H. *Pelops (Melbourne, Aust.) 8, Jan 1993, 9-12.* LEVEL:A

The purpose of this study was to determine the feasibility of measuring resting metabolic rates (RMR) of adults with intellectual disability (ID) using valid procedures established for the general population. If feasible, then the secondary purpose of this study was to collect data on the metabolic rates of adults with ID, with Downs Syndrome (DS) and without Downs Syndrome (NDS), to determine if differences exist. Twenty-one young adults with IQs that would be considered mild to moderate ID participated in this study. Following an overnight fast, subjects reported to the laboratory at 9.30a.m. and rested in a supine position for 30 minutes. Following this, expired air was collected and analysed for fifteen minutes by a metabolic cart. The results indicated: (1) 20 of the 21 subjects complied with staff instructions and successfully completed the testing procedure; and (2) RMR (i.e. resting energy expenditure in kilocalories per 24 hours) did not differ between the two groups. This study does establish the feasibility of such testing with adults who are mildly intellectually disabled. However, because of the limited number of subjects, a definitive conclusion cannot be made concerning the differences/similarities of metabolic rates for the two sub-groups of adults with ID.

An analysis of classification for top 10 finishers in prominent wheelchair road races. Cooper, R.A. Bedi, J.F. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 36-41.* LEVEL:I

Accessible ropes/challenge courses in rehabilitation: roads to the community. Roland, C.C. *Palaestra (Macomb, Ill.) 9(1), Fall 1992, 16-21.* LEVEL:B

Adapted physical activity research: issues and recommendations. Lavay, B. Lasko-McCarthey, P. *Adapted physical activity quarterly (Champaign, Ill.) 9(3), July 1992, 189-196.* LEVEL:B

To successfully conduct quality research, professionals in adapted physical activity (APA) must address a number of unique and challenging issues. These issues include difficulty in acquiring large and homogenous samples; developing valid, reliable, and commercially available test instruments and protocols specific to persons with disabilities; properly training doctoral students to conduct quality research; and maintaining a specific research focus. With regard to these issues, this paper provides the following recommendations: utilize alternative research designs; acquire adequate graduate research training; develop a research focus as an adapted physical activity researcher; and promote an interdisciplinary, collaborative research effort among professionals. Most important, through continued scholarly research adapted physical activity professionals will be able to expand the scientific body of knowledge.

Adapted physical education assessment practices in Wisconsin. Holland, B. *Physical educator (Indianapolis, Ind.) 49(3), Fall 1992, 160-168.* LEVEL:A

Adapted physical equipment for people with upper extremity amputations. Radocy, B. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 52.* LEVEL:B

Cardiovascular fitness programming for adults with mental retardation: translating research into practice. Rimmer, J.H. *Adapted physical activity quarterly (Champaign, Ill.) 9(3), July 1992, 237-248.* LEVEL:I

During the last 15 years a growing number of persons with mental retardation (MR) have been relocated from large congregate facilities to residences in the community. With this trend comes the realization that exercise specialists employed in community based fitness centers will have to address the needs of a growing number of adults with MR who are beginning to access these facilities. Since adults with MR present themselves as a unique group in terms of their cognitive and physical function, this paper will address specific exercise guidelines that must be considered when developing cardiovascular fitness programs for this population.

Coping by individuals with physical disabilities with perceived challenge in physical activity: are people consistent? Bouffard, M. Crocker, P.R.E. *Research quarterly for exercise and sport (Reston, Va.) 63(4), Dec 1992, 410-417.* LEVEL:A

This study examined coping and affective experience to perceived challenge in physical activity settings in 30 individuals with physical disabilities in three separate situations over 6 months. On every occasion, each individual was asked to report the most challenging physical activity of the preceding week and indicate how he or she coped with the challenge and what affective states were experienced. Coping was measured using a modification of Carver, Scheier, and Ewintraub's (1989) COPE Inventory. Self-reported mood was assessed using the Positive Affect Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). The data indicated that perceived challenge was characterized by high levels of positive affect. Generalizability theory, used to determine the relative stability of coping strategies, indicated that individuals with physical disabilities did not consistently use the same coping skill strategies across settings.

COSD Forum: athletes with disabilities and leadership roles. DePauw, K. *Palaestra (Macomb, Ill.) 9(1), Fall 1992, 9.* LEVEL:B

Creating opportunities for persons with profound disabilities: Speical Olympic Motor Activities Training Program. Block, M.E. *Palaestra (Macomb, Ill.) 9(1), Fall 1992, 43-49.* LEVEL:B

EPS et sport adapte dans le projet d'education et d'enseignement specialise. (Physical education and adapted sport.) Brier, P. *E.P.S. Education physique et sport (Paris) 237, sept/oct 1992, 76-77.* LEVEL:B

Exercise and the disabled. Corbett, T. *Network (Sydney, Aust.) Dec/Jan 1992/1993, 17-18.* LEVEL:B

Exercise capacity of untrained spinal cord injured individuals and the relationship of peak oxygen uptake to level of injury. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 11.* Research application. LEVEL:A

Least restrictive environment programming for individuals with hearing impairments: a response to Butterfield. Decker, J. *Adapted physical activity quarterly (Champaign, Ill.) 10(1), Jan 1993, 1-7.* LEVEL:I

This paper is in response to the article recently published in Adapted Physical Activity Quarterly entitled "Physical Education and Sport for the Deaf: Rethinking the Least Restrictive Environment" (Butterfield, 1991). Dr. Butterfield maintained that regular class placement of deaf students is inappropriate whereas such placements lack (a) cultural foundations unique to deaf individuals and essential for their optimal development and (b) appropriate supportive services vital for the education of such students. In response, the present paper (a) delineates terminology frequently applied to individuals with hearing impairments and (b) maintains that failures of least restrictive environment placement are failures of implementation rather than of conception. Specifically, it is hypothesized that lack of established supportive services for students with hearing impairments may be traced, in part, to rejection of the least restrictive environment concept by such students and their parents/guardians. This paper contends that individuals with hearing impairments have much more to gain than to lose form increasing ties to the hearing world, particularly in educational settings.

Least restrictive environment: a response to Decker. Butterfield, S.A. *Adapted physical activity quarterly (Champaign, Ill.) 10(1), Jan 1993, 8-9.* LEVEL:B

Decker contends that deaf children should be educated in regular public school classrooms. In response, it is argued that due to their unique social/emotional/cultural needs, some deaf children benefit from residential school placement - particularly in physical education. Use of the term deaf is also discussed.

Motor sequencing of boys with learning disabilities: modeling and verbal rehearsal strategies. Kowalski, E.M. Sherrill, C. *Adapted physical activity quarterly (Champaign, Ill.) 9(3), July 1992, 261-272.* LEVEL:a

This study examined the effects of model type and verbal rehearsal strategy in relation to motor sequencing of boys with learning disabilities (LD). Eighty boys, ages 7 and 8 years, were exposed to four experimental conditions in a 2 X 2 (Model X Verbal Rehearsal Strategy) design. Subjects were randomly assigned to one of four groups: (a) visual-silent model/verbal rehearsal, (b) visual-verbal model/verbal rehearsal, (c) visual-silent model/no verbal rehearsal, and (d) visual-verbal model/no verbal rehearsal. The four groups were statistically equal on measures of age, IQ, behavior, learner modality preference, and motor proficiency. Data collected for experimental analysis were generated by the Motor Sequencing Test which measured the ability to model seven locomotor tasks in the correct order. Results revealed that the boys with LD performed significantly better on the motor sequencing test when trained in verbal rehearsal strategy. However, results indicated no significant difference in motor sequencing under visual-silent and visual-verbal model conditions.

Pulmonary function of elite wheelchair athletes. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 10.* Research application. LEVEL:A

Racing wheelchairs. A comparison of three- and four-wheeled designs. Higgs, C. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 28-31;34-35.* LEVEL:A

A review of standards of gradient: new directions. Lyons, G.G. *Palaestra (Macomb, Ill.) 9(1), Fall 1992, 22-24;26-27.* LEVEL:B

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Standards = Certification = recognition and parity. APE National Certification. Huber, J.H. *Palaestra (Macomb, Ill.) 9(1), Fall 1992, 64.* LEVEL:B

Le succes des 9es Jeux paralympiques. *Revue olympique (Lausanne) 301, nov 1992, 596-599.* LEVEL:B

Teaching adolescents with mild mental retardation to make decisions in leisure through the use of self-control techniques. Mahon, M.J. Bullock, C.C. *Therapeutic recreation journal (Arlington, Va.) 26(1), First Quarter 1992, 9-26.* LEVEL:A

Few programs focused on teaching individuals with mental retardation decision-making skills exist in the literature and the ones that exist appear to rely upon encouragement and reinforcement rather than self-control techniques to facilitate the development of thoughtful, planned and systematic decision-making in leisure. This study, based theoretically on the principles of cognitive behaviorism, was to determine the impact of decision making instruction which incorporates self-control techniques as compared to instruction which provided only encouragement and verbal praise, on decision-making in leisure of four adolescents who were mildly mentally retarded. In addition, the study sought to determine the impact of an initial leisure awareness program on the level of leisure awareness of the four students. All four of the students displayed an increase in self-instruction by the end of the study. All of the students from the follow-up portion of the study displayed either maintenance or improvement in their self-instruction skills. This study has provided initial support for the efficacy of the use of the Decision Making in Leisure model (Mahon, 1990) in facilitating thoughful decision-making in leisure for adolescents with mental retardation.

Television and verbal encouragement as exercise reinforcers for persons with severe mental handicaps. Todd, T. Reid, G. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 42-47.* LEVEL:I

Touring with disabled athletes. Meintjes, N. *A.P.A. Sports Physiotherapy Group. Newsletter (Perth, Aust.) 4, Dec 1992, 3-4.* LEVEL:B

Training practices of athletes who participated in the National Wheelchair Athletic Association training camps. Watanabe, K.T. Cooper, R.A. Vosse, A.J. Baldini, F.D. Robertson, R.N. *Adapted physical activity quarterly (Champaign, Ill.) 9(3), July 1992, 249-260.* LEVEL:B

A survey designed to record training practices of athletes with disabilities was administered to participants in the 1990 and 1991 National Wheelchair Athletic Association Elite and Developmental Athlete Training Camp. Information on age, weight, nature and level of disability, the sport and experience in it, sources of training information, dietary practices, and alcohol and cigarette consumption was requested. The athletes were also asked to report their weekly training practices by quarters for the previous year concerning average number of workouts per week, number of hours per workout, number of miles per week, percent of time spent on speed work and/or interval training per week, number of weight training sessions per week, and the number of competitions entered per quarter. Results indicate that most of the athletes derived much of their training information form personal contact with coaches, other athletes, and sport scientists. Many do not set goals in developing training routines, training diets, or competition schedules.

Transition of students with disabilities into community recreation: the role of the adapted physical educator. Krebs, P.L. Block, M.E. *Adapted physical activity quarterly (Champaign, Ill.) 9(4), Oct 1992, 305-315.* LEVEL:I

The mission of education is to prepare all students with and without disabilities for adult life in the community. Recent amendments to Public Law 94-142 now require transition services, which promote movement from school to postschool activities, for all students with disabilities to begin as early as age 14 and to be included in the student's IEP. Most special education programs provide vocational, domestic, and community independent living skills training. However, the same cannot be said for lifelong sport and fitness training. A life-skills model for teaching sport and fitness skills that are chronologically age appropriate, functional, and community based is preferred to the traditional developmental approach for teaching adapted physical education. The life-skills model for teaching adapted physical education changes the setting - from school sport facilities to community sport and recreation facilities - in which adapted physical education classes are conducted. It also expands the role of the adapted physical educator from direct service provider to include transition team member, consultant to regular physical education and community sport and receration agencies, trainer of support personnel, and environmental analyst.

Upper body exercise capacity in youth with spina bifida. Coutts, K. McKenzie, D. Loock, C. Beauchamp, R. Armstrong, R. *Adapted physical activity quarterly (Champaign, Ill.) 10(1), Jan 1993, 22-28.* LEVEL:A

The purpose of this study was to describe the upper body exercise capabilities of youth with spina bifida, which would permit comparison of their abilities to norms. Forty-two children with spina bifida age 7 to 18 years were tested for maximal handgrip strength, anaerobic arm-crank power output, and peak arm-crank oxygen uptake. Analysis of variance was used to compare age, gender, and level of disability differences within the total sample. This analysis indicated no significant effect of level of disability on any of the upper body exercise capacity measures. Significant gender and age effects were noted for grip strength and anaerobic and aerobic capabilities. The sample exhibited handgrip strength comparable to that of nondisabled youth but low anaerobic power and peak oxygen uptake values. Some individual subjecs, however, had "normal" values for all tests suggesting that a lower level of participation in regular physical activity rather than spina bifida per se may be responsible for the generally lower physical capacity found in the total sample.

Use of reinforcement to increase independence in physical fitness performance of profoundly mentally retarded youth. Rogers-Wallgren, J.L. French, R. Ben-Ezra, V. *Perceptual and motor skills (Missoula, Mont.) 75(3 Part 1), Dec 1992, 975-982.* LEVEL:A

The purpose of this study was to examine the influence of verbal praise and verbal praise plus music or vibratory reinforcement on the level of independent performance on abdominal strength and endurance, lower back and hip flexibility, and upper body strength/endurance exercises of 12 profoundly mentally retarded, ambulatory youth, ages 10 to 18 years. A single-subject AB design with a control group was used to assess the difference in performance of physical fitness under the baseline condition of no reinforcement and under the two experimental conditions of verbal praise and verbal praise plus music or vibratory reinforcement. In contrast to previous results reported in the literature, verbal praise and verbal praise plus minus or vibratory reinforcement were not effective in increasing the level of independence in performing selected physical fitness tasks.

Using timers and lap counters to promote self-management and independent exercise in adolescents with mental retardation. Ellis, D.N. Cress, P.J. Spellman, C.R. *Education and training in mental retardation (Reston, Va.) 27, 1992, 51-59.* LEVEL:I

What is appropriate physical education for students with profound disabilities? Block, M.E. *Adapted physical activity quarterly (Champaign, Ill.) 9(3), July 1992, 197-213.* LEVEL:I

What is appropriate physical education for students with profound disabilities? Some suggest a developmental model in which students learn prerequisite skills before they are exposed to higher level skills. Others suggest the use of specially designed games that often bear little resemblance to traditional physical education activities. Still others call for a therapeutic model in which physical education focuses on physical and occupational therapy techniques. While these models provide viable programming options for students with profound disabilities, alone they do not constitute an appropriate physical education program as defined in PL 94-142 (reauthorized as PL 101-476). In addition, current philosophies in special education for students with severe and profound disabilities call for programs that are chronological age appropriate, functional, data based, and taught in natural, community based settings. This paper provides an alternative view of what is appropriate physical education for students with profound disabilities by integrating the best aspects of the models described above with the current life-skills curricula model employed in special education.

Wheelchair racing: a second look. An observational system for evaluating wheelchair performance. Pope, C. Wilkerson, J. Ridgway, M. *Palaestra (Macomb, Ill.) 8(4), Summer 1992, 21-27.* LEVEL:A

Adapting equipment for special needs. Tarr, S. *Strategies (Reston, Va.) 6(3), Nov/Dec 1992, 24-27.* LEVEL:B

Aerobic power of competitive paraplegic road racers. Hooker, S.P. Wells, C.L. *Paraplegia (Edinburgh, Scotland) 30(6), 1992, 428-436.* LEVEL:A

Movie mania. Seen any good movies lately? Davis, B. *Sports 'n spokes (Phoenix, Ariz.) 18(4), Nov/Dec 1992, 43-49.* LEVEL:B

Sport without limits: Barcelona '92. Alger, S.L. *Sports 'n spokes (Phoenix, Ariz.) 18(4), Nov/Dec 1992, 12-33.* LEVEL:B

Americans with disabilities: where are we today? Priest, L. Miller, B.B. *National aquatics journal (Indianapolis, Ind.) 8(3), Summer 1992, 6-9.* LEVEL:B

An analysis of least restrictive environment placement variables in physical education. Jansma, P. Decker, J.T. *Research quarterly for exercise and sport (Reston, Va.) 63(2), June 1992, 171-178.* LEVEL:A

The purpose of this study was to determine the variables related to the successful least restrictive placement of students with disabilities into physical education classes. Subjects were 470 school building representatives and 62 adapted physical education professors throughout the nation. Confidence interval estimates (95 percent) of school building data correlated highest on relative importance with university census data on 8 of 37 total variables: motor ability test scores, developmental scale scores, reaching individualized education program instructional objectives, special education teacher recommendation, regular physical educator recommendation, activity offerings, classroom physical accessibility, and safety considerations. These represent those variables that should be used in some "best practices" combination by school personnel in making decisions regarding relevant students' class placement within physical education least restrictive environment alternatives. In addition, staff recommendation category variables were considered more important than test score, student related, class related, and administrative category variables.

Changing attitudes toward physically disabled persons using a videotape sport intervention. Bett, A. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (107 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.S.) - State University of New York College at Brockport, 1991; includes bibliography (l. 69-82). LEVEL:A

13 **A clinical case study of functional aerobic exercise.** DePaepe, J. Krauss, J. Opplinger, J. *Clinical kinesiology (Toledo, Ohio) 46(3), Fall 1992, 21-24.* LEVEL:I

This case study describes the use of an independent ambulation device, the Three Wheeler, by a subject with a traumatic closed head injury for the purpose of affecting functional aerobic fitness. Moderate exercise intensity of progressively increasing duration three times per week for eight weeks was used as a treatment variable for a 29-year-old male with left hemiplegia. Measurements collected included pre-exercise resting heart rate, exercise heart rate, distance traveled, and total exercise time. The results indicate physiological improvements and are reported by graphic illustration. The subject consistently demonstrated moderate intensity levels of 27 percent to 33 percent of his heart rate reserve. At the same time, the subject was able to increase his distance by 37 percent and duration of exercise by 65 percent. The Three Wheeler enabled this subject to increase mobility and energy expenditure, thereby improving his functional aerobic performance.

Competencies for adapted physical educators in Thailand. Suphawibul, M. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (183 fr.) : negative; 11 x 15 cm. Thesis (Ph.D.) - Oregon State University, 1992; includes bibliography (l. 104-111). LEVEL:A

Concentric and eccentric isokinetic lower extremity strength in persons with multiple sclerosis. Ponichtera, J.A. Rodgers, M.M. Glaser, R.M. Mathews, T.A. Camaione, D.N. *JOSPT: The journal of orthopaedic and sports physical therapy (Baltimore, Md.) 16(3), Sept 1992, 114-122.* LEVEL:A

Clinicians might be reluctant to institute exercise training programs for individuals with multiple sclerosis (MS) because so little information is available regarding their muscle performance capability. The purpose of this project was to compare the quadriceps and hamstrings muscle groups' torque capacity of individuals with MS (N=9) to matched non-MS controls (N=9). Muscle torques at several speeds were measured using a KIN-COM II isokinetic dynamometer during both concentric (30, 60, and 90 degrees/sec) and eccentric (45, 60, and 75 degrees/sec) contractions. Peak torque for both muscle groups at all velocities were higher for the non-MS group; however, this difference was only significant for the concentric quadriceps muscle contraction. All subjects demonstrated higher torque eccentrically than concentrically for the quadriceps, but these differences were only significant for the experimental subjects. The MS group showed a greater decrease in torque with increasing speed than the non-MS group. Deficits between the MS and control groups related to changes in contraction velocity were greater during concentric than eccentric contractions. These findings suggest that strengthening programs that emphasize concentric exercise at the higher of the three speeds of movement included in this study may be most effective in treating this particular type of strength deficit in MS patients.

The Disabled Women's Network Canada: speaking with our own voice. Doucette, J. *Journal of leisurability (Concord, Ont.) 19(2), Spring 1992, 25-28.* LEVEL:B

Divisioning for safe, challenging competition. Krebs, P. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 46-48.* LEVEL:B

Effects of an individualized treadmill exercise training program on cardiovascular fitness of adults with mental retardation. Anchuthengil, J.D. Nielsen, D.H. Schulenburg, J. Hurst, R. Davis, M.J. *JOSPT: The journal of orthopaedic and sports physical therapy (Baltimore, Md.) 16(5), Nov 1992, 220-228.* LEVEL:A

Although our society has recognized the need of the "normal" population for physical exercise and wellness, little attention has been given to the physical fitness needs of persons with mental retardation. Physical therapy intervention for these individuals is generally restricted to medical problems, usually of orthopaedic or neuromuscular origin, with little emphasis on cardiovascular function. The purpose of this study was to evaluate the effects of an individualized treadmill exercise training (TET) program on the cardiovascular fitness (CVF) of six adults with mental retardation in an institutional setting. A multiple group by time cross-over design was used. The subjects were randomly assigned to either an experimental group (N=3) or control group (N=3) after an 8-week orientation period. After completion of baseline measurements, the experimental group underwent 12 weeks (Period 1) of progressive TET exercise five times weekly, while the control group received no structured exercise training during this period. Treadmill graded exercise testing was performed every 4 weeks on both groups. After completion of Period 1, the control group was put on a TET program similar to the one performed by the experimental group, and the experimental group underwent a maintenance TET program, with exercise two times weekly. Results indicated reduced heart rate (HR) for standardized submaximal treadmill workloads and significantly increased estimated peak oxygen uptake (VO2) (38 percent) and heart rate (10 percent) subsequent to 12 weeks of TET. Low frequency TET was effective in maintaining CVF. Treadmill exercise training was found to be a safe exercise modality, and compliance to TET was good among all subjects. In conclusion, TET appears to be an effective modality in improving and maintaining CVF of adults with mental retardation in an institutional setting. Additional research with more subjects is recommended to confirm these results.

Effects of instructional approaches on motor performance of boys with developmental disabilities. Tarr, S.J. Bishop, P. *Clinical kinesiology (Houston, Tex.) 45(4), 1992, 18-22.* LEVEL:A

Getting into the game. New opportunities for athletes with disabilities. Hamel, R. *Physician and sportsmedicine (New York) 20(11), Nov 1992, 121-122;124;126-129.* LEVEL:B

Isokinetic arm and leg strength of adults with Down syndrome: a comparative study. Pitetti, K.H. Climstein, M. Mays, M.J. Barrett, P.J. *Archives of physical medicine and rehabilitation (Philadelphia, Pa.) 73(9), Sept 1992, 847-850.* LEVEL:A

This study compared isokinetic arm (elbow flexion and extension) and leg (knee flexion and extension) strength of individuals with Down syndrome (DS), with mental retardation without DS (NDS), and sedentary young adults with no mental retardation (NMR). Eighteen individuals with DS, NDS, and NMR (11 men and seven women in each group) performed strength tests on a Cybex 340 isokinetic dynamometer. Parameters measured were peak torque (ft/lb), peak torque percent body weight (percent BW), average power (watts), and average power percent BW. Subjects with mental retardation (ie, DS and NDS groups) performed the test on two separate days with best test results chosen for statistical comparisons. The NMR group performed the test once. In all isokinetic strength parameters measured for arm strength, the NMR group demonstrated significantly higher scores than subjects with DS and NDS. Subjects with DS and NDS displayed similar test results. Similarly, for all the isokinetic strength parameters measured for leg strength, NMR demonstrated significantly higher scores than subjects with DS and NDS. Subjects with NDS, however, averaged significantly higher test results than subjects with DS for leg strength. The results of this study indicate that both subject populations who were mentally retarded exhibited lower arm and leg strength than the NMR subjects. Additionally, subjects with DS demonstrated inferior leg strength when compared to their peers with NDS.

Isokinetic exercise system modification for short below-the-knee residual limbs. Marin, R. Spellman, N. Kenyon, M. Belandres, P.V. *Archives of physical medicine and rehabilitation (Philadelphia, Pa.) 73(9), Sept 1992, 883-885.* LEVEL:A

The use of isokinetic exercise has been shown to be an effective way of strengthening debilitated muscles. In the below the knee amputee, significant quadriceps and hamstring muscle wasting has been documented. Although isokinetic strengthening of the debilitated knee extensors and flexors in the below the knee amputee would be beneficial, there are no fully described isokinetic equipment modifications in literature that would allow a short below the knee amputee to effectively use isokinetic equipment. This article describes such a modification.

Michael Milton: our first Winter Olympic medallist. Gearside, L. *Aussie sport action (Canberra, Aust.) 3(4), Spring 1992, 28-29.* LEVEL:B

The national curriculum and children with special educational needs. Groves, L. *Primary PE focus (London) Spring 1992, 3.* LEVEL:B

Performance and learning of a dynamic balance task by visually impaired children. Johnson-Kramer, C. Sherwood, D. French, R. Canabal, M.Y. *Clinical kinesiology (Houston, Tex.) 45(4), 1992, 3-5.* LEVEL:I

Physical and psychological aspects of sport and exercise for physically disabled individuals. Part 1. Asken, M.J. *American fitness quarterly (Dublin, Ohio) 11(2), July 1992, 46-47.* Part one of a two-part series. LEVEL:B

Preparing for the future: Special Olympics research at the 1991 ISSOG. Paciorek, M.J. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 35-37.* LEVEL:B

A propos de la these de Anne Marcellini. Sport, stigmate et integration sociale des personnes handicapees. Contribution a l'analyse des strategies de destigmatisation. (An A. Marcellini thesis: sport, stigma and social integration of handicapped persons.) Bui-Xuan, G. *E.P.S. Education physique et sport (Paris) 235, mai/juin 1992, 70.* LEVEL:B

Reliability and validity of three fitness tests for adults with mental handicaps. Montgomery, D.L. Reid, G. Koziris, L.P. *Canadian journal of sport sciences/Revue canadienne des sciences du sport (Champaign, Ill.) 17(4), Dec/dec 1992, 309-315.* This research project was supported by the Canadian Fitness and Lifestyle Research Institute. LEVEL:A

To examine the reliability and validity of cardiovascular fitness tests, 10 untrained controls and 18 adults with mental handicaps (experimental group) completed five trials on each of four exercise protocols. VO2 max results (M plus/minus SD) averaged across trials were as follows: Maximal treadmill test, 27.2 plus/minus 6.2 for the experimental group (E) and 45.5 plus/minus 8.1 for the control group (C); Maximal shuttle run test, 19.7 plus/minus 3.4 (E) and 42.1 plus/minus 6.2 (C); Submzx step test, 33.0 plus/minus 7.6 (E) and 44.5 plus/minus 7.6 (C); and Submzx cycle ergometer test, 36.4 plus/minus 13.1 (E) and 42.0 plus/minus 7.1 (C). The four modes had similar VO2max values across trials with intraclass correlations ranging from r = .90 to .97. To examine validity, the predictive tests were compared with the treadmill VO2 max test. Both the step and shuttle run tests correlated significantly with the treadmill test. The duration of the shuttle run test was unrelated to the exercise intensity. The stepping test is recommended over both the maximum shuttle run test and the submaximum cycling test when measuring the aerobic fitness of adults with mental handicaps.

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A review of joint pathologies in individuals with Down Syndrome: implications for the practitioner. Harris, D.E.E. *Clinical kinesiology (Houston, Tex.) 45(4), 1992, 10-13.* LEVEL:A

The right chair for the right job. Hooper, E. *Sports 'n spokes (Phoenix, Ariz.) 18(2), July/Aug 1992, 47-48.* LEVEL:B

Social aspects of sport participation of Swedish athletes with disabilities: a pilot study. Johansson, J.-O. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (119 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.S.) - Washington State University, 1991; includes bibliography (l. 69-81). LEVEL:A

Special Olympics athletes with severe disabilities. Paciorek, M. Block, M. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 53-56.* LEVEL:B

Sports participation by "handicapped" athletes. Mitten, M.J. *Entertainment and sports lawyer (Chicago, Ill.) 10(1), Spring 1992, 8-15.* LEVEL:I

Strengths and weaknessses perceived by a few professionals. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 57-59.* LEVEL:B

Symposium on Sport and Persons with Disabilities: Special Olympics and beyond. Burton, A. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 14.* LEVEL:B

Testing fitness in mentally retarded individuals. (Editorial) Shephard, R.J. *Canadian journal of sport sciences/Revue canadienne des sciences du sport (Champaign, Ill.) 17(4), Dec/dec 1992, 346.* LEVEL:I

Training Special Olympics athletes: a pilot study. Emes, C. Page, S. *Perceptual and motor skills (Missoula, Mont.) 75(2), Oct 1992, 413-414.* LEVEL:I

An individualized fitness program had no significant effect on the development of selected strength and endurance measures of 5 Special Olympics athletes.

Unified sports: I've seen the future. Krebs, P. Cloutier, G. *Palaestra (Macomb, Ill.) 8(2), Winter 1992, 42-44.* LEVEL:B

Validity and reliability of a hand-held dynamometer with two populations. Surburg, P.R. Suomi, R. Poppy, W.K. *JOSPT: The journal of orthopaedic and sports physical therapy (Baltimore, Md.) 16(5), Nov 1992, 229-234.* LEVEL:A

With the trend in our society toward mainstreaming persons with mental retardation, there is a need to evaluate the efficacy of rehabilitation procedures for this population. The purpose of this study was to examine the validity and reliability of measurements determined with the Nicholas Manual Muscle Tester (MMT) and with the Cybex II isokinetic dynamometer using a sample of 20 adults without mental retardation and 10 adults with mental retardation. Utilizing stabilization techniques, knee extension and elbow flexion were measured with both dynamometers. The Nicholas MMT manifested excellent discriminatory function among subgroups. Correlational analyses between the dynamometers yielded coefficients of .74 and .77 for knee and elbow actions. Significant differences between dynamometers for the subgroups were found in three of the six analyses. Intrarater and interrater reliability coefficients were all greater than .90 for subjects with mental retardation. In conclusion, measurements of muscle strength obtained with the Nicholas MMT from subjects with and without mental retardation were reliable. The validity of this dynamometer assessed by construct and criterion processes was not conclusively established. This dynamometer, which is portable and relatively inexpensive, appears to be suitable as an assessment tool in clinical settings for persons with mental retardation.

A comparison between anthropometric regression equations and hydrostatic weighing for predicting percent body fat of adult males with Down Syndrome. Ovalle, S.E. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (111 fr.) : negative; 11 x 15 cm. Thesis (M.S.) - Oregon State University, 1992; includes bibliography (l. 82-88). LEVEL:A

The effects of integration in physical education on the motor performance and perceived competence characteristics of educable mentally retarded and nonhandicapped children. Smith, S.D. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 3 microfiches (214 fr.) : negative; 11 x 15 cm. Thesis (Ph.D.) - Michigan State University, 1989; appendix B omitted; includes bibliography (l. 164-174). LEVEL:A

Token economy within an adapted physical education program to modify uncooperative behavior of trainable mentally retarded teenagers. Ozols, M.A. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (129 fr.) : negative; 11 x 15 cm. Thesis (M.S.) - Springfield College, 1990; includes bibliography (l. 69-81). LEVEL:A

Active physical therapy and its benefits in rehabilitation. Petrofsky, J.S. Brown, S.W. Cerrel-Bazo, H. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 23-27;61-62.* LEVEL:I

Contribution a l'etude de la condition physique des populations speciales. Eberhard, Y. *Sport (Bruxelles) 137, 1992, 38-55.* LEVEL:I

A control theory approach to the study of posture: first interpretation of results. Corradini, M.L. Fioretti, S. Leo, T. *In, Woollacott, M. and Horak, F. (eds.), Posture and gait : control mechanisms, 1992, volume 2. XIth International Symposium of the Society for Postural and Gait Research, Portland, University of Oregon, c1992, p. 39-41.* LEVEL:A

Deaf athletic directors' orientations to sport. Stewart, D.A. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 33-37.* LEVEL:I

Dismissing disabilities. Wilson, N.J. *American fitness (Sherman Oaks, Calif.) 10(4), July/Aug 1992, 50-51.* LEVEL:B

The effect of electrical stimulation on quadriceps femoris muscle torque in children with spina bifida. Karmel-Ross, K. Cooperman, D.R. Van Doren, C.L. *Physical therapy (Alexandria, Va.) 72(10), Oct 1992, 723-730.* LEVEL:A

The effects of neuromuscular electrical stimulation (NMES) on the torque production of the quadriceps femoris muscles were examined in five children with spina bifida. Two male subjects, aged 5 and 12 years, and three female subjects, aged 5, 12, and 21 years, participated in the study. Surface stimulation was applied to the quadriceps femoris muscles of one lower extremity for 30 minutes each day over an 8-week period. At 0, 4, and 8 weeks, maximum isometric voluntary knee extension torques were measured for both control and stimulated lower extremities with a dynamometer at 0, 15, 30, 45, and 60 degrees of knee flexion. The three oldest subjects had torque measurements of acceptable reliability (intraclass correlation coefficient greater than .72). Two of these three subjects also had significant increases in the torque produced by the stimulated limb relative to the torque produced by the control limb. The data were unreliable from the two youngest subjects. Completion times for functional tasks (walking and step ascension/descension) were also recorded before and after the 8 weeks of stimulation. The completion times were lower following stimulation for four subjects. (PTh)

Exploring sport socialization environments of persons with orthopedic disabilities. Zoerink, D.A. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 38-44.* LEVEL:I

Identifying least restrictive environment options in physical education. Decker, J.T. Jansma, P. *Physical educator (Indianapolis, Ind.) 48(4), Early Winter 1992, 192-200.* LEVEL:B

Integration of sport for athletes with disabilities into sport programmes for able-bodied athletes. Lindstrom, H. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 28-32;58-59.* LEVEL:B

Maximising athletic performance at the 1992 Paralympics : environmental considerations and recommendations. Banks, J. *Sports coach (Canberra, Aust.) 15(3), July/Sept 1992, 18-24.* LEVEL:B

Physical activity for children with a mental handicap. Activite physique pour les enfants qui ont une deficience intellectuelle. Canadian Fitness and Lifestyle Research Institute. *Research file/Le dossier de la recherche (Gloucester, Ont.) 9, 1992, 1;1.* LEVEL:B

Psychological skills of elite wheelchair athletes. Cox, R.H. Davis, R.W. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 16-21.* LEVEL:A

Qualitative changes in the walking mode of healthy and neurologically disabled individuals. van Emmerik, R.E.A. Wagenaar, R.C. *In, Woollacott, M. and Horak, F. (eds.), Posture and gait : control mechanisms, 1992, volume 2. XIth International Symposium of the Society for Postural and Gait Research, Portland, University of Oregon, c1992, p. 168-171.* LEVEL:A

Racing wheelchair roll stability while turning: a simple model. Cooper, R.A. MacLeish, M. *Journal of rehabilitation research and development (Baltimore, Md.) 29(2), Spring 1992, 23-30.* LEVEL:A

Active Living Alliance for Canadians with a Disability: leadership resource directory. Active Living Alliance for Canadians with a Disability. *Gloucester, Ont.: Active Living Alliance for Canadians with a Disability, 1991.* 1 v. (loose-leaf) LEVEL:B

Active living for Canadians with a disability: a blue print for action. La vie active chez les canadiens et canadiennes ayant un handicap: projet de plan d'action. Active Living Alliance for Canadians with a disability. Alliance de vie active pour les canadiens canadiennes ayant un handicap. *Ottawa?: Fitness and Amateur Sport : Condition physique et Sport amateur, 1991.* 24, 24 p. : ill. French and English text on inverted pages with separate paging. Textes francais et anglais disposes tete-beche avec pagination separee. This document is available in alternate media format. Ce document est egalement offert en medias substituts. LEVEL:B

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An alternative to least restrictive environments: a continuum of support to regular physical education. Block, M.E. Krebs, P.L. *Adapted physical activity quarterly (Champaign, Ill.) 9(2), Apr 1992, 97-113.* LEVEL:I

The concept of least restrictive environments (LRE), originally conceived by Deno (1970) and Reynolds (1962) to advocate for a range of special education placements for children with disabilities, has become synonymous with a continuum of physical education placement options for students with disabilities. Many models have been presented over the years. Options range from full-time regular physical education in a regular school to full-time adapted physical education in a special school or facility with various placement options in between. The emphasis of these models is on varying the placement to meet the needs of the student with disabilities. Taylor (1988) has identified several flaws to the concept of LRE placement options. In addition, many special education professionals advocate placing all students with disabilities in regular education with varying levels of support (e.g., Stainback & Stainback, 1990). This paper discusses an alternative to the traditional continuum of LRE placement options. This new model presents a continuum of support which emphasizes how much and what type of assistance is provided to a particular student with disabilities that will enable him/her to succeed in regular physical education.

Analysis of physical fitness levels of individuals with mental retardation in Illinois between 1980-1990. Wang, P.Y. *Asian journal of physical education (Taiwan) 14(4), Oct/Dec 1991, 63-74.* Includes abstract in Chinese. LEVEL:A

Blood lipid and percent body fat levels in down syndrome versus non-DS persons with mental retardation. Rimmer, J.H. Braddock, D. Fujiura, G. *Adapted physical activity quarterly (Champaign, Ill.) 9(2), Apr 1992, 123-129.* LEVEL:A

Little data exist on the comparison of blood lipids and percent body fat between Down Syndrome and non-DS adults with mental retardation (MR). The following study was undertaken to determine if there were physiological and biochemical differences between these two groups. Subjects included 294 non-DS adults with MR (162 males and 132 females) and 31 adults with Down Syndrome (21 males and 10 females). Level of mental retardation was similar for both groups (males/females, Down vs. non-DS). A two-factor ANOVA with a regression approach was used to analyze the data. Results of the study found that there were no significant differences between the Down Syndrome and non-DS subjects on total cholesterol, HDL cholesterol, LDL cholesterol, triglycerides, or percent body fat. The present study suggests that the composition of lipoproteins and storage of body fat are similar in Down Syndrome and non-DS adults with mental retardation, and that the risk for developing coronary heart disease appears to be the same for both groups.

Roles of sportsmedicine and the spinal cord injured: a multidisciplinary relationship. Gayle, G.W. Muir, J.L. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 51-56.* LEVEL:B

Situational anxiety in Special Olympics athletes. Porretta, D.L. Moore, W. Sappenfield, C. *Palaestra (Macomb, Ill.) 8(3), Spring 1992, 46-50.* LEVEL:I

Bridge to Independence: a study of young adults with physical disabilities in Ottawa-Carleton. Pour une vie autonome. Rapport sur les services pour jeunes adultes handicapes d'Ottawa-Carleton. *Ottawa: Disabled Persons' Community Resources : Ressources communautaires pour handicapes, 1991.* viii, 126, viii, 105 p. Textes francais et anglais disposes tete-beche avec pagination separee. English and French text on inverted pages with separate paging. LEVEL:A

Coaching amputee athletes. Nunn, C.J. Goodman, S. *Canberra: Australian Sports Commission, 1992.* viii, 51 p. : ill. ISBN: 0642168903 LEVEL:B

Disabling pain and injury in road racers who use wheelchairs. Shuster, D. B. Britell, C. W. *In, Tenenbaum, G. (ed.) and Eiger, D. (ed.), Coach education: proceedings of the Maccabiah-Wingate International Congress, Netanya, Wingate Institute, The Emmanuel Gill Publishing House, 1991, p. 103-113. Maccabiah-Wingate International Congress on Sport & Coaching (1989 : Wingate)* Includes figures. LEVEL:A

Till lately no studies have been done which look specifically at musculoskeletal pain and injury in road racers using wheelchairs. The purpose of this study was to measure the frequency of occurance of disabling musculoskeletal pain and to specify the types of musculoskeletal injuries which occur in these athletes. Disabling pain was defined as pain causing the racer to be unable to participate in racing, training or daily activities. A survey was sent to 580 subjects which asked thom to specify the number of days missed due to pain in each joint of the upper extremity and to list the specific types of injuries which were diagnosed by a medical professional. 217 responded to the survey of which 184 who actually participated in a competitive road race were used in the study. The shoulder was the most frequent site of disabling pain followed in order by the wrist, elbow and hand, fingers, thumb (studied as a group). The frequency of injuries diagnosed by a physician had the same joint distribution. Correlations between the presence of disabling pain or injury and age, time of wheelchair use, total training time, and training methods were also studied.

Effects of reinforcement based exercise on fitness and work productivity in adults with mental retardation. Croce, R. Horvat, M. *Adapted physical activity quarterly (Champaign, Ill.) 9(2), Apr 1992, 148-178.* LEVEL:A

The present study evaluated the effects of a reinforcement based aerobic and resistance exercise program on three obese men with mental retardation and below average fitness levels. A multiple-baseline-across-subjects design was employed to evaluate treatment effectiveness and retention of treatment effects on five dependent measures: body weight, percent body fat (body composition), oxygen consumption (predicted max VO2 in ml/kg/min), composite isometric strength (in kg of force), and work productivity (pieces of work completed). Subjects improved during treatment from their baseline scores on cardiovascular fitness, strength, and work productivity measurements (p less than .05); however, retention of gains made during treatment were inconsistent and the data that indicated subjects' scores were regressing back toward baseline measurements. There were no significant differences for body weight and percent body fat measurements for treatment and retention phases (p greater than .05). Results indicated that adults with mental retardation respond to a progressive exercise program in much the same manner as their nonretarded peers and that such an exercise program can facilitate job performance.

The influence of therapeutic horseback riding on physiological, biomechanical, and psychomotor variables. Snir, D. Dlin, R. Ayalon, A. Yazdi, O. Inbar, O. *In, Tenenbaum, G. (ed.) and Eiger, D. (ed.), Coach education: proceedings of the Maccabiah-Wingate International Congress, Netanya, Wingate Institute, The Emmanuel Gill Publishing House, 1991, p.131-140. Maccabiah-Wingate International Congress on Sport & Coaching (1989 : Wingate)* Includes tables and figures. LEVEL:A

Horseback riding as a form of therapy has been known for ages. Reports in the literature suggest that it provides many benefits. However on the whole these reports lack a well-founded scientific basis. We herein report on a pilot project investigating the effects of a horseback riding rehabilitation program carried out on 4 disabled children. Physiological, biomechanical, and psychomotor parameters were evaluated before and at the end of one school year. The physiological parameters include cardiorespiratory treadmill testing and walking efficiency, biomechanical - dynamic balance, gait analysis and appropriate muscle strength testing, psychomotor - visual and auditory kinesthesis reaction time, motor coordination, spatial orientation, body image. A significant improvement was fixed in the body movement imitation test and the kinesthesis test. In other tests was a tendency to improvement which was not statistically significant. In treadmill testing there was improvement in walking efficiency. Biomechanical parameters did not show improvement. The test results indicate that horseback riding might have influence on many important rehabilitation parameters. A model for a larger research undertaking is proposed which will include control groups of non-riding children as well as disabled children who enter a different program of equal social status to that of horseback riding. Such research programs will help legitimize horseback riding as a therapeutic activity in rehabilitation.

Integration policy (1992) : increasing sporting opportunities for the disabled. Australian Confederation of Sports for the Disabled. *Glebe, N.S.W.: Australian Confederation of Sports for the Disabled, 1992.* iv, 15 p. LEVEL:B

Motor control modalities of manually propelled wheelchairs and their application in wheelchair sports. Hutzler, Y. *In, Tenenbaum, G. (ed.) and Eiger, D. (ed.), Coach education: proceedings of the Maccabiah-Wingate International Congress, Netanya, Wingate Institute, The Emmanuel Gill Publishing House, 1991, p.91-102. Maccabiah-Wingate International Congress on Sport & Coaching (1989 : Wingate)* Includes figures and tables. LEVEL:A

Persons using wheelchairs for mobility are achieving ever-growing functional and social independence and thus are becoming involved in complex daily vocational and sports related movement activities. Nevertheless there are no research results available yet to provide knowledge concerning the motor control of wheelchair assisted actions. A three-dimensional structure-specific resource model is described, referring to ecological and cognitive theories. The model defines processing resources available for simultaneous or alternative allocation, including: action phases, perceptual motor input and output channels, hemisphere typical control modalities. While the specifications of action phases and the perceptual motor channels may be easily characterized via observation, the control modalities are only heuristically accessible. Therefore to describe the modalities used by experienced wheelchair users and to control their motor actions a phenomenological study was conducted. The series of in-depth interviews provided text contents which were verbal reflections of the control process. Using the method of analytic induction, two main categories were generated: the first referring to gestalt-type (right hemisphere), and the second - to cognitive (left hemisphere) control modalities. Some examples of these procedures enhancing the complex motor action during selected wheelchair sports are discussed.

Perceived challenge in physical activity by individuals with physical disabilities: the relationship between appraisal and affect. Crocker, P.R.E. *Adapted physical activity quarterly (Champaign, Ill.) 9(2), Apr 1992, 130-140.* LEVEL:A

The purpose of this investigation was to determine the relationship between cognitive appraisal and self-reported affect during challenging physical activity by 55 adults (16 females, 39 males) with physical disabilities. Eleven cognitive appraisals related to perceived challenge in physical activity plus positive and negative affect experienced in a recent challenging physical activity were assessed in an interview. The data indicated that perceived challenge was characterized by higher levels of positive affect (M = 4.03, SD = .71) compared to negative affect (M = 1.54, SD = .61). Correlational analyses revealed that the appraisals of fitness and health, learning skills, demonstrating competence, effort, social approval, task value, and external control were all significantly related to positive affect. A regression analysis for positive affect revealed that a two-term equation using task value and social approval could account for 39 percent of the variance. No appraisals were significantly related to negative affect.

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Profile of Roy Fowler : a wheelchair legend. *Bulletin. Australian Confederation of Sports for the Disabled (Sydney, Aust.) 92(09), Apr 1992, 4-6.* LEVEL:B

Statutes and regulations. Comite International des sports des sourds. International Committee of Sports for the Deaf. *s.l.: Comite international des sports des sourds : International Committee of Sports for the Deaf, 1991.* 32 p. Cover title. LEVEL:B

Biomechanics of wheelchair propulsion as a function of seat position and user-to-chair interface. Hughes, C.J. Weimar, W.H. Sheth, P.N. Brubaker, C.E. *Archives of physical medicine and rehabilitation (Philadelphia, Pa.) 73(3), Mar 1992, 263-269.* LEVEL:A

This study investigated the biomechanics of lever and hand-rim propulsion and the effects of seat position on propulsion mechanics.

Nine able-bodied and six paraplegic spinal cord injured persons participated. Subjects performed hand-rim and lever propulsion on a wheelchair test simulator at a speed and load of 3km/hr and 7.5 watts/side, respectively. A 2 x 3 matrix of randomized seat positions was used. Three-dimensional motion measures of the trunk, shoulder, elbow, and wrist were collected over four-second sample periods for each seat position. Hub torque and stroke arc measurements were determined. Upper extremeity motions were significantly different for the two methods of propulsion. Hand-rim propulsion required less elbow motion, greater shoulder extension, less shoulder rotation and less arm abduction than lever propulsion. Both methods of propulsion required a substantial amount of internal rotation at the shoulder. Seat position changes had a greater effect on joint motion ranges when hand-rim propulsion was performed. No significant differences were found for trunk motion for the treatments. The findings provide additional information for development of a model for the optimization of wheelchair propulsion.

Changing attitudes about teac ; students with handicaps. Rizzo, T.L. Vispoel, W.P. *Adapted physical activity quarterly (Champaign, Ill.) 9(1), 1992, 54-63.* LEVEL:I

This study was conducted to determine the influence of two physical education courses on undergraduate physical educators' attitudes toward teaching students labeled educable mentally retarded, behavioral disordered, and learning disabled. The two courses, adapted Physical Education and Physical Education for Children, included 77 and 97 students, respectively. Four strategies for attitudinal change (information, contact, persuasion, and vicarious experience) were emphasized in the former course. Participants in both courses completed the Physical Educators' Attitude Toward Teaching the Handicapped Questionnaire (PEATH-II) during the first and last days of a 16-week semester. The data were analyzed using a split-plot hierarchical ANOVA design with two between-subjects factors, course type and teacher (nested under course type), and two within-subjects factors, time (pretest and posttest) and handicapping label. Results indicated that attitudes toward teaching students with handicaps improved significantly in the adapted physical education course but not in the other course.

Coaching athletes with disabilities. *Sports coach (Canberra, Aust.) 15(1), Jan/Mar 1992, 30-31.* Part 5 of a series of summarised coaching topics taken from the new Level 1 Coaching Manual 'Beginning Coaching' pp. 102-108. LEVEL:B

Disabled or disadvantaged sport? the challenge for the ACSD. Carroll, J. *Sport report (Canberra, Aust.) 12(1), Autumn 1992, 8-9.* LEVEL:B

Editorial. Reid, G. *Adapted physical activity quarterly (Champaign, Ill.) 9(1), 1992, 1-4.* LEVEL:B

The future of sports for the disabled. *Newsletter. Australian Alliance for Physical Activity and Lifestyle (Melbourne, Aust.) 3(3), Autumn 1992, 14-17.* LEVEL:B

The inservice needs of South Carolina public school physical educators providing instruction to handicapped students. White, C. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (168 fr.) : negative; 11 x 15 cm. Thesis (Ed.D.) - University of Missouri-Columbia, 1989; vita; includes bibliography (l. 129-142). LEVEL:A

Integration of people with a disability into generic sporting and recreation services : an Australian perspective. Dempsey, I. Burwell, P. Dwyer, N. French, J. Jeffrey, R. Obervliet, F. Roberts, C. *Leisure options : Australian journal of leisure and recreation (Townsville, Aust.) 2(1), Jan 1992, 24-28.* LEVEL:A

The integration of physically disabled pupils into mainstream schools. Williams, E.A. Farley, A.J. *Physical education review (Manchester) 15(1), Spring 1992, 46-52.* Includes abstracts in French, German and Spanish. LEVEL:I

Perceptions and attitudes of deaf and hearing students in integrated physical education classes. Ormsby, K.A. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (178 fr.) : negative; 11 x 15 cm. Thesis (M.S.) - State University of New York College at Cortland, 1990; includes bibliography (l. 135-144). LEVEL:A

Relationship of rated perceived exertion to heart rate and workload in mentally retarded young adults. Arnhold, R. Ng, N. Pechar, G. *Adapted physical activity quarterly (Champaign, Ill.) 9(1), 1992, 47-53.* LEVEL:A

This study was conducted to determine the predicitive ability of rated perceived exertion (RPE) of mentally retarded (MR) young adults with respect to heart rate (HR) and workload (WL). Subjects were a group of 10 mentally retarded adults (M age = 21.02 yrs, MIQ = 50.5) and a control group of 10 nonretarded adults (M age = 21.18 yrs). The procedure involved the performance of a continuous multistage treadmill test using a modified Balke protocol. Rated perceived exertion and heart rate were recorded after each minute. Correlation coefficients for both RPE/HR and RPE/WL were significant for both groups. Tests for differences in RPE/HR and RPE/WL correlation coefficients between the two groups indicated significane for RPE/HR but none for RPE/WL. Regression analysis revealed that variation in RPE could be explained by variations in HR and WL. The association between rated perceived exertion and heart rate and rated perceived exertion and workload suggests the use of the Borg scale with mentally retarded individuals.

Single-organ patients. Wichmann, S. Martin, D.R. *Physician and sportsmedicine (New York) 20(2), Feb 1992, 176-178;180-182.* LEVEL:B

Sport socialization of cerebral palsied adolescents. Lugo, A.M. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 3 microfiches (205 fr.) : negative; 11 x 15 cm. Thesis (M.S.) - Texas Woman's University, 1991; includes bibliography (l. 135-141). LEVEL:A

Sport, stigmate et integration sociale des personnes handicapees: contribution a l'etude des strategies de destigmatisation. Liotard, A. *STAPS: Revue des sciences et techniques des activites physiques et sportives (Grenoble, Fr.) 13 (28), mai 1992, 102-103.* These troisieme cycle soutenue a Montpellier par A. Marcellini. LEVEL:I

Teach the teachers: including individuals with disabilities in physical education. Doll-Tepper, G. von Selzman, H. Lienert, C. *Journal of the International Council for Health, Physical Education and Recreation (Reston, Va.) 28(2), Winter 1992, 23-27.* LEVEL:I

Use of a sport socialization inventory with cerebral palsied youth. Lugo, A.M. Sherrill, C. Pizarro, A.L. *Perceptual and motor skills (Missoula, Mont.) 74(1), Feb 1992, 203-208.* LEVEL:I

The validity and reliability of the 1978 Sport Interest Inventory of Greendorfer and Lewko were examined to evaluate its appropriateness for youth with cerebral palsy, ages 13 to 21 years. Test-retest data from 35 subjects indicated a reliability coefficient of .92. Data from 112 subjects were subjected to factor analysis to examine construct validity. This analysis indicated that the factor structure was similar to that reported for able-bodied youth, except for the items pertaining to friends and opportunity set.

Wheeling in the wind: the effect of wind velocity and direction on the aerodynamic drag of wheelchairs. Higgs, C. *Adapted physical activity quarterly (Champaign, Ill.) 9(1), 1992, 74-87.* LEVEL:A

A computer model was developed of the aerodynamic drag forces acting to slow down a wheelchair. The model calculated drag forces over a range of wheeling speeds between 2 and 20 m/sec, and for wind conditions over the same range of speeds with wind direction varied between 0 degrees (headwind) and 180 degrees (tailwind). The computer model suggests that the large lateral area of a wheelchair adds considerably to the retarding drag forces at relative wind angles between 0 and 90 degrees. It further suggests that three-wheeled wheelchairs have a considerable aerodynamic advantage over four-wheeled wheelchairs for a wide range of wind speeds and direction. In straight line races, the four-wheeled wheelchair has a slight aerodynamic advantage when the relative wind angle exceeds 90 degrees, but under other speed and wind conditions in this study the three-wheeled wheelchair was more efficient.

Influence of reinforcers on motorized bicycle on-task time of profoundly mentally retarded adolescents. Owlia, G. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (164 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Texas Woman's University, 1991; includes bibliography (l. 107-117). LEVEL:A

17 **The suitability and reliability of the Physical Best fitness test with selected special populations.** Forbus, W.R. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (140 fr.) : negative; 11 x 15 cm. Thesis (Ed.D.) - University of Georgia, 1990; includes bibliography (l. 90-101). LEVEL:A

Validation of a cardiorespiratory fitness test for men with mental retardation. Rintala, P. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1992.* 2 microfiches (110 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Oregon State University, 1990; includes bibliography (l. 70-76). LEVEL:A

Benefits of sport and physical activity for the disabled: implications for the individual and for society. Shephard, R.J. *Scandinavian journal of rehabilitation medicine (Stockholm) 23, 1991, 233-241.* LEVEL:I

Comparison of two methods of improving dynamic balance of mentally retarded children. Boswell, B. *Perceptual and motor skills (Missoula, Mont.) 73(3 Part 1), Dec 1991, 759-764.* LEVEL:A

To compare the effectiveness of a creative dance and a movement exploration program in relation to balance performance 26 mildly and moderately mentally retarded boys and girls (ages 8 to 13 years) were randomly assigned to one of the programs. Mean ages of the subjects in the dance and movement exploration groups were 10.5 yr. and 11.1 yr., respectively. Each group received 24 lessons of 30 min. each, in the 8-wk. program. Pre- and posttest distance on six balance-beam tasks and stabilometer performance subjected to multivariate analysis of covariance indicated no significant differences.

Daily fitness program : Baroona special school. Giles, H. *Winning words (Brisbane, Aust.) 4, Nov 1991, 9-11.* LEVEL:B

The disabled athlete. Fallon, K. *In, Bloomfield, J. ed. et al, Textbook of science and medicine in sport, Melbourne, Blackwell, 1992, p.488-511.* LEVEL:I

The injury experience and training history of the competitive athlete with a disability. Ferrara, M.S. *Ann Arbor, Mich.: University Microfilms International, 1991.* 2 microfiches (178 fr.) Thesis (Ph.D.) -

The Pennsylvania State University, 1990. Includes bibliography. DISS. ABST: AAD91-04873 LEVEL:A

The Medallion Program: using the generic sport model to train athletes with mental disabilities. Dahlgren, W.J. Boreskie, S. Dowds, M. MacTavish, J.B. Watkinson, E.J. *JOPERD: Journal of physical education, recreation and dance (Reston, Va.) 62(9), Nov/Dec 1991, 67-73.* LEVEL:B

Physiological responses to maximal exercise on arm cranking and wheelchair ergometer with paraplegics. Martel, G. Noreeau, L. Jobin, J. *Paraplegia (Edinburgh) 29(7), 1991, 447-456.* LEVEL:A

A rebuttal to: 'Special physical education'. Is it a more appropriate term? Seaman, J.A. *C.A.H.P.E.R.D. journal times (Sacramento, Calif.) 54(2), Nov 1991, 10.* LEVEL:B

Why can't Johnny read or play? The participation rights of handicapped student-athletes. Shepherd, R.E. *Seton Hall journal of sport law (Newark, N.J.) 1(2), 1991, 163-199.* LEVEL:I

Physical activity for individuals with mental retardation. Eichstaedt, C.B. Lavay, B.W. *Champaign, Ill.: Human Kinetics Books, c1992.* 1 v. ISBN: 0873223616 LC CARD: 91-042283 LEVEL:I

Exercise and Alzheimer's disease, Parkinson's disease, and multiple sclerosis. Poser, C.M. Ronthal, M. *Physician and sports medicine (New York) 19(12), Dec 1991, 85-86;88;91-92.* LEVEL:I

Sports and fitness activities of patients who have degenerative neurologic diseases must be individually tailored to the type and severity of their disease. In early Alzheimer's disease, dementia is the only restrictive problem. In Parkinson's disease, bradykinesia, rigidity, and dysequilibrium have to be considered, whereas in multiple sclerosis, weakness, incoordination, and impaired balance are the most serious problems. Patients who have degenerative neurologic diseases must avoid contact sports, but can continue most other sports for a while. Using stationary exercise equipment is beneficial, and supervised swimming is the single most rewarding fitness activity for most patients who have these diseases.

The name of the game is ... goalball. Australian Sports Commission. Aussie Sport Program. *Canberra: Australian Sports Commission, 1991. 4 p.* LEVEL:B

Resources for patients. Carlson, L. *Physician and sports medicine (New York) 19(12), Dec 1991, 87.* LEVEL:B

Adapted physical education delivery model for infants and toddlers with disabilities. Eason, R.L. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 41-43;47-48.* LEVEL:I

'And cricket?'... Pinder, S. *Sport and leisure (London) 32(2), May/June 1991, 26.* LEVEL:B

ARAPCS Adapted Physical Activity Council outlines goals/action plans for the year 2000. Kelly, L. *Update - American Alliance for Health, Physical Education, Recreation and Dance (Reston, Va.) Sept 1991, 12.* LEVEL:B

Building on ability. Marshall, T. *Sport and leisure (London) 32(2), May/June 1991, 14-15.* LEVEL:B

Co-operation and co-ordination. Plumb, J. *Sport and leisure (London) 32(2), May/June 1991, 28.* LEVEL:B

Critical components of the individualized family service plan. Cowden, J.E. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 38-40.* LEVEL:B

Disabled women in sports. Simmons, P. *Outdoor woman (Nyack, N.Y.) 2(2), Feb 1991, 7.* LEVEL:B

From the back of the physical education bus: the functional exclusion of adapted physical education. Rizzo, T.L. Davis, W.E. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 53-55.* LEVEL:B

Improving access: stimulating participation. Bailiff, I. *Sport and leisure (London) 32(2), May/June 1991, 28.* LEVEL:B

Keeping people with disabilities active. *Sport and leisure (London) 32(2), May/June 1991, 30-32.* LEVEL:B

The mainstreaming bandwagon: a need for reassessment. Watkinson, E.J. *CAHPER journal/Journal ACSEPL (Gloucester, Ont.) 57(4), Fall/automne 1991, 39-42.* LEVEL:I

Physical activity and people with a disability. *Fitness report (Collingwood, Ont.) 12(8), Sept 1991, 26.* LEVEL:B

Physical activity and people with a disability. L'activite physique et les personnes ayant un handicap. *Research File/Le dossier de la recherche (Gloucester, Ont.) 91-08, 1991, 1;1.* LEVEL:B

PL 99-457: challenges and opportunities for physical education. Dunn, J.M. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 33-34;47.* LEVEL:B

PL 99-457: impact on one school district. Parks, S. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 46-47.* LEVEL:B

PL 99-457: what the law is all about. McCubbin, J. Zittel, L. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 35-37;47.* LEVEL:B

Problematic issues for adapted physical education implementation of PL 99-457. Kelly, L.E. *Journal of physical education, recreation and dance (Reston, Va.) 62(6), Aug 1991, 44-45;48.* LEVEL:B

Sport for people with a disability. Round-up. *Sport and leisure (London) 32(2), May/June 1991, 25.* LEVEL:B

Ten years on. Ten years after the International Year of Disabled People seems as good a time as any to evaluate what effect, if any, the year had on people with disability participating in sport. Brace, M. *Sport and leisure (London) 32 (2), May/June 1991, 20.* LEVEL:B

Vivian Grisogono takes her regular look at the world of health and fitness. Grisogono, V. *Sport and leisure (London) 32(2), May/June 1991, 29.* LEVEL:B

The wind of change. Dendy, L. *Sport and leisure (London) 32(2), May/June 1991, 16-17.* LEVEL:B

Within-cycle characteristics of the wheelchair push in sprinting on a wheelchair ergometer. Veeger, H.E.J. Van Der Woude, L.H.V. Rozendal, R.H. *Medicine and science in sports and exercise (Indianapolis, Ind.) 23(2), Feb 1991, 264-271.* LEVEL:A

To investigate power output and torque production in wheelchair sprinting, six able-bodied subjects performed nine 20-s sprint tests on a stationary wheelchair ergometer (load 0-8 kg). ergometer data were analyzed and combined with kinematic data and surface electromyography. Of all power and torque parameters investigated, only maximal power output was independent of load (mean peak value 375 W, one-sided). Mean power output is suggested to be a useful indicator for anaerobic power production, but test conditions concerned speed in relation to handrim diameter should be specified. The relevance of the "mechanical constraint principle" for handrim propulsion is discussed. Within one cycle, power and torque curves showed a negative deflection at the beginning and a valley approximately halfway through the push phase. The relation of these phenomena to kinematic parameters and muscle activity is discussed.

Adapted physical education in sport for all. Sherriff, C. *In, Oja, P. and Telama, R. (eds.), Sport for all : proceedings of the World Congress on Sport for All, held in Tampere, Finland, on 3-7 June 1990, Amsterdam, Elsevier Science Publishers, 1991, p. 373-380. World congress on Sport for All (1990 : Tampere, Finland).* LEVEL:I

Adapted physical education. Auxter, D.M. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 25-29.* This article highlights the significant contributions of leaders in the field of adapted physical education. LEVEL:B

ArcadeAccess: pinball providing active recreation opportunities to persons with upper extremity impairment. Buckley, T.J. Smith, R.W. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 40-45.* LEVEL:I

Choosing a sports or sports-style wheelchair. Mathews, P. Wu, M. *Independent living (Aust.) 7(2), Autumn 1991, 10-17.* LEVEL:B

A comparison of participation incentives between adult and youth wheelchair basketball players. Brasile, F.M. Hedrick, B.N. *Palaestra (Macomb, Ill.) 7(4), Summer 1991, 40-46.* LEVEL:I

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Concepts of adapted physical activity - the American experience. Sherrill, C. *In, Oja, P. and Telama, R. (eds.), Sport for all : proceedings of the World Congress on Sport for All, held in Tampere, Finland, on 3-7 June 1990, Amsterdam, Elsevier Science Publishers, 1991, p. 645-652. World congress on Sport for All (1990 : Tampere, Finland).* LEVEL:I

A decade of amputee sport. O'Rourke, M. *Sport report (Canberra, Aust.) 11(3), Spring 1991, 9.* LEVEL:B

Effects of exercise on selected physical fitness components of an ambulatory quadriplegic. Schack, F.K. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 18-23.* LEVEL:A

The International Classification of Impairments, Disabilities and Handicaps as an instrument for planning sports activities in the rehabilitation of the disabled. Vermeer, A. *In, Oja, P. and Telama, R. (eds.), Sport for all : proceedings of the World Congress on Sport for All, held in Tampere, Finland, on 3-7 June 1990, Amsterdam, Elsevier Science Publishers, 1991, p. 653-659. World congress on Sport for All (1990 : Tampere, Finland).* LEVEL:I

John Hermanek: focus on training. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 60-61.* LEVEL:B

Participation of hemiplegics in sport. Ohry, A. *Palaestra (Macomb, Ill.) 7(4), Summer 1991, 36-39.* LEVEL:B

Role of physical activity in the lives of physically disabled and chronically ill children and adolescents in Ontario. Longmuir, P.E. Bar-Or, O. *s.l.: s.n., 1991.* 1 v. February 1991. LEVEL:A

What is the role of physical activity for physically disabled and chronically ill children? Variety Village is now utilizing a survey tool modified from the Canadian Fitness Survey (Research Grant 88-80-0030) to collect unbiased data on the current and desired involvement of these children in physical activity programs. Answers to the survey will establish the type and amount of sport information available to children. Responses will also indicate the attitudes of these children to physical activity, the importance of physical activity to them and whether they consider themselves to be limited in their choice of activities relative to their able-bodied peers. Researchers will learn why these children are unable to participate in activities of their choice, and they will identify activities which should receive the highest priority for future planning. The investigators plan to distribute an information kit describing the survey with the questionnaire to 1560 disabled and chronically ill children through thirteen provincial service agencies. Research assistants will follow-up those subjects who do not initially answer the survey.

Sexuality education for persons with developmental disabilities: a cooperative approach. McNab, W.L. Birch, D.A. *Palaestra (Macomb, Ill.) 7(4), Summer 1991, 47;49-51.* Page 51 - sexuality resources for teachers of students with developmental disabilities. LEVEL:B

Sports for the disabled. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 30-34.* This article highlights the significant contributions of five leaders in the field of sports for the disabled. LEVEL:B

Sports planning and adapted physical activity -- the Finnish perspective. Koivumaki, K. *In, Oja, P. and Telama, R. (eds.), Sport for all : proceedings of the World Congress on Sport for All, held in Tampere, Finland, on 3-7 June 1990, Amsterdam, Elsevier Science Publishers, 1991, p. 669-673. World congress on Sport for All (1990 : Tampere, Finland).* LEVEL:I

A summary of the first and second Canadian Deaf Sport Conferences. Dummer, G.M. Stewart, D.A. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 48-51.* LEVEL:B

Therapeutic recreation. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 35-39.* This article highlights the significant contributions of five leaders in the field of therapeutic recreation. LEVEL:B

Wheelchair propulsion by class II athletes with cerebral palsy: a quantitative look. *Palaestra (Macomb, Ill.) 7(3), Spring 1991, 12.* LEVEL:B

Attitudes, subjective norms, perceived behavioral control, intentions, and behavior toward providing special recreation. Hoge, G.W. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1991.* 2 microfiches (136 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Indiana University, 1990; vita; includes bibliography (l. 92-96). LEVEL:A

Computer applications in physical education and sport for the disabled. Stein, J.U. *In, Grosse, S. (ed.), Sport instruction for individuals with disabilities: the best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1991, p. 255-271.* LEVEL:B

The Continental Quest: ten years later. Beck, K. *Sports 'n spokes (Phoenix, Ariz.) 17(3), Sept/Oct 1991, 38-43.* LEVEL:B

The disabled athlete. McCann, B.C. *In, Mueller, F.O. and Ryan, A.J. (eds.), Prevention of athletic injuries: the role of the sports medicine team, Philadelphia, F.A. Davis, 1991, p. 174-197.* LEVEL:I

Early sport socialization of elite Chinese disabled athletes. Wang, W. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1991.* 1 microfiche (80 fr.) : negative; 11 x 15 cm. Thesis (M.S.) - Washington State University, 1990; vita; includes bibliography (l. 54-55). LEVEL:A

External loading comparisons between able-bodied and below-knee-amputе children during walking. Engsberg, J.R. Lee, A.G. Patterson, J.L. Harder, J.A. *Archives of physical medicine and rehabilitation (Chicago, Ill.) 27(9), Aug 1991, 657-661.* LEVEL:A

The purpose of this investigation was to determine external loading variables that could describe any statistically significant differences between the limbs of below-knee-amputee (BKA) and able-bodied children. Eleven able-bodied children and four BKA children volunteered to participate in this investigation. Force platform data were collected for two consecutive foot falls during two experimental sessions. Significant external load differences existed between the prosthetic limbs and nonprosthetic limbs of BKA children and between limbs of the BKA and able-bodied children. The prosthetic limb generally displayed a subordinate role when compared to nonprosthetic and normal limbs. The nonprosthetic limbs displayed a dominant role when compared to the other limbs. These external loading characteristics of the prosthetic and nonprosthetic limbs may be a logical consequence of the morphologic and functional differences that exist between the groups. It was concluded that as long as the prosthetic limb functions differently from a normal limb, BKA children may have a difficult time walking the same as able-bodied children. It would appear to be advantageous to determine the most appropriate gait pattern for BKA children, given the influence of such factors as prosthetic design, construction, and alignment, rehabilitation, and joint loading.

Mainstreaming in New Zealand physical education. Hanrahan, S.J. *New Zealand journal of health physical education & recreation (Wellington, New Zealand) 24(2), 1991, 23-26.* LEVEL:B

Mainstreaming the disabled for individual sports. Grosse, S.J. *In, Grosse, S. (ed.), Sport instruction for individuals with disabilities: the best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1991, p. 99-114.* LEVEL:B

Motor unit firing rates in postpolio and control subjects during submaximal contraction. Rodriquez, A.A. Agre, J.C. Black, P.O. Franke, T.M. *American journal of physical medicine & rehabilitation (Baltimore, Md.) 70(4), Aug 1991, 191-194.* LEVEL:A

Postpolio patients have a deficit in strength recovery after isometric activity. The cause for this is unknown, but may be the result of higher motor unit firing rates during the activity, which leads to excessive fatigue of the motor units. The purpose of this study was to determine whether postpolio subjects recruited motor units at higher firing rates than control subjects. Twelve control and seven postpolio subjects were tested for maximal voluntary contraction of the quadriceps isometrically. Randomly, subjects performed isometric contractions for five 10-s periods freely against gravity (threshold) and at 20 percent and 40 percent of maximal voluntary contraction. Decompositional motor unit electromyographic analysis was used to measure motor unit amplitude, motor unit firing rate and counted number of motor units identified. Analysis was by univariate analysis of variance. Motor unit firing rate was not significantly greater in postpolio subjects than control subjects at all three levels of contraction. Thus, it is unlikely that an increased motor unit firing rate leads to the deficity in recovery of strength in postpolio subjects.

Planning and implementing intramural programs for special populations. Grosse, S.J. *In, Grosse, S. (ed.), Sport instruction for individuals with disabilities: the best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1991, p. 272-294.* LEVEL:B

Postpoliomyelitis muscle weakness: a prospective study of quadriceps strength. Munin, M.C. Jaweed, M.M. Staas, W.E. Satinsky, A.R. Gutierez, G. Herbison, G.J. *Archives of physical medicine and rehabilitation (Chicago, Ill.) 72(10), Sept 1991, 729-733.* LEVEL:A

The objective of this study was to evaluate the presence of progressive postpoliomyelitis muscle weakness (PPMW) in affected individuals 20 to 40 years after the initial polio infection. Over a three-year period, the isometric and isokinetic strength of the quadriceps femoris muscle was studied in seven symptomatic patients with previous poliomyelitis (mean = 38.3 years from infection) to determine if quadriceps strength decreased during the three years. Each patient had a quadriceps affected by polio on one side and a clinically nonaffected quadriceps on the contralateral limb. The maximal isometric force and the peak isokinetic force of the affected quadriceps (AQ) and nonaffected quadriceps (NQ) muscles were tested on a computerized isokinetic dynamometer machine at six-month intervals. Isometric force increased significantly, by 29 percent per year (p less than .02) in the AQ and by 14 percent per year (p less than .05) in the NQ. Paired analysis to determine the change in strength between the affected and nonaffected muscles for the isometric data showed a mean nonsignificant increase in the AQ of 14 percent per year (p = .01). The change in peak isokinetic force demonstrated a significant increase in the AQ of 35 percent per year (p less than .05); whereas, the NQ peak isokinetic force increased 15 percent per year which was not statistically significant. Paired analysis to determine the change in strength between the affected and nonaffected muscles for the isokinetic data showed a nonsignificant relative increase in the AQ of 20 percent per year (p less than .06). Based on these data, it was concluded that both the isometric and isokinetic strength of the AQ muscle did not progressively decrease over a three-year period in this population of patients who reported PPMW.

Prevention of shoulder injuries. Millikan, T. Morse, M. Hedrick, B. *Sports 'n spokes (Phoenix, Ariz.) 17(2), July/Aug 1991, 35-38.* LEVEL:B

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Principles and practices for championship performances in wheelchair track events. Corbbett, J.J. *In, Grosse, S. (ed.), Sport instruction for individuals with disabilities: the best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1991, p. 144-165.* LEVEL:B

Product evaluation: the Versatrainer. Morse, M. Hart, A. Hedrick, B. *Sports 'n spokes (Phoenix, Ariz.) 17(2), July/Aug 1991, 32-24.* LEVEL:B

Safety and injury prevention for persons with disabilities. Birk, T.J. *In, Grosse, S. (ed.), Sport instruction for individuals with disabilities: the best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1991, p. 295-314.* LEVEL:B

Sport instruction for individuals with disabilities: the best of Practical pointers. Grosse, S. *Reston, Va.: American Alliance for Health, Physical Education, Recreation and Dance, c1991.* 314 p. : ill. Includes bibliographical references. ISBN: 0-88314-507-3 LEVEL:I

Sport-specific functional classification for wheelchair athletes. Curtis, K.A. *Sports 'n spokes (Phoenix, Ariz.) 17(2), July/Aug 1991, 45-48.* LEVEL:B

Sports and recreation for the physically disabled. Shephard, R.J. Davis, G.M. *In, Strauss, R.H. (ed.), Sports medicine, 2nd ed., Philadelphia, W.B. Saunders, c1991, p. 544-562.* LEVEL:I

The swinging pendulum. Crase, N. *Sports 'n spokes (Phoenix, Ariz.) 17(2), July/Aug 1991, 70.* LEVEL:B

Activities and adaptation: a call for innovations to serve aging adults with developmental disabilities. Hawkins, B.A. Kultgen, P.B. *In, Keller, M.J. (ed.), Activities with developmentally disabled elderly and older adults, Binghamton, N.Y., Haworth Press, c1991, p. 5-18.* LEVEL:I

The effect of variability of practice in children with learning disabilities. Maero, R.B. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1991.* 2 microfiches (116 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.A.) - California State University, Long Beach, 1990; includes bibliography (l. 101-106). LEVEL:A

The effect of verbal praise and sensory reinforcers on the level of independence on selected components of physical fitness tasks by profoundly mentally retarded youth. Rogers-Wallgren, J.L. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1991.* 3 microfiches (276 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.A.) - Texas Woman's University, 1990; includes bibliography (l. 230-236). LEVEL:A

The social behaviors of integrated mentally handicapped children at play. Fagan, T. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1991.* 2 microfiches (144 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.A.) - Dalhousie University, 1990; includes bibliography (l. 123-136). LEVEL:A

2e Congres International medical sur le sport pour les handicapes physiques. Saint-Etienne, France, 5-6 juillet 1990. 2nd International Medical Congress on Sports for the Disabled, Saint-Etienne, France, 5-6 July, 1990. *St Georges de Montaigu: Techni Media, 1990.* 46 p. *Congres international medical sur le sport pour les handicapes physiques (2e : 1990 : Saint-Etienne, France). International Medical Congress on Sports for the Disabled (2nd : 1990 : Saint-Etienne, France).* Numero special. LEVEL:I

Adapted physical education for students with autism. Davis, K. *Springfield, Ill.: C.C. Thomas, c1990.* xv, 126 p. Includes bibliographical references. ISBN: 0-39-05688-9 LC CARD: 90-033488 LEVEL:I

The athletes were on a roll in New Orleans: the 10th National Veterans Wheelchair Games were a display of courage and skill. Noden, M. *Sports illustrated (New York) 73(11), 10 Sept 1990, 12; 15; 17.* LEVEL:B

Children with special needs: mainstreaming and movement. Grater Lewis, E. *In, Stinson, W.J. (ed.), Moving and learning for the young child, Reston, Va., American Alliance for Health, Physical Education, Recreation and Dance, c1990, p. 135-136.* LEVEL:B

Effect of practica types in preservice adapted physical education curriculum on attitudes toward disabled populations. Stewart, C.C. *Journal of teaching in physical education (Champaign, Ill.) 10(11), Oct 1990, 76-83.* LEVEL:I

This study investigated the effects of four practica situations on the attitudes of undergraduate students toward disabled individuals. Students enrolled in two undergraduate adapted physical education classes were studied during two academic quarters. They had the option of being involved in one of four practica situations. The attitudes of the students were measured with the Attitude Toward Disabled Persons scale. Interpretation of the statistical analyses revealed that, as a group, the adapted physical education students' attitudes improved over a 10-week period and that certain practica experiences tended to affect attitudes more than others.

Eleves handicapes et EPS: l'absenteisme en EPS a l'Erea de Berck. Handicapped puplis and physical education. Tournebize, A. Gougeon, Y. *E.P.S. education physique et sport (Paris) 223, mailjuin 1990, 22-23.* LEVEL:B

Guide sur l'organisation d'exercices de representation: a l'intention des Canadiens et Canadiennes ayant un handicap. Advocacy: the process. A resource in support of Canadians with a disability. Morrison, A. Paterson, G. Pendray, D. *Gloucester, Ont.: Active Living Alliance for Canadians with a Disability : Alliance de vie active pour les Canadiens, 1990.* iii, 28, 28 p. French and English text on inverted pages with separate paging. Textes francais et anglais disposes tete-beche avec pagination separee. Bibliographie: p. 27-28. Bibliography: p. 27-28. LEVEL:B

Medico-legal problems of sport for the physically disabled. Chawla, J.C. *In, Payne, S.D.W. (ed.), Medicine, sport and the law, Oxford, England, Blackwell Scientific Publications, c1990, p. 145-148.* LEVEL:B

Mental handicap, sport and the law. Radhakrishnan, G. *In, Payne, S.D.W. (ed.), Medicine, sport and the law, Oxford, England, Blackwell Scientific Publications, c1990, p. 149-157.* LEVEL:B

Myotonic dystrophy: quantification of muscle weakness and myotonia and the effect of amitriptyline and exercise. Milner-Brown, H.S. Miller, R.G. *Archives of physical medicine and rehabilitation (Chicago, Ill.) 71(12), Nov 1990, 983-987.* LEVEL:A

The purpose of this study was to quantify the degree of muscle weakness and myotonia in 12 patients with myotonic dystrophy (MD), and to quantitatively determine the effects of a four- to six-month therapeutic trial of amitriptyline. Patients had exercised with weights for one or more years. Some had shown initial improvement in muscle strength, but had reached a plateau; others had not improved when the study began. Muscle weakness was quantified by comparing the five-second maximum voluntary contraction (MVC) in newtons (N) per kg (body weight) of 12 patients and 20 healthy subjects. Knee extensor, elbow flexor, and first dorsal interosseous (FDI) muscles were compared. Myotonia was quantified by measuring relaxation times (RTs) at the end of the five-second MVC produced by FDI, as the time taken for the MVC to decrease by 50 percent and 75 percent (referred to as 1/2 and 3/4RT). The results were as follows: (1) the mean muscle strength of each of the three muscles of the patients was significantly (p is less than .001) reduced compared with healthy subjects; and (2) 1/2 and 3/4RT means of the patients (vs healthy subjects) were significantly prolonged (p is less than .01). Eight of the patients participated in a therapeutic trial of amitriptyline. Therapeutic effects were quantified by measuring muscle strength, 1/2 and 3/4RT, and percent change in evoked muscle action potential (MAP) from the FDI muscle after a ten-second MVC, to determine change in excitability. Mean muscle strength of FDI improved from .27 to .33N/kg, (p is less than .05). Both the mean 1/2RT and 3/4RT were reduced from 328 to 142msec and from 445 to 187msec, respectively (p is less than .01). However, the 27 percent mean change in MAP after ten-second MVC was unchanged. We concluded that amitriptyline (combined with muscle exercise) may provide therapeutic benefit to patients with myotonic dystrophy.

Official rulebook of the National Wheelchair Athletic Association. National Wheelchair Athletic Association. *Colorado Springs, Colo.: National Wheelchair Athletic Association, 1990.* 1 v. (loose-leaf) Cover title: National Wheelchair Athletic Association. Official rules. LEVEL:B

Perceived physical competence in children with mental retardation: modification of a pictorial scale. Ulrich, D.A. Collier, D.H. *Adapted physical activity quarterly (Champaign, Ill.) 7(4), Oct 1990, 338-354.* LEVEL:A

Self-perceptions of competence are thought to mediate a person's motivation to participate and persist in tasks under optimally challenging conditions. Little systematic research has been conducted related to the self-perceptions of physical competence in children with mental retardation and the influence on achievement motivation in this domain. Various models of self-concept are reviewed, followed by a discussion of self-concept and special populations. Preliminary data are presented on a modified pictorial scale of perceived physical competence for use with 7- to 12-year-old students with mild mental retardation. Future research directions are proposed related to achievement motivation, perceived competence, and mental retardation.

Performance evaluation of wheelchair athletes: more than a disability classification level issue. Brasile, F.M. *Adapted physical activity quarterly (Champaign, Ill.) 7(4), Oct 1990, 289-297.* LEVEL:A

The data used for statistical analysis in this investigation were based on results from 79 males tested at the National Wheelchair Basketball Association/Paralyzed Veterans of America wheelchair basketball camp held at Wright State University in August 1989. Results acquired from a multivariate analysis of variance indicated significant differences in scores across NWBA player classification levels. Post hoc comparisons indicated that Class II and Class III participants were similar and that Class I participants recorded lower overall skills proficiency scores. A stepwise forward regression analysis was conducted to determine the influence of predictor variables on skill proficiency levels. Results indicate that one's level of disability may influence performance; however, amount of time spent in practice, previous experience in the sport, and age also influence one's overall performance in wheelchair basketball.

Physical education for children with severe learning difficulties. Alcott, M. *In, Armstrong, N. (ed.), New directions in physical education, Champaign, Ill., Human Kinetics Publishers, c1990, p. 121-135.* LEVEL:I

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Physiologic responses to prolonged electrically stimulated leg-cycle exercise in the spinal cord injured. Hooker, S.P. Figoni, S.F. Glaser, R.M. Rodgers, M.M. Ezenwa, B.N. Faghri, P.D. *Archives of physical medicine and rehabilitation (Chicago) 71(11), Oct 1990, 863-869.* LEVEL:A

This study determined the physiologic responses to prolonged functional neuromuscular stimulation (FNS) leg-cycle exercise in seven quadriplegic and seven paraplegic subjects. Each subject completed 30 minutes of continuous FNS leg cycling during which open-circuit spirometry, impedance cardiography, auscultation, and fingertip capillary blood sampling were used to assess metabolic and hemodynamic responses. Compared with resting values, oxygen uptake, carbon dioxide production, respiratory exchange ratio (RER), pulmonary ventilation, heart rate (HR), left ventricular stroke volume (SV), cardiac output (Qt), and blood lactate (La) concentration were significantly elevated, whereas plasma volume, bicarbonate concentration, and pH were significantly decreased in both groups during prolonged FNS leg-cycle exercise. Mean arterial pressure remained unchanged in quadriplegic and paraplegic subjects during the prolonged FNS leg-cycle exercise bout. Persons with quadriplegia elicited significantly lower MAP and tended to have lower SV and Qt responses than persons with paraplegia, probably due to a higher degree of sympathetic dysfunction and circulatory hypokinesis during FNS leg-cycle exercise. All other physiologic variables responded similarly between groups. We speculate that the relative increases observed for HR (33 percent to 60 percent), SV (45 percent to 69 percent), and Qt (113 percent to 142 percent) during prolonged FNS leg-cycle exercise create a sufficient cardiac-volume load to promote central cardiovascular conditioning in persons with both quadriplegia and paraplegia. The La accumulation (4.7 to 5.2 mmol.L-1) in the spinal cord injured during prolonged FNS leg cycling is unusually high for the power output attained (5.2W and 6.1W for quadriplegia and paraplegia, respectively). However, the significant decline in the RER from minute 5 to minute 30 suggests a gradual preference for lipid substrate by exercising muscle as FNS leg cycling continued. Despite impaired sympathetic nervous system function resulting from spinal cord injury and the nonphysiologic manner of FNS muscle contraction, the absolute levels of metabolic and hemodynamic responses achieved indicate that prolonged FNS leg cycling is a relatively safe mode of exercise training for persons with quadriplegia and paraplegia.

Prioritizing adapted physical education goals: a pilot study. Sherrill, C. Montelione, T. *Adapted physical activity quarterly (Champaign, Ill.) 7(4), Oct 1990, 355-369.* LEVEL:A

The purpose of this study was to develop and field test an instrument to assist in prioritizing adapted physical education goals. Nine goals were identified, and the paired-comparison technique was selected to examine beliefs concerning the relative importance of each goal. Data were collected from three samples representative of individuals who teach physical education to handicapped students and/or train others to do so. Findings indicated that the goal ranked as most important by each sample was not significantly different from those ranked as second and third in importance. Adapted physical educators consider many goals to be of equal importance. In general, motor skills, fitness, self-concept, and perceptual motor function/sensory integration are held in high esteem whereas creative expression is considered least important. Other goals are assigned intermediate importance. The Goals of Adapted Physical Education Scale (GAPES) is a valid and reliable instrument that offers promise for the further study of adapted physical education goals.

Relationship of presage, context, and process variables to ALT-PE of elementary level mainstreamed students. Vogler, W.E. Van der Mars, H. Darst, P. Cusimano, B. *Adapted physical activity quarterly (Champaign, Ill.) 7(4), Oct 1990, 298-313.* LEVEL:A

Classroom processes were analyzed to study the effectiveness of main-streaming in physical education. Thirty teachers and 30 mainstreamed handicapped students were videotaped in elementary school P.E. classes. Data on their classroom behavior were coded using standard systematic ALT-PE "effective teaching" observation practices. There were many favorable classroom processes to indicate that mainstreaming was a good context for both handicapped and nonhandicapped students (e.g., comparable ALT-PE percentages and a more positive than negative interaction between teacher and student). Variables most predictive of ALT-PE were interruptions in class and whether a teacher was itinerant or not.

Sport et aptitudes a l'effort dans le handicap mental. Eberhard, Y. *Sport (Bruxelles) 33(131), 3/1990, 159-164.* LEVEL:I

Les Activites Physiques Adaptees (A.P.A.) aux sujets handicapes mentaux profonds ont ete utilisees, tout au long du recit de cette communication, comme moyens privilegies de provoquer et d'etudier leurs aptitudes a l'effort physique. Les Auteurs exposent les principaux resultats obtenus a partir d'etudes experimentales avec des populations de sujets handicapes mentaux profonds et tentent de justifier pourquoi la prise en compte de parametres physiologiques permet de mieux organiser la pratique physique car ils permettent d'en qualifier les resultats obtenus. A la vue des resultats experimentaux, s'il apparait que les facteurs limitant l'effort chez la plupart des handicapes mentaux ne se situent pas au niveau bioenergetique, il est mis en evidence que dans certains cas de handicap mental d'origine genetique (par exemple dans la trisomie 21) certaines inaptitudes physiologiques, si elles sont surpassees, auraient tendance a se modifier positivement. Ce resultat est montre au moins de maniere transitoire. Cela veut dire que lorsque ce sujet deficitaire est contraint de s'adapter aux exigences de l'effort qu'il a ete habitue a produire, il le fait, semble-t-il, toujours favorablement. Mais, pour ce faire, il faut atteindre le seuil minimum d'activation et de sollicitation que represente l'activite d'endurance par ses avantages d'intensite moderee et de regularite. Enfin, on observera qu'il n'existe pas, dans la deficience mentale, de reelles inadaptations metaboliques a l'effort, a ne pas confondre avec certaines pathologies organiques, qui elles seules sont incompatibles avec la sante dans l'effort physique. Il s'agirait surtout d'un retard considerable dans les methodologies d'activation de ces sujets, dont on se desinteresse parce qu'ils sont relegues au bas de l'echelle des inadaptes. Une pratique reguliere d'entretien physique a l'aide des APA pourrait quelquefois contribuer a leur garantir une meilleure image sociale.

Tennessee - mother can't contract away son's, husband's right to sue. Ross, C.T. *Sports and the courts (Winston-Salem, N.C.) 11(5), 1990, 9-10.* LEVEL:B

United Kingdom: Ministerial report on sport for people with disabilities. *Sports information bulletin (Brussels) 22, Sept 1990, 1504-1508.* LEVEL:B

Video motion analysis of the effects of 'relationship-play' on gross motor control in children with severe learning difficulties. Williams, J.G. Riley, S. *Physical education review (Manchester) 13(2), Autumn 1990, 151-155.* LEVEL:I

Wheelchair racquetball: a preliminary time motion analysis. Higgs, C. *Adapted physical activity quarterly (Champaign, Ill.) 7(4), Oct 1990, 370-384.* LC CARD: SIRC LEVEL:A

Wheelchair racquetball players in the A and B divisions of the 1989 Canadian Racquetball Championships were videotaped and their performances were analyzed. The results indicated that the athletes had an exercise-to-pause ratio of 1:1.5 at the A level and 1:2.3 at the B level. Rallies were slightly longer at the higher level, with substantially longer pause periods at the B level. There was a higher percentage of longer rallies at the A level, although both divisions of play had comparable percentages of forehand and backhand shots. A-level players demonstrated greater distances covered per rally, greater wheelchair speed, and a higher degree of wheelchair maneuverability measured by the number and magnitude of directional changes. In particular, A-level players showed a greater tendency to use small directional corrections, particularly turns to the right of less than 45 degrees. It is suggested that this action allowed a less restricted backswing for powerful forehand shots.

Un pas de plus vers la forme physique: un programme a l'intention des adultes handicapes mentalement. Reid, G. Seidl, C. Montgomery, D.L. *Gloucester, Ont.: Association canadienne pour la sante, l'education physique et le loisir, c1990.* 198 p. Also published in English under the title: Stepping out for fitness: a program for adults who are intellectually handicapped. ISBN: 0-919068-13-8 LEVEL:B

Stepping out for fitness: a program for adults who are intellectually handicapped. Reid, G. Montgomery, D.L. Seidl, C. *Gloucester, Ont.: Canadian Association for Health, Physical Education and Recreation, c1990.* 152 p. Aussi public en francais sous le titre: Un pas de plus vers la fame physique: un programme a l'intention des adultes handicapes mentalement. ISBN: 0-91068-15-4 LEVEL:B

A biomechanical analysis of the prolonged effects on functional parameters of a test seating system for moderately involved cerebral palsied children. Boucher, G.P. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1990.* 1 microfiche (92 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.A.) - McGill University, 1986; includes bibliography (l. 72-73). LEVEL:A

Effects of social play activities on the play behavior of children with autism. Schleien, S.J. Rynders, J.E. Mustonen, T. Fox, A. *Journal of leisure research (Alexandria, Va.) 22(4), 1990, 317-328.* LEVEL:A

This study explores the effects of utilizing four social levels of play: isolate, dyadic, group, and team on the appropriate play behavior of children with autism in an integrated leisure education/physical education program. Recreation activities representing the four social levels of play were implemented during 10-minute periods on a randomized basis within a multielement design. Same-age peers without disabilities, who were trained to participate in integrated activities, were present during all four conditions. Results indicated that not only did the type of play activity significantly influence the frequency of appropriate play behavior exhibited by the children, but that they consistently played more appropriately in the more developmentally advanced (i.e., team, group, dyadic) play activities as compared with their frequency of appropriate play in isolate play activities. Based on these findings, suggestions are made for furthering the development of recreation and play curricula to serve individuals with autism in integrated settings. (JLR)

21 **Jean Driscoll: pushing for PRs...in everything.** Crase, N. *Sports 'n spokes (Phoenix, Ariz.) 16(3), Sept/Oct 1990, 18-20.* LEVEL:B

Physical activity for those pupils with epilepsy. McGeorge, S. *Health and Physical Education Project newsletter (Loughborough, Leics, England) 25, May 1990, 1-4.* LEVEL:B

Wheelchair sports: Canada leading the way. Milner, J. *Rehabilitation digest (Toronto) 21(2), Summer 1990, 8-10.* LEVEL:B

The effect of trials-to-criterion on the retention of a discrete motor skill by moderately retarded and severely mentally retarded individuals. Morehouse, J.W. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1990.* 1 microfiche (97 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - Oregon State University, 1988; includes bibliography (l. 64-73). LEVEL:A

Paternalism and Special Olympics. Harmer, P.A.P. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1990.* 2 microfiches (153 fr.) : negative, ill.; 11 x 15 cm. Thesis (Ph.D.) - University of Oregon, 1989; vita; includes bibliography (l. 134-139). LEVEL:A

Pre- and post-knowledge of results intervals and motor performance of mentally retarded individuals. Yun, C-H. *Eugene, Ore.: Microform Publications, College of Human Development and Performance, University of Oregon, 1990.* 1 microfiche (69 fr.) : negative, ill.; 11 x 15 cm. Thesis (M.S.) - Washington State University, 1989; includes bibliography (l. 37-39). LEVEL:A

Accessible recreation: 20 years behind the times. Oeswtreicher, M. *Parks & recreation (Alexandria, Va.) 25(8), Aug 1990, 52-55.* LEVEL:B

Athlete training programs. *Palaestra (Macomb, Ill.) 6(3), 1990, 36-38;48-49.* LEVEL:B

Attitudes of handicapped and nonhandicapped high school students toward physical education. Toon, C.J. Gench, B.E. *Perceptual and motor skills (Missoula, Mont.) 70(3), June 1990, 1328-1330.* LEVEL:A

The attitudes of 381 handicapped and nonhandicapped high school students toward physical education in mainstreamed classes were compared using measures from the Kneer Attitude Inventory and Diagnostic Statements. A two-way analysis of variance yielded a significant difference between the groups' attitudes. Nonhandicapped high school students had significantly more positive attitudes toward physical education than their handicapped peers. No sex differences were significant.

A biomechanical analysis of amputee athlete gait. Smith, A.W. *International journal of sport biomechanics (Champaign, Ill.) 6(3), Aug 1990, 262-282.* LEVEL:A

The aims of the present study were to quantify lower limb kinetics and kinematics during walking and slow jogging of below-knee amputee athletes and to demonstrate the usefulness of the additional information provided by kinetic analyses as compared to that of kinematic assessments alone. Kinematic and force platform data from three amputee subjects were collected while the subjects walked and jogged in the laboratory. Results indicated that neither prosthesis (SACH and an energy-storing carbon fiber or ESCF) emulated the kinetics or the kinematics of so-called normal gait during walking. While the knee joint on the prosthetic side clearly tended to be biased toward extension during stance, the knee flexors were dominant and acted concentrically during this phase of the gait cycle. An examination of prosthetic limb hip and knee joint kinetics at both cadences revealed the functional role played by the hamstrings early in stance. The results indicated that with increasing cadence, less variability, measured by coefficients of variation, was evident in the kinematic data while the opposite was true for the kinetics.

Cardiorespiratory and perceptual responses to arm crank and wheelchair exercise using various handrims in male paraplegics. Gayle, G.W. Pohlman, R.L. Glaser, R.M. Davis, G.M. *Research quarterly for exercise and sport (Reston, Va.) 61 (3), Sept 1990, 224-232.* LEVEL:A

The purpose of the present study was to determine the effects of 10-in (0.25-m) versus 16-in (0.41-m) wheelchair handrims on cardiorespiratory and psychophysiological exercise responses during wheelchair propulsion at selected velocities. Fifteen male paraplegics (27.0 plus/minus 5.5 yrs) performed three discontinuous exercise tests (ACE = arm crank ergometer; WERG = wheelchair roller ergometer) and two 1600-m performance-based track trials (TRACK) under simulated race conditions. There were no significant differences in HR, VO2, VE, HLa, or category-ratio ratings of perceived exertion (PRE) using different handrims during wheelchair propulsion at 4 km.h-1. In contrast, at 9 km.h-1 subjects demonstrated a 13 percent lower steady state VO2 using the 10-in handrims, coincident with a 23 percent lower VE. Steady state HR during WERG at 8 km.h-1 using the 10-in (124.4 plus/minus 3.9 b.min-1) or 16-in (130.6 plus/minus 4.6 b.min-1) handrims were not significantly different. There were also no significant differences between ACE or WERG conditions during maximal effort for VO2 or VE. However, HRpeak during ACE was 7 percent higher than HRpeak during WERG16 (183 plus/minus 15 b.min-1 vs. 171 plus/minus 12 b.min-1, p less than .05), and whole blood HLa during ACE was also significantly higher (by 2.3-2.5 mmol; p is less than .05) compared to WERG. There were no significant differences for HR, performance time, or RPe between trials using different handrim diameters during the 1600-m event. In contrast, HLa was significantly lower using smaller handrims (9.9 mmol) compared with larger handrims (11.3 mmol), paralleling a similar difference in the laboratory. Although these data demonstrated few significant differences of physiologic responses between trials using different handrims, there was a tendency for a lower metabolic stress using the smaller handrims.

Causal attributions of physical education majors and mentally retarded adults. Boswell, B. Arbogast, G. *Perceptual and motor skills (Missoula, Mont.) 71(1), Aug 1990, 219-224.* LEVEL:A

This exploratory study examined the causal attributions and expectancies of 51 physical education majors and 25 mentally retarded adults. The majors completed a written questionnaire concerning their causal attributions and expectancies for motor performance of the adults. The adults responded through an interview procedure regarding causal attributions and expectancies for their own motor performance. Analysis did not support the hypothesis that people make stable attributions about the performance of mentally retarded populations and subsequently maintain low expectancies. Previous experiences of failure did not diminish the expectancies of the adults for their own future success.

Comparative study of the dynamic, static, and rotary balance of deaf and hearing children. Gayle, G.W. Pohlman, R.L. *Perceptual and motor skills (Missoula, Mont.) 70(3), June 1990, 883-888.* LEVEL:A

The purpose of the present study was to measure the dynamic, static and rotary balance of deaf and hearing children. Twenty deaf and 20 normal hearing students matched for mean age of 123 plus/minus 5.9 or 5.6 mo. and sex (11 boys, 9 girls) performed three tests of balance. A series of Wilcoxon signed-ranks tests and a Kendall Tau were applied to assess whether balance was affected in sensorineural deafness and to assess whether age and sex were factors in over-all balance, respectively. Significant differences were noted between groups for dynamic balance and rotary balance. Although not significant, there was a difference of 57.8 percent in number of trials for successful completion of static balance in favor of the hearing children. In the present study, over-all balance in deaf children was significantly inferior to the balance in hearing children. Knowledge of these differences may aid those working with deaf children in physical education.

Comparisons of physical activity programs for severely/profoundly mentally retarded individuals. Greenwood, M. Silliman, L.M. French, R. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 38-42;44-45;47.* LEVEL:I

Corporate involvement: the Special Olympics philosophy. *Palaestra (Macomb, Ill.) 6(3), 1990, 32-34;43.* LEVEL:B

Disabled fitness. Everson, C. *Muscle & fitness (Woodland Hills, Calif.) 51(1), Jan 1990, 217-218.* LEVEL:B

Effects of programs on gross motor development of learning disabled pre-school children: pilot study. Remmer, J.H. Kelly, L.E. *Journal of the Massachusetts Association for Health, Physical Education, Recreation and Dance (Northboro, Mass.) 28(3), Spring 1990, 25-27.* LEVEL:I

Effects of resistance and flexibility training on strength, spasticity/muscle tone, and range of motion of elite athletes with cerebral palsy. Holland, L.J. Steadward, R.D. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 27-31;46.* LEVEL:A

Expanding the horizons. Operation Challenge allows persons with disabilities to participate in a variety of activities they previously might have thought impossible. Hayes Byxbe, K. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 14-15.* LEVEL:B

Field test estimation of maximal oxygen consumption in wheelchair users. Franklin, B.A. Swantek, K.I. Grais, S.L. Johnstone, K.S. Gordon, S. Timmis, G.C. *Archives of physical medicine and rehabilitation (Chicago, Ill.) 71(8), July 1990, 574-578.* LEVEL:A

To develop a field test to estimate maximal oxygen consumption (VO2max) in wheelchair users, 30 men (mean age = 34.3 years) were subjected to progressive arm-crank ergometer testing with directly measured VO2max. Additionally, they performed a modified 12-minute wheelchair propulsion test for distance. Field testing was conducted within two weeks of the VO2max determination, using a standardized wheelchair (Quickie II) on a 0.1-mile indoor synthetic running track. Average peak power output and VO2max were 540kg.m.min-1 and 22.0ml.lg-1min-1, respectively. The mean (plus/minus 1SD) wheelchair propulsion distance was 1.11 plus/minus 0.24 miles. Correlation of the field test data with the VO2max was highly significant ($r = 0.84$; p less than .001). The regression of distance in 12 minutes plotted against VO2max yielded the following equation: wheelchair propulsion (miles) = 0.370 plus 0.0337 (VO2max, ml.lg-1.min-1), where the standard error of estimate = 0.13. These findings suggest that field testing can provide a good estimate of VO2max in selected wheelchair users.

Focus on international teams. *Palaestra (Macomb, Ill.) 6(3), 1990, 46-47.* LEVEL:B

For the love of coaching. *Palaestra (Macomb, Ill.) 6(3), 1990, 26-29.* LEVEL:B

L'integration scolaire du jeune handicape physique. Delfosse, C. *Revue de l'education physique (Liege, Bel.) 30(2), juin 1990, 91-92.* LEVEL:B

Outreach - expanding Special Olympics. *Palaestra (Macomb, Ill.) 6(3), 1990, 39-40;50.* LEVEL:B

Past, present, and future prospectives of the IWSOG. *Palaestra (Macomb, Ill.) 6(3), 1990, 44-45;47.* LEVEL:B

Prevention and care of injuries in wheelchair athletes. Bishop, P. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 59-60.* Research application. LEVEL:B

A reliable isokinetic strength test for arm and leg musculature for mildly mentally retarded adults. Pitetti, K.H. *Archives of physical medicine and rehabilitation (Chicago) 71(9), Aug 1990, 669-672.* LEVEL:A

This study attempted to establish a reliable test protocol to measure the strength of muscles involved in elbow and knee flexion and extension for mentally retarded (MR) adults. Nineteen mildly MR adults performed strength tests on a Cybex 340 isokinetic dynamometer on two separate days; 12 subjects performed a third trial of knee flexion and extension tests. For the 19 subjects, there were no significant differences in strength measurements--except for peak torque of knee flexion--between the first two test days. There were relatively high correlation coefficients when test parameters were compared for both test days, and best efforts occurred almost as often on test day two as on test day one. For the 12 subjects tested on three test days, there were no significant differences for test parameters among the three test days; however, 25 percent of best efforts took place on test day three. These findings indicate that when measuring the isokinetic strength of mildly MR individuals, tests should be performed at least two, optimally three, separate times to ensure reliability. The test protocol would be reliable when measuring knee and elbow flexion and extension strength for job assessment or clinical or rehabilitation purposes.

Robert Steadward: steadfast in his challenge. Robert Steadward: ferme avec son defi. Morse, E. *Champion (Ottawa) 14(1), July 1990, 10-11.* LEVEL:B

Self-concepts of disabled youth athletes. Sherrill, C. Hinson, M. Gench, B. Kennedy, S.O. Low, L. *Perceptual and motor skills (Missoula, Mont.) 70(3), June 1990, 1093-1098.* LEVEL:A

A self-concept inventory was administered to 158 youth athletes, ages 9 to 18 yr. (M = 13.94 yr., SD = 2.63) who competed in the first Pan American Victory Games for Physically Disabled Youth. Disabilities represented were blind (n = 57), cerebral palsy (n = 52), dwarfs (n = 18) spinal cord injured (n = 12), amputation (n = 10), and les autres (n = 9). The purpose was to examine the self-concepts of disabled youth athletes and begin a data base. Analysis indicated that mean self-concept scores fell within or were close to ranges of means for able-bodied youth, as given in the test manual.

Special Olympics: a portrait of volunteerism. *Palaestra (Macomb, Ill.) 6(3), 1990, 41-43.* LEVEL:B

Sports editors perceptions of their coverage and portrayal of wheelchair athletes and wheelchair sports. Hunt, S.L. Lykins, R.J. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 24-26.* LEVEL:I

Uniting people through unified sports programs. *Palaestra (Macomb, Ill.) 6(3), 1990, 24-25.* LEVEL:B

Variables of wheelchair position for athletes with cerebral palsy and amputation. Bishop, P. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 59.* Research application. LEVEL:I

A working model assessing body composition of non-ambulatory individuals. Lehnhard, H.J. Lehnhard, R.A. Lagatutta, F.P. Douce, F.H. *Palaestra (Macomb, Ill.) 6(4), Summer 1990, 19-22;56.* LEVEL:A

Cardiovascular response of severely multihandicapped individuals to body position at rest. Mita, K. Akataki, K. Miyagawa, T. Koyama, K. Ishida, N. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 182-186. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

Development of auditory reaction times, using fine and gross motor movements in visually impaired children. Nakata, H. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 148-153. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

The Edge. Robbins, S. *Sports' n spokes (Phoenix, Ariz.) 16(2), July/Aug 1990, 16-19.* LEVEL:B

Evaluation of physical fitness in paraplegic wheelchair basketball players. Kobayashi, M. Hirano, T. Fukunaga, T. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 160-163. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

Every body active. Promoting the participation of young people with disabilities in community sport and school PE isn't easy. Stafford, I. Newman, I. *Sport and leisure (London) 31(2), May/June 1990, 26-27.* LEVEL:B

Functional neuromuscular stimulation for physical fitness training of the disabled. Glaser, R.M. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 127-134. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:I

Muscular exercises for myoelectric control of artificial limbs. Luo, Y.Z. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 154-159. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

Physiological characteristics of wheelchair basketball players. Ibusuki, T. Kondo, T. Soya, H. Yagi, H. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 164-168. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

The sound of silence. Working a game involving deaf players or coaches can be a challenging experience. The same goes for a deaf official working regular games. No matter the mix, the results are intriguing, even humorous. Keys, S. *Referee (Racine, Wisc.) 15(6), June 1990, 76-77.* LEVEL:B

Take to the trails: everything you ever wanted to know about off-road wheelchairs. Axelson, P. Castellano, J. *Sports' n spokes (Phoenix, Ariz.) 16(2), July/Aug 1990, 20-24.* LEVEL:B

A whole new ball game for the disabled. Krasnow, S. *Sports illustrated (New York) 73(1), 2 Jul 1990, 14.* LEVEL:B

Somatic growth, biological maturation, and physical performance of mentally retarded boys. Beunen, G. Breugelmans, K. Lefevre, J. Maes, H. De Corte, D. Claessens, A. *In, Kaneko, M. (ed.), Fitness for the aged, disabled, and industrial worker, Champaign, Ill., Human Kinetics Publishers, c1990, p. 143-147. International Council for Physical Fitness Research. Symposium (1988 : Osaka, Japan).* LEVEL:A

Atlanto axial instability in people with down syndrome. Wilson, L. *Winning words (Brisbane, Aust.) 1, 1990, 16-17.* LEVEL:B

Corporate commitment: 10th National Veterans Wheelchair Games. *Paraplegia news (Phoenix, Ariz.) 44(5), May 1990, 50-56.* LEVEL:B

Fitness data of children with ostomy: a pilot study. Vogler, E.W. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 259-264.* LEVEL:I

Twenty nine ostomy children (16 girls and 13 boys) with external openings in their urinary or intestinal tract for waste collection were assessed for fitness using the Health Related Physical Fitness test. The children, as a group, were discovered to be only in the 20th percentile in overall fitness when compared to the norm in the United States. Using guidelines established by the American Alliance for Health, Physical Education, Recreation and Dance, all 29 children were identified as candidates for an individualized adapted physical education program.

Fitness in special populations. Shephard, R.J. *Champaign, Ill.: Human Kinetics Books, c1990.* ix, 350p. : ill. Bibliography: p. 281-343. ISBN: 0-87322-270-9 LC CARD: 89-027879 LEVEL:I

Intermittent velocity and wheelchair performance characteristics. Gehlsen, G.M. Davis, R.W. Bahamonde, R. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 219-230.* LEVEL:I

The purpose of this study was to describe the intermittent velocity variation of wheelchair propulsion and to determine the relationship between selected wheelchair propulsive characteristics and peak velocity. The subjects were 11 (10 males and 1 female) members of the U.S. 1988 Paralympic Track and Field Team. Each subject's personal racing chair was mounted on a Pro Roller. Intermittent velocity was ascertained by a tach-generator. A stationary 16-mm Locam camera was used to photograph the subject's sagittal plane propulsive movements. A sonic digitizer was used to digitize three complete propulsive cycles for each subject. Paraplegic and quadriplegic subjects' stroke frequency mean values were 2.27 and 1.80 Hz, respectively. Significant correlations between the Pro Roller's computer-generated peak velocity and hand-handrim positions were indicated. Handrim contact angles and trunk angles were approximately 30 to 40 degrees forward of the same angles reported in the literature. Results indicate that a forward lean of the trunk may allow the athlete to increase the range of hand-handrim contact.

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Problem based learning and personnel preparation in adapted physical education. Hogan, P.I. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 205-218.* LEVEL:I

A prominent theme of educational reform involves focusing on developing students' thinking abilities. This theme is germane to improving the quality of teacher preparation programs in all subject areas including adapted physical education (APE). Perhaps schools of education in general and APE teacher preparation programs in particular can learn from some progressive and prominent medical schools regarding the development of curricula, programs, and experiences to improve quality of personnel. These medical schools have introduced a conceptually significant innovation--the problem-based learning (PBL) curriculum. It is the purpose of this article to introduce the concept of PBL as a potential model for graduate level personnel preparation in APE.

Reliability of the health related fitness test for mainstreamed educable and trainable mentally handicapped adolescents.

Pizarro, D.C. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 240-248.* LEVEL:I

This study investigated the reliability and suitability of the Health Related Physical Fitness Test for mainstreamed educable mentally handicapped (EMH) adolescents. A total of 126 12- to 15-year-old male and female nonhandicapped (NH), EMH, and TMH adolescents were administered the following tests: modified sit-ups, sit and reach, 880-yard run, and skinfold fat measure (triceps only). Reliability coefficients were obtained using an interclass correlation formula. Deviations in test performance were recorded on a checklist. Modified sit-ups, sit and reach, and skinfold fat measurement were determined to be reliable and suitable for use with mainstreamed EMH/TMH adolescents. Reliability scores for the 880-yard run were fair for NH, good for EMH, and excellent for TMH subjects. Procedural deviations in the 880-yard run by TMH adolescents raised questions about the suitability of this test for these subjects. Proper orientation, an allowance for practice, and the development of an appropriate test environment appeared to be important aspects of test preparation for adolescents functioning at a below normal intellectual level.

Review of administration procedures used to assess the motor skills of deaf children and youth. Stewart, D.A. Dummer, G.M. Haubenstricker, J.L. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 231-239.* LEVEL:I

Administration procedures reported in studies on the motor skills of deaf children and youth are reviewed. There was general consensus among these studies that modification of administration procedures is necessary. However, the effect of instructional modifications on the validity and reliability of motor skill tests was never addressed. Furthermore, there is a range of communication systems used in the education of the deaf that complicates administration procedures. Implications for future studies include a call for researchers to become more aware of the communication needs of their deaf subjects and a willingness to use experts familiar with the linguistic and communiction needs of a particular group of deaf subjects to help design and administer motor skill tests.

The spinal injured athlete. Wells, C.L Hooker, S.P. *Adapted physical activity quarterly (Champaign, Ill.) 7(3), July 1990, 265-255.* LEVEL:I

Physiological variables identified as important factors in athletic performance are discussed in relation to the spinal cord injured (SCI) athlete. These include body composition, pulmonary function, cardiorespiratory efficiency, muscular strength and endurance, and anaerobic power. SCI athletes are less fat and have a larger lean body mass than nonathletes, and male SCI are less fat than female SCI. Static lung volumes are usually below normal values in SCI subjects, but athletic SCI subjects tend to have higher values than sedentary SCI. Sedentary SCI subjects have lower aerobic power (VO2max) than the general able-bodied (AB) sedentary population on tests of arm cranking or wheelchair ergometry. Low-lesion paraplegics generally achieve VO2max values comparable to AB subjects. VO2max is inversely related to level of injury, that is, the higher the SCI, the lower the VO2max. However, elite SCI athletes are capable of achieving very high levels of VO2max during arm exercises. SCI subjects respond well to strength and muscular endurance training. Paraplegic subjects achieve higher anaerobic power scores than quadriplegic subjects. Increases in VO2max occur at about the same magnitude as in AB subjects. The required intensity level appears to be about 70-80 percent of maximal heart rate reserve.

Sport for people with disabilities : assistance programs. Australian Sports Commission. *Canberra: Australian Sports Commission, 1990.* 1 brochure LEVEL:B

Teaching and coaching individuals with disabilities (SIc): research findings and implications. DePauw, K.P. *Physical education review (Manchester, Eng.) 13(1), Spring 1990, 12-16.* This article is based upon a presentation given at the ICHPER Conference held in Frostburg, Md., in July 1989. LEVEL:I

8th annual survey of the lightweights. Sunderlin, A. *Sports 'n spokes (Phoenix, Ariz.) 15(6), Mar/Apr 1990, 24-26;28-38;40-41;43-47;50-51.* LEVEL:B

Applying principles of coordination in adapted physical education. Burton, A.W. *Adapted physical activity quarterly (Champaign, Ill.) 7(2), Apr 1990, 126-142.* LEVEL:A

Adapted physical education specialists must design and carry out programs for students with movement coordination problems, but intervention strategies for such students are rarely included in adapted physical education textbooks. In response to the lack of information available to practitioners, the purpose of this paper is to provide a conceptual framework for better understanding movement coordination, to briefly review some of the methods used by both researchers and practitioners to assess coordination, and to present some possible strategies for addressing movement coordination deficits. Two types of coordination solutions are discussed - neuromotor and mechanical - and specific activity progressions are given for jumping jacks and overhand throwing.

Cardiorespiratory responses of mentally retarded adults to air-brake ergometry and treadmill exercise. Pitetti, K.H. Tan, D.M. *Archives of physical medicine and rehabilitation (Chicago, Ill.) 71(5), Apr 1990, 318-321.* LEVEL:A

The graded treadmill (TM) exercise test is considered the optimal mode of exercise for evaluating the cardiovascular fitness of mentally retarded (MR) individuals. A new mode of exercise, the Schwinn Air-Dyne ergometer (SAE), was evaluated and compared to the TM for determining the cardiovascular fitness of adults. Twelve MR adults performed maximal exercise tests to volitional exhaustion, on separate days, on the SAE and TM. Maximal heart rates, oxygen consumption, minute ventilation, and respiratory quotient were similar for both exercise tests. These results indicate that the SAE is comparable to TM exercise in assessing the cardiovascular capacity of MR adults.

The dramatic birth of a new international sports body for the disabled. Lindstrom, H. *Palaestra (Macomb, Ill.) 6(2), Winter/Spring 1990, 12-14.* LEVEL:B

The effects of reinforcement-based fitness training on adults who are institutionalized and dually diagnosed. Combs, C.S. Jansma, P. *Adapted physical activity quarterly (Champaign, Ill.) 7(2), Apr 1990, 156-169.* LEVEL:A

This study examined the effects of physical fitness training and reinforcement on adults who were institutionalized and dually diagnosed as mentally retarded/emotionally disturbed. Subjects (N = 5) were provided daily 1-hour fitness training sessions for 6 weeks. Fitness data were collected before initial fitness training, after 3 weeks of training, after 1 week of no fitness training, after 3 more weeks of training, and 2 weeks after training was terminated. Fitness data collected included total number of bent-knee sit-ups completed in 1 minute, total distance in feet completed in 12 minutes of running, and flexibility in centimeters measured on a sit-and-reach box. An equivalent time-series research design (A-B-A-B) with follow-up was used to test the relationship of fitness training and reinforcement to subsequent fitness component behaviors. The results for both individual and group data show improvement in all three fitness parameters after 3 weeks of training and continued improvement for the final 3 weeks of training and reinforcement for all three fitness parameters across research phases and follow-up.

Global dimensions of World Games for the Deaf. Stewart, D.A. *Palaestra (Macomb, Ill.) 6(2), Winter/Spring 1990, 32-35;43.* LEVEL:B

Guidelines for resistance exercise training for persons with cerebral palsy. McCubbin, J.A. Horvat, M. *Palaestra (Macomb, Ill.) 6(2), Winter/Spring 1990, 29-31;47.* LEVEL:B

Human performance lab. Sirolli, H. Ernstoff, B. *Sports 'n spokes (Phoenix, Ariz.) 15(6), Mar/Apr 1990, 76-77.* LEVEL:B

Influence of a physical activity program on children with cerebral palsy: a single subject design. Rintala, P. Lyytinen, H. Dunn, J.M. *Pediatric exercise science (Champaign, Ill.) 2(1), Feb 1990, 46-56.* LEVEL:A

The effects of a 4-month physical activity program on physical fitness, balance, and ball skills were examined. A multiple baseline design across subjects was used to study the effects of training on static and dynamic balance, physical fitness, and the motor skills of catching and throwing. The subjects were eight 7- to 11-year-old, ambulatory, hemiplegic or diplegic cerebral palsy children. The results indicated slight overall improvement in physical fitness. The specific balance training was not effective, with improvements in dynamic balance noted in only one subject. The specific ball training improved target throw skill in all subjects, but catching skill scores varied greatly, with none of the subjects showing consistent improvement.

Kevin Hansen: coach. Crase, N. *Sports 'n spokes (Phoenix, Ariz.) 15(6), Mar/Apr 1990, 20-23.* LEVEL:B

Physiological and biomechanical differences between wheelchair-dependent and able-bodied subjects during wheelchair ergometry. Brown, D.D. Knowlton, R.G. Hamill, J. Schneider, T.L. Hetzler, R.K. *European journal of applied physiology and occupational physiology (Berlin) 60(3), 1990, 179-182.* LEVEL:A

The purpose of this study was to compare the physiological and biomechanical responses of wheelchair-dependent persons (WCD) to able-bodied persons (AB) during manual wheelchair ergometry. Five WCD and five AB performed a discontinuous wheelchair ergometer test starting at 12.8 W at 30 rev.min-1 (57 m.min-1) with increments of 7.0 W at 6-min intervals. Biomechanical data were collected 3.5 min into each stage followed by the collection of physiological data. After the fifth stage, peak oxygen consumption was determined by having the subject work against a resistance of 14.7-19.6 N at 30 rev.min-1. The WCD had significantly higher net mechanical efficiency at 26.7, 33.6 and 40.6 W in comparison to the AB. The WCD had significantly greater shoulder extension at the point of initial wheel contact as measured by the shoulder angle, while the AB had significantly greater shoulder range of motion at all work rates in comparison to the WCD. The results demonstrate that a significant physiological difference exists in the manner by which WCD and AB accomplish wheelchair ergometry. The biomechanical differences between AB and WCD were found to be a prominent factor contributing to the higher mechanical efficiency of WCD over AB. It was concluded that basic physiological and biomechanical differences exist between WCD and AB in manual wheelchair locomotion and that these differences are important considerations to the interpretation of data in wheelchair ergometry studies.

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Potential impact of World Games for the Deaf on the deaf community in New Zealand. Brain, J. *Palaestra (Macomb, Ill.) 6(2), Winter/Spring 1990, 44;46-47.* LEVEL:B

Psychological skills training for the blind athlete: a pilot program. Hanrahan, S.J. Grove, J.R. Lockwood, R.J. *Adapted physical activity quarterly (Champaign, Ill.) 7(2), Apr 1990, 143-155.* LEVEL:A

This paper presents the development and implementation of a psychological skills training program for blind athletes. The structure of the program was based on the personal accounts of successful athletes and the results of studies using sighted athletes. Skills designed to give insight to the body/mind relationship, raise or lower arousal levels, maintain motivation, prepare for competition, and improve problem-solving abilities were introduced to the athletes. Participants completed a self-assessment of a psychological skills to determine the skill areas they had strengths in and therefore should take advantage of as well as those mental skill areas in which they could improve. A qualitative evaluation of the program is presented and recommendations for future programs are discussed. Overall, few changes were needed to accommodate for athletes' visual impairments.

Sports, handicapes mentaux et amelioration de la competence personnelle et du statut social: un etat de la question. (Sport and improvement in self-esteem and social status among mentally handicapped individuals. A study.) Vermeer, A. *Sport (Brussels) 33(1), 1990, 16-22.* LEVEL:I

Strength training for wheelchair users. Davis, G.M. Shephard, R.J. *British journal of sports medicine (Guildford, Eng.) 24(1), Mar 1990, 25-30.* LEVEL:A

Sedentary adult males with spinal lesions, all habitual wheelchair users, were allocated to exercise (n = 11) and control (n = 4) groups. A Cybex II dynamometer was used to assess peak power, average power, total work and muscular endurance for elbow flexion/extension, shoulder flexion/extension and shoulder abduction/adduction at five angular velocities, on recruitment and after eight and 16 weeks of forearm ergometer training (three days/week). Small sub-groups of the exercised subjects were assigned to high or low intensity endurance effort (70 of 40 per cent of maximal oxygen intake) and long or short training sessions (40 or 20 minutes per session). Despite the aerobic nature of the activity, gains of average power were registered by the two muscle groups most involved in the ergometer task (shoulder extension and elbow flexion). In keeping with current theories of training, gains were largest with prolonged, high intensity activity at angular velocities approximating those adopted during training.

Tennessee- handicapped student must exhaust administrative remedies before filing suit. Ross, C.T. *Sports and the courts (Winston-Salem, N.C.) 11(3), 1990, 10-11.* LEVEL:B

Unique identity of the World Games for the Deaf. Ammons, D.A. *Palaestra (Macomb, Ill.) 6(2), Winter/Spring 1990, 40-43.* LEVEL:B

Movement problem solutions by educable mentally handicapped individuals. Bouffard, M. *Adapted physical activity quarterly (Champaign, Ill.) 7(2), Apr 1990, 183-197.* LEVEL:A

Educable mentally handicapped persons lag well behind nonhandicapped children in the development of both fine and gross movement skills. These persons have difficulty in solving movement problems. Based upon recent work done in cognitive science, it is argued that this lag in movement skill development is related to five major sources: (a) deficiences in the knowledge base or lack of access to it, (b) lack of spontaneous use of strategies, (c) inadequate metacognitive knowledge and understanding, (d) lack of executive control, and (e) inadequate motivation and practice. A seven-step procedure to teach movement skills to mentally handicapped persons that takes into account these five factors is described. Implications for adapted physical activity are outlined briefly.

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Aerobic fitness for the mentally retarded. Bauer, D. *In, American Alliance for Health, Physical Education, Recreation, and Dance. Adapted Physical Activity Council, The best of Practical pointers, Reston, Va., American Alliance for Health, Physical Education, Recreation, and Dance, c1989, p. 52-72.* LEVEL:B

Affective dimensions. Winnick, J.P. *In, Winnick, J. P. (ed.), Adapted physical education and sport, Champaign, Ill., Human Kinetics Publishers, c1990, p. 71-80.* LEVEL:I

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Circulatory and metabolic responses of women to arm crank and wheelchair ergometry. Sedlock, D.A. Knowlton, R.G. Fitzgerald, P.I. *Archives of physical medicine and rehabilitation (Chicago) 71(2), Feb 1990, 97-100.* LEVEL:A

This study compared the circulatory and metabolic responses of arm crank ergometer (ACE) exercise to those of wheelchair ergometer (WCE) exercise during maximal and submaximal intensities. Maximal intensity exercise was defined as the highest power output (PO) achieved on each ergometer. The submaximal responses were compared at an equivalent absolute (PO=25W) and relative (66 percent peak oxygen uptake VO2) intensity. On separate days and in random sequence, nine untrained able-bodied women performed a discontinuous incremental test for peak VO2 using either ACE or WCE. Each exercise bout was approximately six minutes, interspersed with four-minute rest periods. VO2 and heart rate (HR) were measured during each stage of the test and blood lactate concentrations were measured five minutes postexercise. Peak PO, ventilation (VE), and HR were significantly higher on the ACE, with no significant difference in peak VO2 or postexercise blood lactate concentration. When compared at equivalent submaximal PO levels (25W), VO2, VE, and HR were significantly higher on the WCE than on the ACE. In contrast, ACE exercise elicited a higher PO at an equivalent relative metabolic load (66 percent peak VO2). These results suggest that in women wheelchair ergometry is less metabolically efficient than arm crank ergometry at submaximal exercise intensities. However, at maximal intensity exercise, ACE exercise imposes greater central circulatory stress. The finding that a higher peak HR was elicited by the ACE than the WCE suggests that exercise testing needs to be ergometer-specific when the results are to be used for exercise prescription.

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Exercise for children who are mentally retarded. Physician and sportsmedicine (Minneapolis) 15(12), Dec 1987, 141-142. LEVEL: I

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Survival as a rural cooperative itinerant adapted physical educator. Weber, R.C. Physical educator (Indianapolis) 44(4), Winter 1987, 406-410. LEVEL: I

Ruston, A.W. Confronting the interaction between perception and movement in adapted physical education. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 257-267.

The possibility that movement problems experienced by children may be at least partially accounted for by perceptual deficits needs to be considered by adapted physical educators. The ecological approach to perception, emphasizing the person-environment relationship, provides a useful conceptual foundation for defining perceptual deficits in relation to movement, for assessing perceptual deficits, and for designing and implementing remedial programs. A starting point for acknowledging the interaction of perception and movement in adapted physical education programs might be to strive to include activities that are purposeful in nature whenever possible. The next step, for students who may be suspected of having perceptual deficits, might be to help the children become better attuned to the affordances in their environment.*

Dummer, G.M. Ewing, M.E. Habeck, R.V. Overton, S.R. Attributions of athletes with cerebral palsy. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 278-292.

The attributions of 147 athletes with cerebral palsy who participated in the 1985 National Cerebral Palsy/Les Autres Games were investigated following competition relative to their reactions to objectively and subjectively defined success or failure. Attributions were the dependent variable in a 2 x 2 (More-Disabled/Less-Disabled x Win/Loss) MANOVA. Attributions were also analyzed in a 2 x 4 (More-Disabled/Less-Disabled x Satisfied/Dissatisfied, Winner/Loser) MANOVA designed to determine the influence of perceived success or failure upon causal explanations of performance. There were no significant differences in the use of attributions by gender; however, there were differences in the use of attributions across disability classifications. Disabled winners used both internal and external explanations to a greater degree than losers, which was inconsistent with previous literature. Previous results linking persistence in sport to the use of internal and stable attributions were supported. Subjective outcome, defined in terms of satisfaction with performance, was a more powerful explanation of achievement behavior for the disabled athletes in this study than objective outcome. Satisfaction was associated with demonstration of positive qualities such as using the right strategy and ability, with realistic assessment of ability, and with enjoying competition.*

Hilbers, P.A. White, T.P. Effects of wheelchair design on metabolic and heart rate responses during propulsion by persons with paraplegia. Physical therapy (Alexandria, Va.) 67(9), Sept 1987, 1355-1358.

The purpose of this study was to investigate the metabolic and heart rate (HR) responses of individuals with paraplegia to propulsion in wheelchairs of different design. Eight male and one female wheelchair-bound adults with paraplegia were studied. Each subject propelled a conventional wheelchair and a sports wheelchair on a level wooden surface at four velocities ranging from 1 to 3 m/sec. Steady-rate oxygen consumption (VO2) and immediate postexercise HR measurements were obtained. A linear regression analysis of VO2 (L/min) as a function of velocity (m/sec) revealed a slope and correlation coefficient of 0.614 and .93, respectively, for the conventional chair, and 0.510 and .96, respectively, for the sports chair. The intercepts of these relationships did not differ between wheelchair designs. The data analysis revealed no difference between chair designs in the relationship between velocity and work rate. Thus, the energy cost of propelling the sports chair at a specific velocity was 17% less than that of the conventional chair. The greater efficiency of the sports chair is attributed to differences in wheelchair design, rather than to the total mass of the device.*

Marchiori, G.E. Wall, A.E. Bedingfield, W. Kinematic analysis of skill acquisition in physically awkward boys. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 305-315.

This study investigated the learning of the stationary hockey slap shot by two physically awkward boys; for comparison purposes, two age-matched boys performed the same skill. In an initial data collection session, the physically awkward and the control boys performed three successful slap shots. Following this, the physically awkward subjects practiced 400 trials at home every 2 weeks over a 6-week training period, under the supervision of their parents. Performance data were collected very 2 weeks, after 400, 800, and 1,200 practice trials. Cinematographic analysis of each subject's three successful responses led to an examination of the kinematics, phasing, and timing of the slap shot. In the initial baseline session, the control subjects exhibited consistency of performance; however, even after 1,200 trials of supervised practice the performance of the two physically awkward children was extremely variable.*

Patrick, G.D. Improving attitudes toward disabled persons. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 316-325.

The degree to which physical education majors' attitudes toward disabled persons improved after taking an adapted physical education course was examined in this study. Participants included 179 undergraduate students from a large university, some of whom were exposed to course lectures, clinic contact with disabled individuals, relevant films, disability simulations, and readings. A Solomon four-group design was used. Two groups perceived the course in adapted physical education (pretest-posttest, n is 47; posttest only, n is 45), and two control groups were not enrolled (pretest-posttest, n is 44; posttest only, n is 43). Data were collected using the Attitudes Toward Disabled Persons Scale (Yuker, Block, & Young, 1966). The results indicated significant change of the two treatment groups, leading to improved attitudes toward disabled persons. Secondary findings included the reactivity to pretesting for students in the experimental condition and no statistically significant effects of gender and age.*

Rowe, J. Stutts, R.M. Effects of practica type, experience, and gender on attitudes of undergraduate physical education majors toward disabled persons. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 268-277.

The purpose of this study was to determine variables that affect change of attitudes of undergraduate physical education majors toward disabled persons. The subjects (175) were assigned to one of four practicum sites. They were not matched with a particular disabled person, nor were they given a choice of practicum sites. The practica were with (a) preschool disabled, (b) adult CP disabled, (c) elementary school disabled, and (d) adolescent MR disabled. The practica was for 12 weeks, 2 days per week. The physical education majors were administered the Attitudes Toward Disabled Persons Scale, Form A, on a pre- and posttest basis. Of the total subjects, 109 (63%) had negative attitudes toward disabled persons before the practica experience but had a change in attitude at the completion of the practica experience. Another 20 (11%) had negative attitudes before the practicum and remained unchanged. The remaining 46 (26%) had positive attitudes and remained positive in their attitudes toward the disabled. There was no significant difference between the results of males and females.*

Zwernik, D.A. Early play and recreation experiences of persons with physical disabilities: an exploration. Adapted physical activity quarterly (Champaign, Ill.) 4(4), Oct 1987, 293-304.

The purpose of this exploratory study was to inquire about the childhood and adolescent social and recreational experiences of adult males having congenital orthopedic disabilities, those having acquired orthopedic disabilities, and those who were able-bodied. An interview method using a prepared questionnaire was employed to collect data from 173 men, of whom 53 had congenital disabilities, 60 had acquired disabilities, and 60 were able-bodied. They ranged in age from 20 to 40 years. The analyses, using the chi-square statistic at p is .001, revealed that men with congenital disabilities differed from each of the other two groups with respect to memories of childhood social and recreational opportunities. They recalled having had more or about the same number of childhood opportunities to play with friends, be involved in active games and in outdoor activities, and play at friends' homes. Subjects with congenital disabilities, in contrast to the others, also recalled as adolescents having had more or about the same number of opportunities to participate in active games and go to friends' homes.*

Millage, J.G. Longmuir, P.E. Everyone can play. CAHPER/ACSEPL journal (Ottawa) 53(4), Jul/Aug-juil/aout 1987, 12-15.

Le rugball est un sport d'equipe qui a ete invente au Variety Village afin de permettre aux enfants possedant des aptitudes variees de pratiquer un jeu avec des chances egales. Les joueurs les plus agiles sont nommes capitaines et n'ont pas le droit de marquer. Le rugball se joue selon les principes du succes et de la participation, deux elements essentiels dans les jeux mettant l'accent sur la cooperation. Pour assurer le succes du jeu, tous les membres de l'equipe doivent travailler de concert. Le rugball combine avec succes les elements participation et competition d'equipe afin de creer un jeu dont tout le monde profite.

Rugball is a team sport which was developed at Variety Village to allow children with a wide range of abilities to participate on an equal basis. The most able players are designated as captains and are not permitted to score. Rugball follows the principles of success and participation which are fundamental to co-operative games. In order to be successful, all team members must work together. Rugball successfully combines goals of participation and team competition to produce a game which can be enjoyed by anyone.

Webster, G.E. Influence of peer tutors upon academic learning time - physical education of mentally handicapped students. Journal of teaching in physical education (Champaign, Ill.) 6(4), Jul 1987, 193-203.

The purpose of this study was to determine the influence of peer tutors on the academic learning time (ALT) of moderately/severely mentally handicapped students in adapted physical education. A multiple baseline-across-students and withdrawal design was used to analyze the effects of untrained and trained tutors on the ALT-PE of the students. Motor appropriate behavior was documented with the ALT-PE observation system (Siedentop, Tousignant, & Parker, 1982). Data were analyzed by visual inspection. It was concluded that the presence of peer tutors appeared to have a positive effect on the ALT-PE of mentally handicapped students. No differences were evident between untrained and trained tutors with respect to ALT-PE.*

Bulbulian, R. Johnson, R.E. Gruber, J.J. Darabos, B. Body composition in paraplegic male athletes. Medicine and science in sports and exercise (Indianapolis) 19(4), June 1987, 193-201.

The body composition and anthropometric characteristics of male paraplegic athletes (PARA, N is 22) were contrasted to an able-bodied ectomorphic (N is 22) and mesomorphic (N is 31) comparison group of moderately and highly trained male subjects. The validity of 12 body composition (density (Db)) prediction equations reported in the literature, 4 generalized, were determined (tested) on this special group of athletes (PARA). On the whole, the prediction equations overpredicted Db in PARA by 0.0039 to 0.0106 g.cm-3 (under-predicted relative fat by 1.8 to 7.4 %). Five diameter, 11 circumference, and 7 skinfold measures were used in a SAS-STEPWISE multiple regression procedure with hydrostatically determined Db to develop several suitable Db prediction equations for the paraplegic athlete. Diameters were poor predictors, while skinfolds, circumferences, or a combination of measures were acceptable, with the combined equation being best. The findings of this study suggest that even generalized equations do not adequately predict Db in PARA and that paraplegic specific equations are presently best suited for predicting Db in paraplegic athletes. The results further indicate that although these equations meet many of the criteria of Lohman, the SEE and total error values are unusually high and make prediction of body composition using anthropometry in a heterogeneous group of PARA athletes slightly unreliable.*

Collier, D. Reid, G. A comparison of two models designed to teach autistic children a motor task. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 226-236.

The purpose of this investigation was to compare two instructional models designed to teach autistic children a bowling task. One strategy (referred to as the extra-stimulus prompt model) used extensive physical, visual, and verbal prompts while the second (referred to as the within-stimulus prompt model) minimized such prompts. With the theory of overselectivity, it was predicted that the within-stimulus prompt model would be the more effective. Both instructional models included a 13-level task analysis of bowling. Group and time series designs were utilized. 3 subjects in each condition performed 332 trials of the task. The dependent variable was improvement on the bowling task as demonstrated by the task analytic level achieved by each subject. The student-teacher interaction was videotaped and assessed for number and types of prompts, reinforcement, and punishment. Nonparametric and visual analyses revealed that the extra-stimulus prompt group performed significantly better in bowling than did the within-simulus prompt group. No differences occurred in a reinforcement or punishment received.*

DiRocco, P.J. Clark, J.E. Phillips, S.J. Jumping coordination patterns of mildly mentally retarded children. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 178-191.

The purpose of the study was to determine if mildly mentally retarded (MMR) children followed the same developmental sequence of coordination for the propulsive phase of the standing long jump as their nonhandicapped (NH) peers. Subjects for the study included 39 MMR and 90 NH children, ages 4-7 years. Each subject was filmed performing several standing long jumps. Jumping patterns were analyzed from the film records, and distance jumped also was determined from the film. Results indicated that the arm and leg patterns of coordination proposed for NH children by Clark and Phillips (1985) were comprehensive enough to include the MMR children. In spite of similar patterns of coordination, the age group means for the distance jumped by the MMR subjects were 2 to 3 years behind their NH peers. Two explanations are offered for this deficit in distance jumped: first, there may be differences in coordination between the arm and leg action, and second, there may be differences in control mechanisms.*

Gordon, B. Gavron, S.J. A biomechanical analysis of the running pattern of blind athletes in the 100-m dash. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 192-203.

The purpose of this study was to investigate selected kinematic variables of two classes of blind runners, B-1 and B-3, in the 100-m dash. A total of 26 males served as subjects and were filmed in actual competition at the 1984 International Games for the Disabled. Filming was conducted at 150 frames per second with the camera positioned perpendicular to the plane of motion. Kinematic data extracted from the film included center of gravity, displacements, velocities, and selected joint angles. It was believed that the results of this study would be useful for (a) establishing some descriptive data of blind athletes in B-1 and B-3 classes, (b) understanding individual differences among blind runners of two different classifications, and (c) providing empirical data of the running patterns from which implications for the development of teaching coaching methods might be gained.*

Langsner, S.J. Anderson, S.C. Outdoor challenge education and self-esteem and locus of control of children with behavior disorders. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 237-246.

The impact of an outdoor challenge education program on self-esteem and locus of control of children with behavior disorders was investigated. The subjects consisted of four self-contained elementary special education classrooms of boys with behavior disorders. The experimental group consisted of two classrooms (n is 14), and the control group consisted of two classrooms (n is 17). An untreated control group design with pretest and posttest, expanded by the researcher to include two additional groups (experimental and control) without a pretest, was employed as a quasi-experimental nonequivalent control group design. There were no significant differences in either self-esteem or locus of control between the control and experimental groups as a consequence of the outdoor challenge program.*

Ribadi, H. Rider, R.A. Toole, T. A comparison of static and dynamic balance in congenitally blind, sighted, and sighted blindfolded adolescents. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 220-225.

The purpose of this investigation was to compare static and dynamic balance in sighted, sighted blindfolded, and congenitally blind students. The subjects (n is 51) ranged in age from 14.1 to 17.4 years of age. The sighted subjects (n is 34) were randomly assigned to one of two groups, 17 in the sighted and 17 in the sighted blindfolded group. The 17 congenitally blind subjects were selected from the total population of blind students attending a special school for the blind. All subjects were tested for static balancing using the Stork Stand. Dynamic balance was measured using the stabilometer. The data analysis revealed significant differences between all three groups, with the sighted group demonstrating superior balance for both measures. The blind subjects performed significantly better than the sighted blindfolded group for dynamic balance only. The results of the study support previous investigations which have demonstrated that sighted individuals have better balance when compared with blind individuals. However, the fact that the blind subjects performed better on dynamic balance when compared to the sighted blindfolded group points to the need for immediate intervention in this area for adventitiously blind persons, or those acquiring blindness later in life.*

Titus, J.A. Watkinson, E.J. Effects of segregated and integrated programs on the participation and social interaction of moderately mentally handicapped children in play. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 204-219.

This study examined the behavior of moderately mentally handicapped children in integrated and segregated programs. Seven subjects 5 to 10 years of age were observed during free play in two programs, one integrated and one segregated, to determine if they would benefit from placement in physical activity programs with nonhandicapped children. Socialization and activity participation were examined using a simple eight-category instrument on videotaped data. The presence or absence of play vehicles was also investigated to determine whether this play equipment would further affect behavior. Some 300 minutes of videotaped data were available for each subject. Behavior durations were recorded using an OS-3 event recorder. Interobserver agreements were calculated on 15% of the data, with mean agreements of .96. Duration data were transformed to percentage of observable time for each subject in integrated and segregated settings, and when play vehicles were and were not available. Results from the study generally did not support the assumption that exposure to integrated programs will increase activity participation and social interaction. Activity participation did not appear to be effected by the presence of play vehicles in the environment. Social interaction levels were reduced significantly under this condition.*

Winnick, J.P. An integration continuum for sport participation. Adapted physical activity quarterly (Champaign, Ill.) 4(3), Jul 1987, 157-161.

A continuum for sport participation is depicted and contrasted for guiding decisions on sport participation based upon integration, and for facilitating provision of innovative experiences along the continuum. The continuum ranges from regular sport with no modifications to segregated adapted sport.*

Hardison, G.T. Israel, R.G. Somes, G.W. Physiological responses to different cranking rates during submaximal arm ergometry in paraplegic males. Adapted physical activity quarterly (Champaign, Ill.) 4(2), Apr 1987, 94-105.

The purpose of this study was to identify the most desirable cranking rate to be used by paraplegic individuals during submaximal arm training programs. Eleven healthy paraplegic males (M age, 28.8 years) with lesion levels ranging from T4 to T12 served as subjects. Arm exercise loads for the four submaximal cranking rates studied (50, 60, 70 and 80 rmp) were set to elicit 60 percent of peak VO2. Duration of the submaximal tests was 15 min. VE, VO2, RER, HR, and differentiated RPE were recorded each minute throughout the 15-min test. A randomized block ANOVA and Duncan's post hoc analysis indicated that 80 rpm produced significantly higher values for HR, absolute VO2, VE, VCO2, and VE/VO2 than any other rates. Cranking at 70 rpm resulted in significantly higher (p is less than .05) values for O2 pulse, while relative VO2 was significantly higher (p is less than .05) at 50 rpm than at 60 or 70 rpm, with no difference between 50 and 80 or 60, 70, and 80. The authors concluded that 70 rpm was the most appropriate cranking rate for paraplegic males to use during arm training programs.*

Hedrick, B.N. Wheelchair sport as a mechanism for altering the perceptions of the nondisabled regarding their disabled peers' competence. Therapeutic recreation journal (Alexandria, Va.) 20(4), 1986, 72-84.

This study investigated the effect of participation in an instructional tennis program with physically disabled peers on the perceptions of significantly more skilled nondisabled adolescents regarding the tennis efficacy and the general, social, cognitive and physical competence of their physically disabled peers. Disabled coactors were introduced at various points throughout the learning and performance treatment stages to assess the effect of their variable presence on the perceptions of the nondisabled subjects. Results revealed that early integration of the sport context with disabled and nondisabled peers who are characterized by significantly different levels of ability, can be detrimental to the nondisabled subject's perceptions regarding the sport-specific competence of their disabled peers. A directional trend was found which supports the contention that improving the nondisabled subjects' perceptions of the sport-specific efficacy of their disabled peers may enhance their perceptions of their disabled peers' general physical competence. However, this relationship was not statistically significant. Also, the confounding use of a proficient adult wheelchair tennis instructor in the homogeneous learning sessions requires that future studies be carried out to corroborate these findings.

Kelly, L.E. Rimmer, J.H. A practical method for estimating percent body fat of adult mentally retarded males. Adapted physical activity quarterly (Champaign, Ill.) 4(2). Apr 1987, 117-125.

The subjects were 170 moderately and severly mentally retarded men who were divided into two groups. The first group was used to formulate a new prediction equation and the second group was used to cross-validate and ascertain the stability of the derived equation. The prediction equation, employing waist and forearm circumferences, height and weight as predictors, and estimated percent body fat calculated by the generalized regression equation of Jackson and Pollock (1978) as the criterion measure, was formulated using a stepwise multiple regression analysis. A multiple R value of .86 was obtained for the derived equation with a standard error of estimate value of 3.35. The equation as cross-validated on the second error of estimate of 4.41 was obtained between the subjects' estimated percent body fat, using the new equation, and the criterion measurement. This simplified equation provides practitioners with an accurate, reliable, and inexpensive method of estimating percent body fat for adult mentally retarded males.*

Patrick, G.D. The effects of wheelchair competition on self-concept and acceptance of disability in novice athletes. Therapeutic recreation journal (Alexandria, Va.) 20(4), 1986, 61-71.

Ten novice mobility impaired athletes were measured prior to and 5 months after their first competitive wheelchair experience and compared to veteran athletes and non-athletes on self-concept and acceptance of disability. As an effect of the athletic participation significant gains were found on self-concept and sub-scales of perceived behavior, family self, as well as acceptance of disability.

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Seidl, C. Reid, G. 'Montgomery, D.L. A critique of cardiovascular fitness testing with mentally retarded persons. Adapted physical activity quarterly (Champaign, Ill.) 4(2), Apr 1987, 106-116.

Recently there has been a plethora of research investigating various dimensions of the cardiovascular fitness of mentally retarded persons. It is clearly documented that as a group, mentally retarded persons are particularly low in aerobic fitness. Although there is evidence that such low cardiovascular functioning can be increased, exercise training studies have invariably ignored the important questions of reliability and validity of the dependent measures. Also, there are innumerable testing protocols that make cross-study comparisons tenuous. Several factors are fundamental to the reliability and validity of standardized protocols that have recently been used with retarded persons. These include underlying assumptions of cadence adherence, constant efficiency, learning, and motivation to perform optimally. The development of cardiovascular test protocols for use with retarded persons is necessary to provide for their immediate and future needs in cardiovascular fitness evaluation.*

Scott, D.H. Henderson, S.E. Moyes, F.A. Diagnosis and remediation of handwriting problems. Adapted physical activity quarterly (Champaign, Ill.) 4(2), Apr 1987, 137-147.

The lack of a system for the analysis and diagnosis of handwriting incompetence has led to the neglect of this area of learning failure. This article describes a new instrument, the Diagnosis and Remediation of Handwriting Problems (DRHP) (Scott, Moyes, & Henderson, 1984), that has been designed to fill this hiatus. Handwriting problems are divided into (a) faults of concepts and style, which reflect failures of learning or teaching, and (b) faults of motor control, which suggest fine-motor or perceptual dysfunction and may have a neurological origin. Specimens of children's handwriting illustrate this categorization. The methodology of the remedial programs proposed by the DRHP is based on empirical findings about the nature of handwriting movements. These programs are briefly described. There is a need for handwriting specialists to advise teachers and help in the diagnosis of problems. It is suggested that physical education teachers be trained to develop these skills.*

Brenes, G. Dearwater, S. Shapera, R. LaPorte, R.E. Collins, E. High density lipoprotein cholesterol concentrations in physically active and sedentary spinal cord injured patients. Archives of physical medicine and rehabilitation (Chicago) 67(7), Jul 1986, 445-450.

This research was designed to investigate the concentrations of high density lipoprotein cholesterol (HDLc) and its subfractions HDL2 and HLD3 among 66 sedentary patients in a rehabilitation centre. The concentrations of HDLc were compared to those of 22 olympic calibre wheelchair athletes and 126 able-bodied controls. Total HDLc, HDL2 and HDL3 levels were lower in the male SCI sedentary population than in both the male SCI athlete and the able-bodied control populations. As the level of physical activity was found to be the major difference between the two SCI groups, the authors suggest that an increase of physical activity may decrease the risk of coronary heart disease in the SCI patient.

Fitem, K.H. Snell, P.G. Stray-Gundersen, J. Maximal response of wheelchair-confined subjects to four types of arm exercise. Archives of physical medicine and rehabilitation (Chicago, Ill.) 68(1), Jan 1987, 10-13.

Eight active wheelchair confined males performed arm driven ergometric exercise to exhaustion. The Cybex Upper Body Ergometer (CUBE) and the Schwinn Air-Dyne ergometer (SAE) were compared with responses to the Monark Arm Ergometer (MAE). Subjects also performed incremental wheelchair exercise on a motor driven treadmill (TM), where they pushed their wheelchairs until volitional exhaustion. VO2 max, maximum heart rate and lactate concentration during the 4 exercises were not significantly different. Minute ventilation was lower in the MAE protocol than the CUBE and SAE protocols. TM was not significantly different compared with the 3 modes. Exhaustion was longer using TM (10.00 min.) than on CUBE (8.0 min.), MAE (7.5 min.) and SAE (8.4 min.). The authors concluded that the CUBE and SAE compare favourably with TM and the MAE in assessing aerobic capacity of wheelchair confined subjects.

Burkett, L.N. Chisum, J. Cook, R. Norton, B. Taylor, B. Ruppert, K. Wells, C. Construction and validation of a hysteresis brake wheelchair ergometer. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 4(1), Jan 1987, 60-71.

Numerous studies in the past 10 years have researched physiological adaptation to stress by wheelchair-bound subjects. Instrumentation necessary to produce this effect had to be designed and tested prior to obtaining valid data. This study had two main purposes: to design a wheelchair ergometer for physiological testing of spinal cord-injured subjects, and to demonstrate the validity of the maximal stress test when using the wheelchair ergometer. 10 disabled subjects (9 paraplegic and 1 quadriplegic) participated in both a maximal field test (FT) and a maximal wheelchair ergometer test (WERG), with each subject serving as his or her own control. A randomly assigned counterbalanced design (5 subjects assigned to complete the FT first, with the second group of 5 subjects completing the WERG first) was used to reduce the learning effect in the study. The results of the t-tests indicated there was no significant difference between VO2 and VE, (STPD) averages for the WERG and FT for maximal effort. The Pearson product moment correlation level was statistically significant when the WERG' VO2 was compared to the FT VO2 and was significant when the WERG VE was compared to the FT VE.*

Churton, M.W. Impact of the Education of the Handicapped Act on adapted physical education: a 10-year overview. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 4(1), Jan 1987, 1-8.

In the 10 years since the enactment of the Education of the Handicapped Act (EHA) (1975), special education has grown substantially. Physical education, although cited within the definition of special education, has not grown to the same degree relative to number of teachers trained and children served. Financial assistance from the federal government helped develop adapted physical education programs but it has not been adequate to meet the needs. Several areas of concern are identified and recommendations are made for possible implementation of the physical education mandate of the EHA.*

Coutts, K.D. Smeryn, J.L. Aerobic and anaerobic power of Canadian wheelchair track athletes. Medicine and science in sports and exercise (Indianapolis) 19(1), Feb 1987, 62-65.

The aerobic and anaerobic capabilities of six wheelchair track athletes were determined on a wheelchair ergometer prior to their competition in the 7th World Wheelchair Games. The sample included two male tetraplegics, one female paraplegic, and three male paraplegics, each in different competitive classifications. The evaluation of the anaerobic capabilities of the athletes involved determination of the total work accomplished during a 30-s all-out effort and the peak power output (PO) during a 5-s interval of this test. Aerobic capability was determined as the peak oxygen uptake and associated PO over a 1-min time period during a continuous progressive intensity test to exhaustion. Peak oxygen uptakes ranged from 1.90 to 3.43 l.min-1 (16.9 to 5.07 ml/kg.1 min-1) and aerobic PO from 19 to 120 W. Peak anaerobic PO was 21 to 70 percent higher (31 to 148 W) than aerobic PO, and total work in 30 s ranged from 740 to 4315 J. The male paraplegics displayed the highest values while the class 1A tetraplegic had the lowest. These laboratory findings were in general agreement with the athletes' performance in their track events.*

Kerr, R. Hughes, K. Movement difficulty and learning disabled children. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 4(1), Jan 1987. 72-79.
Results of recent research have implicated information processing deficits in explaining the poor academic performance of learning disabled children. However, the motor difficulties of these children have not been extensively studied from a processing framework, yet cognitive skills are inherent to the successful performance of motor skills. Sixteen learning disabled and sixteen control subjects ranging in age from 6 to 8 years were tested on a Fitts' reciprocal tapping task using 16 different target combinations with the ID ranging from 1.50 to 6.64 bits. Analysis of the slope and intercept coefficients showed a significant difference for intercept but not for slope. These data suggest that the problem may not be a major processing deficit, as the learning disabled children were able to handle the increased task difficulty in the same manner as the controls. Instead the problem may exist at the very early input stage of the processing mechanism: getting the information into the system.*

Killian, K.J. Arena-Ronde, S. Bruno, L. Refinement of two instruments that assess water orientation in atypical swimmers. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 4(1), Jan 1987. 25-37.
The purpose of this study was to examine the usefulness of two instruments designed to assess water orientation, which was defined to include both traditional water adjustment concerns and novel aspects of a swimmer's adjustment to water. The Water Orientation Checklist-Basic (WOC-B) assessed successful performance using a five-choice rating scale. The Water Orientation Checklist-Advanced (WOC-Adv) assessed successful and unsuccessful performance; unsuccessful responses involved a subject's failed attempt to perform a task and were thought to be an indicator of motivation. Seventy-one atypical subjects (i.e. individuals who require special swimming instruction) were individually observed; these included 15 autistic children, 14 autistic youths, 10 functionally retarded children, 9 functionally retarded youths, 13 functionally retarded preschoolers, and 10 nonhandicapped preschoolers. The checklists were found to offer good interobserver agreement (WOC-B, 87 percent, WOC-Adv, 80 percent and were found appropriate for assessing water orientation in the six groups observed. Based on the findings of the study, the instruments were thought to be useful assessment devices for instructional and research purposes.*

McGrain, P. van Dyke, J. Mastro, J. Coefficients of restitution of balls used in team sports for the visually impaired. International journal of sport biomechanics (Champaign, Ill.) 3(1), Feb 1987. 63-68.
This study examined the coefficients of restitution (e) of selected balls used in team sports for the visually impaired: beep baseball and goal ball. Specifically, a basketball was compared to two men's standard goal balls, and a softball was compared to three different types of beep baseballs. The e for all balls was calculated by dropping each ball five times from heights of 6 ft (1.83 m) and 19.25 ft (5.88 m). A Sony reel-to-reel videotape recorder was used to record rebound heights on a background scale for each ball dropped. Reliability tests of the procedures yielded correlation coefficients (r) of 0.996 and 0.998 for the 6 ft (1.83 m) and 19.25 ft (5.88 m) drops, respectively. Two two-factor analysis of variance (ANOVA) tests yielded significant differences across ball type and height of drop for the basketball and goal balls and for the softball and beep baseballs, respectively. The es for the more recently developed beep baseballs are close to that of the standard softball, indicating a possible danger to visually impaired participants in beep baseball.*

Verderber, J.M.S. Payne, V.G. A comparison of the long and short forms of the Bruininks-Oseretsky Test of Motor Proficiency. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 4(1), Jan 1987. 51-59.
The relationship between the long and short forms of the Bruininks-Oseretsky Test of Motor Proficiency was investigated. Forty-eight regular education students, who had been referred to adapted physical education, were administered the long form of this test. Short form scores were subsequently derived from the long form items. Pearson product-moment r values generally indicated strong relationships between long and short form scores when the data were converted to standard and percentile scores. T-test analyses, however, indicated that long and short form standard score mean differences were significant at the .01 level (conventional .05 alpha level was reduced to .01 by the Dunn Test) for the two younger age groups and the all-subjects group. The results indicated that placement decisions in adapted physical education may vary depending upon which form of the test is used.*

Karper, W.B. Evans, B.W. Cycling program effects on one rheumatoid arthritic. American journal of physical medicine (Baltimore) 65(4), Aug 1986. 167-172.
This study investigated the effects of a progressive resistive bicycle ergometric exercise program on cardiovascular endurance in a rheumatoid arthritic. The subject of study, a 46 year old male, exercised three days a week for 2 periods of fourteen weeks. Blood samples were taken prior to and following the exercise program. Psychological and physical health and lifestyle data were gathered before, during and after the 14 week period. The results of the test showed a positive effect in training, a 28 percent improvement in blood values from the beginning to the end of the program, and a positive influence on various psychological and physical parameters.

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Antony, R.M. Atlantoaxial instability: why the sudden concern? APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(4), Oct 1986, 320-328.
The conditions of atlantoaxial instability and subsequent dislocation have raised much concern in recent years. Lack of knowledge in the medical and educational professions hampered efforts by Special Olympics, Inc. in 1983 to encourage screening of all Down syndrome participants prior to athletic competition. As a result, numerous articles on these conditions have been published in the last few years attempting to promote awareness. This paper looks at atlantoaxial instability and dislocation in depth, with the hope of providing knowledge to those who do not understand the concern surrounding these conditions.*

Asken, M.J. Goodling, M.D. Sport psychology: an undeveloped discipline from among the sport sciences for disabled athletes. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(4), Oct 1986, 312-319.
This article describes the relationship and potential contribution of sport psychology to disabled athletic competition. It is suggested that sports for disabled individuals is an area that has been essentially neglected by sport psychology research and intervention, although appropriate and needed applications do exist. Evidence for this neglect as well as examples of beneficial applications are provided. Recommendations are given for approaches to integrate sport psychology knowledge and techniques into the area of sports for disabled athletes.*

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Cooney, M.M. Walker, J.B. Hydraulic resistance exercise benefits cardiovascular fitness of spinal cord injured. Medicine and science in sports and exercise (Indianapolis) 18(5), Oct 1986, 522-525.
The purpose of this investigation was to examine the effects of hydraulic resistance exercise training on fitness in spinal cord injured patients. Ten subjects (five quadriplegics and five paraplegics) participated in a 9-wk training program. Subjects trained 3 times/wk. The 9-wk program was divided into three 3-wk periods, designated as stages I, II, and III. A discontinuous arm crank protocol was used to assess VO2 max before and after training. Assessment of the intensity of the hydraulic resistance exercise was made by continuous ECG monitoring during training. A 60 to 90 percent maximum observed heart rate was calculated for the subjects. The spinal cord-injured subjects' VO2 max increased 28.1 percent, and maximum exercise power output increased 36.7 percent as a result of the 9-wk training program. Both of these findings were statistically significant. The exercise intensity was within a 60 to 90 percent training zone during stages II and III but not during stage I training. The results of this study indicate that hydraulic resistance exercise training may produce increased cardiovascular fitness in spinal cord-injured subjects.*

Cowell, L.L. Squires, W.G. Raven, P.B. Benefits of aerobic exercise for the paraplegic: a brief review. Medicine and science in sports and exercise (Indianapolis) 18(5), Oct 1986, 501-508.
The importance of exercise for the general population is emphasized widely; therefore, it must be even more important for paraplegics who are already threatened with poor health due to the sedentary nature of their lifestyle. The effects of functional degeneration are vast and greatly reduce the overall health of paraplegics, particularly within the musculoskeletal and cardiovascular systems, thereby increasing their risk for cardiovascular disease. Recent investigations suggest that this process may be reversible through exercise training and that paraplegics respond to exercise training in essentially the same manner as the non-handicapped individual. In addition, exercise training has been reported to decrease the resorptive process of the skeleton by decreasing bone and collagen catabolism and possibly aiding in new bone formation. This review attempts to summarize the available literature on the effects of exercise on the paraplegic and will hopefully provide some direction not only for further research but also recommendations for practioners working in the field.*

Dearwater, S.R. Laporte, R.E. Robertson, R.J. Brenes, G. Adams, L.L. Becker, D. Activity in the spinal cord-injured patient: an epidemiologic analysis of metabolic parameters. Medicine and science in sports and exercise (Indianapolis) 18(5), Oct 1986, 541-544.
The purpose of the current research was to investigate the metabolic differences between spinal cord injured individuals (SCI sendentary group), active disabled individuals (SCI athletes), and able-bodied individuals. Fasting morning blood samples were obtained for the determination of high density lipoprotein cholesterol (HDLC) subfractions (HDL2), glucose, and insulin. The sedentary SCI group comprised 77 males. The 17 SCI athletes were recruited prior to competition at the annual National Wheelchair Games. Total HDLC and both its subfractions were significantly lower in the male SCI sedentary population than in the SCI athletes or ablebodied controls. HDL2 was significantly elevated in the SCI athlete compared to the SCI sedentary group (42.7 vs 34.1 mg.dl-1) and was similar to the control population (46.1 mg.dl-1). Glucose levels were similar in the two SCI groups but were both significantly lower than in the able-bodied controls. These data suggest that the extreme inactivity observed in disabled populations is associated with lower HDLC concentrations and an increase in coronary heart disease risk if these values were to persist over time. It also appears that physical activity is associated with increases in total HDLC, primarily through the HDL2 subfraction. Glucose and insulin were similar for both SCI groups despite the marked difference in activity levels, suggesting that these parameters may not be associated with activity.*

Eason, R.L. Brandon, J.E. Smith, T.L. Serpas, D.C. Relaxation training effects on reaction/response time, frontalis EMG, and behavioral measures of relaxation with hyperactive males. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(4), Oct 1986, 329-341.

The purposes of this study were to determine if three medically diagnosed hyperactive males could be taught to relax using a modified version of Behavioral Relaxation Training (BRT), as conformed by frontalis electromyographic (EMG) data and by Poppen's Behavioral Relaxation Scale (BRS), and to determine if a relaxed state is more optimal for performing attention-demanding motor tasks. After obtaining baseline data for relaxation and reaction/response time variables, subjects received six to eight sessions of BRT, followed by posttesting and a 1-month follow-up. Results indicated large reductions in BRS scores, EMG reductions in two of the three subjects, and reductions in reaction/response time. The results supported the use of relaxation training for facilitating information processing.*

McNeill, A.W. Mulholland, R. Consolidation memory theory applied to relearning motor skills in profoundly retarded, multiply handicapped children. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(4), Oct 1986, 342-350.

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This study evaluated the effects of latency periods on the retention of gross motor skills in three profoundly retarded, multiply handicapped children, and the efficacy of a relearning model as a test of learning among these children. The study used a quasi-experimental, multiple baseline-across-subjects design. The subjects were taught a motor skill designed specifically to their abilities; the skill was retaught following latency periods of 90, 30, and 14 days during which time the skill was not practiced. Based upon the results of this study, it was concluded that the subjects had some ability to retrieve motor programs and that some feedback process operated to refine the motor program. It was determined that the number of trials required to achieve a criterion is dependent upon the latency interval, with a 14-day interval having no effect upon achievement of criterion. These findings are used to support an argument for intermittent programming for the retention of motor skills in profoundly retarded, multiply handicapped children, thereby helping them to maintain and expand their repertoire of behaviors.*

DePauw, K.P. Horseback riding for individuals with disabilities: programs, philosophy, and research. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 217-226.

Although historical mention of horseback riding for individuals with disabilities can be traced through the centuries, programs of therapeutic riding were not established until the mid-1900s. Since its inception, horseback riding for the disabled has become diversified and increasingly sophisticated. As a result, the programs have a varying emphasis on riding as sport, recreation, education, or therapy. The literature contains articles describing therapeutic riding programs that include claims of medical and educational benefits for participants. Although the programs have existed for 30 years, interest in research on the benefits of horseback riding for the disabled is relatively new. Despite the progress made, it is critical that professionals in horseback riding for individuals with disabilities (a) collect empirical evidence supporting the claimed benefits, (b) develop appropriate evaluation instruments/tools, (c) identify effective intervention techniques, (d) provide for accessibility of publications/information from Europe, and (e) develop printed and audiovisual materials for the health professional community.*

Edwards, J.M. Elliott, D. Lee, T.D. Contextual interference effects during skill acquisition and transfer in Down's syndrome adolescents. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 250-258.

An experiment is reported that investigated the effects of contextual interference on motor skill acquisition, and transfer of training in Down's syndrome adolescents. Twenty Down's syndrome adolescents and 20 nonhandicapped mental age controls learned a coincident anticipation timing task using either a random or a blocked training schedule. For transfer to a novel but similar task, subjects from both populations evidenced beneficial effects due to random practice. These data are discussed in terms of recent developments for strategy enhancement in motor learning by mentally retarded individuals.*

Hattin, H. Ward, G.R. Fraser, M. Shephard, R.J. Are deaf children unusually fit? A comparison of fitness between deaf and blind children. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 265-275.

Fitness levels have been tested in a sample of 29 functionally deaf students (15 boys and 14 girls) of average age 13.5 years and compared to deaf and blind children of similar age - published by Cumming, Goulding, and Bagley (1971) and by Lee, Ward, and Shephard (1985). Maximum attained oxygen intake, maximum power output, and 12-min run scores were less than anticipated in the general Canadian population of this age. This seems to be a reflection of difficulty in stimulating all-out effort, since the physical working capacity at a heart rate of 170 bpm was well up from figures observed in a recent national sample. All fitness scores were closely comparable with a previous study of deaf children in Winnipeg (Cumming et al., 1971). Our data do not support the hypothesis that deafness stimulates hyperactivity, with the resultant development of an unusual level of fitness. Indeed, many deaf children could profitably be stimulated to undertake more endurance exercise.*

Sherrill, C. Fostering creativity in handicapped children. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 236-249.

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The purpose of this paper is to increase awareness of creativity as a goal of adapted physical education, to describe assessment techniques, and to suggest instructional approaches for developing creativity in the movement setting. Creative behaviors that can be developed in handicapped children and youth include fluency, flexibility, originality, elaboration, risk-taking, courage, curiosity, and imagination. Research on creativity and handicapped children is identified and cited. Assessment instruments reviewed are Torrance Tests of Creative Thinking, Wyrick Test of Motor Creativity, Torrance Test of Thinking Creatively in Action and Movement, TWU Motor Creativity Rating Scale, and Brennan Test of Creative Motor Performance.

Instructional approaches described are dance and movement education, games analysis intervention, and shared decision-making versus teacher decision-making. Also discussed are modeling and the influence of specific teaching behaviors on handicapped children's classroom responses.

Stott, D.H. Henderson, S.E. Moyes, F.A. The Henderson revision of the test of motor impairment: a comprehensive approach to assessment. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 204-216.

This article describes the approach to testing that guided the recent revision of the Test of Motor Impairment (TOMI). Traditional attempts to measure intrinsic ability lent themselves to the labeling of children as defective. A test score should be regarded rather as a record of available capabilities. Performance depends on the abilitites a child brings into play; the use of abilities and the development of skills depend in turn on motivational-emotional factors. Moreover, a composite score does not provide information about the reasons for failure. These considerations led to the compilation of qualitative diagnostic aids. The first directs the tester's attention to the nature of a child's failure of motor control, the second to behavioral sources of poor performance. The third checklist is a task-by-task, process-oriented analysis of motor faults designed for clinical diagnosis and professional training. In providing a detailed picture of a child's performance, the TOMI bridges the gap between assessment and therapy and provides instrumentation for systematic, measurable therapy.*

Surburg, P.R. New perspectives for developing range of motion and flexibility for special populations. APAQ: Adapted physical activity quarterly (Champaign, Ill.) 3(3), Jul 1986, 227-235.

The purpose of this article was to examine techniques that are available to adapted physical educators and therapeutic recreators to enhance flexibility. Based upon current research and literature in the areas of flexibility and range of motion, this article explored theoretical constructs as well as applications of specific techniques. A two-tier model for flexibility enhancement was generated which served as a basis for the development of this article. One tier involved considerations concerning the stretching of collagenous tissue, implications regarding elastic and viscous properties, and new methods for stretching this type of tissue. The other tier incorporated neurophysiological mechanisms, their effect upon agonist and antagonist muscles, and facilitation exercises to improve flexibility.*

Pandavela, J. Gordon, S. Gordon, G. Jones, C. Martial arts for the quadriplegic. American journal of physical medicine (Baltimore, Md.) 65(1), Feb 1986, 17-29.

The authors outline the success of their Martial Art Classes for spinal cord injured wheelchair patients at the Long Beach California V.A. Medical Centre. The "wheelchair martial arts" program began in 1975. Classes start with warmup exercises and are followed by several katas. Special consideration is paid to each individual, and students progress at their own rate. The program provides exercise, has a physically therapeutic value, instills a sense of comraderie and trains students to defend themselves in certain situations.

Stotts, K.M. Health maintenance: paraplegic athletes and nonathletes. Archives of physical medicine and rehabilitation (Chicago, Ill.) 67, Feb 1986, 109-114.

The purpose of this study was to determine whether there is a positive relationship between participation in competitive wheelchair sports and the successful avoidance of medical complications secondary to spinal cord injuries. Subjects consisted of 42 individuals under the age of 50 years. Each were diagnosed as traumatic paraplegics with a duration of no less than two years, who used manual wheelchairs as their primary mode of ambulation. For the purposes of comparison, the subjects were divided into two groups: twenty-one athletes and twenty-one non-athletes. Three separate questionnaires were used in the study, each designed to collect specific data about: 1) athletic involvement; 2) health/illness-related behaviour and 3) health status and activity level. The third estimate was completed by by a friend or relative of the subject's choosing, and thus provided an independent account of each subject's health status. The results showed that paraplegic athletes are able to avoid major medical complications for which they are at risk more successfully than non-athletes. The author interpreted these results to mean that athletically active paraplegics cost the individual, medical insurance companies and the state less money in terms of medical care and hospitalition than their non-athletic counterparts.

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Calzolari, A. Baronci, C. Biondi, G. Donfrancesco, A. Franti, L. Miano, C. Pucci, S. Ragonese, P. Turchetta, A. Evaluation of a group of leukaemic children "off-therapy", towards their inclusion in physical activites. International journal of sports cardiology (Rome) 2(2), Jul/Dec 1985, 108-115.

Fifteen patients were examined (10 male, 5 female), 9.6-15.8 years old, of whom 14 suffered from acute lymphoblastic leukaemia and one from acute myeloid leukaemia. The patients underwent clinical examination, hemocromocitometric tests, bone marrow examination, analysis of urine, electrocardiogram at rest and maximal exercise test by cycloergometer, mono and bi-dimentional echocardiography examination, continuous 24 hour dynamic electrocardiogram (Holter), spirography and a psychological evaluation. The results of the tests carried out were within normal standards, except for the exercise test with the bicycle, which showed a total work and duration of the test significantly lower than the theoretical value, no arrhythmias have been recorded and maximal blood pressure remained normal. As well, the psychological examinations indicated difficulties in interrelating with others, school performance and group life.*

Burch, N.R. Reid, M. Butler, T.J. A facility-wide approach to recreation programming for adults who are severely and profoundly retarded. Therapeutic recreation journal (Alexandria, Va.) 19(3), 1985, 71-78.

A facility-wide recreation program was designed and implemented in order to increase staff and client participation in daily leisure activities at an intermediate care facility for severely and profoundly mentally retarded adults. The baseline phase of the study consisted of having recreational materials available during scheduled recreation periods. The treatment was a package program consisting of (1) providing the staff with preplanned materials and activities, (2) assigning staff to specific roles, and (3) monitoring staff and providing feedback by supervisors. The treatment was implemented on the two living units of the Liberty Intermediate Care Facility. Treatment effects were similar on both units. Client participation increased from a baseline average of less than 10 percent to nearly 50 percent and staff participation increased from less than 10 percent to an average of 60 percent during program implementation.*

Claremont, A.D. Maksud, M.G. A model treadmill adaptation for wheelchair ergometry. Canadian journal of applied sport sciences/Journal canadien des sci. appliquees au sport (Windsor) 10(4), Dec 1985, 178-181.

The authors have designed, constructed and tested a restraining apparatus to permit safe uninhibited hand propulsion of a wheelchair on a motor driven treadmill. The special design features of the tracking assembly minimize any potential hazard or apprehension associated with possible lateral or rearward displacement of a chair from the belt surface. Special linear bearings minimize any increase in rolling resistance at speeds ranging from 4 to 282 m. min.. The supporting frame is adjustable for variations in treadmill belt widths and different model wheelchairs. Easy removal of the chair enables convenient conversion of the treadmill for walking/running activity.*

Hahn, A.G. The nature and causes of exercise-induced asthma. Australian journal of science and medicine in sport (Kingston, ACT) 17(2), June 1985, 3-10.

Exercise-induced asthma occurs in all asthmatic people. Though it can be prevented through the use of prophylactic drugs, they do not always provide total protection. This detailed review outlines how current research suggests that exercise-induced asthma begins with airway mucosa water loss during exercise hyperpnea. The asthmatic athlete can take various precautions to prevent or minimize exercise-induced asthma.

Mastro, J. French, R. Henschen, K. Horsai, M. Use of the state-trait anxiety inventory for visually impaired athletes. Perceptual and motor skills (Missoula, Mont.) 61(3), Dec 1985, 775-778.

The reliability of the State Trait Anxiety Inventory was tested for verbal presentation and standard questionnaire presentation to 19 male and 17 female undergraduate physical education students. The inventory was also administered verbally to visually impaired elite female athletes on two occasions. The inventory results were found to be reliable for both methods of presentation. This leads the authors to suggest that verbal presentation of the inventory may be used in the mental preparation of visually impaired athletes prior to competition.

Rozendal, R.H. Heerkens, Y.F. van Ingen Schenau, G.J. van Ravensberg, C.D. van der Woude, L.H.V. Vector diagrams in the evaluation of human gait. Archives of physical medicine and rehabilitation (Chicago, Ill.) 66(10), Oct 1985, 682-686.

X-z vector diagrams (VDG) are constructed from measurements of foot reaction forces in the vertical (Z) and horizontal for-af(t) direction during walking. The dependency of the VDG parameters on body weight, velocity, step length, age, and physical condition is indicated. The VDGs of 18 hemiplegic subjects are evaluated in a clinical setting. The height and width of the VDG vary with the speed of walking. Alterations in the functions of the legs and irregularities due to instability are observed.

Schleien, S.J. Wreder, J.K. Perceived responsibilities of special recreation services in Minnesota. Therapeutic recreation journal (Alexandria Va.) 19(3). 1985. 51-62.
Recent federal legislation has established the right of individuals with disabilities to live, learn, and by implication, recreate in least restrictive environments. These initiatives have facilitated the move of large numbers of handicapped persons into community living situations, consequently shifting the responsibility of recreation programming to community agencies. To determine the quantity and quality of recreation programs and services thoughout the state of Minnesota, the authors [illegible] park and recreation departments, community education agencies, and schools via a needs assessment inventory. A 73 percent return enabled the authors to identify perceived responsibilities and the degree of coordination among agencies, and the extent and nature of special recreation services currently offered, including the integration of handicapped and nonhandicapped participants.*

Singleton, J.F. Shields, P. Jamieson, P. Strong, T. Finlay, D. Connors, R. Rights of individuals in an institution. Journal of leisurability (Concord, Ont.) 12(1), Summer 1985. 46-49.
A survey of 25 residents in six homes for special care in Nova Scotia was undertaken in order to determine if these individuals were aware of their rights under the Nova Scotia Homes for Special Core Act. Results indicated that: 1) only 4 percent of the respondents knew their rights under the act, 2) 56 percent of the respondents chose their present residence, 3) family, friends and professional colleagues were the most frequent visitors, 4) the most popular activities were bingo, crafts, bowling, watching television and listening to the radio, and 4) 73.9 percent of the respondents did not know how leisure activities were planned in their institutions.

Zinman, B. Zuniga-Guajardo, S. Kelly, D. Comparison of the acute and long-term effects of exercise on glucose control in type I diabetes. Diabetes care (New York) 7(6). Nov/Dec 1984. 515-519.
13 subjects with type I diabetes and 7 control subjects performed 45 minutes of bicycle exercise 3 times per week for 12 weeks. Physical fitness levels (V02 max) increased significantly in both groups while body weight remained unchanged. The diabetic subjects experienced an acute glucose-lowering effect with each exercise session throughout the 12 weeks of training. Fasting plasma glucose and glycosylated hemoglobin had insignificant changes in both groups. Caloric intake increased significantly on exercising days and neutralized significant decreases in plasma glucose levels experienced on exercising days. The authors recommend the formulation of more precise guidelines and recommendations as to the timing of exercise and nutrient intake for diabetes.

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Dearwater, S.R. Laporte, R.E. Cauley, J.A. Brenes, G. Assessment of physical activity in inactive populations. Medicine and science in sports and exercise (Indianapolis) 17(6). Dec 1985. 651-655.
The ability to index activity objectively in disabled or impaired activity populations is critical for our understanding of the long-term health consequences of reduced activity. The current research employed the large-scale integrated activity monitor as an objective measure of free living daily activity in 28 subjects with traumatic spinal cord injury. All the spinal cord-injured subjects wore the monitors for 2 days while in-patients at a rehabilitation center. The results indicated that the instruments can accurately index individual physical activity levels in this population, which has drastically reduced activity. Furthermore, group differences in activity were discriminated where paralegic activity was significantly greater than quadriplegic activity despite the markedly low activity levels. The results thus indicate that activity sentors can index individual activity levels at the very low end of the activity spectrum.*

Dickinson, J. Perkins, D. Socialization into physical activity for the disabled populations. CAHPER/ACSEPL journal (Ottawa) 51(8). Nov/Dec 1985. 4-12.
Socialization limits to participation and motivation to continue participation among the disabled population are examined in the realm of physical activity. Active and inactive blind and wheelchair subjects completed questionnaires designed to elicit information concerning socialization into physical activity, limits to participation and motivations to continue participation. Significant differences between active and inactive samples emerged in the socializing role of agencies associated with the disability, significant adult others and the influence of role models. Intrinsic factors rather than extrinsic factors were more important in maintenance of participation. Males were significantly more influenced by role models to participate than females and females were more influenced by their mothers. Significantly greater limits to participation were found by the inactive in terms of lack of interest, medical problems and physical discomfort, travel problems, embarrassment concerning public participation and the attractiveness of alternative activities.*

Broadhead, G.D. Placement of mildly handicapped children in mainstream physical education. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 307-313.
This paper describes some issues which should be considered when placing mildly handicapped children with their nonhandicapped peers for physical education, and contrasts two approaches which seek to produce effective mainstreaming. In some parts of the country, having decided that mainstreaming large numbers of mildly handicapped children was appropriate, state education administrators have issued regulations and guidelines aimed at ensuring delivery of services. However, it is suggested that mainstreaming policies and procedures which do not take account of conditions in widely disparate local school settings may be unlikely to match the unique needs of each handicapped child. An alternate way to ensure effective mainstreaming is discussed.*

Craft, D.H. Hogan, P.I. Development of self-concept and self-efficacy: considerations for mainstreaming. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 320-327.
Humanistic goals related to the affective domain have been of considerable influence in the justification of mainstreaming. Physical educators have traditionally identified development in this domain as a salient educational outcome of physical activity and of physical education programs. Concerning handicapped children in regular physical education programs, the benefits related to development in the affective domain have been espoused and projected to be significant. However, development in the affective domain (especially as related to self-concept and self-efficacy) does not occur incidentally, but must be planned for. This article elaborates on the constructs of self-concept and self-efficacy and discusses the implications for developing or enhancing these constructs in mainstreamed handicapped children.*

DeHaepe, J.L. The influence of three least restrictive environments on the content motor-ALT and performance of moderately mentally retarded students. Journal of teaching in physical education (Champaign, Ill.) 5(1). Oct 1985. 34-41.
The purpose of this investigation was to determine which of three least restrictive classroom environments would provide the greatest opportunity for mentally retarded students to practice on-task motor behavior. The experimental design used in this investigation consisted of three intact groups, each containing 10 moderately mentally retarded subjects ranging in age from 5 to 12 years. Static and dynamic balance measures were taken to evaluate the acquisition of overall balance performance while controls were placed on intelligence quotients and ability. Academic Learning Time (ALT) was also recorded in order to determine differences in content motor behavior. A significant relationship occurred between static balance and ALT. In addition, the peer tutors significantly increased the time moderately mentally retarded students practiced content motor behavior, which established the peer-tutor classroom setting as the least restrictive environment for enhancing motor performance.*

Dunn, J.M. Fredericks, H.D.B. The utilization of behavior management in mainstreaming in physical education. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 338-346.
The mainstreaming of handicapped students into physical education classes is dependent upon teachers who can provide successful learning experiences. The application of behavior management concepts appears to be an instructional technique which physical educators should consider in designing quality mainstreaming experiences. Studies were reviewed that report the application of behavior management principles in various curricular areas including physical education. Additional research is needed to substantiate the importance of behavior management techniques in helping to create a favorable environment in the mainstreamed physical education class.*

Karper, W.B. Martinek, T.J. Problems in mainstreaming research: some personal observations. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 347-350.
Decisions are necessary regarding the standardization of procedures that place atypical students in the mainstream, and clear definitions are needed regarding what constitutes a handicapped student in physical education. Also, agreement is needed on what typifies the makeup of a regular physical education program that serves handicapped students. Additionally, physical education class content and context differs between classes in the same school, making controlled studies nearly impossible to achieve. It is very difficult to select test instruments that are appropriate to both handicapped and nonhandicapped students. Finally, data analysis is a problem because of the unequal numbers of handicapped and nonhandicapped students found in mainstream physical education classes.*

Karper, W.B. Martinek, T.J. The integration of handicapped and nonhandicapped children in elementary physical education. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 314-319.
This paper describes physical education research completed in a university-based laboratory over a 2-year period. The purpose of various laboratory projects was to study the complexities associated when integrating handicapped with nonhandicapped children. All of the work was focused on children in the kindergarten through third grades. Variables studied were motor performance, self-concept, teacher expectations, student effort (how hard a student tried during class), age, and social climate (competitive and noncompetitive atmospheres). Implications for teachers of physical education are drawn from investigation results.*

Rarick, G.L. Bender, A.C. The effect of mainstreaming on the motor performance of mentally retarded and nonhandicapped students. Adapted physical activity quarterly (Champaign, Ill.) 2(4). Oct 1985. 277-282.
This paper is an account of a field research project on mainstreaming two age levels of TMR children in physical education classes, including a commentary on pedagogical considerations in mainstreaming. The findings indicated that the gain in motor performance of the integrated generally exceeded that of the nonintegrated TMRs without adversely affecting the performance of their nonhandicapped peers. Teacher intervention was greater for the young retarded than for their nonhandicapped peers, more apparent for the integrated than for the segregated TMRs, and less evident for the older nonhandicapped than for the older TMR children. Tbhe findings lend support to the belief that the retarded can be successfully integrated in physical education classes.*

Santomier, J. Physical educators' attitudes and the mainstream: suggestions for teacher trainers. Adapted physical activity quarterly (Champaign, Ill.) 2(4), Oct 1985, 328-337.
Establishing a psychosocial atmosphere that encourages the acceptance of individual differences is of primary importance to the success of mainstreaming. However, a positive psychosocial atmosphere does not occur incidentally. It demands (a) a desire to establish a positive environment; (b) knowledge concerning the importance of establishing such an environment; (c) skills and techniques required to establish such an environment; (d) deliberate planning on the part of the physical education teacher. Since teacher attitudes and opinions regarding mainstreamed handicapped children affect the psychosocial environment, this paper examines the potential effects of teachers' negative attitudes and opinions and suggests strategies that teacher trainers may use to improve attitudes and opinions toward mainstreaming and toward handicapped children.*

Schmidt, S. Hearing impaired students in physical education. Adapted physical activity quarterly (Champaign, Ill.) 2(4), Oct 1985, 300-306.
Unless vestibular etiology exists, the hearing impaired student exhibits no difference in motor performance than other students in the regular physical education class. Physical educators will need to plan and teach lessons which show an understanding of the concomitant language delay that will accompany a hearing impairment. Using sign language and a variety of visual aids as well as monitoring the language level of handouts can make the physical education class highly beneficial for the hearing impaired student.*

Sherrill, C. Integration of handicapped students: philosophical roots in pragmatism, idealism, and realism. Adapted physical activity quarterly (Champaign, Ill.) 2(4), Oct 1985, 264-272.
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This paper presents an alternative rationale, other than compliance with PL 95-142, for implementing the integration of handicapped and nonhandicapped students in physical education. Support for integration is related to Lawrence Kohlberg's (1971, 1984) stages of moral development. Integration is discussed in terms of the three major philosophical positions (pragmatism, idealism, and realism) as described by Davis (1963), Van Dalen (1975), and Webster (1965). Support for integration, although for different reasons and to different degrees, can be found in each philosophy. The paper illustrates an exercise in the clarification of values that can be replicated by readers.*

Sherrill, C., Pyfer, J.L. Learning disabled students in physical education. Adapted physical activity quarterly (Champaign, Ill.) 2 (4), Oct 1985, 283-291.
Many learning disabled students demonstrate psychological/behavioral and perceptual motor characteristics that affect physical education placement and programming. Among the characteristics exhibited by these students are hyperactivity, disorders of attention, impulsivity, poor self-concept, social imperception, delay in social play development, and deficiencies in body equilibrium, visual motor control, bilateral coordination, repetitive finger movements, and fine motor coordination. Activities found to benefit learning disabled students are jogging, relaxation, highly structured teacher-directed routines, and noncompetitive games, all of which must be carefully sequenced. Testing must be done to determine the type and extent of the learning disabled students' problems, and activities must be selected on the basis of the results of such tests.*

Winnick, J.P. The performance of visually impaired youngsters in physical education activities: implications for mainstreaming. Adapted physical activity quarterly (Champaign, Ill.) 2(4), Oct 1985, 292-299.
The relative performance of individuals with visual handicapping conditions in physical education is directly or indirectly associated with severity of visual impairment, gender, age, activity type, method of ambulation, and parental attitudes. Each of these influences success, extent, and/or nature of participation in physical activity, which in turn results in characteristics, limitations, abilities, and needs that must be considered in order to effectively implement physical education programs in mainstreamed settings. Several implications for mainstreaming based on research pertaining to these factors are presented.*

IV-APÊNDICE I: Artigos Medline Com Abstracts

PESQUISA MEDLINE CLASSIFICADA POR TÍTULO DO ARTIGO

TI: A computer-aided walking rehabilitation robot.
AU: Siddiqu-NA; Ide-T; Chen-MY; Akamatsu-N
AD: Department of Orthopaedic Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.
SO: Am-J-Phys-Med-Rehabil. 1994 Jun; 73(3): 212-6
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: Even with recent techniques, a significant number of patients with multiple injuries cannot be mobilized at an early stage despite the fixation of all fractures. Conventional mobilization aids are not able to provide the prescribed weight bearing needed in fractures, especially those involving both the lower limbs. Robotics is a current technology aimed at improving the quality of medical care. To this end, Takatoshi Ide developed the mobility rehabilitation robot, the REHABOT. This apparatus facilitates rehabilitation by providing secure postural support and prescribed weight bearing during ambulation. The REHABOT has been used for early mobilization and gait training of severely disabled patients at different hospitals in Japan during the last 6 years. In most of the cases, this training has resulted in earlier improvement of ambulatory capability. In this paper we report the use of this device for early ambulation in two patients with multiple fractures involving the extremities and the spine. Early mobilization was achieved by initially reducing the weight bearing to 30% of body weight followed by a gradual increase governed by patient tolerance. The average length of training for these two patients was 18 days. The average total distance was 5.5 km and total walking duration was 4.5 h. After the completion of the training both patients were able to walk independently.
MESH: Adult-; Child-; Hip-Dislocation-rehabilitation; Locomotion-; Middle-Age; Robotics-instrumentation; Weight-Bearing
MESH: *Fractures-rehabilitation; *Leg-Injuries-rehabilitation; *Robotics-; *Spinal-Fractures-rehabilitation
TG: Case-Report; Female; Human; Male
PT: JOURNAL-ARTICLE

TI: Activity in the spinal cord-injured patient: an epidemiologic analysis of metabolic parameters.
AU: Dearwater-SR; LaPorte-RE; Robertson-RJ; Brenes-G; Adams-LL; Becker-D
AD:
SO: Med-Sci-Sports-Exerc. 1986 Oct; 18(5): 541-4
ISSN: 0195-9131 PY: 1986 LA: ENGLISH CP: UNITED-STATES
AB: Individuals with traumatic spinal cord injury (SCI) represent a population with extreme inactivity. The purpose of the current research was to investigate the metabolic differences between extremely inactive disabled individuals (SCI sedentary group), active disabled individuals (SCI athletes), and able-bodied individuals. Fasting morning blood samples were obtained for the determination of high density lipoprotein cholesterol (HDLc) subfractions, glucose, and insulin. The sedentary SCI group was comprised of 77 consecutive male admissions to a rehabilitation center. The 17 SCI athletes were recruited prior to competition at the annual National Wheelchair Games. Total HDLc and both its subfractions were significantly lower (P less than 0.01) in the male SCI sedentary population than in the SCI athletes or able-bodied controls. HDL2 was significantly elevated (P less than 0.01) in the SCI athlete compared to the SCI sedentary group (42.7 vs 34.1 mg X dl-1) and was similar to the control population (46.1 mg X dl-1). Glucose levels were similar in the two SCI groups but were both significantly lower (P less than 0.05) than in the able-bodied controls. These data suggest that the extreme inactivity observed in disabled populations is associated with lower HDLc concentrations and presumably an increase in coronary heart disease risk if these values were to persist over time. Additionally, it appears that physical activity is associated with increases in total HDLc, primarily through the HDL2 subfraction. Glucose and insulin were similar for both SCI groups despite the marked difference in activity levels, suggesting that these parameters may not be associated with activity.

MESH: Adult-; Blood-Glucose-analysis; Coronary-Disease-blood; Insulin-blood; Lipoproteins,-HDL-Cholesterol-blood; Rest-; Risk-
MESH: *Exertion-; *Spinal-Cord-Injuries-blood
TG: Human; Male; Support,-U.S.-Gov't,-P.H.S.
PT: JOURNAL-ARTICLE

TI: Americans with Disabilities Act. Commentary.
AU: Strax-TE
AD: JFK Johnson Rehabilitation Institute, Edison, NJ 08818.
SO: Am-J-Phys-Med-Rehabil. 1991 Aug; 70(4): 223-4
ISSN: 0894-9115 PY: 1991 LA: ENGLISH CP: UNITED-STATES
MESH: Employment-legislation-and-jurisprudence; Transportation-legislation-and-jurisprudence; United-States
MESH: *Civil-Rights-legislation-and-jurisprudence; *Disabled-legislation-and-jurisprudence
TG: Human
PT: JOURNAL-ARTICLE

TI: An analysis of least restrictive environment placement variables in physical education.
AU: Jansma-P; Decker-JT
AD: Adapted Physical Activity Section, School of Health, Physical Education and Recreation, Ohio State University, Columbus.
SO: Res-Q-Exerc-Sport. 1992 Jun; 63(2): 171-8
ISSN: 0270-1367 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: The purpose of this study was to determine the variables related to the successful least restrictive placement of students with disabilities into physical education classes. Subjects were 470 school building representatives and 62 adapted physical education professors throughout the nation. Confidence interval estimates (95%) of school building data correlated highest on relative importance with university census data on 8 of 37 total variables: motor ability test scores, developmental scale scores, reaching individualized education program instructional objectives, special education teacher recommendation, regular physical educator recommendation, activity offerings, classroom physical accessibility, and safety considerations. These represent those variables that should be used in some "best practices" combination by school personnel in making decisions regarding relevant students' class placement within physical education least restrictive environment alternatives. In addition, staff recommendation category variables were considered more important than test score, student related, class related, and administrative category variables.
MESH: Schools-
MESH: *Disabled-education; *Environment-Design; *Physical-Education-and-Training
TG: Human; Support,-U.S.-Gov't,-Non-P.H.S.
PT: JOURNAL-ARTICLE

TI: Anthropometric and physiological profiles of active blind Malaysian males.
AU: Singh-R; Singh-HJ
AD: Department of Physiology, School of Medical Sciences, University Sains Malaysia, Kelantan.
SO: J-Sports-Med-Phys-Fitness. 1993 Dec; 33(4): 378-82
ISSN: 0022-4707 PY: 1993 LA: ENGLISH CP: ITALY
AB: Cardiopulmonary capacities of twelve adults (aged between 14 to 44 years) with varying degrees of blindness engaged in regular recreational activities were compared with twelve age-matched normal sighted healthy males (control group) who were also involved in regular recreational activities. Maximum oxygen consumption (VO2max) was measured directly during exhaustive exercise test on a cycle ergometer. Forced vital capacity, leg strength and power were determined by spirometry, standing long jump and vertical jump respectively. No significant differences in VO2max, forced vital capacity and leg strength and power were observed between the blind and the control groups. No anthropometric differences were evident between the two groups. The results show therefore that the visually handicapped who are active can have a similar level of physical fitness, lung function and explosive leg strength as those of their active sighted counterparts.

MESH: Adolescence-; Adult-; Anthropometry-; Malaysia-; Muscles-physiology; Respiratory-Airflow
MESH: *Blindness-physiopathology; *Physical-Fitness-physiology
TG: Comparative-Study; Human; Male
PT: JOURNAL-ARTICLE

TI: Assessment of physical activity in inactive populations.
AU: Dearwater-SR; LaPorte-RE; Cauley-JA; Brenes-G
AD:
SO: Med-Sci-Sports-Exerc. 1985 Dec; 17(6): 651-5
ISSN: 0195-9131 PY: 1985 LA: ENGLISH CP: UNITED-STATES
AB: The ability to index activity objectively in disabled or impaired activity populations is critical for our understanding of the long-term health consequences of reduced activity. The current research employed the large-scale integrated activity monitor as an objective measure of free living daily activity in 28 subjects with traumatic spinal cord injury. All the spinal cord-injured subjects wore the monitors for 2 d while in-patients at a rehabilitation center. The results indicated that the instruments can accurately index individual physical activity levels in this population, which has drastically reduced activity. Furthermore, group differences in activity were discriminated where paraplegic activity (mean, 32.0 counts X h-1) was significantly greater than quadriplegic activity (mean, 15.1 counts X h-1) (P less than 0.01) despite the markedly low activity levels. The results thus indicate that activity sensors can index individual activity levels at the very low end of the activity spectrum.
MESH: Adult-; Equipment-and-Supplies; Evaluation-Studies; Paraplegia-physiopathology; Quadriplegia-physiopathology
MESH: *Exertion-; *Spinal-Cord-Injuries-physiopathology
TG: Human-; Male-; Support,-U.S.-Gov't,-P.H.S.
PT: JOURNAL-ARTICLE

TI: Benefits of aerobic exercise for the paraplegic: a brief review.
AU: Cowell-LL; Squires-WG; Raven-PB
AD:
SO: Med-Sci-Sports-Exerc. 1986 Oct; 18(5): 501-8
ISSN: 0195-9131 PY: 1986 LA: ENGLISH CP: UNITED-STATES
AB: The importance of exercise for the general population is emphasized widely; therefore, it must be even more important for paralegics who are already threatened with poor health due to the sedentary nature of their lifestyle. The effects of functional degeneration are vast and greatly reduce the overall health of paraplegics, particularly within the musculoskeletal and cardiovascular systems, thereby increasing their risk for cardiovascular disease. Recent investigations suggest that this process may be reversible through exercise training and that paraplegics respond to exercise training in essentially the same manner as the non-handicapped individual. In addition, exercise training has been reported to decrease the resorptive process of the skeleton by decreasing bone and collagen catabolism and possibly aiding in new bone formation. This review attempts to summarize the available literature on the effects of exercise on the paraplegic and will hopefully provide some direction not only for further research but also recommendations for practitioners working in the field.
MESH: Cardiovascular-System-physiopathology; Osteoporosis-etiology; Osteoporosis-prevention-and-control; Oxygen-Consumption; Paraplegia-physiopathology; Physical-Fitness
MESH: *Exercise-Therapy-methods; *Paraplegia-rehabilitation
TG: Human
PT: JOURNAL-ARTICLE; REVIEW

TI: Cardiac precautions for non-acute inpatient settings.
AU: Fletcher-BJ; Dunbar-S; Coleman-J; Jann-B; Fletcher-GF
AD: Department of Rehabilitation Medicine, Emory University School of Medicine, Atlanta, Georgia.
SO: Am-J-Phys-Med-Rehabil. 1993 Jun; 72(3): 140-3
ISSN: 0894-9115 PY: 1993 LA: ENGLISH CP: UNITED-STATES
AB: Activity progression of persons with physical disabilities and accompanying cardiovascular disease in medical rehabilitation centers is traditionally based on cardiac precautions derived from acute care settings. Concern that

these guidelines were too conservative and restrictive led to exercise testing and evaluation of 64 physically disabled male patients with a history of coronary artery disease. The sample had a mean age of 62.4 years. The exercise test was an adaptation of the Schwade Arm Ergometer Protocol with blood pressure measured at baseline, immediately after each 2 minutes of exercise, peak exercise and each minute for 6 minutes after peak exercise. Heart rate was monitored continuously. Patients achieved a mean peak heart rate of 115 beats per minute, mean peak systolic pressure of 169 mm Hg and mean peak diastolic pressure of 89 mm Hg. Ischemic electrocardiographic changes occurred in four of the 64 patients. Based on the achieved ranges of values of heart rate, systolic and diastolic pressures and comparison of these results with baseline (pre-exercise) values, more liberal guidelines for prescribing activity in the non-acute inpatient setting are provided.
MESH: Adult-; Aged-; Coronary-Disease-rehabilitation; Echocardiography-; Hemodynamics-; Middle-Age; Rehabilitation-
MESH: *Coronary-Disease-physiopathology; *Disabled-; *Exercise-Test
TG: Human; Male; Support,-U.S.-Gov't,-Non-P.H.S.
PT: JOURNAL-ARTICLE

TI: Comparison of plastic/metal and leather/metal knee-ankle-foot orthoses [published erratum appears in Am J Phys Med Rehabil 1988 Oct;67(5):210]
AU: Krebs-DE; Edelstein-JE; Fishman-S
AD: Child Prosthetic-Orthotic Studies Department, New York University Postgraduate Medical School, New York 10016.
SO: Am-J-Phys-Med-Rehabil. 1988 Aug; 67(4): 175-85
ISSN: 0894-9115 PY: 1988 LA: ENGLISH CP: UNITED-STATES
AB: Fifteen children with bilateral lower limb disability were fit alternately with plastic/metal (PM) and leather/metal (LM) knee-ankle-foot orthoses. Fit was maintained by periodic growth adjustments. Gait, activities of daily living, and subjective reactions were gathered for each orthosis type. Despite previous anecdotal reports and expert opinion to the contrary, no overall differences were found between the two types of orthoses. Several specific differences were revealed, however; most children preferred the PM orthoses, saying they were lighter and more easily donned and doffed; the PM orthoses also controlled hip and knee sagittal motion and foot valgus/varus during gait more effectively. Individual biomechanical, neuromuscular and psychologic attributes of the disabled child must be carefully matched with the technical attributes of each orthotic option to effect an optimal prescription.
MESH: Activities-of-Daily-Living; Adolescence-; Adult-; Braces-; Child-; Child,-Preschool; Equipment-Design; Foot-; Gait-; Metals-; Plastics-
MESH: *Ankle-; *Knee-; *Orthotic-Devices
TG: Comparative-Study; Human-; Support,-U.S.-Gov't,-P.H.S.
PT: JOURNAL-ARTICLE

TI: Conceptual basis of outcome measures.
AU: Keith-RA
AD: Research and Planning Center, Casa Colina Hospital, Pomona, CA 91767.
SO: Am-J-Phys-Med-Rehabil. 1995 Jan-Feb; 74(1): 73-80
ISSN: 0894-9115 PY: 1995 LA: ENGLISH CP: UNITED-STATES
AB: Because of its treatment configuration and the assumption of long-term benefit, rehabilitation has had a continuing interest in the measurement of outcomes. The utility of outcome indicators rests on their conceptual foundations, the technical development of measures and validation research. Some measures, particularly of functional status, have become increasingly sophisticated with the application of psychometric and statistical analysis techniques. Less effort has been devoted to an elaboration of their theoretical basis. A first step is an examination of the assumptions underlying outcome measures, the purpose of this article. Central to an understanding is clarification of definitions of key terms such as outcomes, independence, impairment, disability and handicap. All outcome measures must be seen as part of a social context of norms and expectations. However, most norms in rehabilitation are implied rather than explicit. The assumptions behind several common outcomes are examined with suggestions for ways to increase their utility. The ability of rehabilitation to compete in the current climate, stressing cost-effectiveness, will depend heavily on the robustness of outcome measures.

MESH: Activities-of-Daily-Living; Nomenclature-; Rehabilitation-classification; Rehabilitation-economics; Rehabilitation-standards; Residence-Characteristics; Self-Care; United-States
MESH: *Disability-Evaluation; *Health-Services-Research-methods; *Outcome-Assessment-Health-Care; *Rehabilitation-statistics-and-numerical-data
PT: JOURNAL-ARTICLE

TI: Continuity of care. A teaching model.
AU: Klingbeil-GE; Fiedler-IG
AD: Milwaukee County Medical Complex, WI 53226.
SO: Am-J-Phys-Med-Rehabil. 1988 Apr; 67(2): 77-81
ISSN: 0894-9115 PY: 1988 LA: ENGLISH CP: UNITED-STATES
AB: Recent changes in health care mandate innovative approaches to teaching. Rehabilitation as part of the continuum of disability motivated the "continuity of care model." This model permits the presentation of rehabilitation in its global sense: from onset of injury through re-integration into the community. This report describes a curriculum for physical medicine and rehabilitation residents that comprises a three-phase approach to rehabilitation: acute care, inpatient rehabilitation and community re-entry. The curriculum is adaptable for medical students. A secondary benefit of the project for the resident is a better understanding of relevant cost benefit/cost effective concepts in the delivery of quality services. The close interaction of residents with community agencies permits these agencies to gain a better understanding of the medical needs of disabled people.
MESH: Adult-; Physician's-Role; Spinal-Cord-Injuries-rehabilitation
MESH: *Continuity-of-Patient-Care; *Curriculum-; *Internship-and-Residency; *Primary-Health-Care; *Rehabilitation-education
TG: Human-; Male-
PT: JOURNAL-ARTICLE

TI: Coping by individuals with physical disabilities with perceived challenge in physical activity: are people consistent?
AU: Bouffard-M; Crocker-PR
AD: Department of Physical Education and Sport Studies, University of Alberta, Edmonton, Canada.
SO: Res-Q-Exerc-Sport. 1992 Dec; 63(4): 410-7
ISSN: 0270-1367 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: This study examined coping and affective experience to perceived challenge in physical activity settings in 30 individuals with physical disabilities in three separate situations over 6 months. On every occasion, each individual was asked to report the most challenging physical activity of the preceding week and indicate how he or she coped with the challenge and what affective states were experienced. Coping was measured using a modification of Carver, Scheier, and Weintraub's (1989) COPE inventory. Self-reported mood was assessed using the Positive Affect Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). The data indicated that perceived challenge was characterized by high levels of positive affect. Generalizability theory, used to determine the relative stability of coping strategies, indicated that individuals with physical disabilities did not consistently use the same coping skill strategies across settings.
MESH: Adult-; Aged-; Attitude-; Emotions-; Exercise-physiology; Goals-; Middle-Age; Problem-Solving; Reproducibility-of-Results; Social-Support
MESH: *Adaptation,-Psychological; *Affect-; *Disabled-psychology; *Motor-Activity-physiology
TG: Female; Human; Male; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Determining differences in post discharge outcomes among catastrophically and noncatastrophically sponsored outpatients with spinal cord injury.
AU: Tate-DG; Forchheimer-M; Daugherty-J; Maynard-F
AD: Department of Physical Medicine and Rehabilitation, University of Michigan Medical Center, Ann Arbor.
SO: Am-J-Phys-Med-Rehabil. 1994 Apr; 73(2): 89-97
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES

AB: This study tested differences in functional independence status, level of psychologic distress and extent of handicap experienced after discharge from inpatient rehabilitation among a group of 125 outpatients with spinal cord injury (SCI) sponsored by one of three types of rehabilitation insurance payors: catastrophic (Michigan Automobile No-Fault and Workers' Disability Compensation), Medicaid and third-party privates. Outcome measures included the functional independence measure, the brief symptom inventory and the Craig handicap assessment reporting technique. Insurance data was obtained via medical chart reviews and interviews that were conducted either face-to-face or by telephone, using the benefits coverage inventory. No differences in terms of post discharge functional independence across subjects sponsored by the three payors was found when controlling for neurologic status. However, SCI subjects sponsored by different payors reported receiving different amounts of benefits. Subjects also differed on the extent of psychologic distress experienced after discharge and the extent of their handicaps. SCI subjects sponsored by Medicaid reported receiving fewer benefits, being more distressed and experiencing greater handicap in comparison to others. Third-party privately sponsored subjects, conversely, experienced less handicap and distress than did the study's other subjects.
MESH: Adolescence-; Adult-; Analysis-of-Variance; Depression-diagnosis; Disability-Evaluation; Disabled-; Insurance-Benefits; Medicaid-; Middle-Age; Outcome-Assessment-Health-Care; Outpatients-; Stress,-Psychological-psychology; United-States; Workers'-Compensation
MESH: *Activities-of-Daily-Living; *Insurance,-Health,-Reimbursement; *Spinal-Cord-Injuries-economics; *Spinal-Cord-Injuries-rehabilitation
TG: Female; Human; Male; Support,-U.S.-Gov't,-Non-P.H.S.
PT: JOURNAL-ARTICLE

TI: Differences in activation patterns in elbow flexor muscles during isometric, concentric and eccentric contractions.
AU: Nakazawa-K; Kawakami-Y; Fukunaga-T; Yano-H; Miyashita-M
AD: Motor Dysfunction Division, National Rehabilitation Centre for the Disabled, Tokorozawa City, Saitama Prefecture, Japan.
SO: Eur-J-Appl-Physiol. 1993; 66(3): 214-20
ISSN: 0301-5548 PY: 1993 LA: ENGLISH CP: GERMANY
AB: To investigate the relative activation of the synergistic muscles during three different types of muscle contraction, the electromyograms (EMG) of two elbow flexor muscles, the biceps brachii (BB) and the brachioradialis (BR), have been compared. To accomplish this eight healthy human subjects performed the following elbow flexions against the same load--concentric, eccentric and isometric contractions. The isometric contractions were performed at three elbow angles: 10, 45 and 90 degrees (0 degree equal to full extension). The EMG were recorded by bipolar surface electrodes, and the relative activation between the two muscles was evaluated as the quotient of mean EMG activities (BR/BB). For the isotonic elbow flexions, BR/BB were calculated at three angle divisions: 0-30 degrees, 30-60 degrees and 60-90 degrees. Results indicated that the relative activation of the BR during the concentric contractions was higher than that of the eccentric contraction, particularly at the extended elbow angles, i.e. the BR/BB of the concentric contractions for the elbow joint angles ranging from 0-30 degrees and 30-60 degrees were significantly greater ($P < 0.05$) than those of the eccentric contractions. During the isometric and eccentric contractions, the BR/BB at the flexed joint angles tended to be greater than those at the extended angles. In contrast, there were no angle-dependent BR/BB variations during the concentric elbow flexions. Further, changing patterns in the EMG power spectra due to the type of contraction were different between BB and BR. These results indicated that the activation pattern in the two elbow flexor muscles varied with the muscle contraction pattern.
MESH: Adult-; Elbow-anatomy-and-histology; Electromyography-; Isometric-Contraction-physiology; Muscle-Contraction-physiology; Muscles-anatomy-and-histology
MESH: *Elbow-physiology; *Muscles-physiology
TG: Human; Male
PT: JOURNAL-ARTICLE

TI: Dynamics of wheelchair basketball.
AU: Coutts-KD
AD: Department of Exercise Science, University of British Columbia, Vancouver, Canada.

SO: Med-Sci-Sports-Exerc. 1992 Feb; 24(2): 231-4
ISSN: 0195-9131 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: A sport model wheelchair instrumented with a portable computer and a switch activated with each half revolution of a rear wheel was used to record serial time and distance data on two subjects (1 male, 1 female) during a portion of a basketball game. These and two additional subjects (1 male, 1 female) also completed a series of coast down and maximal sprint trials on the basketball court. The drag force while coasting was positively related to the mass of the subject, and the male subjects had a higher maximal speed, acceleration, force, and power output in the sprint trials. During the wheelchair basketball game, it was estimated that 64% of the time was spent in propulsive action and 36% in braking activity. Projections for a complete 40 minute game indicated that both subjects would travel about 5 km at an average speed of 2 m.s-1 and attain a peak speed of 4 m.s-1. Plots of speed and power vs time showed the intermittent nature of playing wheelchair basketball. The greater amount of propulsive work (52.6 vs 37.5 kJ) and braking ("negative") work (43.9 vs 30.8 kJ) in a game for the male subject can be related to the male's higher body mass and wheelchair drag force.
MESH: Acceleration-; Body-Mass-Index; Motion-
MESH: *Basketball-; *Disabled-; *Wheelchairs-
TG: Female; Human; Male
PT: JOURNAL-ARTICLE

TI: Effects of exercise and rest on the state anxiety and blood pressure of physically challenged college students.
AU: Brown-DR; Morgan-WP; Raglin-JS
AD: Sport Psychology Laboratory, University of Wisconsin-Madison.
SO: J-Sports-Med-Phys-Fitness. 1993 Sep; 33(3): 300-5
ISSN: 0022-4707 PY: 1993 LA: ENGLISH CP: ITALY
AB: The purpose of this study was to evaluate the effects of a single session of exercise and quiet rest on the blood pressure and state anxiety response of physically challenged college students (n = 10) enrolled in an adaptive physical education class. Each student had some degree of injury or disability (none requiring the use of a wheelchair) which made exercising inconvenient with regard to maintaining an optimal level of frequency, intensity, and duration of activity. All subjects participated in two treatment conditions in a counter-balanced design: (1) exercise (on a bicycle ergometer or treadmill) to self-imposed maximum, and (2) quiet rest in a soundproof chamber. Blood pressure and state anxiety (STAI 1) were assessed prior to and immediately following both conditions. A repeated measures ANOVA was used to analyze the data. There was a non-significant 7.4 mmHg increase in systolic blood pressure immediately following exercise, and a 9.6 mmHg, decrease following rest. A significant decrease in state anxiety was observed following exercise and rest. It is concluded that individuals who are physically challenged can experience reductions in anxiety after a session of vigorous exercise.
MESH: Adult-; Anxiety-physiopathology; Bicycling-physiology; Disabled-rehabilitation; Exercise-Tolerance-physiology; Perception-; Physical-Education-and-Training; Running-physiology
MESH: *Anxiety-prevention-and-control; *Blood-Pressure-physiology; *Disabled-; *Exercise-Therapy; *Rest-physiology
TG: Female; Human; Male
PT: CLINICAL-TRIAL; JOURNAL-ARTICLE; RANDOMIZED-CONTROLLED-TRIAL

TI: Electromyography and the study of sports movements: a review.
AU: Clarys-JP; Cabri-J
AD: Department of Experimental Anatomy, Faculty of Medicine and Pharmacy, Vrije Universiteit Brussel, Belgium.
SO: J-Sports-Sci. 1993 Oct; 11(5): 379-448
ISSN: 0264-0414 PY: 1993 LA: ENGLISH CP: ENGLAND
AB: Within electromyography (EMG), a particular specialty has been developed wherein the aim is to use EMG for the study of muscular function and co-ordination. This area of research is usually called kinesiological EMG. The general aims of kinesiological EMG are to analyse the function and co-ordination of muscles in different movements and postures, in healthy subjects as well as in the disabled, in skilled actions as well as during training, in humans as well as in animals, under laboratory conditions as well as during daily or vocational activities. This is often done by a combination of electromyographical and kinesiological or biomechanical measurement techniques.

Because there are over 400 skeletal muscles in the human body and both irregular and complex involvement of the muscles may occur in neuromuscular diseases and in voluntary occupational or sports movements, it is impossible to sample all of the muscles of the entire body during the performance of complex motor skills. In addition, the measurement of kinesiological EMG in sport and specific field circumstances, such as the track and/or soccer field, the alpine ski slope, the swimming pool and the ice rink, demands a specific technological and methodological approach, adaptable to both the field and the sport circumstances. Sport movement techniques and skills, training approaches and methods, ergonomic verification of the human-machine interaction have, amongst others, a highly specialized muscular activity in common. The knowledge of such muscular action in all its aspects, its evaluation and its feedback should allow for the optimization of movement, of sports materials, of training possibilities and, in the end, of sports performance. Drawing conclusions from a review of the EMG research of 32 sports, covering over 100 different complex skills, including methodological approaches, is an impossible task. We have attempted to set standards concerning the EMG methodology at the beginning of this review. Electromyography and sports is a vast area and a complete review is impossible, as information will be found scattered in many different journals, including those on the sports sciences, ergonomics, biomechanics, applied physiology, in different congress proceedings, and so on. Consequently, many important aspects and possibly important publications may have been omitted from this review.
MESH: Muscle-Contraction; Signal-Processing,-Computer-Assisted
MESH: *Electromyography-; *Movement-; *Muscles-physiology; *Sports-physiology
TG: Human
PT: JOURNAL-ARTICLE; REVIEW; REVIEW,-ACADEMIC

TI: Ethical considerations in the management of individuals with severe neuromuscular disorders.
AU: Bach-JR; Barnett-V
AD: Department of Physical Medicine and Rehabilitation, UMD-New Jersey Medical School, Newark.
SO: Am-J-Phys-Med-Rehabil. 1994 Apr; 73(2): 134-40
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: There have been many recent advances in improving the quality of life and prolonging life for individuals with advanced neuromuscular disease. These include the use of physical medicine techniques to balance extremity muscle strength and improve range of motion and noninvasive techniques to provide inspiratory and expiratory muscle assistance to prolong life without resort to tracheostomy. Such advances help eliminate the "crisis" decision making about "going on a respirator" and sophisticated assistive equipment and robotic aids. Physicians and society in general use quality of life issues inappropriately derived by questioning physically able individuals to justify withholding or implementing life-sustaining therapeutic interventions for these individuals. Informed decisions about ethically and financially complex matters such as long-term ventilator use should be made by examining the life satisfaction of competent individuals who have already chosen these options. The great majority of severely disabled ventilator-assisted individuals with neuromuscular disease are satisfied with their lives despite the inability to achieve many of the "usual" goals associated with quality of life in the physically able population. Their principle life satisfaction derives from social relationships, the reorganization of goals and from their immediate environment. Although the Americans with Disabilities Act is seen as an important step to prevent discrimination against disabled individuals, it does little or nothing for the self-directed disabled individual who is not informed by his/her physicians regarding potentially vital therapeutic options nor does it help those who are warehoused in institutions because of lack of a national personal assistance services policy.(ABSTRACT TRUNCATED AT 250 WORDS)
MESH: Cost-Control; Life-Support-Care; Patient-Advocacy-legislation-and-jurisprudence; Patient-Care-Team; Patient-Education; Quality-of-Life; Respiration,-Artificial
MESH: *Ethics,-Professional; *Neuromuscular-Diseases-rehabilitation; *Patient-Advocacy
TG: Human
PT: JOURNAL-ARTICLE

TI: Field testing: assessment of physical fitness of disabled adults.
AU: Kofsky-PR; Davis-GM; Shephard-RJ; Jackson-RW; Keene-GC
AD:
SO: Eur-J-Appl-Physiol. 1983; 51(1): 109-20

ISSN: 0301-5548 PY: 1983 LA: ENGLISH CP: GERMANY,-WEST
AB: The objectives of this investigation were (i) to develop simple field-test procedures for examining the cardio-respiratory and muscular strength fitness of lower-limb disabled individuals and (ii) to compare fitness levels across disabilities and physical activity levels. Forty-nine disabled adults (42 males and 7 females) were classified according to (i) functional and/or muscular deficit and, (ii) level of habitual physical activity. A forearm ergometer test was used to determine peak oxygen intake (VO2 peak). Sex-specific regression equations developed from the direct test were used in conjunction with a modified Astrand-Ryhming equation to predict VO2 peak from sub-maximal test results. Likewise, an equation was developed to predict isokinetic upper body strength (UBS) from cable tensiometry and hand grip force. The predictive power of the sub-maximal ergometer test was fair (r = 0.67), while the isometric strength measurements were relatively effective in predicting isokinetic total UBS (r = 0.82). Class 1 differed significantly from all other classes with respect to VO2 peak and UBS. The more active individuals also achieved significantly higher scores (p less than 0.05) for both variables. This study shows that an estimate of peak oxygen intake and UBS can be obtained from simple field tests and that active disabled individuals are more fit than their inactive counterparts.
MESH: Adolescence-; Adult-; Disability-Evaluation; Exercise-Test; Leg-; Middle-Age; Muscles-physiology; Oxygen-Consumption
MESH: *Disabled-; *Physical-Fitness
TG: Female; Human; Male; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Functional outcome in children with traumatic brain injury. Agreement between clinical judgment and the functional independence measure.
AU: Di-Scala-C; Grant-CC; Brooke-MM; Gans-BM
AD: Department of Rehabilitation Medicine, Tufts/New England Medical Center, Boston, MA 02111.
SO: Am-J-Phys-Med-Rehabil. 1992 Jun; 71(3): 145-8
ISSN: 0894-9115 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: As improvements in the delivery of trauma care have increased survival from injury, it has become essential to assess the resulting morbidity to plan for medical and psychosocial services, particularly for children whose needs may be wide and long term. This paper focuses on the assessment of disability of 598 children, age 8 to 19 yr. hospitalized for traumatic brain injury with or without injury to other body regions, exclusive of spinal cord injury. The disability was measured at discharge from acute care in nine areas of functional activities and a recovery time assigned by a clinician. For the study, children were divided into three groups: those whose recovery was expected in less than 7 months (Group A: n = 463), in 7 to 24 months (Group B: n = 66) and in greater than 2 yr (Group C: n = 69). The clinician's expectation of recovery time significantly (P less than 0.01) reflected the injury severity as measured by the Glasgow Coma Scale and the Injury Severity Score. By the Glasgow Coma Scale, 16.4% were comatose on admission in Group A, 51.5% in Group B and 58% in Group C. The Injury Severity Score was significantly different with 25.5% severely injured in Group A, 68.2% in Group B and 84% in Group C. At discharge, 15% in Group A had four or more areas of impairments, 61% in Group B and 84% in Group C. The Functional Independence Measure confirmed the clinician's assessment of compromise with significantly (P less than 0.01) different average values of 110, 80 and 58 for Groups A, B and C, respectively.
MESH: Accidents,-Traffic; Activities-of-Daily-Living; Adolescence-; Brain-Injuries-etiology; Child-; Injury-Severity-Score; Psychometrics-; Treatment-Outcome
MESH: *Brain-Injuries-rehabilitation; *Disability-Evaluation; *Disabled-classification; *Wounds,-Nonpenetrating-rehabilitation
TG: Comparative-Study; Female; Human; Male; Support,-U.S.-Gov't,-Non-P.H.S.
PT: JOURNAL-ARTICLE

TI: Introduction: exercise capacities and adaptations of people with chronic disabilities--current research, future directions, and widespread applicability.
AU: Pitetti-KH
AD: Department of Health, Administration, Gerontology, College of Health Professions, Wichita State University, KS 67208-1595.
SO: Med-Sci-Sports-Exerc. 1993 Apr; 25(4): 421-2

ISSN: 0195-9131 PY: 1993 LA: ENGLISH CP: UNITED-STATES
AB: This symposium addresses the unique physiological problems, current research, future needs, and widespread applicability for research involving people experiencing five major chronic disabilities within the United States: quadriplegia, paraplegia, mental retardation, multiple sclerosis, and poliomyelitis. Each author represents ACSM members who, by their distinguished research efforts, exemplify scientists who have demonstrated their dedication to the specific needs of these populations. The papers will give a brief description of the pathophysiology of the disability and the resultant effects upon the group's acute response to exercise and their physiological adaptations to exercise programs. Each paper will include reports on the state of current research and what benefits to that group could be expected if a major research breakthrough occurred. Additionally, the papers will indicate the major research questions currently confronting each population and a brief statement about the strategy needed to resolve these questions. If applicable, the authors will address how such a model (of the specific disability/disease) could be used to better understand the able-bodied response to exercise. The purpose of this symposium, therefore, was not only to better understand the effects of exercise on persons having chronic disabilities, but from a physiological point of view, to use what we know about the response of people with chronic disabilities to better understand the able-bodied response.
MESH: Forecasting-; Research-
MESH: *Adaptation,-Physiological; *Disabled-; *Exercise-
TG: Human
PT: JOURNAL-ARTICLE

TI: Issues concerning medical school admission for students with disabilities [editorial]
AU: Meier-RH 3d
AD:
SO: Am-J-Phys-Med-Rehabil. 1993 Dec; 72(6): 341-2
ISSN: 0894-9115 PY: 1993 LA: ENGLISH CP: UNITED-STATES
MESH: Motor-Skills
MESH: *Disabled-; *School-Admission-Criteria; *Students,-Medical
TG: Human
PT: EDITORIAL

TI: Life satisfaction of individuals with Duchenne muscular dystrophy using long-term mechanical ventilatory support.
AU: Bach-JR; Campagnolo-DI; Hoeman-S
AD: Department of Physical Medicine and Rehabilitation, New Jersey Medical School-UMDNJ, Newark.
SO: Am-J-Phys-Med-Rehabil. 1991 Jun; 70(3): 129-35
ISSN: 0894-9115 PY: 1991 LA: ENGLISH CP: UNITED-STATES
AB: The Life Domain Satisfaction Measures and Semantic Differential Scale of General Affect are instruments designed by Campbell to measure perceived well-being. They were used to survey 82 ventilator-assisted individuals with Duchenne muscular dystrophy (DMD) and 273 physically intact health care professionals. A third instrument was devised to study the relative undesirability of dependence on mechanical ventilation. Ten of 80 responding patients (12.5%) expressed dissatisfaction with their lives in general. This compares with 9% of the surveyed health care professionals and 7% of the general population studied by Campbell. The health care professionals significantly underestimated the patients' scores in the life satisfaction and general affect instruments and significantly overestimated the patients' assessment of the relative hardship associated with ventilator dependence. We conclude that the vast majority of severely disabled chronic ventilator-assisted individuals with DMD have a positive affect and are satisfied with life despite the physical dependence which precludes many of the activities most commonly associated with perceived quality of life for physically intact individuals. Health care professionals should not use their judgment of the patient's quality of life to justify withholding life-sustaining therapy.
MESH: Adolescence-; Adult-; Attitude-of-Health-Personnel; Middle-Age; Muscular-Dystrophy-psychology; Psychological-Tests; Quality-of-Life; Semantic-Differential; Time-Factors
MESH: *Muscular-Dystrophy-rehabilitation; *Personal-Satisfaction; *Ventilators,-Mechanical

TG: Comparative-Study; Female; Human; Male
PT: JOURNAL-ARTICLE

TI: Manual wheelchair propulsion: effects of power output on physiology and technique.
AU: van-der-Woude-LH; Hendrich-KM; Veeger-HE; van-Ingen-Schenau-GJ; Rozendal-RH; de-Groot-G; Hollander-AP
AD: Department of Functional Anatomy, Faculty of Human Movement Sciences, Free University, Amsterdam, The Netherlands.
SO: Med-Sci-Sports-Exerc. 1988 Feb; 20(1): 70-8
ISSN: 0195-9131 PY: 1988 LA: ENGLISH CP: UNITED-STATES
AB: Eight wheelchair sportsmen conducted eight wheelchair exercise tests on a treadmill. Two workload strategies were followed: strategy 1--increments in speed at a constant slope and strategy 2--increments in slope at constant velocity. Thus, data on cardio-respiratory and propulsion technique parameters were obtained on two identical series of 16 speed and slope combinations. Between each two identical speed and slope combinations of strategies 1 and 2, a different workload history is apparent. A four-factor analysis of variance with repeated measures on the factors "strategy" (workload history), "speed," and "slope" was applied (P less than 0.05). No "strategy" effect was seen in the cardio-respiratory parameters (gross mechanical efficiency, ventilation, oxygen consumption, and heart rate), work/cycle, and cycle time. Thus, within the experimental set-up, workload history did not affect the parameters studied and 3-min workload periods appeared sufficiently long for experienced wheelchair users to adapt to the requirements of a given speed and slope combination. Significant effects were found on "speed," "slope," and their interaction in all parameters tested. Moreover, a comparison of two equal levels of power output, but different speed and slope, led to a significantly higher efficiency, cycle time, and work per cycle for the "low speed and high slope" combination. Push time and recovery time appeared highly dependent on speed and slope, respectively. The findings indicate that propulsion technique and cardio-respiratory parameters should not merely be studied in relation to power output, but also with respect to its constituents, speed, and slope/resistance.
MESH: Adult-; Energy-Metabolism; Exercise-Test-methods; Sports-
MESH: *Disabled-; *Exertion-; *Heart-Rate; *Respiration-; *Wheelchairs-
TG: Human-; Male-; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Peak oxygen uptake and maximal power output of Olympic wheelchair-dependent athletes.
AU: Veeger-HE; Hadj-Yahmed-M; van-der-Woude-LH; Charpentier-P
AD: Faculty of Human Movement Sciences, Free University, Amsterdam, The Netherlands.
SO: Med-Sci-Sports-Exerc. 1991 Oct; 23(10): 1201-9
ISSN: 0195-9131 PY: 1991 LA: ENGLISH CP: UNITED-STATES
AB: To extend the existing data base on the cardiovascular capacity of wheelchair-dependent athletes, a maximum wheelchair exercise test was conducted by 48 athletes (8 females and 40 males) on a motor driven treadmill. Athletes were selected on availability from the representatives of eight different disciplines. For 36 subjects maximal external power was calculated on the basis of a separate drag test. Maximal oxygen uptake (VO2max) for the male population was 2.23 l.min-1 (32.9 ml.kg-1.min-1). Subjects were divided into functional categories according to the International Stoke Mandeville Classification, with one nonambulatory, nonparaplegic group classified as "LA." The LA group displayed the highest values while the class IC tetraplegic showed the lowest performance level. Classified over sports disciplines, male track and field representatives showed the highest VO2max (2.86 l.min-1, 44.9 ml.kg-1.min-1) and target shooting athletes the lowest (1.32 l.min-1, 16.3 ml.kg-2.min-1). Maximal power output was on average 81.1 W for the male population and varied from 65.8 W for class II athletes to 92.2 W for class LA. Between sports values ranged from 96.8 W for basketball players to 48.2 W for the archery representative. These data are useful for setting standards for maximally attainable performance levels in relation to sport, functional classification, or sex and underline the capability of the wheelchair-dependent to improve cardiovascular fitness.
MESH: Adult-; Anthropometry-methods; Disabled-classification; Sex-Factors
MESH: *Disabled-; *Oxygen-Consumption-physiology; *Sports-; *Wheelchairs-
TG: Female; Human; Male

PT: JOURNAL-ARTICLE

TI: Personality profiles of disabled individuals in relation to physical activity patterns.
AU: Goldberg-G; Shephard-RJ
AD:
SO: J-Sports-Med-Phys-Fitness. 1982 Dec; 22(4): 477-84
ISSN: 0022-4707 PY: 1982 LA: ENGLISH CP: ITALY
MESH: Adult-; Attitude-; Body-Image; Cattell-Personality-Factor-Questionnaire; Habits-; Internal-External-Control; Middle-Age
MESH: *Exertion-; *Paraplegia-psychology; *Personality-
TG: Human-; Male-; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Physical disability from knee osteoarthritis: the role of exercise as an intervention.
AU: Ettinger-WH Jr; Afable-RF
AD: Department of Internal Medicine, Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, NC 27157-1051.
SO: Med-Sci-Sports-Exerc. 1994 Dec; 26(12): 1435-40
ISSN: 0195-9131 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: Osteoarthritis (OA) of the knee is a common, nonfatal, chronic condition that causes pain and physical disability in older people. Persons with knee OA report difficulty with activities that require ambulation and transfer from the sitting to the standing position. Physical disability from knee OA is the result of a complex interplay among the severity of disease, pain, comorbid conditions, psychosocial factors, and deficits in physical capacity such as low aerobic work capacity and lower extremity muscle weakness. These deficits in physical capacity may be correctable with exercise training. Short-term studies indicate that persons with knee OA show gains in physical capacity and report less pain and disability with exercise training. However, the long-term effectiveness and safety of exercise in persons with knee OA remains unknown.
MESH: Aged-; Attitude-to-Health; Osteoarthritis-physiopathology; Osteoarthritis-psychology; Pain-prevention-and-control; Pain-physiopathology; Physical-Fitness
MESH: *Disabled-; *Exercise-Therapy; *Knee-Joint; *Osteoarthritis-rehabilitation
TG: Human; Support,-U.S.-Gov't,-P.H.S.
PT: JOURNAL-ARTICLE; REVIEW; REVIEW,-TUTORIAL

TI: Physical medicine and rehabilitation as a primary care specialty. Commentary.
AU: Bockenek-WL; Currie-DM
AD: Department of PM&R, Charlotte Institute of Rehabilitation, NC 28203.
SO: Am-J-Phys-Med-Rehabil. 1994 Feb; 73(1): 58-60
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES
MESH: Disabled-; Health-Services-Needs-and-Demand; Physician's-Role; Physicians,-Family-supply-and-distribution; United-States
MESH: *Physical-Medicine; *Primary-Health-Care; *Rehabilitation-
TG: Human
PT: JOURNAL-ARTICLE

TI: Physical strain in daily life of wheelchair users with spinal cord injuries.
AU: Janssen-TW; van-Oers-CA; van-der-Woude-LH; Hollander-AP
AD: Faculty of Human Movement Sciences, Vrije Universiteit Amsterdam, The Netherlands.
SO: Med-Sci-Sports-Exerc. 1994 Jun; 26(6): 661-70
ISSN: 0195-9131 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: Forty-three men (age 33 +/- 9 yr) with spinal cord injuries (SCI) were observed during a normal workday while heart rate was recorded continuously. Physical strain was estimated using the heart rate response expressed

relative to the individual heart rate reserve (%HRR). The mean physical strain during the day for group I (C4-C8, N = 9), II (T1-T5, N = 6), III (T6-T10, N = 15), and IV (T10-L5, N = 13) was 38 +/- 8, 29 +/- 12, 22 +/- 8, and 23 +/- 5%HRR, respectively. Prolonged periods (> 15 min) of high strain (> 60%HRR) that might maintain or improve physical capacity were not identified during activities of daily life (ADL), but only during sports activities. The analysis of activity-related strain revealed that specific ADL such as making transfers, entering/leaving car, and negotiating environmental barriers, provoked high levels of strain, especially in those with quadriplegia. Periods of peak strain (> 60%HRR, < 3 min) occurred frequently, also predominantly in those with quadriplegia. It was concluded that the physical strain during ADL is related to the level of lesion and is not of a magnitude and duration that would maintain or improve physical capacity. The periods of peak strain might restrict the mobility and independence of persons with SCI, and, therefore, reduce their quality of life.
MESH: Adolescence-; Adult-; Aged-; Analysis-of-Variance; Exercise-Therapy; Heart-Rate; Injury-Severity-Score; Medical-Records; Middle-Age; Paraplegia-physiopathology; Physical-Fitness; Quadriplegia-physiopathology; Spinal-Cord-Injuries-complications; Spinal-Cord-Injuries-rehabilitation
MESH: *Activities-of-Daily-Living; *Disabled-; *Exertion-physiology; *Spinal-Cord-Injuries-physiopathology; *Wheelchairs-
TG: Human; Male; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Physical work capacity and daily physical activities of handicapped and non-handicapped children.
AU: Dresen-MH; de-Groot-G; Corstius-JJ; Krediet-GH; Meijer-MG
AD:
SO: Eur-J-Appl-Physiol. 1982; 48(2): 241-51
ISSN: 0301-5548 PY: 1982 LA: ENGLISH CP: GERMANY-WEST
AB: In this study physical work capacity, mechanical efficiency on the bicycle ergometer and daily physical activities were compared between 24 physically handicapped and 24 non-handicapped children. As a measure of mechanical efficiency and physical work capacity, the oxygen uptake per kg body weight at 0.5 watt . kg-1 and oxygen uptake per kg body weight at a heart rate of 150 beats . min-1 were used. The daily physical activities were recorded during a 24-h period by means of a scoring list. The load imposed by the daily physical activities was investigated by registration of heart rate. The mean value of the physical work capacity of the group of handicapped children was found to be lower compared with the non-handicapped children. The mechanical efficiency of 7 of the 24 handicapped children was lower when compared with the mechanical efficiency of 23 of the 24 non-handicapped children. A significant correlation between mechanical efficiency and nature of the handicap (spastic hemi-, di-, tetraplegic) was found (p less than 0.05). During light daily physical activities the handicapped children showed the same mean heart rate as the non-handicapped children, but the mean heart rate during heavy daily physical activities was lower for the handicapped group than for the non-handicapped group. The non-handicapped children spent more time in physical activities with relatively high heart rates. From the results obtained of oxygen uptake and heart rate measurements it is to be expected that non-handicapped children are able to maintain a higher state of training by means of their daily physical activities than are handicapped children.
MESH: Adolescence-; Child-; Exercise-Test; Muscle-Spasticity; Respiration-
MESH: *Activities-of-Daily-Living; *Disabled-; *Heart-Rate; *Paralysis-physiopathology
TG: Comparative-Study; Human-
PT: JOURNAL-ARTICLE

TI: Physical work capacity and effect of endurance training in visually handicapped boys and young male adults.
AU: Shindo-M; Kumagai-S; Tanaka-H
AD: Department of Exercise Physiology, School of Physical Education, University of Fukuoka, Japan.
SO: Eur-J-Appl-Physiol. 1987; 56(5): 501-7
ISSN: 0301-5548 PY: 1987 LA: ENGLISH CP: GERMANY-WEST
AB: The purpose of the present study was to evaluate the relationship between several physical fitness parameters and eyesight divided into 3 grades in visually handicapped boys and young male adults, and to investigate the effect of mild exercise training on physical and psychic symptoms as well as cardiorespiratory fitness. Four subjects were totally blind (TB), 6 were semi-blind (SB) and 27 had amblyopia (AM). Physical fitness tests consisted of

maximal oxygen uptake (Vo2max), maximal pedalling speed and power, maximal stepping rate, and isometric knee extension strength. Compared with AM and SB groups, the TB group was inferior in all physical fitness parameters. Especially, Vo2max, in TB (26 ml.kg-1.min-1) was about 56% of that in age-matched Japanese sighted subjects and was significantly low compared with the AM and SB groups. Both muscle strength and maximal pedalling power corresponded to about 50% that of the age-matched sighted group. Six SB and 4 TB students (mean = 17.7 years) were trained for 6 weeks on a bicycle ergometer at an intensity of 50% VO2max. Training was undertaken for 3 days per week and maintained for 60 min per session. After training, physical and psychic symptoms determined by the Cornell Medical Index improved significantly. These results indicate that low physical work capacity in visually handicapped boys and young male adults is due to the lack of physical activity, and that mild endurance training is effective in improving physical and psychic symptoms as well as cardiorespiratory fitness.
MESH: Adolescence-; Adult-; Child-; Cornell-Medical-Index; Exercise-Test; Oxygen-Consumption; Physical-Education-and-Training; Vision-Disorders-psychology
MESH: *Physical-Fitness; *Vision-Disorders-physiopathology
TG: Human-; Male-; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Physiological aspects of swimming performance for persons with disabilities.
AU: Chatard-JC; Lavoie-JM; Ottoz-H; Randaxhe-P; Cazorla-G; Lacour-JR
AD: Laboratoire de Physiologie, Faculte de Medecine de Saint-Etienne, Saint Jean-Bonnefonds, France.
SO: Med-Sci-Sports-Exerc. 1992 Nov; 24(11): 1276-82
ISSN: 0195-9131 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: The purpose of this study was to evaluate the various factors involved in the performances of three groups of swimmers with disabilities. These factors were average VO2max (Av-VO2max) measured during swimming and gliding factors measured by the passive drag. Thirty-four swimmers with disabilities were assigned into three groups ranging from more disabilities to fewer disabilities. The first group (G I) included 13 subjects in wheelchairs, the second group (G II) 10 subjects walking with technical aids, and the third group (G III) 11 swimmers with disabilities walking without any help. For G I, the performances and Av-VO2max were lower ($P < 0.05$) than for G II and G III while the passive drag was higher than for G III ($P < 0.05$). The performances, Av-VO2max, and passive drag were not statistically different between G II and G III. Some of the swimmers had a pronounced amyotrophia of the lower extremities (i.e., reduced volume of inactive muscles). The height from the top of the head to the beginning of the bilateral amyotrophia was called "height without amyotrophia" (HWA). In the whole group, passive drag was not related to the mass or the height but to the ratio mass/HWA ($r = 0.71$, $P < 0.01$). However, within each group, passive drag was mainly related to the mass ($r = 0.63, 0.78, 0.62$, $P < 0.01$, for G I, G II, and G III respectively). Performances of a 100-m and 400-m swim were mainly related to Av-VO2peak ($r = 0.81$ and 0.79, $P < 0.01$, respectively).(ABSTRACT TRUNCATED AT 250 WORDS)
MESH: Adult-; Anthropometry-; Body-Constitution; Oxygen-Consumption
MESH: *Disabled-; *Swimming-physiology
TG: Female; Human; Male; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Predicting depression and psychological distress in persons with spinal cord injury based on indicators of handicap.
AU: Tate-D; Forchheimer-M; Maynard-F; Dijkers-M
AD: Department of Physical Medicine and Rehabilitation, University of Michigan Medical Center, Ann Arbor.
SO: Am-J-Phys-Med-Rehabil. 1994 Jun; 73(3): 175-83
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: This study examined whether experiences of handicap influence levels of depression and distress among persons with spinal cord injury (SCI) during the years after initial discharge from rehabilitation. SCI outpatients (163), who had received inpatient treatment at one of two rehabilitation centers in Michigan and who were between 2 to 7 years since injury, participated in the study. Measures of depression, of psychological distress and of handicap were collected during 2 consecutive years utilizing the Zung Self-Rating Scale, the Brief Symptom Inventory and the Craig Handicap Assessment and Reporting Technique (CHART) in conjunction with the

Perceived Handicap Questionnaire (PHQ)," respectively. According to the study's findings, depressed/distressed SCI subjects reported spending more hours in bed ($P < 0.01$), fewer days out of the house ($P < 0.03$) and receiving more paid personal care assistance ($P < 0.02$) than did other subjects. They also expended more for general medical expenses ($P < 0.001$) and reported less access to readily available transportation ($P < 0.003$). CHART total scores, reflecting a simple objective measure of handicap as described by Whiteneck et al. (Whiteneck GG, Charlifue SW, Gerhart KA, Overholser JD, Richardson GN: Guide for Use of the CHART: Craig Handicap Assessment and Reporting Technique. Craig Hospital, CO, 1988) were significantly associated with both distress and depression as measured during the second year of data collection. Other significant predictors of depression and distress included subjects' self-perceived handicap (measured by the PHQ), gender, marital status and age.(ABSTRACT TRUNCATED AT 250 WORDS)
MESH: Activities-of-Daily-Living; Adolescence-; Adult-; Demography-; Disabled-psychology; Middle-Age; Neuropsychological-Tests; Predictive-Value-of-Tests; Quality-of-Life; Regression-Analysis; Self-Assessment-Psychology
MESH: *Depression-diagnosis; *Spinal-Cord-Injuries-psychology; *Stress,-Psychological-diagnosis
TG: Female; Human; Male; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: Providing care to persons with physical disability. Effect on family caregivers.
AU: Evans-RL; Bishop-DS; Ousley-RT
AD: Department of Veterans Affairs Medical Center, Seattle, WA 98108.
SO: Am-J-Phys-Med-Rehabil. 1992 Jun; 71(3): 140-4
ISSN: 0894-9115 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: Studies on caregiving often assume that outcomes will be problematic and assess negative factors, such as burden or stress. Results may be biased by detailing only the problems encountered. The current study assessed positive, neutral and negative aspects of caregiving and evaluated the impact of caregiving using criteria based on an accepted model of family functioning. Of 942 consecutive hospital admissions, 217 subjects required assistance in personal care and returned home with a primary caregiver. Caregivers reported moderately more anxious, depressive and somatic symptoms than expected from standardized tests, but these findings were not clinically or statistically significant. Family functioning was related to the duration of the caregiving experience. Family relations seemed to be a source of strength for caregivers, regardless of disability type. Further research is needed to determine if family functioning can be used to buffer against unfavorable aspects of caregiving or to enhance positive aspects of the situation.
MESH: Adaptation,-Psychological; Adult-; Aged-; Communication-; Disabled-psychology; Middle-Age; Problem-Solving; Time-Factors; Washington-
MESH: *Activities-of-Daily-Living; *Caregivers-psychology; *Disabled-; *Family-psychology; *Home-Nursing-psychology
TG: Female; Human; Male; Support,-U.S.-Gov't,-Non-P.H.S.
PT: JOURNAL-ARTICLE

TI: Recent developments in rehabilitation giving rise to important new (and old) ethical issues and concerns.
AU: Meier-RH 3d
AD: Department of Rehabilitation Medicine, University of Colorado Health Sciences Center, Denver.
SO: Am-J-Phys-Med-Rehabil. 1988 Feb; 67(1): 7-11
ISSN: 0894-9115 PY: 1988 LA: ENGLISH CP: UNITED-STATES
MESH: Adult-; Infant,-Newborn; Insurance,-Health,-Reimbursement; Middle-Age; Quality-of-Life; Rehabilitation-economics; Rehabilitation-psychology
MESH: *Disabled-psychology; *Ethics,-Medical; *Rehabilitation-trends
TG: Female-; Human-; Male-
PT: JOURNAL-ARTICLE

TI: Recommended guidelines for admission of candidates with disabilities to medical school. Developed by the Association of Academic Physiatrists.

AU:
AD:
SO: Am-J-Phys-Med-Rehabil. 1993 Feb; 72(1): 45-7
ISSN: 0894-9115 PY: 1993 LA: ENGLISH CP: UNITED-STATES
MESH: Physical-Medicine; Societies,-Medical; United-States
MESH: *Disabled-; *School-Admission-Criteria; *Schools,-Medical
TG: Human
PT: GUIDELINE; JOURNAL-ARTICLE

TI: Research in physical medicine and rehabilitation. XII. Measurement tools with application to brain injury.
AU: Johnston-MV; Findley-TW; DeLuca-J; Katz-RT
AD: Kessler Institute for Rehabilitation, Orange, N.J. 07052.
SO: Am-J-Phys-Med-Rehabil. 1991 Feb; 70(1): 40-56
ISSN: 0894-9115 PY: 1991 LA: ENGLISH CP: UNITED-STATES
AB: There are basic principles and techniques of measurement that are relevant across biomedical disciplines. The purpose of this article is to explain some of the most important of these for medical rehabilitation, to illustrate how to use them to choose assessment instruments and to describe the nature of measurement in medical rehabilitation by examples in brain injury rehabilitation. Reliability is basic to any scientific measure. Validity, the ultimate criterion, is closely associated with the purpose of the measure. Content validity, criterion validity and construct validity are explained. Sensitivity to rehabilitative interventions and significance in patients' real lives (ecological validity) are emphasized. Measures of functional outcomes (disability) may show improvement after rehabilitation even when impairment measures do not. An extensive but selected list of measures of coma, global status, disabilities, communicative and cognitive impairments, and handicaps is presented, and their main uses are illustrated. Examples illustrate how to choose measures to study comprehensive program-level outcomes, to study learning-based interventions and to develop a general purpose database. Although there are many measures of activities of daily living and mobility, little published evidence of reliability and validity could be found even for some well-known scales. Ecologically valid and sensitive outcome measures are especially needed. Studies of the clinical utility of measures were also scarce. Many of these gaps can be spanned by clinical researchers with limited resources. Physical medicine and rehabilitation will benefit from formal studies of the reliabilities and validities of both its old and its new measurement instruments and by increased sophistication in choice of measures.
MESH: Brain-Injuries-diagnosis; Brain-Injuries-epidemiology; Data-Interpretation,-Statistical; Databases,-Bibliographic; Disability-Evaluation; Outcome-and-Process-Assessment-Health-Care-methods; Physical-Medicine-instrumentation; Physical-Medicine-statistics-and-numerical-data; Rehabilitation-instrumentation; Rehabilitation-statistics-and-numerical-data; Reproducibility-of-Results; Research-
MESH: *Brain-Injuries-rehabilitation; *Physical-Medicine; *Rehabilitation-
TG: Human
PT: JOURNAL-ARTICLE

TI: Starting out. The first six months posthospital for spinal cord-injured veterans.
AU: Pilsecker-C
AD: Spinal Cord Injury Service, VA Medical Center, Long Beach, CA 90822.
SO: Am-J-Phys-Med-Rehabil. 1990 Apr; 69(2): 91-5
ISSN: 0894-9115 PY: 1990 LA: ENGLISH CP: UNITED-STATES
AB: Thirty-one former patients were contacted 6 mo after their completion of a spinal cord injury rehabilitation program: 14, paraplegics; 8, complete quadriplegics; 9, incomplete quadriplegics. Mean age was 38.5 yr. Most respondents were living in a family setting. Income ranged from substantial to barely adequate. Half of the respondents needed no assistance with activities of daily living; for the others, family members were the primary helpers. Almost all described their social contacts as sufficient for their needs. Half had not needed to use community resources for the disabled; the others had used a range of resources. Two respondents were employed, four were in school, six others had plans for eventual employment. Neither extent of disability nor income seemed related to likelihood of entering the workforce. Most respondents reported frequent local travel; some had traveled extensively. The large majority engaged in one or more hobbies and/or physical activities. Just over half of the

respondents had had no sexual activity after discharge. Of the sexually active, half had found the experience frustrating. Except for the 30- to 39-yr-old respondents, the majority expressed satisfaction with most aspects of their lives.
MESH: Adult-; Aged-; Attitude-; Community-Health-Services-supply-and-distribution; Follow-Up-Studies; Income-; Middle-Age; Sex-; Social-Support; Spinal-Cord-Injuries-psychology; Veterans-
MESH: *Activities-of-Daily-Living; *Life-Style; *Spinal-Cord-Injuries-rehabilitation
TG: Human-; Male-
PT: JOURNAL-ARTICLE

TI: Temperature regulation during upper body exercise: able-bodied and spinal cord injured.
AU: Sawka-MN; Latzka-WA; Pandolf-KB
AD: U.S. Army Research Institute of Environmental Medicine, Natick, MA 01760-5007.
SO: Med-Sci-Sports-Exerc. 1989 Oct; 21(5 Suppl): S132-40
ISSN: 0195-9131 PY: 1989 LA: ENGLISH CP: UNITED-STATES
AB: This paper will consider human thermoregulatory response differences between upper and lower body exercise. In addition, the thermoregulatory problems of spinal cord injured individuals are examined. For able-bodied individuals, the rise in core temperature is independent of the skeletal muscle mass employed and dependent upon the metabolic rate during exercise. The avenues of heat exchange, however, are different for individuals performing upper body as opposed to lower body exercise. During upper body exercise, there is a greater dry heat loss from the torso; however, no additional heat loss (as compared to lower body exercise) occurs from the exercising arms. If an individual performs upper body exercise in cold water, there will be a greater heat loss and susceptibility to hypothermia than during lower body exercise. A spinal cord injury impairs one's ability to thermoregulate because of: (a) loss of autonomic nervous system control for vasomotor and sudomotor responses in the areas of the insensate skin; (b) a reduced thermoregulatory effector response for a given core temperature; and (c) a loss of skeletal muscle pump activity from the paralyzed limbs. As a result, a spinal cord injured person has a reduced ability to tolerate thermal extremes and to perform aerobic exercise. Surprisingly little research, however, has focused on the ability of the disabled to thermoregulate during exercise. Recent data suggest that rectal temperature measurements may underestimate the thermal burden imposed on wheelchair athletes during competition.
MESH: Regional-Blood-Flow; Skin-blood-supply; Sweating-physiology
MESH: *Arm-physiology; *Body-Temperature-Regulation; *Exercise-physiology; *Spinal-Cord-Injuries-physiopathology
TG: Human-
PT: JOURNAL-ARTICLE; REVIEW; REVIEW,-TUTORIAL

TI: The "value" of functional independence measure scores.
AU: Bunch-WH; Dvonch-VM
AD: Lakeshore Hospital, Birmingham, AL 35209.
SO: Am-J-Phys-Med-Rehabil. 1994 Feb; 73(1): 40-3
ISSN: 0894-9115 PY: 1994 LA: ENGLISH CP: UNITED-STATES
AB: Functional independence measure (FIM) scores are frequently used as if the various sections are of equal importance and as if the interval between each score is equal. We tested this hypothesis by using marketing research techniques to assess the value to rehabilitation nurses and therapists of four of the six sections. Communication was valued more highly than continence, mobility and self care in that order. The interval between the scores is not equal, with difference between a FIM 2 and 3 being greater than between a FIM 5 and 6. However, when the other difficulties such as interexaminer reliability are considered, these score differences are not great. We concluded that for practical purposes FIM scores may be used as if they were of equal interval spacing, and the scores of the various sections may be added together.
MESH: Communication-; Decision-Theory; Locomotion-; Nurses-; Outcome-Assessment-Health-Care; Physical-Therapy; Self-Care; Urinary-Incontinence-psychology
MESH: *Activities-of-Daily-Living; *Disabled-; *Rehabilitation-methods
TG: Human; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

TI: The injury experience of the competitive athlete with a disability: prevention implications.
AU: Ferrara-MS; Buckley-WE; McCann-BC; Limbird-TJ; Powell-JW; Robl-R
AD: College of Applied Science and Technology, Ball State University, Muncie, IN 47306.
SO: Med-Sci-Sports-Exerc. 1992 Feb; 24(2): 184-8
ISSN: 0195-9131 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: The purpose of this project was to describe the injury experiences of athletes with disabilities. A cross-disability instrument was developed to measure variables of interest. A retrospective survey was administered to 426 athletes who participated at the 1989 national competition of the National Wheelchair Athletic Association (NWAA), United States Association for Blind Athletes (USABA), and the United States Cerebral Palsy Athletic Association (USCPAA). The definition of injury was any trauma to the participant that occurred during any practice, training, or competition session that caused the athlete to stop, limit, or modify participation for 1 d or more. Thirty-two percent (N = 137) of the total respondents reported at least one time-loss injury. By organization, 26% of the total injuries were from the NWAA and 37% were from the USABA and USCPAA, respectively. The shoulder and arm/elbow accounted for 57% of the total NWAA injuries. Fifty-three percent of the injuries to the USABA athlete were to the lower extremity. Injuries to the USCPAA athlete were distributed among four body locations, knee (21%), shoulder (16%), forearm/wrist (16%), and leg/ankle (15%). The athlete with a disability demonstrated approximately the same percentage of injury as the athlete without a disability in similar sport activities. Biomechanical considerations of locomotion and specific sport skills should be analyzed by experts to reduce the percentage of injuries.
MESH: Adult-; Athletic-Injuries-epidemiology; Blindness-; Cerebral-Palsy; Retrospective-Studies; United-States-epidemiology
MESH: *Athletic-Injuries-prevention-and-control; *Disabled-
TG: Female; Human; Male
PT: JOURNAL-ARTICLE

TI: The use of contextual interference trials by mildly mentally handicapped children.
AU: Porretta-DL; O'Brien-K
AD: School of HPER, Ohio State University, Columbus 43210.
SO: Res-Q-Exerc-Sport. 1991 Jun; 62(2): 240-4
ISSN: 0270-1367 PY: 1991 LA: ENGLISH CP: UNITED-STATES
MESH: Child-; Cognition-; Mental-Retardation-physiopathology; Motor-Skills-physiology; Random-Allocation; Retention-Psychology; Transfer-Psychology
MESH: *Mental-Retardation-psychology
TG: Female; Human; Male
PT: JOURNAL-ARTICLE

TI: The use of transdermal scopolamine to control drooling. A case report.
AU: Dreyfuss-P; Vogel-D; Walsh-N
AD: Department of Rehabilitation Medicine, University of Texas Health Science Center, San Antonio 78284-7798.
SO: Am-J-Phys-Med-Rehabil. 1991 Aug; 70(4): 220-2
ISSN: 0894-9115 PY: 1991 LA: ENGLISH CP: UNITED-STATES
AB: Drooling is a serious social handicap experienced by some neurologically impaired patients. No one method has been identified to control drooling for all patients, however, anticholinergic drugs recently have been utilized. In the case study described, transdermal scopolamine patches were found to be effective for controlling drooling in a traumatic brain-injured patient for whom more conservative methods failed. From a baseline saliva flow rate, saliva flow decreased an average of 30% with one-patch and 59% with two-patch dosing. No significant side effects were observed with treatment, and the decrease in drooling was maintained for a 4-month period. Although transdermal scopolamine may represent one acceptable facet of long-term treatment, it must be stressed that efficacy is variable across patient populations and that treatment approaches must be individualized.
MESH: Administration,-Cutaneous; Adult-; Brain-Injuries-complications

MESH: *Scopolamine-administration-and-dosage; *Sialorrhea-drug-therapy
TG: Case-Report; Human; Male
PT: JOURNAL-ARTICLE

TI: Transcutaneous oxygen pressure. An effective measure for prosthesis fitting on below-knee amputations.
AU: Casillas-JM; Michel-C; Aurelle-B; Becker-F; Marcer-I; Schultz-S; Didier-JP
AD: Groupe d'Etudes et de Recherches sur le Handicap, Faculte de Medecine de Dijon, France.
SO: Am-J-Phys-Med-Rehabil. 1993 Feb; 72(1): 29-32
ISSN: 0894-9115 PY: 1993 LA: ENGLISH CP: UNITED-STATES
AB: After amputation for arterial occlusive disease of the lower limbs, healing and local adaptation to a prosthesis depend on the oxygen ratio in the tissue. Transcutaneous oxygen tension (TcPO2) is a noninvasive microcirculatory exploration. Forty six below-knee stumps were selected without any prosthetic problem excepting vascular, with a follow-up mean duration of 23 months. They were classified into different prosthetic categories. The first was the worst because it required further amputation on the thigh and the fourth the best, which displayed complete adaptation to a socket contact. These groups were related to their TcPO2 values on the anterior and exterior face of the stumps in both reclined and seated positions. It seems that it is impossible to achieve healing when the TcPO2 value is lower than 15 mm Hg in lying position. However, healing is possible above 20 mm Hg but socket contact is not possible when TcPO2 values are under 40 mm Hg. When TcPO2 values are above 40 mm Hg, a good prosthesis fitting is possible when no problems are encountered other than vascular ones.
MESH: Aged-; Arterial-Occlusive-Diseases-physiopathology; Arterial-Occlusive-Diseases-surgery; Leg-blood-supply; Partial-Pressure
MESH: *Amputation-Stumps-physiopathology; *Artificial-Limbs; *Blood-Gas-Monitoring,-Transcutaneous-methods; *Microcirculation-
TG: Female; Human; Male
PT: JOURNAL-ARTICLE

TI: UDS report. The Uniform Data System for Medical Rehabilitation Report of First Admissions for 1990.
AU: Granger-CV; Hamilton-BB
AD: UDS Data Management Service, State University of New York, Buffalo 14214.
SO: Am-J-Phys-Med-Rehabil. 1992 Apr; 71(2): 108-13
ISSN: 0894-9115 PY: 1992 LA: ENGLISH CP: UNITED-STATES
MESH: Adult-; Aged-; Disabled-classification; Injury-Severity-Score; Length-of-Stay; Middle-Age; Patient-Admission; Severity-of-Illness-Index
MESH: *Information-Systems; *Rehabilitation-
TG: Female; Human; Male
PT: JOURNAL-ARTICLE

TI: Very sensitive issue in the lives of people with disabilities [letter]
AU: Kraemer-WJ
AD:
SO: Med-Sci-Sports-Exerc. 1991 Nov; 23(11): 1318-9
ISSN: 0195-9131 PY: 1991 LA: ENGLISH CP: UNITED-STATES
MESH: Disabled-psychology; Prejudice-; Semantics-; United-States
MESH: *Disabled-
TG: Human
PT: LETTER

TI: Voluntary and electromyostimulation forces in trained and untrained men.
AU: Hortobagyi-T; Lambert-NJ; Tracy-C; Shinebarger-M
AD: Human Performance Laboratory, East Carolina University, Greenville, NC 27858.

SO: Med-Sci-Sports-Exerc. 1992 Jun; 24(6): 702-7
ISSN: 0195-9131 PY: 1992 LA: ENGLISH CP: UNITED-STATES
AB: Electromyostimulation (EMS) evoked responses of lower extremity muscles of sedentary or disabled subjects have been extensively studied to improve muscular strength and delay atrophy. However, it is not apparent whether EMS can serve a similar function in upper extremity muscles and in athletes. We compared the forces of maximal voluntary isometric contraction (MVC), percutaneous EMS-evoked tetanus, and EMS superimposed on MVC of the elbow flexors in six strength-trained and six untrained healthy men. Stimulation consisted of a 2.5-kHz alternating current sine wave modulated at 50 bursts.s-1 with a 50% duty cycle. Reliability of the criterion measures was assessed over 4 d and ranged from R = 0.746 to R = 0.948. Strength-trained men had 29% higher MVC than untrained controls (P less than 0.001). Untrained men tolerated 21.9 mA and trained men 31.3 mA of EMS current (P less than 0.021), yet tetanic forces were similar: 92.5 N vs 96.0 N (P greater than 0.196). These tetanic forces corresponded to 32% (untrained) and 24% (trained) of MVC (P less than 0.047). When EMS was superimposed on MVC, compared with MVC alone, force was significantly (P less than 0.048) lower by 10% (31 N, untrained) and 13% (55 N, trained). These data suggest that, independent of training status, percutaneous EMS reduces maximal voluntary elbow flexion forces and that tetanic forces may not be sufficiently high for purposes of muscular strength development or prevention of atrophy.
MESH: Adult-; Elbow-physiology; Middle-Age; Transcutaneous-Electric-Nerve-Stimulation
MESH: *Isometric-Contraction; *Physical-Education-and-Training
TG: Human; Support,-Non-U.S.-Gov't
PT: JOURNAL-ARTICLE

V-APÊNDICE II: Índice de Periódicos do SportSearch

A.C.H.P.E.R. national journal
Australian Council for Health, Physical Education and Recreation, P.O. Box 304, Hindmarsh, South Australia 5007

A.F.B action
Association of Fitness in Business, 965 Hope Street, Stamford, CT 06907

Academy papers - American Academy of Physical Education
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Adapted physical activity quarterly
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Addvantage
United States Professional Tennis Association, Two Commerce Park Square, Suite 100, 23200 Chagrin Blvd., Cleveland, OH 44122

Aim
Shooting Federation of Canada, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Amateur boxer
Amateur Boxer, P.O. Box 249, Cobalt, CT 06414

American bicyclist and motorcyclist
American Bicyclist and Motorcyclist, 80 Eighth Avenue, New York, N.Y. 10011

American fencing
American Fencing, 2201 Bywood Drive, Oakland, CA 94602

American fitness
Aerobics and Fitness Association of America, 15250 Ventura Blvd., Suite 802, Sherman Oaks, CA 91403

American hockey magazine
Amateur Hockey Association of the United States, 2997 Broadmoor Valley Road, Colorado Springs, Colorado 80906

American journal of sports medicine
6262 Hamilton Road, Columbus, GA 31995

American rowing
US Rowing, 251 N. Illinois Street, Suite 980, Indianapolis, Indiana 46204

American whitewater
AWA Journal, P.O. Box 1483, Hagerstown, MD 21740

Animateur d'entrainement physique dans le monde moderne
Animateur d'entrainement physique dans le monde moderne, 23, bd Bonne Nouvelle, 75002 Paris, France

Annales de kinésithérapie
Masson S.A. Fribourg, Chemin des roches, 8A, CH-1701 Fribourg, Suisse

Annals of sports medicine
American Medical Joggers Association, P.O. Box 4704, North Hollywood, CA 91607

Archery business
Winter Sports Publishing, Inc., Suite 100, 11812 Wayzata Blvd., Minnetonka, MN 55343

Archery world
Archery World, P.O. Box 362, Mt. Morris, IL 61054

Archivos de la Sociedad Chilena de Medicina del Deporte
Archivos de la Sociedad Chilena de Medicina del Deporte, a Casilla 23-D, Santiago, Chile

Arete
San Diego University Press, San Diego State University, San Diego, CA 92182

Asian journal of physical education
Asian Journal of Physical Education, No. 3, Lane 153, Section 2, Chang An East Road, Taipei, Taiwan, Republic of China

Athletic administration
National Association of Collegiate Directors of Athletics, 1229 Smith Court, P.O. Box 16428, Cleveland, Ohio 44116

Athletic Asia
A.T.F.C.A. Secretariat, Netaji Subhas, National Institute of Sports, Patiala, India

Athletic business
Melanie Bingham, Circulation Director, 1842 Hoffman Street, Suite 201, Madison, WI 53704

Athletic director
National Council of Secondary School Athletic Directors, AAHPER, 1900 Association Drive, Reston, Virginia 22091

Athletic journal
Athletic Journal Publ. Co., 1719 Howard St., Evanston, IL 60202

Athletics
Athletics Magazine, 1220 Sheppard Ave. East, Willowdale, Ontario, M2K 2X1

Athletics coach
B.A.A.B., Coaching Office, Francis House, Francis Street, London, SW1P 1DL England

Audible
Ontario Amateur Football Association, 1220 Sheppard Avenue East, Willowdale, Ontario, M2K 2X1

Australian gliding
Australian Gliding, Box 1650, G.P.O, Adelaide, South Australia 5001

Australian gymnast
The Australian Gymnast, P.O. Box 180, Moorabbin, Vic. 3189, Australia

Australian journal of science and medicine in sport
Australian Journal of Science and Medicine in Sport, Terry Sanders, Executive Director, Australian Sports Medicine Federation, P.O. Box 897, Belconnen, ACT, Australia 2616

Australian rowing
Australian Rowing, The Editor, 24 Goldsmith Road, Claremont, WA 6010

Aviron
Fédération française des sociétés d'aviron, 7, rue la Fayette, 75009 Paris, France

Backpacker
Backpacker, P.O. Box 2784, Boulder, CO, 80322

Badminton
Marsh Publications Ltd., 77 Great Peter St., London SW1P 2EZ, England

Badminton U.S.A.
United States Badminton Association, P.O. Box 456, Waterford, MI 48095

Ballooning
Balloon Federation of America, P.O. Box 264, Indianola, IA 50125, U.S.A.

Baseball research journal
Society for American Baseball Research, P.O. Box 1010, Cooperstown, NY 13326, U.S.A.

Basketball Clinic
Princeton Educational Publishers, CN 5245, Princeton, N.J. 08540

Bicycling
Bicycling, 33 E. Minor St., Emmaus, PA 18049

Bike tech
Rodale Press, Inc., 33 E. Minor Street, Emmaus, Penna. 18049

Black belt magazine
Rainbow Publications, 1813 Victory Place, P.O. Box 7728, Burbank, CA 91510-7728

Bowlers journal
National Bowlers Journal Inc., Suite 1430, 200 South Michigan Avenue, Chicago, IL 60604

Bowling
American Bowling Congress, 5301 S. 76th St., Greendale, WI 53129

Bowling proprietor
Bowling Proprietors' Association of America, Inc., P.O. Box 5802, 615 Flags Drive, Arlington, Texas 76011

British archer
B.A. Publishing Company Ltd., 43/45 Milford Road, Reading, Berkshire, RG1 8LG, England

British journal of physical education
Physical Education Association of Great Britain and Northern Ireland, Ling House, 5 Western Court, Bromley Street, Digbeth, Birmingham B9 4AN

British journal of sports history
British Journal of Sports History, The Subscription Manager, Frank Cass & Co. Ltd., Gainsborough House, 11 Gainsborough Road, London E11 1RS, England

British journal of sports medicine
Dr. H.E. Robson, 39 Linkfield Road, Mountsorrel, Nr. Loughborough, Leicestershire LE12 7DJ, England

Bulletin - Canadian Intramural Recreation Association / Bulletin - Association canadienne de loisirs-intramuros
C.I.R.A., National Office, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Bulletin of physical education
P.E. & Sports Sciences, University of Technology, Loughborough, Leicestershire, LE11 3TU England

C.A.H.P.E.R.D. journal / Journal de l'A.C.S.E.P.L.D.
CAHPERD 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

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Roy Cummings, Editor, Ontario Soccer Referees' Association, 573 Chamberlain Rd., Burlington, Ontario, L7L 2V2

Canadian archer/Archer canadien
Editor/rédacteur: Kathleen Windsor, RR#2, Didsbury, Alberta, T0M 0W0. Phone + Fax: (403) 335-2366.

Canadian coach
Canadian Coach, c/o Ontario Equestrian Federation, 1220 Sheppard Avenue East, Willowdale, Ontario, M2K 2X1

Canadian equestrian
Canadian Equestrian Team, 612 Sherbourne Street, Suite 207, Toronto, Ontario, M4X 1L5

Canadian journal of applied physiology/Revue canadienne de physiologie appliquee
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Canadian journal of history of sport / Revue canadienne de l'histoire des sports
Alan Metcalfe, Editor, Canadian journal of history of sport, University of Windsor, Windsor, Ont. N9B 3P4

Canadian rider
Canadian Rider, P.O. Box 7065, Ancaster, Ont. L9G 3L3

Canadian runner
Canadian Runner Publications, 6 Brentcliffe Road, Toronto, Ontario, M4G 3Y2

Canadian squash
Canadian Squash Racquets Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Canadian weightlifting journal
Canadian Weightlifting Federation, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

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C.A.W.A., 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Canadian yachting. Power and sail
Canadian Yachting Magazine Ltd., Louise Freitas, Magazine Circulation, Maclean Hunter Building, 7th floor, 777 Bay St., Toronto, Ont., M5W 1A7

Canoe
P.O. Box 3146, Kirkland, WA 98083

Canpara
CSPA, 5185 Dunning Road, Navan, Ont. K4B 1J1

Carnegie research papers
Carnegie School of Physical Education and Human Movement Studies, Leeds Polytechnic, Beckett Park, Leeds LS6 3QS

Catch
Canadian Amateur Rowing Association, Catch, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Champion
Athlete Information Bureau, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

China sports
China International Book Trading Corporation (Guoji Shudian), P.O. Box 399, Beijing, China

Cinésiologie
Docteur Jacques Baudoux, 29, rue Gay Lussac, 49400 Saumur, France

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Climbing, Box E, Aspen, Colorado 81611

Clinical journal of sport medicine
Raven Press, 1185 Avenue of the Americas, New York, N.Y. 10036

Clinical kinesiology
American Corrective Therapy Journal, San Diego State University, San Diego, CA 92182-1900

Clinics in sports medicine
W.B. Saunders Company, The Curtis Center, Independence Square West, Philadelphia, PA 19106

Coaching clinic
Princeton Educational Publishers, CN5245, Princeton, N.J. 08540

Coaching volleyball
American Volleyball Coaches Association, 1227 Lake Plaza Dr., Suite B, Colorado Springs, CO 80906.

Coaching women's basketball
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Coffin corner
Professional Football Researchers Association, P.O. Box 9616, Canton, Ohio 44711, U.S.A.

Colorado J.O.H.P.E.R.D.
Dr. Cheryl Norton, Box 25 PER Department, Metropolitan State College, Denver, Colo. 80204

Compass sport. The orienteer
Compass Sport, 37 Sandycoombe Road, Twickenham, Middlesex TW1 2LR, England

Counterattack
Canadian Women's Field Hockey Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Cross country skier
Rodale Press, Inc., 33 E. Minor Street, Emmaus, PA 10849

Curling Canada
Canadian Curling Association, National All-Sport Promotions, 1623 Yonge Street, Toronto, Ontario, M4T 2A1

Dance exercise today
International Dance-Exercise Association, Inc., 2437 Morena Boulevard, Second Floor, San Diego, CA 92110

Dirt bike
Dirt Bike, 10600 Sepulveda Blvd., Mission Hills, CA 91345

Dressage and CT Magazine
Ivan I. Bezugloff, Jr., Editor/Publisher, 1772 Middlehurst Road, Cleveland Heights, OH 44118-1648

E.P.S. Éducation Physique et Sport
Revue éducation physique et sport, 11, avenue du Tremblay, 75012 Paris, France

Employee health and fitness
Subscription Department, Employee Health and Fitness, 67 Peachtree Park Drive N.E., Atlanta, GA 30309

Equus
Equus, Box 392 Horseshow Lane, Farmingdale, NY 11737

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Escrime, 45, rue de Liège, 75008 Paris, France

European journal of applied physiology and occupational physiology
Springer-Verlag New York Inc., Service Centre Secaucus, 44 Hartz Way, Secaucus, N.J. 07094

EXCEL
The Editor, Australian Institute of Sport, P.O. Box 176, Belconnen, A.C.T., 2616 Australia

Exercise and sport sciences reviews
Macmillan Publishing Company, 866 Third Avenue, New York, NY 10022

F.I.E.P. Bulletin
Mr. Jean Monsinat, 14, rue Marceau, 31400 Toulouse, France

Fencing
Prof. R. Goodall, 20 Dent's Grove, Lower Kingswood, Surrey, KT20 70X, England

Fencing Canada escrime
Canadian Fencing Association, Association canadienne d'escrime, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Fitness and sports review
Michael Yessis, Ph.d., Sports Training, Inc., P.O Box 460429, Escondido, CA 92046

Fitness industry
Fitness Industry, Circulation Department, 1545 N.E. 123rd Street, North Miami, FL, 33161-9990

Fitness leader
Fitness Leader, c/o Pitters Publishing, 251 Bank Street, Suite 405, Ottawa, Ontario, K2P 1X3

Fitness report
Fitness report, 102 Adelaide St. E., Suite 202, Toronto, Ont M5C 1K9

Florida J.O.H.P.E.R.D.
Florida Association for Health, Physical Education, Recreation and Dance, 304 Florida Gymnasium, University of Florida, Gainesville, FL 32611

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Soaring Association of Canada, 485 Bank Street, 2nd floor, Ottawa, Ont., K2P 1Z2

Fun runner
Vaucluse Press, P.O. Box 109, Rose Bay, 2029 N.S.W., Australia

G.A.H.P.E.R.D. journal
Georgia Association for Health, Physical Education, Recreation and Dance, Ann Salisbury, Executive Secretary, 3041 Grey Road, Smyrna, GA 30080

Goal
Professional Sports Publications, 600 Third Avenue, New York, N.Y. 10016

Golf Australia
Horwitz Grahame Pty Ltd, 506 Miller Street, Cammeray NSW

Golf clubmaker
Professional Golf Club Repairmen's Association, 2053 Harvard Ave., Dunedin FL 34698

Golf course management
Golf Course Superintendent Associationof America, 1421 Research Park Drive, Lawrence, KS 66049-3859

Golf digest
Golf Digest/Tennis, Inc., 495 Westport Avenue, Norwalk, Conn. 06856

Golf européen
Golf Européen, 19, rue de Prony, 75017 Paris, France

Golf industry
Circulation, Dept., Golf Industry, 1545 N.E. 123rd Street, No, Miami, Florida 33161

Golf magazine
Golf Magazine, P.O. Box 2786, Boulder, CO 80302

Grasp
Grasp, Main Street, Bruntinthorpe, Nr. Lutterworth, Leicestershire, England

Green
Janet Mary, Lawrencetown, Annapolis County, N.S., B0S 1M0

Green section record - U.S.G.A.
United States Golf Association, Golf House, Far Hills, N.J. 07931

GreenMaster
Canadian Golf Superintendents Association, Suite 509, 5580 Explorer Drive, Mississauga, Ontario, L4W 4Y1 Canada

Gymnastics coach
Australian Gymnastic Federation, Inc., P.O. Box 180, Moorabbin, Victoria 3189, Australia

H.P.V. news
International Human Powered Vehicle Association, P.O. Box 2068, Seal Beach, CA 90740

Handball
Handball, 930 N. Benton Ave., Tucson, Arizona 85711

Handball magazine
Fédération québécoise de handball olympique, 4545 Pierre de Coubertin, Montréal, Québec, H1V 3R2

Hang gliding
United States Hang Gliding Association, Post Office Box 8300, Colorado Springs, Colorado 80933

Highlights Faits saillants
Canada Fitness Survey : Enquete condition physique Canada, 506-294 Albert, Ottawa, Ontario, K1P 6E6

Hockey digest
The Editor. Hockey Digest, Laleham-on-Thames, Middx. TW18 2TD. England

Hockey field
Patricia Ward, Green Crest, Silver Hill, Perrenwell Station, Truro, Cornwall TR3 7LR, England

Hockey today
Canadian Amateur Hockey Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Hommes volants
Les Hommes Volants, 28, rue de Navarin, 75009 Paris, France

Horse and rider
D.J. Murphy (Publishers) Ltd., 104 Ash Road Sutton, Surrey SM3 9LD. England

Horseman
Horseman, P.O. Box 1990, Marion, OH 43305

Human power
IHPVA, P.O. Box 2068, Seal Beach, CA 90740

Hungarian review of sports medicine
H-1123 Alkotas LL 48 OTSI, Budapest, Hungary

Ice and roller skate magazine
Ice and Roller Skate, 1 Strathmore Close, Caterham, Surrey, England CR3 5EQ

Impulse
Human Kinetics Publichers, Inc., Box 5076, Champaign, IL 61825

Inform: a magazine for all sport & physical educators
Inform Editonal Office, Centre for Physical Activity & Performance Development, School of Human Movement Studies, Kelvin Grove Campus, Queensland University of Technology, Victora Park Rd, Kelvin Grove QLD 4059

Inside karate
Inside Karate, 4201 Vanowen Place, Burbank, CA 91505

Inside kung-fu
Inside Kung-fu subscription department, 4201 Vanowen Place, Burbank, CA 91505

Inside sports
Inside Sports, Subscription Department, P.O. Box 3308, Harlan, IA 51537, U.S.A.

International basketball
Tamas Gyarfas, 1553 Budapest, pf37, Hungary

International bulletin of sports information
International Association for Sports information, Postbox 85558, 2508 CG The Hague, Netherlands

International gymnast
225 Brooks-P.O. Box G, Oceanside, CA 92054

International journal of physical education
Verlag Karl Hofmann, D-7060 Schorndorf, Postfach 1360, Federal Republic of Germany

International journal of sport nutrition
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

International journal of sport psychology
Edizioni Luigi Pozzi, Via Panama 68, 00198 Rome, Italy

International journal of sports medicine
Thieme-Stratton Inc., 381 Park Avenue, South, New York, N.Y. 10016

International Olympic lifter
Box 65855, Los Angeles, CA 90065

International review for the sociology of sport
R. Oldenbourg Verlag GmbH, P.O. Box 801360, D-8000 Munchen 80, Germany

International skating
International Skating, Via Marco Polo, 3, 65100 Pescara, Italy

International swimmer
The Editor, The International Swimmer, P.O. Box 25, Artarmon, N.S.W., 2064, Australia

International swimming and water polo
Tamas Gyarfas, 1553 Budapest, Pf. 37, Hungary

Interscholastic athletic administration.
National Federation, 11724 Plaza Circle, P.O. Box 20626, Kansas City, MO 64195

Jim Rennie's sports letter
Jim Rennie, Box 1000, Collingwood, Ont. L9Y 4L4

Journal de traumatologie du sport
Masson, Editeur; 120, bd Saint-Germain, 75280 Paris, France

Journal of aging and physical activity
Human Kinetics Publichers, Inc., Box 5076, Champaign, IL 61825

Journal of applied biomechanics
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Journal of applied physiology
American Physiological Society, 9650 Rockville Pike, Bethesda, Md 20814

Journal of applied sport psychology
Association for the Advancement of Applied Sport Psychology,; Editor's Office; 203 Fetzer - 8700, University of North Carolina, Chapel Hill, N.C. 27599; U.S.A.

Journal of athletic training
National Athletic Trainers' Association, 2952 Stemmons Freeway, Dallas, TX 75247

Journal of human movement studies
Teviot Scientific Publications Ltd., 82 Great King Street, Edinburgh EH3 6QU, United Kingdom

Journal of motor behavior
Heldref Publications, 1319 - 18th Street N.W., Washington, DC 20036-1802

Journal of orthopaedic and sports physical therapy
Journal of Orthopaedic and Sports Physical Therapy, 428 E Preston St., Baltimore, MD 21201

Journal of physical education, recreation and dance
A.A.H.P.E.R.D., 1900 Association Dr., Reston, VA 22091

Journal of sport and social issues
Dr. Jordan Gebre-Medhin, Journal of Sport and Social Issues, 360 Huntington Avenue, Department of African-American Studies, Northeastern University, Boston, Mass. 02115

Journal of sport behavior
Dr. William F. Gilley, Department of HPELS, University of South Alabama, Mobile, Alabama 36688

Journal of sport history
Ronald A. Smith, NASSH Secretary-Treasurer, 101 White Building, Pennsylvania State University, University Park, Pa. 16802

Journal of sport management
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Journal of sport and exercise psychology
Human Kinetics Publishers, Box 5076, Champaign, IL 61825

Journal of sport rehabilitation
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Journal of sports medicine and physical fitness
Edizioni Minerva Medica, Corso Bramante 83-85, 10126 Torino, Italy

Journal of sports philately
Margaret A. Jones, 3715 Ashford-Dunwoody Rd., N.E., Atlanta, GA 30319, U.S.A.

Journal of sports sciences
Journal of Sports Sciences, Subscriptions Department, A.B.P. (UK) Ltd., North Way, Andover, Hampshire, UK SP10 5BE

Journal of sports traumatology and related research
Editrice Kurtis s.r.l., Via L. Zoja, 30-20153 Milano, Italy

Journal of strength and conditioning research
Human Kinetics Publishers, P.O.Box 5076, Champaign, IL 61825-5076

Journal of swimming research
American Swimming Coaches Association, 1 Hall of Fame Drive, Fort Lauderdale, Florida 33316, U.S.A.

Journal of teaching in physical education
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Journal of the Canadian Athletic Therapists' Association
C.A.T.A. Journal, c/o Sport Medicine Council, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Journal of the Massachusetts Association for Health, Physical Education, Recreation and Dance
M.A.H.P.E.R.D., Merrill S. Bergstrom, Executive Secretary, 15 Jay Avenue, Northboro, MA 01532

Journal of the philosophy of sport
Human Kinetics Publishers, Box 5076, Champaign, IL 61825

Journal of the Society of Archer-antiquaries
Journal of the Society of Archer-antiquaries, Editor: A. Webb, Tump Cottage, Pastor's Cul-de-sac, Bream, nr. Lydney, Glos. GL15 6NA, England

Journal of the Sports Turf Research Institute
Sports Turf Research Institute, Bingley, West Yorkshire BD16 1AU, England

Juco review
George E. Killian, Executive Director, 1831 Austin Bluffs Parkway, Suite 200, Colorado Springs, Colorado 80907, U.S.A.

Judo
Fédération française de judo et disciplines associées, 43 rue des Plantes, 75014 Paris, France

Judo Journal
Judo Journal Publications, P.O. Box 18485, Irvine, CA 92713

Judo magazine
Judo Ltd., Publications Division, Candem House, 717 Manchester Old Road, Rhodes, Middleton, Manchester M24 4GF, England

K.A.H.P.E.R.D. Journal
K.A.H.P.E.R.D. Journal, Department of Health Education, Eastern Kentucky University, Richmond, KY 40475

Kanawa
Canadian Recreational Canoeing Association, P.O.Box 500, Hyde Park, Ont. NOM 1ZO

Karate/Kung-fu illustrated
Rainbow Publications, Inc., 1813 Victory Place, P.O. Box 7728, Burbank, CA 91510-7728

Lacrosse
All England Women's Lacrosse Association, 16 Upper Woburn Place, London WC1 England

Lacrosse
Lacrosse magazine, Newton H. Whyte, Jr. Athletic Center, Homewood, Baltimore, MD 21218

Lakeland boating
Lakeland boating, P.O. Box 389, Mount Morris, IL 61054

Leisure sciences
Crane, Russak & Co. Inc., 3 East 44th Street, New York, N.Y. 10017

Leisurelines
New Zealand Council for Recreation and Sport, P.O. Box 5122, Wellington, New Zealand

Loisir et société Society and leisure.
Les Presses de l'Universite du Québec, C.P. 250, Sillery, Québec, G1T 2R1

Loisir information Leisure newsletter
Gilles Pronovost, Universite du Québec à Trois-Rivières, C.P. 500, Trois Rivières, Québec, G9A 5H7

M.A.H.P.E.R.D.
Michigan Association for Health, Physical Education, Recreation, Dance, P.O. Box 392, Ypsilanti, MI 48197, U.S.A.

Médecine du sport
Médecine du Sport, 17, rue du 8-mai-1985, F. 75010 Paris, France

Medicine and science in sports and exercise
American College of Sports Medicine, 401 West Michigan St., Indianapolis, Ind. 46202

Message olympique
Comité international olympique, Chateau de Vidy, 1007 Lausanne, Suisse

Modern athlete and coach
Modern Athlete and Coach, 1 Fox Avenue, Athelstone, S.A. 5076, Australia

Momentum
Dunfermline College of Physical Education, Cramond Road North, Edinburgh EH4 6JD, Scotland, UK

Motocross action magazine
Motocross Action magazine, P.O. Box 9502, Mission Hills, CA 91345-9502

Muscle and fitness
I, Brute Enterprises, Inc., 21100 Erwin St., Woodland Hills, CA 91367

N.I.R.S.A. Journal
National Intramural-Recreational Sports Association, Executive Secretary: Will Holsberry, Dixon Recreation Center, Oregon State University, Corvallis, OR 97331

National pastime
Society for American Baseball Research, P.O. Box 323, Cooperstown, NY 13326, U.S.A.

National racquetball
Publication management, Inc., 4350 DiPaolo Center/Dearlove Road, Glenview, IL 60025

National Strength & Conditioning Association Journal
National Strength & Conditioning Association, 300 Old City Hall Landmark, 916 "O" Street, Lincoln, NE 68508

Netball
All England Netball Association, Francis House, Francis Street, London SWIP IDE

New Zealand gliding kiwi
New Zealand Gliding Association, Private Bag, Tauranga, New Zealand

New Zealand gymnast
N.Z. Gymnast, 8 Bideford St., New Plymouth, New Zealand

New Zealand journal of health, physical education and recreation
New Zealand Journal of Health, Physical Education and Recreation, P.O. Box 17-127, Wellington, New Zealand

New Zealand runner
New Zealand Runner, Southwestern Publishing Co. Ltd., Box 37-732, Auckland 1, New Zealand

Official bulletin - Canadian Equestrian Federation
Canadian Equestrian Federation, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Official karate
Charlton Publications Inc., Division St., Derby, Conn. 06418

Olympian
United States Olympic Committee, Dept. MM, 1750 East Boulder St., Colorado Springs, CO 80909

Olympic message
Comité International Olympique, Chateau de Vidy, 1007 Lausanne, Switzerland

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International Olympic Committee, Chateau de Vidy, 1007 Lausanne, Switzerland

Olympic wrestling
H. Jacob, 2 Huxley Drive, Bramhall, Stockport, England

Orienteering Canada
Canadian Orienteering Federation, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

P.F.R.A. annual
Professional Football Researchers Association, 218 Wise Street, N.E., North Canton, OH 44720

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Canadian Canoe Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

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Parachutist
USPA, 1440 Duke Street, Alexandria, Va. 22314

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Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Perceptual and motor skills
Perceptual and Motor Skills, Box 9229, Missoula, Mont. 59807

Performance horseman
Performance Horseman, Subscription Service Department, P.O. Box 962, Farmingdale, N.Y. 11737, U.S.A.

Perspective
82 Humboldt Ave., #11, Bloomington, MN 55431

Physical education review
Mr. Trefor Jones, D.M.S., Business Manager, 37 Wyverne Rd., Chorlton-cum-Hardy, Manchester, M21 12W, England

Physical educator
Subscription Office, 901 W. New York St., Indianapolis, IN 46223

Physical therapy
American Physical Therapy Association, 1111 North Fairfax St., Alexandria, VA 22314

Physician and sportsmedicine
Circulation Department, McGraw-Hill, Inc., 4530 W. 77th St., Minneapolis, MN 55435

Physiotherapy in sport
The Editor, Physiotherapy in Sport, 17 Tudor Avenue, Dymchurch, Kent, England

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Planche magazine
Planche Magazine, 5, rue du Commandant-Pilot, 92522 Neuilly, Cedex, France

Platform tennis news
American Platform Tennis Association, Inc., P.O. Box 901, Upper Montclair, New Jersey 07043, U.S.A.

Play and culture
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Polo
Polo Publishers, Inc., 656 Quince Orchard Road, Gaithersburg, Maryland 20760

Powder
Power Magazine, Box 7400, Bergenfield, NJ 07621

Powerlifting U.S.A.
Powerlifting USA, Post Office Box 467, Camarillo, CA 93010, U.S.A.

Practical horseman
Practical Horseman, Subscription Service Dept., P.O. Box 927, Farmingdak, NY 11737

Precision shooting
Stella Buchtel, Precision Shooting, 5735 Sherwood Forest Drive, Akron, Ohio 44319

Proceedings - National Association for Physical Education in Higher Education
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Professional skier
133 South van Gordon Suite 101, Lakewood, Colorado 80228

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Québec Yachting & Voile, 465, rue St-Jean, Bureau 908, Montréal, Québec, H2Y 3S4

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Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

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Racquets Canada, 22A Cumberland Street, Suite 202, Toronto, Ont., M4W 1J5

Referee
Referee, P.O. Box 161, Franksville, Wis. 53126

Research quarterly for exercise and sport
American Alliance for Health Physical Educaltion, Recreation and Dance, 1900 Association Drive, Reston, VA 22091

Review
Wissenschaftlicher Rat fuer Koerperkultur und Sport der DDR, Generalsekretariat, 108 Berlin, Mohrenstrasse 6, German Democratic Republic

Revista Brasileira de ciencias do esporte
Colegio Brasileiro de Ciencias do Esporte, Caixa Postal 20383 - CEP 01000, Sao Paulo SP, Brazil

Revue de l'A.E.F.A.
Amicale des entraîneurs français d'athlétisme, 10, rue Faubourg-Poissonnière, 75010 Paris, France

Revue de l'éducation physique
Fédération d'éducation physique, 33, Bd. de la Sauvenière, 4000 Liège, Belgique

Revue de l'entraineur
Revue de l'entraîneur, a/s Société des sports du Québec, 4545, avenue Pierre-de-Coubertin, C.P. 100, Succursale M, Montréal, Québec, H1V 3R2

Revue olympique
Comité International olympique, Chateau de Vidy, 1007 Lausanne, Switzerland

Rifleman
National Small-Bore Rifle Association, Lord Roberts House, Bisley Camp, Brookwood, Woking, Surrey GU24 0NP

River runner magazine
River Runner Magazine, P.O. Box 2047, Vista, CA 92083

Road race management
Road Race Management, 507 2nd Street, N.E., Washington, D.C. 20002, U.S.A.

Rowing Canada Aviron
Canadian Amateur Rowing Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Rowing magazine
The Rowing Centre, Barge Walk, East, Malesey, Surrey, KT8 9AJ England

Rowing U.S.A.
USRA, #4 Boathouse Row, Philadelphia, PA 19130

Rugby
Rugby Press Ltd., 2414 Broadway, New York, N.Y. 10024

Rugby world and post
Rugby Post, Subscription Department, P.O. Box 142, Reading, Berks RG4 9DX, England

Runner
Alberta Teachers' Association, 11010 - 142 St., Edmonton, Alberta, T5N 2R1

Runner
Ziff Davis Publishing Co., One Park Ave., New York, NY 10016

Runner's world
Runner's World, Rodale Press, Inc., 33 E. Minor St., Emmaus, PA 18049

Running magazine
Stonehart Magazines, 67-71 Goswell Road, London EC1V 7EN, England

S.N.I.P.E.S. journal
Society for the National Institutes of Physical Education and Sports, NIS, Motibagh, Patiala - 147001, India

S.P.O.R.T.S.
Coaching Association of Canada, 1600 James Naismith Drive, suite 604, Gloucester, Ontario K1B 5N4

Sail
Sail Publications, Inc., 34 Commercial Wharf, Boston, MA 02110

Sail boarder international
Surfer Publishing Group, 33046 Calle Aviador, San Juan Capistrano, CA 92675

Sailing Canada
Sailing Canada, 95 Berkeley St., Toronto, Ont., M5A 2W8

Sailing World
Cruising World Publications, 5, John Clarke Road, Newport RI 02840

Sailplane and gliding
British Gliding Association, Kimberley House, Vaughan Way, Leicester, England LE1 4SG

Santé et sport
Santé et sport, 123, rue Saint-Maur, 75011 Paris

Scandinavian journal of sports sciences
Finnish Society for Research in Sport and Physical Education, Annankatu 4 B, SF-00120 Helsinki 12, Finland

Scholastic coach
Scholastic Coach, P.O. Box 2042, Mahopac, NY 10541 (In Canada: 123 Newkirk Rd., Richmond Hill, Ont. L4C 3G5)

Science du sport
Association canadienne des entraîneurs, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Science et motricité
Librairie du Sport; 6, rue Jean Mermoz; B.P. 31; 94340 Joinville-Le-Pont;, France

Science & sports
Editions scientifiques Elsevier; 29, rue Buffon; F-75005 Paris; France

Scientific journal of orienteering
International Orienteering Federation, Scientific Group, Dr. Roland Seiler, Biberweg 6, D-5000 Koeln 40, Germany

Scottish journal of physical education
David Baker, Crieff High School, Crieff, Perthshire

Skate
Roller Skating Rink Operators' Association, 7700 "A" Street, Lincoln, NE 68510

Skating
United States Figure Skating Association, 20 First Street, Colorado Springs, CO 80906

Skeet shooting review
NSSA, P.O. Box 28188, San Antonio, Tex. 78228

Ski
Ski, Box 2795, Boulder, CO 80302

Ski area management
Beardsley Publishing Corporation, 45 Main Street North, P.O. Box 443, Woodbury, CT 06798

Ski Canada magazine
Maclean Hunter, Maclean Hunter Bldg., 777 Bay Street, 7th floor, Toronto, Ontario, M5W 1A7

Ski nautique
Fédération québécoise de ski nautique, 4545 Pierre-de-Coubertin, Montréal, Québec, H1V 3R2

Ski racing
Ski Racing, Two Bentley Ave., Poultney, VT 05764

Skier
Skier, P.O. Box 1280, Studio City, CA 91604

Skieur nautique
FQSN, 4545 Pierre de Coubertin, Montréal, Que., H1V 3R2

Skiing
One Park Avenue, New York, NY 10016

Soaring
Soaring Society of America, P.O. Box 66071, Los Angeles, CA 90066

Soccer journal
Mr. Bob Robinson, NSCAA Treasurer, 6245 Devon Avenue, Wayne, Penna. 19087

Sociology of sport journal
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Spin
Spin Magazine, USTTA Olympic House, 1750 East Boulder Street, Colorado Springs, Colorado 80909-5793, U.S.A.

Spor hekimligi dergisi Turkish journal of sports medicine
Prof. Dr. Necati Akgun, Institute of Sports Medicine, Ege University Medical Faculty, Bornova, Izmir, Turkey

Sport
Sport, Galerie Ravenstein 4-27, 1000 Bruxelles, Belgique

Sport
Sports Media Corporation, 119 West Fortieth Street, New York, NY 10018

Sport administrator
Sport administrator, Box 15974, Station F, Ottawa, Ontario K2C 3S8

Sport and fitness
Sport and Fitness, P.O. Box 10, Sunbury, Middlesex TW16 5PZ, England

Sport and leisure
Sports Council, 16 Upper Woburn Place, ,London WC1 H0QP England

Sport health (with supplement - Sports Medicine News)
Terry Sanders, Executive Director, Australian Sports Medicine Federation, P.O. Box 897, Belconnen, ACT, Australia 2616

Sport marketing quarterly
Fitness Information Technology Inc., P.O.Box 4425, University Avenue, Morgantown, WV, 26504.

Sport med info
Sport Medicine Council of Canada, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

Sport parachutist
British Parachute Association Ltd., Kimberley House, 47 Vaughan Way, Leicester, LE1 4SG

Sport psychologist
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Sport science review
International Council of Sport Science and Physical Education (ICSSPE/CIEPSS), Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Sport-talk
F.S. Productions, Box 10, Site 329, R.R.3, Collingwood, Ontario L9Y 3Z2

Sporting goods review
Sporting Goods Review, Box 3061, Winnipeg, Manitoba, R3C 4E5

Sporting Traditions (The Journal of the Australian Society for Sports History)
Dr. J. O'Hara, Macarthur Institute of Higher Education, PO Box 555, Campbelltown NSW 2560

Sportorials
International Association of Approved Basketball Officials, 61 South Main Street, West Hartford, CT 06107, U.S.A.

Sports and leisure
Sports Council, 16 Upper Woburn Place, London, WC1 H0QP England

Sports 'n spokes
Sports 'n Spokes, 5201 North 19th Avenue, Suite 111, Phoenix, Arizona 85015

Sports and the courts
Sports and the Courts, P.O. Box 2836, Winston-Salem, N.C., 27102

Sports business
Sports Business, Circulation Department, 501 Aokdale Road, Downsview, Ontario, M3N 1W7

Sports coach
Department of Youth, Sport and Recreation, Perry Lakes Stadium, Wembley 6014, Australia

Sports Coach (Australian National coaching Journal)
Australian Coaching Council, PO Box 176, Belconnen ACT 2616

Sports illustrated
Time Inc., 10880 Wilshire Blvd., Los Angeles, CA 90024-4193

Sports marketing
Publisystème Inc., 9851 Parkway Blvd., Montréal, Que., H1J 1P3

Sports medicine
Adis Press International Inc., 401 South State Street, Newtown, Pennsylvania 18940, U.S.A.

Sports medicine bulletin
American College of Sports Medicine, 1 Virginia Avenue, Suite 340, P.O. Box 1440, Indianapolis, IN 46206

Sports mediscope
United States Olympic Committee - Sports Medicine Division, Department of Education Services, 1750 East Boulder Street, Colorado Springs, Colorado 80909-5760, U.S.A.

Sports retailer
Sporting Goods Association, 1699 Wall Street, Mt. Prospect, IL 60056

Sports science
Mr. Peng Yue, Editorial Department of Sports Science, The People's Sports Publishing House, 8, Tiyugan, China

Sports trade
Sports Trade, Circulation Dept., 501 Oakdale Road, Downsview, Ontario, M3N 1W7

Sports trainers digest - Injury prevention, athlete preparation
Terry Sanders, Executive Director, Australian Sports Medicine Federation, P.O.Box 897, Belconnen, ACT, Australia 2616.

Sports turf bulletin
Sports Turf Research Institute, Bingley, West Yorkshire BD16 1AU

Sportsmedicine digest
Sportsmedicine Digest, P.O. Box 2160, Van Nuys, CA 91405

Sportstaettenbau + Baederanlagen
IAKS, Carl-Diem-Weg 3, D-5000 Koeln 41, Federal Republic of Germany

Squash life
Squash Ontario, 1220 Sheppard avenue East, Willowdale, Ontario, M2K 2X1

Squash player international
A E. Morgan Publications Ltd., Stanley House, 9 West Street, Epsom, Surrey, England KT18 7RL

Stopwatch
New Brunswick Teacher's Association, Physical Education Council, K. Neilson, Fredericton High School, 365 Prospect Street, Fredericton, N.B., E3B 3B9

Stringer's assistant
United States Racquet Stringers Association, P.O. Box 40, Del Mar, CA 92014

Stringer's digest
United States Stringer Association, P.O. Box 40, Del Mar, CA 92014, U.S.A.

Surfer
Surfer, Box 1028, Dana Point, CA 92629

Surfing
Subscription Department, Surfing Magazine, Box 27889, San Diego, CA 92128

Swim
Swim Canada Magazine, 402 King Street East, Toronto, Ont. M5A 1L3

Swimming teacher
Swimming Teachers' Association, 1 Birmingham Road, West Bromwich, West Midlands, England

Swimming technique
Swimming World Publications, 1130 W. Florence Avenue, Inglewood, CA 90301

Swimming times
Harold Fern House, Derby Square, Loughborough, Leics, LE11 OAL, England

Swimming world and junior swimmer
Sports Publications, Inc., P.O. Box 2025, Sedona, AZ 86339-2025

Synchro
Dawn P. Bean, 1902 Red Hill Ave., Santa Ana, CA 92705

Synchro Canada
Canadian Amateur Synchronized Swimming Assoc., 18 Harlowe Crescent, Ottawa, Ont. K2H 5P1

T.A.H.P.E.R.D. journal
Texas Association for Health, Physical Education, Recreation and Dance, P.O. Box 7578, University Station, Austin, Texas 78713

Teaching Elementary Physical Education
Human Kinetics Publishers, Inc., Box 5076, Champaign, IL 61825

Technical soaring
Soaring Society of America Inc., Box 66071, Los Angeles, CA 90066

Tennis
Tom Manning, Box 2039, Harlan, IO 51537

Tennis (Australia Asia The Pacific)
Tennis Publications, PO Box 292, South Yarra, VIC 3141

Tennis de France
Tennis de France, 11, rue de varize, 75016 Paris, France

Tennis industry
Industry Publishers, Inc., 1545 N.E. 123rd Street, No. Miami, Florida 33161

Tennis world
Editor, Tennis World, Dennis Fairey Publishing Ltd., Media House, Boxwell Road, Berkhamsted, England

Texas coach
Texas High School Coaches' Association, P.O. Drawer 14627, Austin, Tex. 78761

Thrower
Max Jones, National Athletics Coach, 152 Longdon Road, Knowle, Solihull, West Midlands B93 9HU, England

Track and field journal
C.T.F.A./A.C.A., 1600 promenade James Naismith Drive, Gloucester, Ont K1B 5N4

Track and field news
Track and Field News, Box 296, Los Altos, CA 94022

Track and field quarterly review
U.S. Track Coaches' Association, 1705 Evanston, Kalamazoo, Michigan 49008

Trap and field
Trap and Field, 1000 Waterway Blvd., Indianapolis, Ind. 46202

Triathlete
1127 Hamilton Street, Allentown, PA 18102

Triathlon Sports
PO Box 424, Cronulla NSW 2230

U.A.H.P.E.R.D. journal
Utah Association for Health, Physical Education, Recreation and Dance, Dept. of HPER, UMC 70, Utah State University, Logan, Utah 84322

U.I.T. journal
International Shooting Union, Bavariaring 21, D-8000 Munchen 2, Federal Republic of Germany

U.S.C.T.A. news
United States Combined Training Association, 292 Bridge Street, South Hamilton, MA 01982

U.S.D.F. bulletin
United States Dressage Federation, Lowell Boomer, Executive Secretary, 1212 O. Street, P.O. Box 80668, Lincoln, NE 68501

Ultrasport
Ultrasport Magazine, P.O. Box 5262, Boulder, CO 80322

Velo-news
Velo-news, Box 1257, Brattleboro, VT 05301

Virginia journal
Virginia Journal, Dr. Patricia J. Bruce, Editor, Godwin Hall, James Madison University, Harrisonburg, VA 22807

Voile libre
Voile libre, 9851 Parkway, Anjou, Québec, H1J 1P3

Volleyball monthly
Straight Down, Inc., P.O. Box 3137, San Luis Obispo, CA 93403, U.S.A.

Volleyball technical journal
Canadian Volleyball Association, 1600 promenade James Naismith Drive, Gloucester, Ont. K1B 5N4

W.A.H.P.E.R. journal
WAHPER Publications Co-Editor, Dept. of PERHE, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201

Water ski
P.O. Box 2456, Winter Park, FL 32790

Water skier
American Water Ski Association, P.O. Box 191, Winter Haven, Fla. 33880

Wave lengths
Whittall Publishing, P.O. Box 413, Schomberg, Ontario, L0G 1T0

Whole air
Whole Air, P.O. Box 98786, Tacoma, WA 98498, U.S.A.

Wind surf
Wind Surf, Box 561, Dana Point, CA 92629

Windrider magazine
Windrider Magazine, Subscriptions, P.O. Box 183, Mt. Morris, IL 61054

Windsport magazine
Windsport Magazine, 2255b Queen Street East, Suite 3266, Toronto, Ontario M4E 1G3

Women's coaching clinic
Princeton Educational Publishers, Princeton, NJ 08540

Women's sports and fitness
Sports and Fitness Publishing, 2025 Pearl Street, Boulder, CO 80302.

World badminton
International Badminton Federation, 24 Winchcombe House, Winchcombe Street, Cheltenham, Gloucestershire GL52 2NA, England

World gymnastics
International Sports Publications, 1553 Budapest, P.F. 37 Hungary

World hockey
Fédération internationale de Hockey, Avenue des Arts 1 (Box 5), 1040 Brussels, Belgium

World soccer
Webster's Publications Ltd., Onslow House, 60-66 Saffron Hill, London, EC1N 8AY, England

World tennis
World Tennis Magazine, P.O. Box 5343, 1255 Portland Place, Boulder, Colorado 80322

Wrestling U.S.A.
Wrestling U.S.A., Subscription Dept., P.O. Box 128 MSU, Bozeman, MT 59717

Yachts and yachting
Yachting Press Limited, 196 Eastern Esplanade, Southend-on-Sea, Essex SS1 3AB, England