



International Federation of Adapted Physical Activity



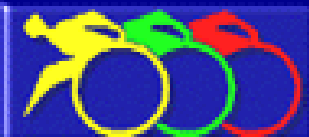
# Adapted Physical Activity 2008 : implications for Special Olympics' Athletes

Yeshayahu (Shayke) Hutzler

**IFAPA President**

Israel Sport Center for the Disabled

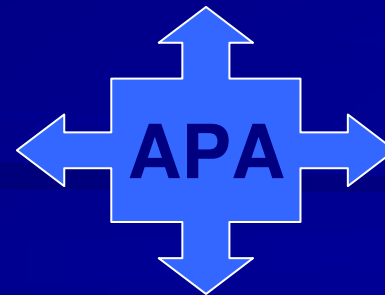
Zinman College for Physical Education and Sport Sciences



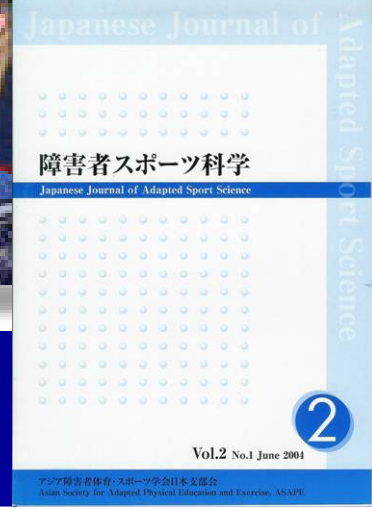
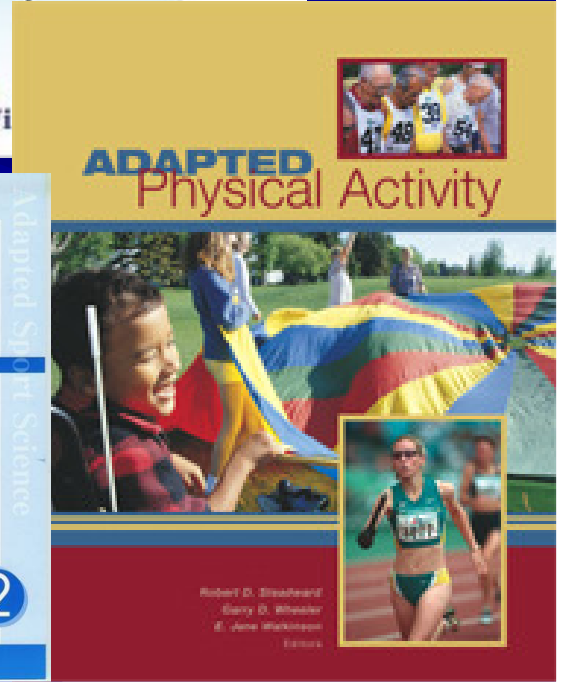
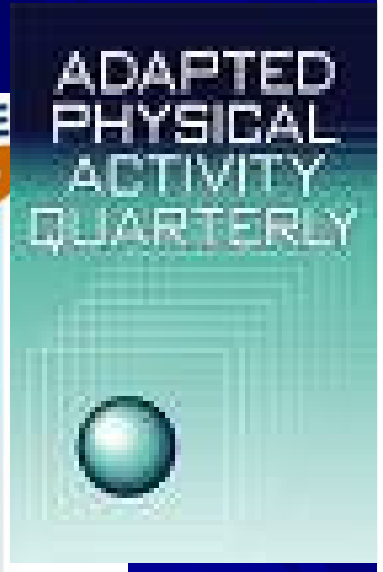
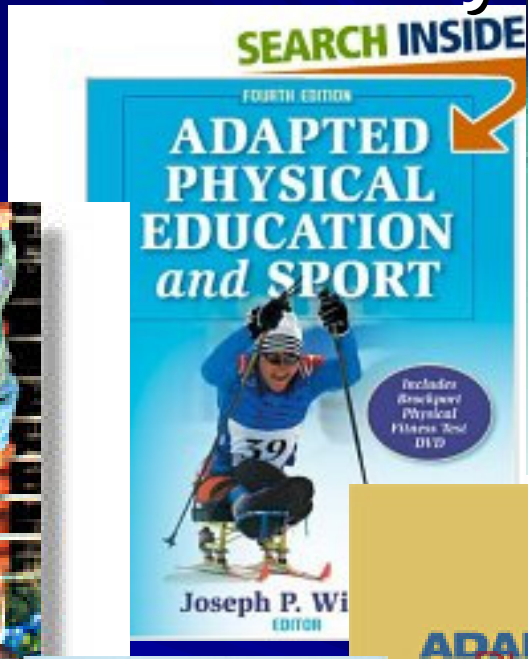
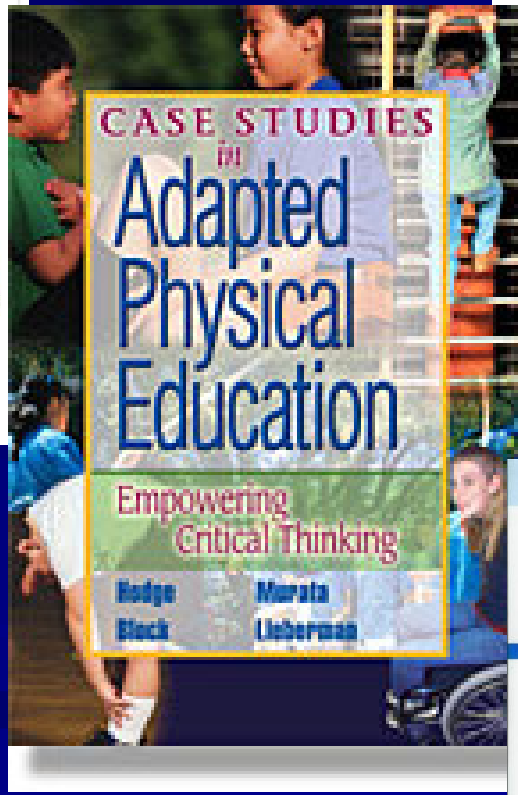
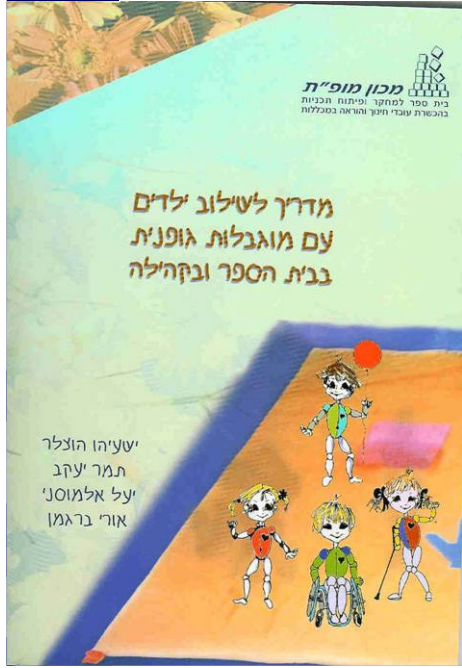
# Adapted Physical Activity (APA)

(adapted from Hutzler & Sherrill, 2007)

- The **practice, professional know-how, and scientific knowledge bases** of physical activity in individuals who require **adaptation/modification/accommodation** to ensure participation
- Participants usually persons with disability
- Typically within four contexts of expertise:
  - **competitive sports,**
  - **recreation,**
  - **physical education,**
  - **exercise in (post) rehabilitation & Health**



# Adapted Physical Activity as an Academic Field of Study



SIMARD



# International Federation of Adapted Physical Activity

[www.IFAPA.biz](http://www.IFAPA.biz)

SHERRILL



International Federation of Adapted Physical Activity



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22/8/2005  
**Newsletter Deadline**

22/8/2005  
**Secretary position vacant**

23/9/2005  
**New IFAPA Forum: APA-**

IFAPA is an international, crossdisciplinary professional organization of individuals, institutions, and agencies supporting, promoting and disseminating information about adapted physical activity, disability sport, and all aspects of sport, movement, and exercise science for individuals of all abilities.

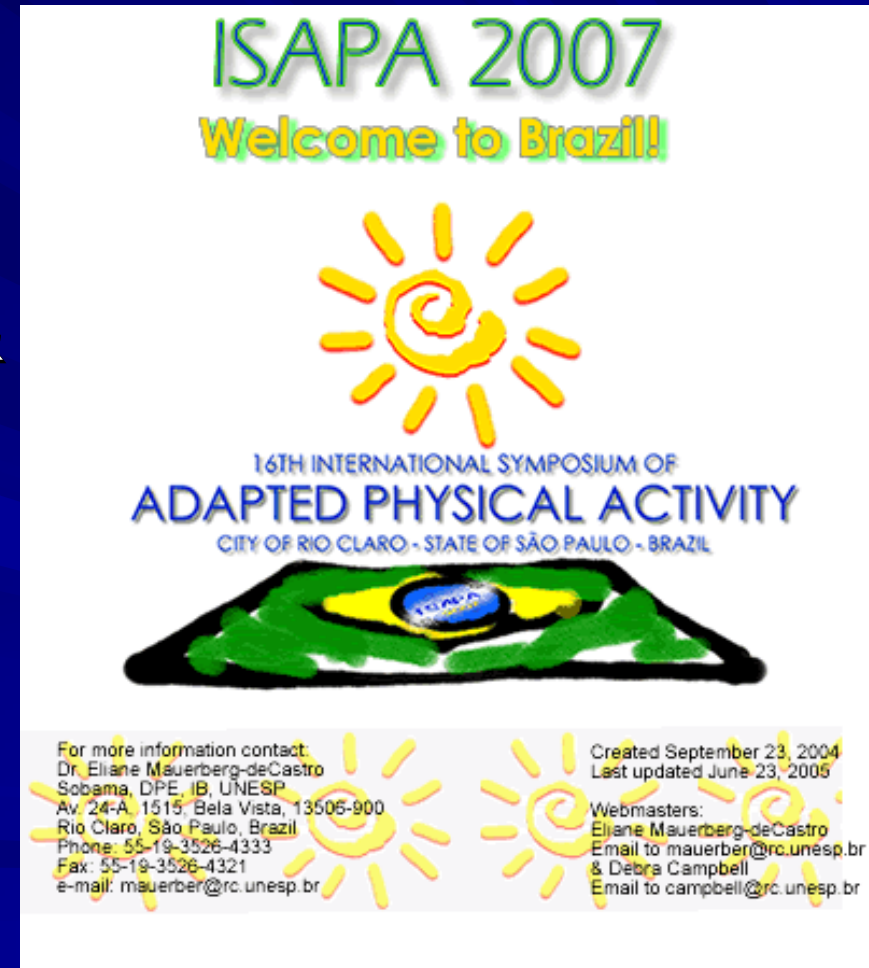
Members of IFAPA include practitioners, researchers, scholars, pedagogues, scientists and students in a broad spectrum of fields, such as regular and adapted physical education, community and therapeutic recreation, dance and creative arts, sport training and competition, leisure education, psychomotor therapy, kinesiology, medicine, nutrition, rehabilitation, special education, occupational and physical therapy, gerontology, and many other areas.

# World wide Coverage – [www.ifapa.biz](http://www.ifapa.biz) website hits at a given time



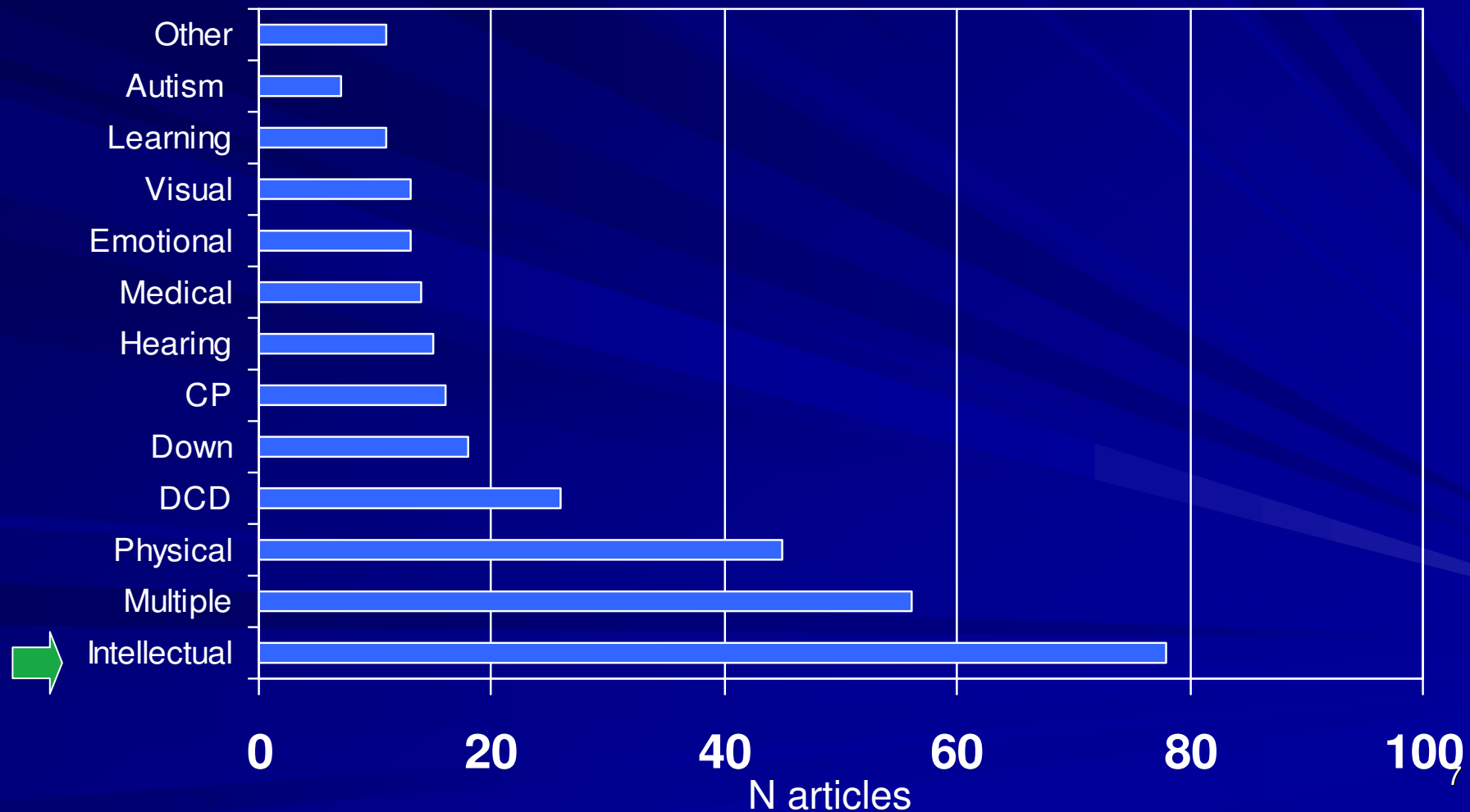
# International Symposia on Adapted Physical Activity (ISAPA)

- Every 2<sup>nd</sup> year several hundred professionals gather to discuss & share knowledge
- Collaboration with International and national bodies
- **Research & Education in APA**



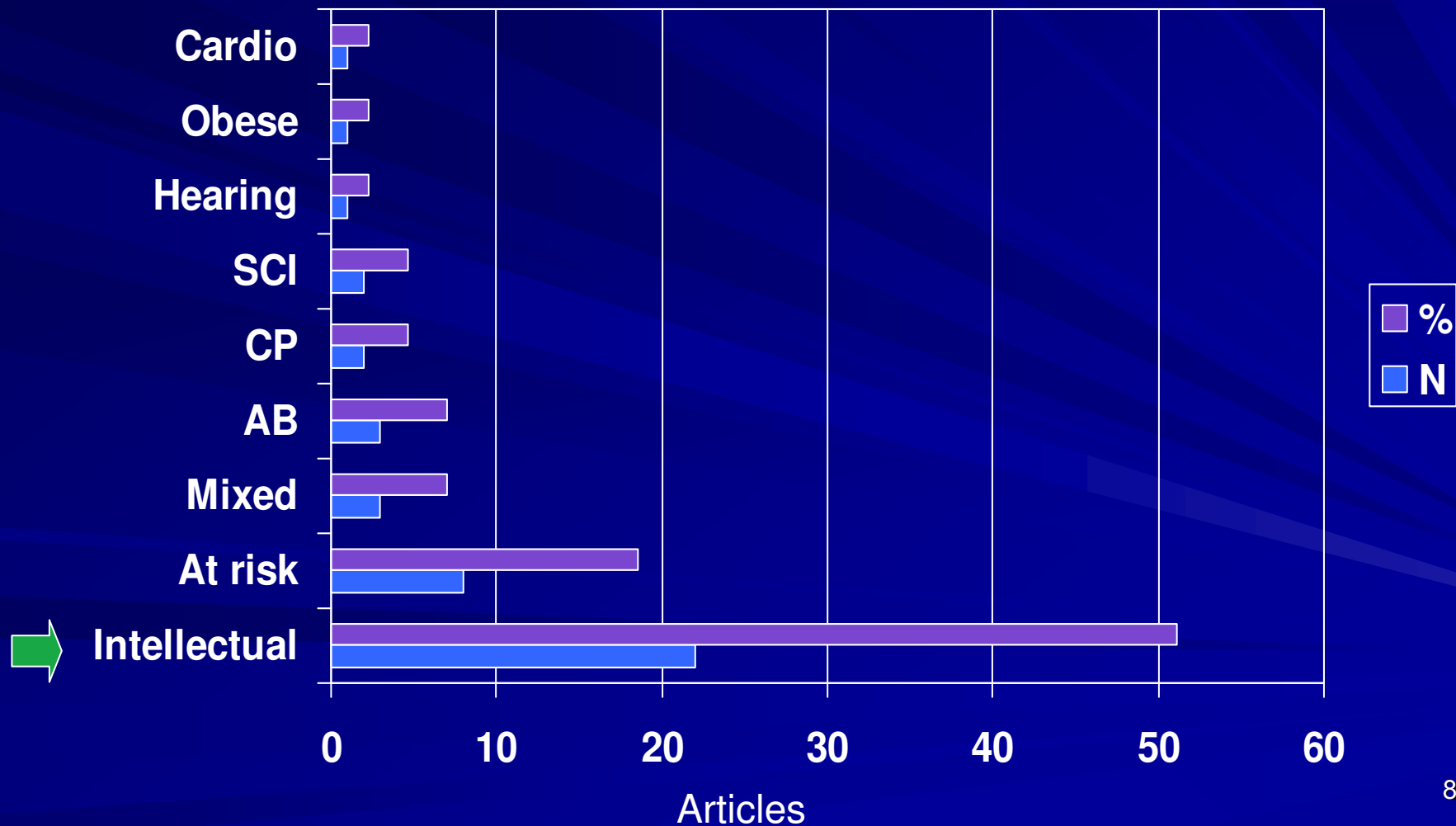
# Research in APA by Population

■ Reid and Stanish (2003) - **Disabilities included in APAQ articles 1984 – 2000**



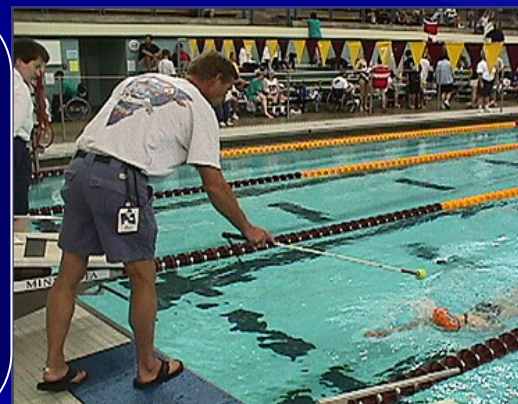
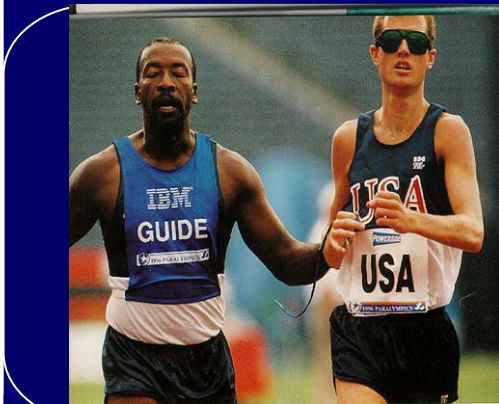
# Evidence Based Practice Intervention Research in APA

■ Data from Hutzler (2006) - Disabilities included in APAQ articles 1995 - 2004

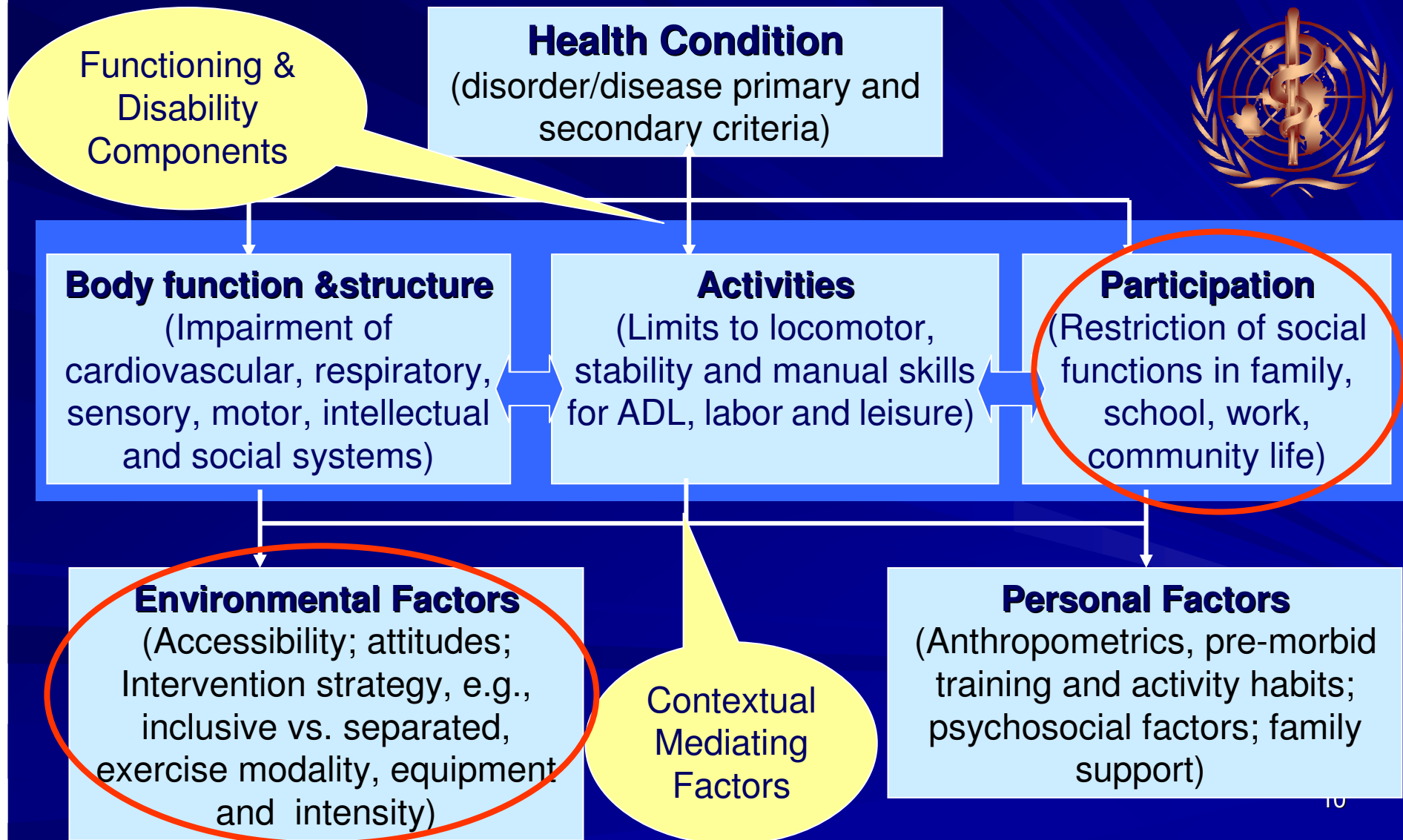


# Core theme of APA is **Adaptation** enabling **Participation**

- Adaptation is a natural and necessary human virtue for coping with environmental challenges
- In APA we follow the principles of activity **compensation and accommodation** i.e., using an alternative skill, technique, equipment, instructional, environmental, and or rule change



# International Classification of Function and Disability (ICF) WHO - 2001

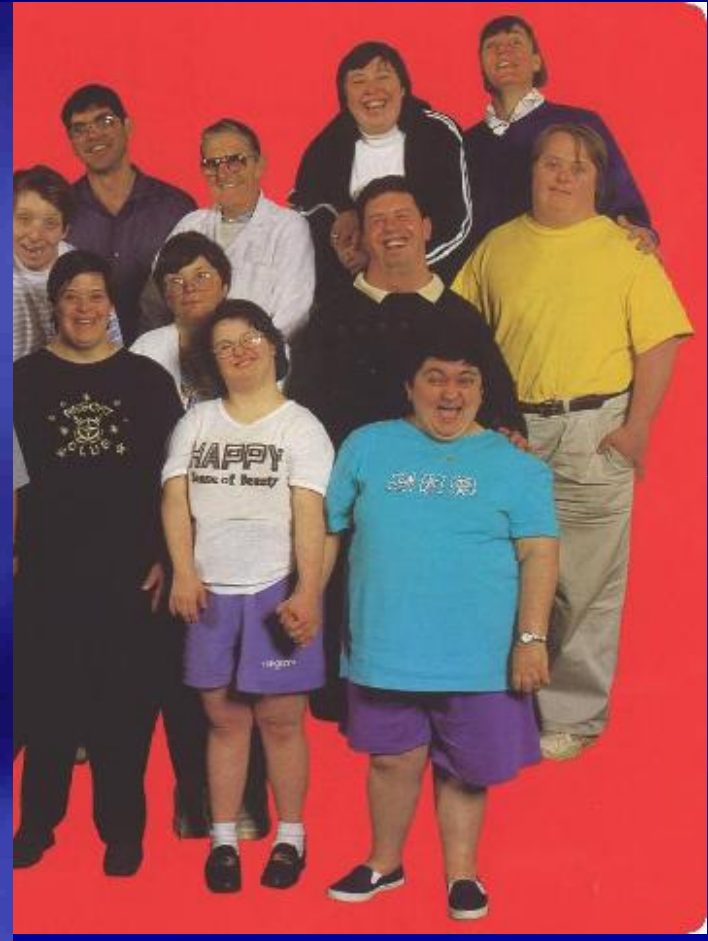


# Exercise in Health Promotion for participants with ID

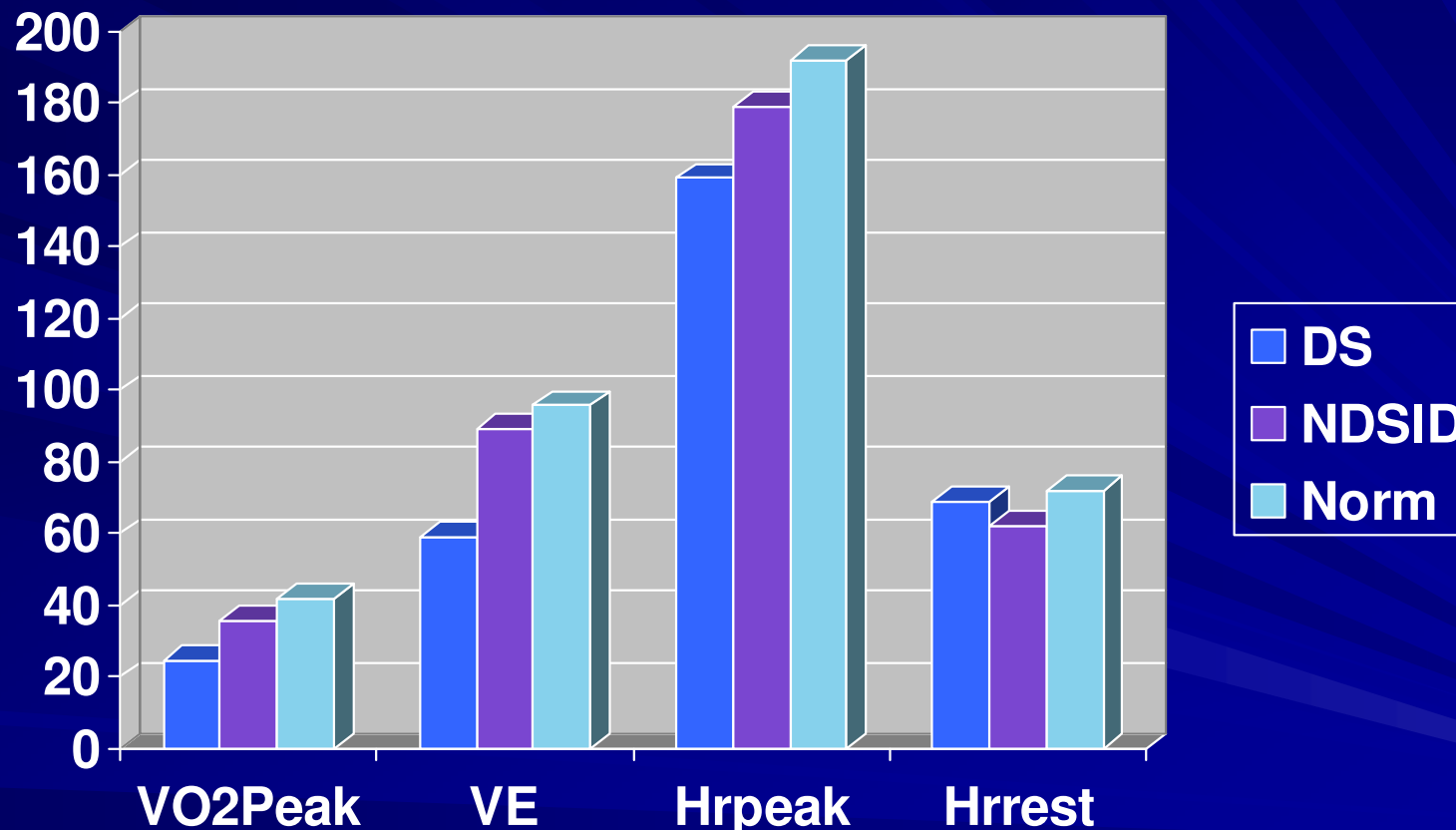
- At risk of **increasing health hazards** compared to peers with similar age and **gender** (Janicki, Dalton, Henderson, & Davidson, 1999).  
including:
  - **Obesity**
  - Reduced daily activity
  - **Lower maximal O<sub>2</sub> consumption**
  - Reduced muscular strength and power



# The facts .....health Hazards



# Comparative data of maximal responses to exercise in persons with ID with and without Down Syndrome



VO2peak (peak oxygen uptake) ml.Kg-1.min-1, VE (minute ventilation) L.min-1, HRpeak (peak heart rate) bpm-1, HRrest (resting heart rate) bpm-1, RER (Respiratory Exchange Ratio).

Cited from: Gordon, D. (2006); Pastore E, Marino B, Calzolari A, Digilio MC, Giannotti A, Turchetta A. (2000); Fernhall B, McCubbin JA, Pitetti KH, Rintala P, Rimmer JH, Millar AL, De Silva A. (2001); Climstein M, Pitetti KH, Barrett PJ, Campbell KD. (1993); Pitetti KH, Climstein M, Campbell KD, Barrett PJ, Jackson JA (1992)

# Vicious Inactivity Cycle

Reduced participation  
& Functional deterioration

**Primary  
Condition**

↑ Energy  
Cost of  
Movement

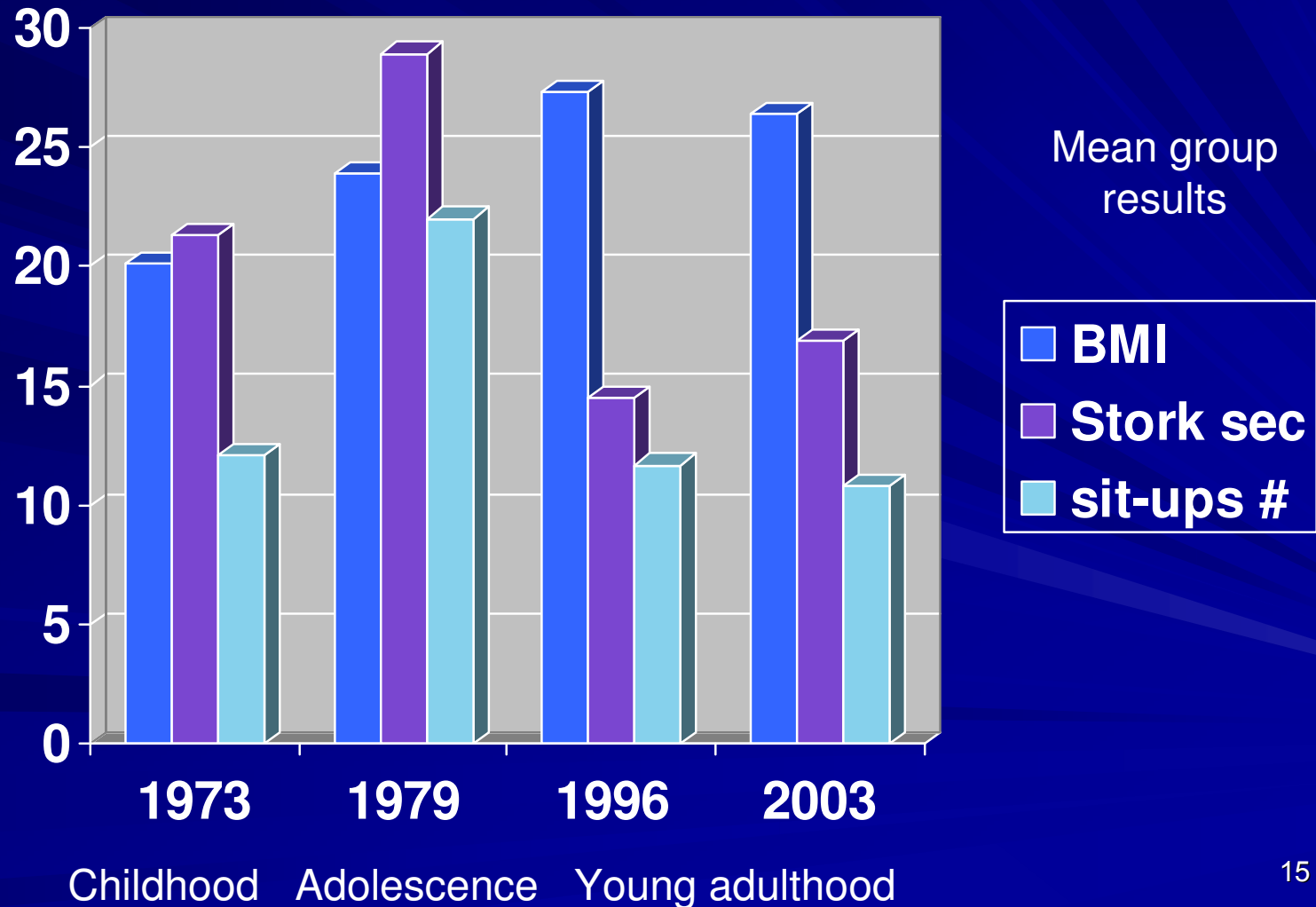
Movement  
difficulty/attention  
distraction

Muscular ↓  
Strength ↓  
Endurance ↓

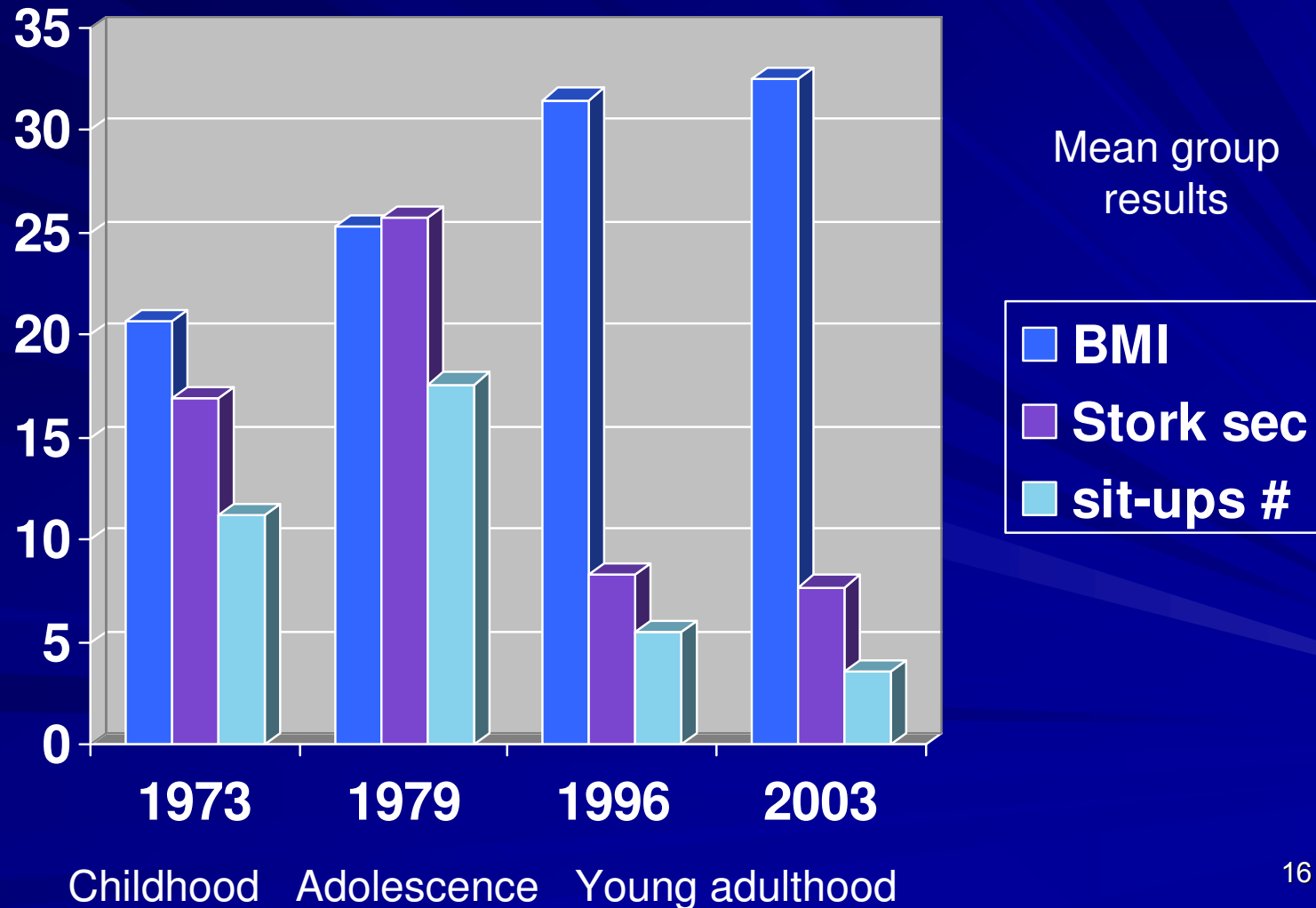
↓ Physical  
activity

↓ Physical  
Fitness

# Males with ID: 30 Yrs. Follow-up study (Lahtinen et al, 2007)

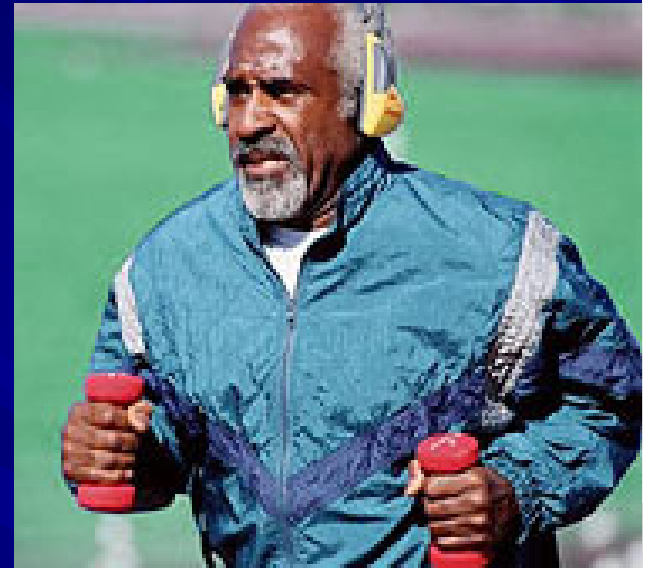


# Females with ID: 30 Yrs. Follow-up study (Lathinen et al, 2007)



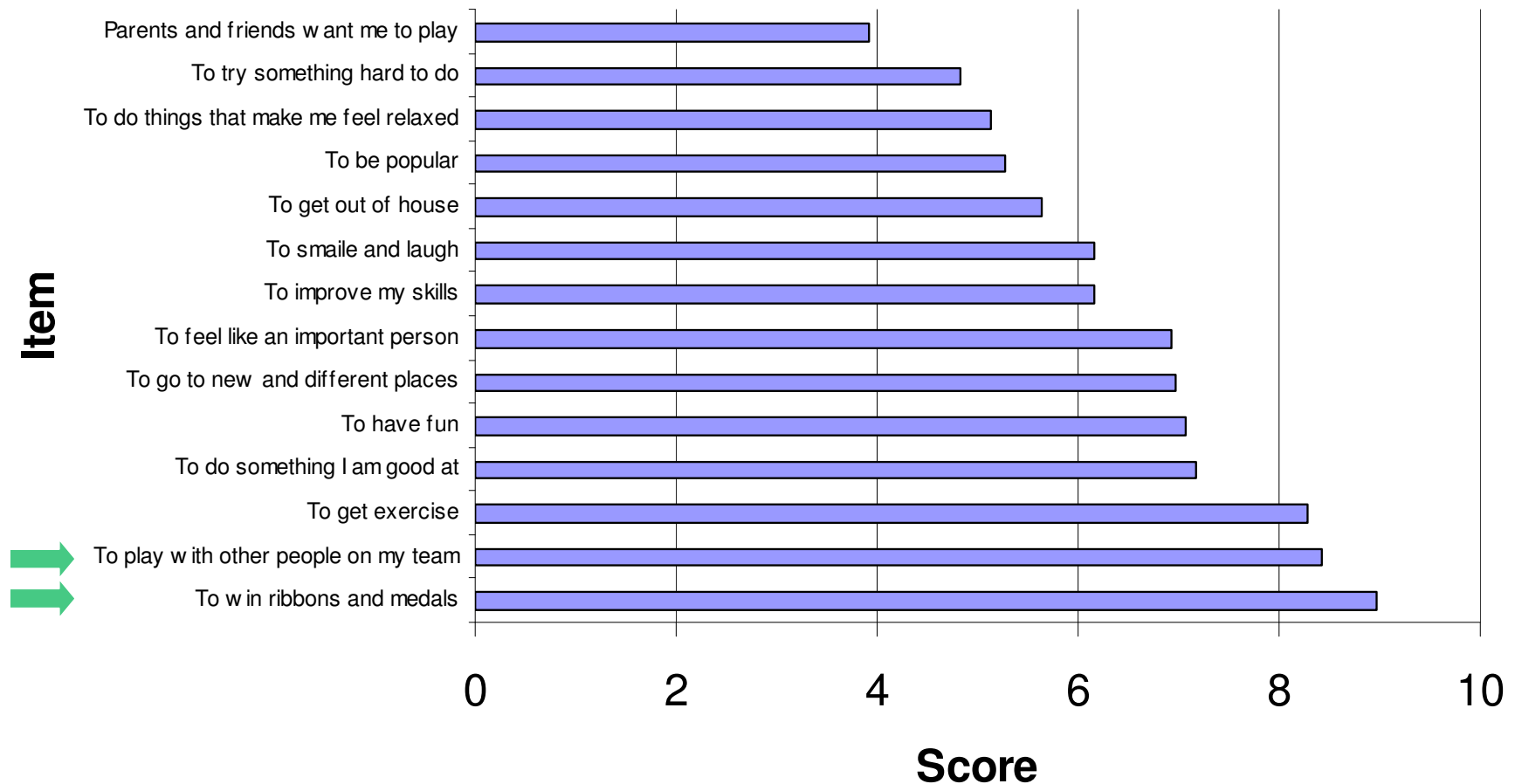
# Problem: how to increase Compliance and motivation to participation

- Compliance: The willingness or motivation of a service recipient to initiate and maintain a prescribed treatment within a medical, paramedical or educational setting (Encarta, 2004; Hagopian & Thompson, 1999; WordNet, 1997).



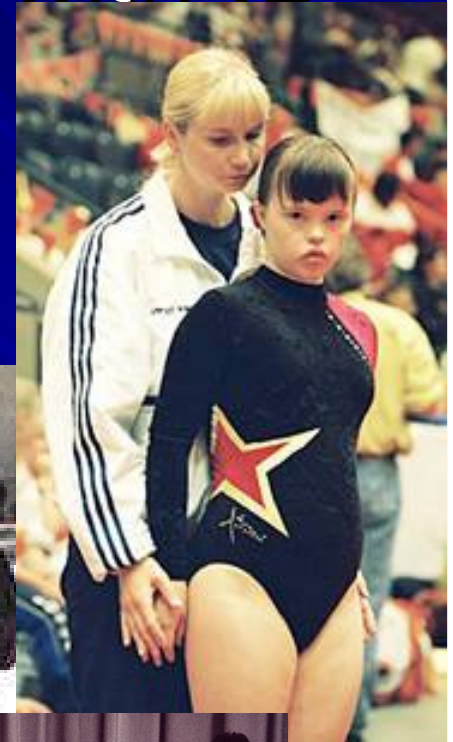
# Participation motives in SO athletes based on 147 participants (Shapiro, 2003)

## Descriptives and rank order of motives



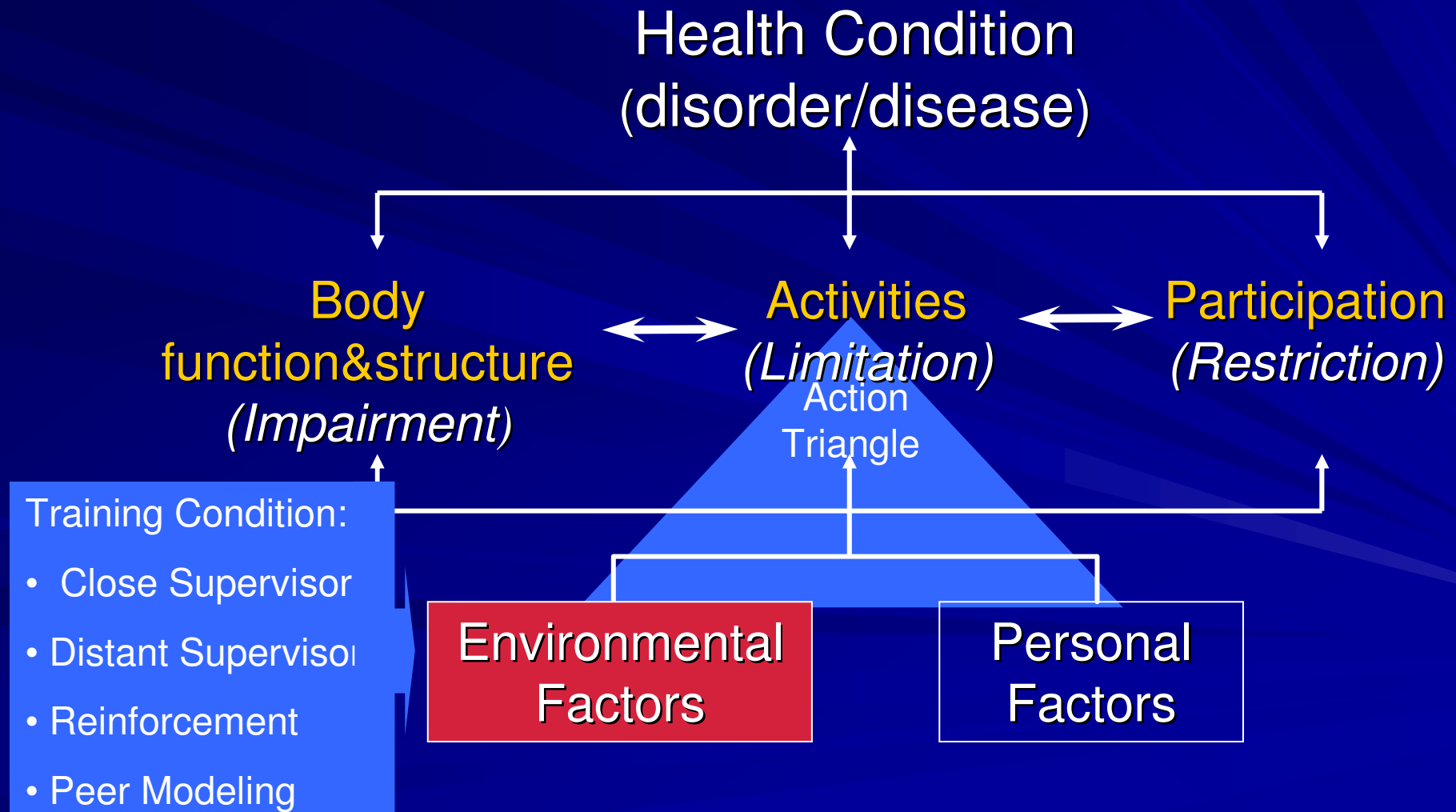
# Adaptations to increase motivation & Compliance in participants with ID

- Physical guidance during coaching
- Gradual presentation of tasks with higher to lower success probability
- Supervisor's position while applying guidance and support
- Positive
- Group identity and social support



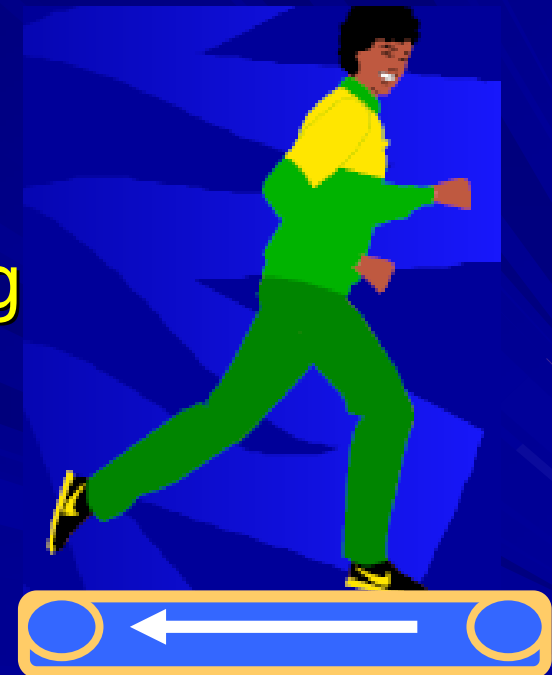
# Influence of training conditions on compliance (participation)

(Vashdi, Hutzler, & Roth, JIDR 2008)



# Method reaction to attempts to discontinue walking

- 15 participants moderate to severe ID. Walking was to be endured 5 min. If the child **discontinued walking** the instructor immediately asked him or her to continue walking;
- If the child tried to **discontinue walking longer than 5 sec.** the instructor physically interfered to reinitiate walking;
- We followed Fernahll et al., (2001). Walking intensity as **65-75 % of maximal predicted heart rate (HR)**, with an intensity HR 140 – 150



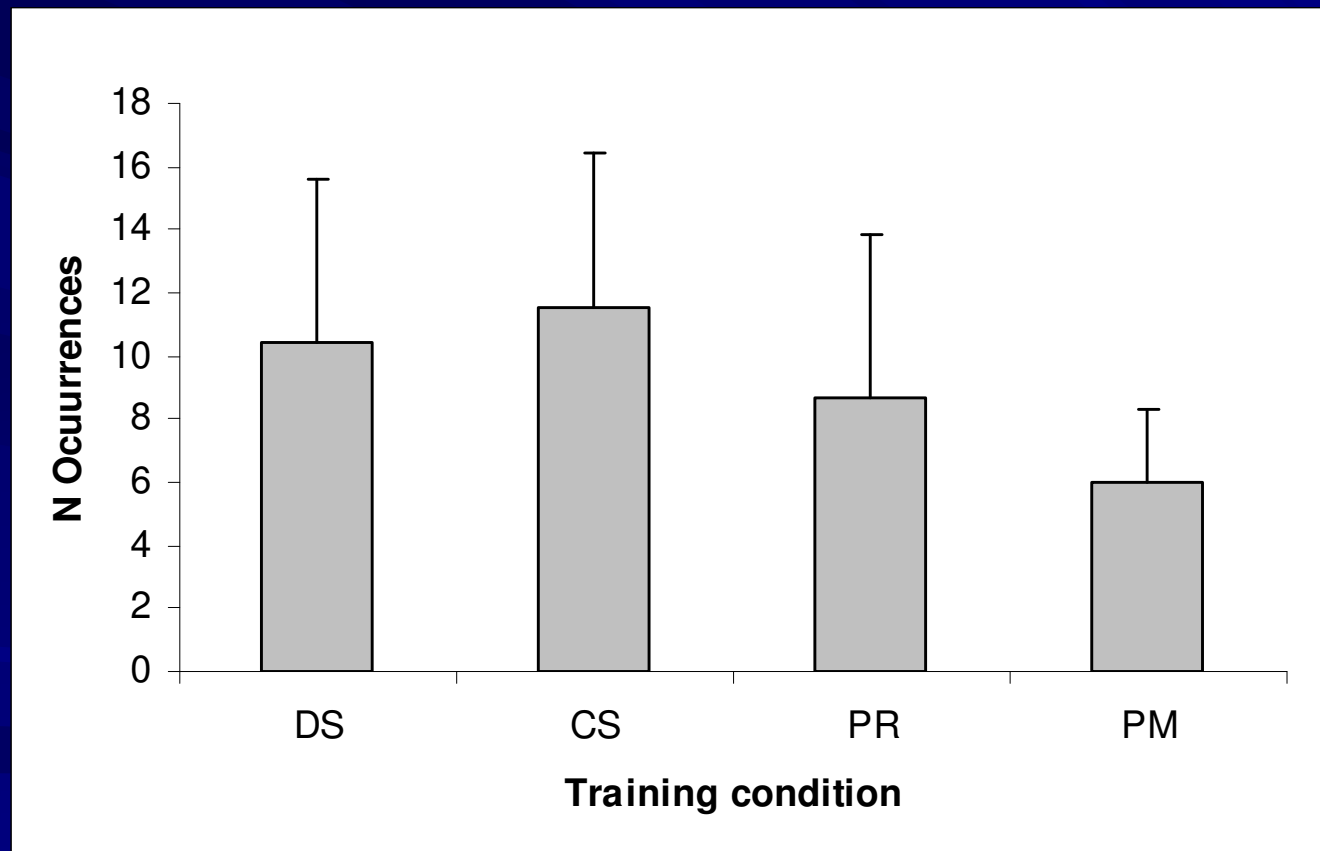
# Exercise set-up

- Biodex treadmill with two long rails covering the complete length of the equipment.
- During PM the accompanying child used a Cybex treadmill.



# Results

- Descriptive and statistic (GLMM) outcomes of comparison between training conditions



PM=peer modeling

CS=Close supervisor

DS=Distant supervisor

PR=Positive reinforcement

PM < CS (F=21.3; p<.0001); DS (F=14.8; p<.005); PR (F=2.43; p<.02)  
PR < DP (F=2.29; p<.03)

# How SO and IFAPA can benefit from each other

- **Common Goal:**  
Increasing initiation and adherence of participation to physical activity / sport activities



**Bundoora Netball and Recreation Center**  
**CREATING A SPORTING CHANCE;**  
**SPORT AND RECREATION PROGRAMS**  
**FOR PEOPLE WITH AN INTELLECTUAL DISABILITY**

# Previous and Current IFAPA / SO Collaboration

- Education: University SO Curriculum;
- Providing theoretical basis for programs and assessment of program outcomes;
- Persons with ID as research subjects;
- Individually driven collaboration, mainly focusing on health outcomes.

# Future Collaboration?

- Organizational collaboration ?
- Education: IFAPA / SOI Certified Adapted Fitness Trainer (ADFIT) ?
- Fitness & Health industry: Accessibility guide for persons with ID ?
- Research: Measure and Analyze SO disciplines by intensity / step counting to provide specific health recommendations ?
- EBP: Studying effects of programs via scientific methodology: case, controlled, randomized controlled and multi-site trials ?