APA: contents and perspectives

EUCAPA 2008

Congress of EUFAPA (European Federation in APA)

Torino 9-10-11 OTTOBRE 2008

Abstracts
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Jean Claude DE POTTER

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Italo FAZIO
EUFAPA AWARDS

EUFAPA Awards are conferred in 3 categories:

1) EUFAPA-European Professional Award for outstanding achievements
   the contribution to the field of APA can be achieved by acquisitions in research or professional activities or in sport competition.
   The candidate will be selected by the EUFAPA award committee following to nominations / applications from European countries. The call for nominations will be published at the EUFAPA website and on the EUCAPA organizer’s website.
   The Award recipient receives a certificate honoring his/her contribution(s) to Adapted Physical Activity along with a campaign medal.

2) EUFAPA-Award for outstanding achievements on national level (of the hosting country)
   the contribution to the field of APA in Italy this year should be achieved by acquisitions in research (Master Thesis).
   The candidate will be selected by the national (award/organizing) committee and verification by two members of EUFAPA board.
   The Award recipient receives a certificate honoring his/her contribution(s) to Adapted Physical Activity along with a campaign medal. Nominations should be forwarded to the awards committee by the EUCAPA organizer’s committee.

3) EUFAPA-young investigators award
   this award will be given for the best presented paper at EUCAPA.
   The candidate will be selected, among the applications submitted together with the submission of the abstract by the master thesis award committee.
   The Award recipient receives a certificate honoring his/her presentation at a session during EUCAPA, together with a campaign medal and additionally he/she may have free participation in the next EUCAPA congress.
KEYNOTE SPEECH

The Test of Gross Motor Development-2nd Edition:
Uses, Administration, Scoring,& Applications to Children with Disabilities

Dale A. Ulrich, PhD
Professor & Director
Center for Motor Behavior & Pediatric Disabilities
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University of Michigan
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The Test of Gross Motor Development-2nd Edition:
Uses, Administration, Scoring & Applications to Children with Disabilities
Professor Dale A. Ulrich, PhD
Director, Center for Motor Behavior & Pediatric Disabilities
Kinesiology
University of Michigan

Test Structure
Subtests and Skills
A. Locomotor Subtest
1. Run
2. Gallop
3. Hop
4. Leap
5. H. Jump
6. Slide

Test Uses
1. Diagnostic evaluation to determine child’s eligibility for adapted physical education. National norms on 1208 children aged 3-10 by gender.
2. Plan instruction based on the child’s strengths and weaknesses. Identify which skills need work and which elements of the skill needs improvement.

Test Uses
3. Monitor the child’s progress in acquiring gross motor behaviors.
- Requires reassessment over time
- Count the number of learned movements for each skill and within each subtest
- Determine the amount of change in the child’s norm score.
  Absolute change: child learned 9 new movements
  Relative change: 7th %ile to 12th %ile score

Test Administration
1. You must learn to observe and analyze the specific performance criteria for all 12 skills.
  Locomotor skills have 24 performance criteria
  Object control skills have 24 performance criteria
Use highly skilled children first and then use children that display movement errors.
Establish a clear mental picture of what the performance criterion looks like
Scoring the Kick Item
1. Rapid continuous approach
2. An elongated stride before ball contact
3. Nonskipping feet placed near ball
4. Kicks ball with instep or toe on preferred foot

Test administration
2. Determine the child’s preferred hand and foot.
3. Provide 1 demonstration that includes all of the performance criteria.
4. Give the child 1 practice trial to make sure they understand the task.

Scoring the Test
1. Give the child 2 test trials and score all performance criteria on each trial.
2. If the child displays the performance criterion correctly, score a “1” in the column for that trial. If they do not display the performance criterion correctly, score a “0”. Score both trials.
3. Calculate the performance criterion score by summing the two trials and place in the column labeled “score”. Do this for all performance criteria.

Scoring the Test
4. Calculate the skill score by summing the performance criteria scores and place in the cell labeled skill score
5. Calculate the locomotor and object control subtest scores by summing the 6 skill scores within each subtest. Place these scores on the first page of the score sheet under “raw score”. 
Using the Norms

Information Needed:
- Child’s age in years & months
- Gender
- Locomotor subtest score (Ben 32)
- Object control subtest score (Ben 31)
- Refer to norm tables

Ben:

Male, aged 7 years, 7 months

Locomotor raw score = 32, norm scores: 9th %ile, standard score = 6

Object control raw score = 31, norm scores:
5th %ile, standard score = 5

Standard scores have a mean of 10 & standard deviation of 3.
Calculate the age equivalent score for the locomotor and object control subtest scores.
See table D 1

Calculate the total gross motor development quotient and percentile score by summing the two standard scores and using table C1.

Ben’s locomotor
Standard score = 6
Object control
Standard score = 5
Sum = 11
Gross Motor Development quotient = 73 or percentile rank >3

Making Adaptations to the TGMD for Instructional Assessment & Children with Disabilities

- If you are not using the norms, you can modify anything you want about the test:
  1. performance criteria
  2. directions or test conditions
  3. scoring
     1=successful performance with a physical prompt
     2=successful with an environmental prompt
     3=successful with a verbal prompt
     4=successful independent performance
- Collect local norms
Converting the TGMD-2 for Use In Other Countries

2. Modify the test so that is represents skills taught and learned by children in your country.
3. Collect national norms in your country.

The Run item

The Gallop item

The Hop item

The Leap item

The Horizontal Jump item
RESEARCH METHODOLOGY
INTERESTS OF EXERCISE PHYSIOLOGY VS PERSONS WITH INTELLECTUAL DISABILITIES

EBERHARD Y.
1: Joseph Fourier University, Grenoble, France

Concerning the research production, persons with intellectual disabilities (ID) are more investigated through psychological and psychiatric models. Knowledges of the ID handicap through investigations resulting of exercise physiology are quite unusual. The aim of the present intervention is to give to a researcher student, basic principles which must be respected in research methodology towards persons with ID engaged in experimental effort protocols.

Some developments will be done around underlying questions presented and discussed during the communication:
1) analysis of the title terms;
2) exercise physiology and training: what evolution?;
3) investigation of persons with ID through exercise physiology constraints: presence of two main problems;
4) methodology advices: (i) basic principles; (ii) literature vs ID and physical activity; (iii) a concrete example: positive role of physical activity in Down Syndrome and evidence of their biological regulations;
5) in conclusion and perspectives, the epigenetic regulations seem to be a new way to investigate and to quantify the benefit effects of physical activity at a fundamental level.
THE ROLE OF BIOMECHANICS IN ADAPTED PHYSICAL ACTIVITY

VANLANDEWIJCK Y.1
1: Katholieke Universiteit Leuven, Department of Rehabilitation Sciences and Physiotherapy, Leuven, Belgium

The role of biomechanics as a bridge builder among disability sport sciences will be clarified through the example of handcycling. In this presentation, the linkage between biomechanics and many other areas of endeavour of sport science and sports medicine will be stressed. Amongst others:

1) the understanding of the causal mechanisms and the prevention of repetitive strain injuries through inverse dynamics;
2) the ergonomic optimization of the handbike-user interface through handbike adjustments and consequent seat position changes;
3) the assessment of upper extremity recovery after stroke through arm cranking; and
4) the minimization of energy expenditure during prolonged submaximal handcycling. All examples will be placed in a framework of synergy between multidisciplinary data collection in realistic conditions at the one hand, and mathematical modelling, simulation and optimization at the other hand.
ADAPTED PHYSICAL ACTIVITY FOR INDIVIDUALS WITH CHRONIC DISEASES: ANALYSIS OF CONDITIONS TO IMPROVE HEALTH STATUS

VARRAY A.1
1: University of Montpellier I, Faculty of Sports Sciences, Laboratory "Motor Efficiency and Deficiency", France

The prescription of physical activity for individuals with chronic disease is quite recent in the field of A.P.A. In the beginning, the issue was framed as a humanist conviction that physiological impairment due to chronic disease should never be a reason to avoid physical activity. At this stage, the main concern was to encourage some level of physical activity to ensure each individual a lifestyle as normal as possible.

In a next stage, many studies focused on two of the advantages of retraining programs: 1) they counter the tendency toward hypoactivity, which is known to often worsen disease or disease symptoms, and 2) they improve the general health status of almost all people. This last point was of prime importance, because numerous studies in the international literature showed that when specific physical activity was proposed on the basis of precise pathophysiological indications, it induced metabolic and physiologic effects that reduced the impact of illness and improved exercise tolerance, both of which are directly responsible for an improved health status and better quality of life. These effects occur even in the absence of any improvement in disease severity. The independence between disease severity and improved health status is in fact one of the major scientific contributions to this field, and much greater hope can now to offered even to those with irreversible disease.

The aim of this presentation is to present a method for building pertinent pathophysiological bases for A.P.A. practice and it will use as an example the work that has been done in dealing with obstructive pulmonary disease. The pathophysiological base in these diseases was constructed by taking into account exercise mismatching, analysed according to its short- and long-term impact on disease outcome. A larger vision will then be offered, showing how it is possible to generalize this approach to other chronic pathological states such as mellitus type I and II diabetes, HIV1 infection, obesity, and so on. In each case, specific exercise adaptations based on a keen understanding of the underlying physiological processes provide the key to an adapted intervention with well-defined exercise program aims.

The efficacy of physical activity is so great that in some cases it is simply the best way to improve the general well-being of individuals suffering from chronic disease. Since this is a major concern for health professionals and the chronically ill, A.P.A. offers a wonderful means to rise to this challenge.
SPORT SOCIALIZATION AND SPORT PEDAGOGY IN ADAPTED PHYSICAL ACTIVITY

KUDLÁČEK, M.¹

¹: Faculty of Physical Culture, Palacký University in Olomouc, Czech Republic

The purpose of this workshop is to present two main topics: (a) sport socialization and (b) sport pedagogy to university students of adapted physical education to provide good understanding about the state of knowledge and possibilities of future research. Participation of persons with disabilities in sport is one of the key problems in adapted physical activity. Understanding participation motives and processes of sport socialization can help us to improve quality of lives of persons with disabilities. In disability sport area studies were initiated by Williams and colleagues by series of articles discussing theoretical issues applied clearly in studied topics. Good example of socialization study is Williams and Kolka (1998) who examined the subculture of wheelchair basketball using structural functionalistic perspective. Wheeler et al. (1996) and Wheeler et al. (1999) enriched the body of knowledge in adapted physical activity research by two excellent studies that focus on the retirement from disability sports. Wheeler et al. (1999) did great job in describing phases of athletic involvement: (a) pre-transition (initiation and development, competitive experience; (b) transition phase (exit from competition), and (c) post-transition phase (adjusting to life after competitive sport). In order to conceptualize the state of knowledge on inclusion we utilize the model of inclusion research (Kudláček, 2006) works with the three main factors: a) teachers, b) students, and c) teaching process. In the factor related to teachers we need to understand: i) preparation of teachers; ii) teachers with and without experience with inclusion; iii) paraprofessionals; and iv) APE consultants. Good example of study focused on the experiences of teacher is LaMaster, Gall, Kinchin, and Siedentop (1998) who found that even effective teachers (sample from USA) were constantly struggling to provide appropriate teaching. Teachers also stated that they felt like they were inadequately prepared to teach effectively in integrated classes. Recently Morley, Bailey, Tan and Cooke (2005) focused on perceptions (views) of forty three teachers on inclusion and discovered that Irish teachers had concerns about: (a) the level of participation; (b) the lack of support services and training; and (c) the accessibility of environment. Good example of research focused on the experiences of student is study by Goodwin and Watkinson (2000) who found both good and bad experiences of students with disabilities. Good experiences were expressed as: (a) sense of belongings, (b) skillful participation, and (c) PE benefits while bad experiences were: (a) isolation, (b) questioned competence, and (c) isolation. Our knowledge on teaching or interaction in inclusive PE is limited with the main focus being on Academic learning time in PE, social interactions and the phenomenon of peer tutoring. The third topic being recently studied by Klavina and Block (in press) focused on support conditions for three students with SMD: (a) teacher-directed, and (b) peer-mediated. Instructional behavior data showed that during peer-mediated support conditions the instructions provided by tutors were more frequent than instructions provided by teachers during teacher-directed conditions. However it must be highlighted that the phenomenon of inclusion in PE has not been yet thoroughly studied and we need to make effort to understand practice with applying good quality research in order to provide support for creating the appropriate learning opportunities for students with disabilities without putting too much burden on teachers, students or parents.
## Schedule for Chairmen

### FRIDAY 10th October

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<td>WHEELCHAIR SPORTS</td>
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<td>10.40 a.m.</td>
<td>BREAK</td>
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<td>11.00 a.m.</td>
<td>ILLNESS</td>
<td>ELDERLY</td>
<td>BRAIN INJURY</td>
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<td>01.00 p.m.</td>
<td>ULRICH-BIANCO</td>
<td>DE POTTER - RAINOLDI</td>
<td>MALONE-CARRIOLA</td>
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<td>02.00 p.m.</td>
<td>LUNCH</td>
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<td>03.00 p.m.</td>
<td>EVALUATION</td>
<td>INTERVENTION</td>
<td>WORKSHOP</td>
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<td>BOURSIER-ONYEWADUM</td>
<td>HUTZLER-TOLOMIO</td>
<td>DINOLI-CAZZOLI</td>
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<td>03.40 p.m.</td>
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ULRICH Keynote Speech

### SATURDAY 11th October

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<td>8.40 a.m.</td>
<td>INCLUSION</td>
<td>ELDERLY</td>
<td>ILLNESS</td>
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<tr>
<td>10.40 a.m.</td>
<td>BREAK</td>
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<tr>
<td>11.00 a.m.</td>
<td>GENETICS</td>
<td>CLASSIFICATION</td>
<td>POSTUROGRAPHY</td>
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<td>EBERHARD-MAZZA</td>
<td>KENNETH-DAVICO</td>
<td>RINTALA-KNAPFELTZ</td>
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<td>01.00 p.m.</td>
<td>CONCLUSIONS (DE POTTER) - AWARDS - EUCAPA2010</td>
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<td>Time</td>
<td>MORNING: AT CONGRESS CENTRE (Corso Stati Uniti 23)</td>
<td>AFTERNOON: AT THE &quot;RUBBIANETTA&quot; (Centro Internazionale del cavallo &quot;La Venaria Reale&quot; Parco Regionale &quot;La Mandria&quot; Cascina Rubbianetta Druento - Torino)</td>
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<td>8.00 a.m.</td>
<td>REGISTRATION</td>
<td>OPENING CEREMONY PROGRAMME</td>
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<td>9.00 a.m.</td>
<td>PRE-Congress for Students: research methodology</td>
<td>04.30 p.m. Welcome local Authorities</td>
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<td>9.00 a.m.</td>
<td>Y. Vanlandewijck</td>
<td>05.30 p.m. Exhibitions: riding therapy, vaulting, pony games, &quot;ripresa&quot;. horse riding for disabled and integrated equestrian vaulting Show: evaluation/analysis equipment</td>
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<td>9.30 a.m.</td>
<td>Y. Eberhard</td>
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<td>10.00 a.m.</td>
<td>Questions</td>
<td>06.30 p.m. Minisymposium: Frigo - Pavan: A movement analysis approach to analyse the action mechanisms of horseback riding therapy. Modelling the human-horse interaction can help understanding the effects of horseback riding therapy</td>
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<td>LUNCH</td>
<td>08.15 p.m. Evening Tour of the park and animal watching</td>
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<td>Jean Claude De Potter (EUFAPA and EUCAPA President)</td>
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<td>Shayke Hutzier (IFAPA Board President)</td>
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<td>Marco Zaccaria (Master President in APA, University of Padova)</td>
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<td>Aurelio Cappozzo (Department of Scienze del Movimento Umano e dello Sport, University of Roma, Foro Italico)</td>
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<td>Suit abnormalities in patients suffering from type 2 diabetes</td>
<td>MOVEAT - an out-patient programme for overweight young people with Down Syndrome and their families</td>
<td>Physiologic parameters and specific wheelchair basketball skills of a team along competition season</td>
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<td>Benedetti</td>
<td>Carraro</td>
<td>Martinelli</td>
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<td>Wearable technology for the monitoring of motor activity</td>
<td>APA and psychogenic obesity: a clinical experience</td>
<td>Increase of the endurance capacity on a paraplegic male athlete by handbike: a case study</td>
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<td>Davico</td>
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<td>Recommendations for optimal electrode positioning to acquire high quality surface EEG from medial gastrocnemius and upper trapezius muscles</td>
<td>Obesity and physical activity among adolescents with mental disability</td>
<td>Strengtheners in competitive wheelchair basketball: a qualitative interview study</td>
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<td>Physical functional limitation assessment using an inertial sensing unit</td>
<td>Somato type and BMI profiles of Botswana special olympics athletes</td>
<td>Relationship between anaerobic power and selected tests from the battery of quad rugby</td>
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<td>Biomechanical analysis in soccer: artificial versus natural field and identification of the right soccer boots to use</td>
<td>Physical activity in low bone mineral density post-menopausal women</td>
<td>Pear as resources for learning. A situated learning approach to APA in rehabilitation</td>
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<td>Abriki</td>
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<td>Maintaining function of chronic stroke survivors</td>
<td>Long term benefits of a six months adapted physical activity training protocol in sedentary elders</td>
<td>The effect of swimming program on gross motor function of children with cerebral palsy</td>
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<td>12:00 a.m.</td>
<td>Cavallaro</td>
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<td>Malzone-Onida</td>
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<td>Amputation control in parkinsonism through exoskeleton neuro-motor activation</td>
<td>Age-related differences in human corticospinal excitability during iTBS in young adults and elderly subjects evaluated with</td>
<td>Taking over a specialist institute with adapted cycling an experiment in Amiens</td>
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<td>Martorana</td>
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<td>Preliminary study on adapted physical activity for patients subject to hemodialysis: contribution to clinical improvement and perceived life quality</td>
<td>The influence of APA on the established postural of the elderly person as main of the prevention of the loss of autonomy</td>
<td>Effects of Aquatic Interventions in Children with Neuro-Motor Impairment: A Systematic Review of Literature</td>
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<td>Rosa</td>
<td>Vacca</td>
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<td>APA programme of young and adult recovering drug addicts under residential care</td>
<td>Validity and reliability of the quality of life index and the UCLA loneliness scale in Greek elderly</td>
<td>Project “physical and multisensory stimulation for people with disability”</td>
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<td>1:00 p.m.</td>
<td>Rintala</td>
<td>Koutsouli</td>
<td>Crawford</td>
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<td>Leisure-time physical activity of children with a long-term illness or disability in Finland</td>
<td>Quality of life comparison between adults with cerebral palsy and the general population</td>
<td>The application of an APA intervention Programme for children with autism and co-occurring learning disabilities</td>
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LUNCH
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**ULRICH Keynote Speech**

**BOURSIER-ONYEWADUME**

Valuation of the swim activity effects in an autistic hyperactive child

**HUTZLER-TOLOMIO**

The impact of using force functional exercises on some bills and physical and dynamic levels on the players’ handball

1) Vallet/Capellini - BASKIN (03.00 p.m./03.30 p.m.)

2) Kudlacek - APA Introductory courses (03:30 p.m./04.00 p.m.)

**DINOLOD-CAZZOLI**

**WORKSHOP**

Planning sports training in Adapted Physical Activity

3) Fazio - CIRCUS (04.15 p.m. / 04.45 p.m.)

**EUFAPA General Assembly (05.00 p.m./06.00 p.m.)**

**POSTER SESSION**
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<td>8.40a.m./</td>
<td>INCLUSION</td>
<td>ELDERLY</td>
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<td>11.00a.m.</td>
<td>SHERILL-ROSA</td>
<td>TAYLOR-CARRARA</td>
<td>METTE-PREGIUNASCO</td>
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<td>Fernandez</td>
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<td>Puerto Rican physical education student teachers’ judgments about inclusion of students with disabilities in regular physical education classes</td>
<td>A Longitudinal Analysis of an APA Home Care Service for Elders with Disabilities</td>
<td>Confirmatory factor analysis of the 18-item standardized asthma quality of life questionnaire (AGQLS) in Greek adult asthmatic patients</td>
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<td>Narese</td>
<td>Curletti</td>
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<td>Disabled child and school institution: integration or not integration?</td>
<td>The Cawthorne and Cooksey Program applied in prevention of falls in older patients: preliminary study</td>
<td>Physical activity promotion project for RBDDM affected persons</td>
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<td>Klavina</td>
<td>Van Coppenolle</td>
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<td>Peer tutoring for students with severe disabilities in inclusive physical education</td>
<td>European best practices and policies for promotion and implementation of APA for elderly - THERAPIA III</td>
<td>Third age and diabetes: physical activity at home</td>
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<td>9.40 a.m.</td>
<td>Valet</td>
<td>Malone</td>
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<td>The inclusion: a new challenge for the adapted physical activities</td>
<td>Advancing paralympic sport through scientific collaboration</td>
<td>The possible relationship between the traditional Chinese medicine and the integrative motor and sport activities in the educational context</td>
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<td>Blanco</td>
<td>Cruz</td>
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<td>Theory and practice in the Italian model of inclusion: contact, communication, collaboration among peers, coping, resilience</td>
<td>The influence of regular exercise on older women’s self and quality of life</td>
<td>Sports and disability in the Italian school</td>
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<td>10.20 a.m.</td>
<td>Kudlacek</td>
<td>Ferreira</td>
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<td>The nature of service delivery in adapted physical education and support for inclusion</td>
<td>Athletic identity, self-esteem, physical self and subjective well-being in Portuguese athletes with disability</td>
<td>APA PE teacher training: disabled students inclusion and Integration quality investigation about teachers perception</td>
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<td>GENETICS</td>
<td>CLASSIFICATION</td>
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<td>12.40 a.m.</td>
<td>Ulrich</td>
<td>VanLandewijk</td>
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<td>The relationship between fitness variables &amp; level of physical activity in Down syndrome</td>
<td>Towards evidence-based classification in Paralympic sport - Overview of the issues</td>
<td>Repeatability of physiologically significant parameters during a stabilometry test</td>
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<td>Briquet</td>
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<td>Maximal and submaximal treadmill tests in a young adult with a fragile-X syndrome</td>
<td>Towards evidence-based classification in Paralympic sport - What is the optimal trunk range of action for wheelchair sprinting?</td>
<td>The analysis of posture by means of a geometric method for the determination of the symmetry line of the vertebral column</td>
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<td>Ulrich</td>
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<td>Effects of a bike training program on patterns of physical activity in children with Down syndrome</td>
<td>Towards evidence-based classification in paralympic athletics - what is the optimal seated throwing position?</td>
<td>Gait analysis for diabetic foot prevention</td>
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<td>Analysis of service return execution of elite table tennis athletes with intellectual disabilities</td>
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CONCLUSIONS (DE POTTER) - AWARDS - EUCAPA2010

26
ORAL PRESENTATIONS
TAKING OVER A SPECIALISED INSTITUTE WITH ADAPTED CYCLING
AN EXPERIMENT IN AMIENS

BAZIN L.1, MORA I.2, COTTEREAU M.3, WEISSLAND T.2
1: Sport Science Faculty, Jules Verne University of Picardie, Amiens, France
2: EA 3300, Sport Science Faculty, Jules Verne University of Picardie, Amiens, France
3: Institute of Motor Education Saint-Exupéry, Amiens, France

Key words: Cycling, Adapted Physical Activity, Cerebral Palsy, therapeutic benefits of cycling, education.

Introduction
Cycles into Centers of Motor Education provide to the Adapted Physical Activity professional an opportunity to structure an individualised activity crossing several fields. Adapted to children with Cerebral Palsy, cycling basics can help develop and restore motor reflexes and functions, educate to road safety (essential to consider outdoors trip), and join the Paralympic movement.
Within the framework of a two-school-year collaboration between The Sport Faculty of Amiens and the St-Exupéry Institute, we will introduce you our experiment of young APA teacher through the adapted cycling activity we organised during our 2nd and 3rd year Bachelor.

2006-2007 project: Cycling to readapt
To validate the hypothesis of therapeutic benefits to cycling, the job was focused on cycling contribution to walking efficiency. This study compared 2 groups of CP (8 cyclists matching in age and disability level with 8 control [without sport]) at the beginning and the end of an 8-week series of sessions. Six functional tests evaluated walking, coordination, sprint, balance, strength and stiffness. After 8 weeks, results showed significative progress for the Cycling group versus the Control group [1].

2007-2008 project: Cycling to educate
This project was based on learning a responsible road behaviour. From recreational group situations, an approach to “road safety” contributed to make the children aware and respect both codes and rules while calling upon their attention and concentration.
Collaborating with Amiens’ Police Department, we set ability tests (cycle command, traffic knowledge and road safety rules). The first tests revealed strong or low lacks depending on the cerebral affection. A final test has been conducted in May on a city road-education track, delivering an ability certificate.
Next year, along with this work the aim is to prepare the children to sporting event such as time trial.

Conclusion
Cycling is an energetic activity enabling CP’s disability to be compensated. Movement speed mastering and road safety rules knowledge gives to CPs the opportunity to go outside their usual institute surroundings, and to a larger extent “easy ride”. In a more sporty way, the activity can give rise to participation projects in disabled events. Our experience also shows the necessity to add an Adapted Physical Activity professional to the therapeutic and educative team of the St-Exupéry Institute.

References
WEARABLE TECHNOLOGY FOR THE MONITORING OF MOTOR ACTIVITY

BENEDETTI M.G., STRAUDI S., FRIZZIERO A.

1: Laboratorio Di Analisi Del Movimento, Istituti Ortopedici Rizzoli, Bologna, Italy

Key words: motor activity, wearable technology, rehabilitation.

In recent years the need for monitoring motor activity outside of the laboratory during daily life activity has emerged. The development of miniature sensors has increased sharply the possibility to monitor functional motor activities of patients over extended periods of time also outside the clinical environment, thus providing information on the impact of clinical interventions on real life activities.

A number of wearable devices for clinical applications in rehabilitation and sports medicine have been developed. The compact and lightweight characteristics of these advanced devices for monitoring motor activity allow them to be used with real-time computer control of the recorded parameters.

The focus was initially on using accelerometers or a combination of accelerometers, electrogoniometers and electromyographic sensors to capture movement and muscle activity patterns associated with a given set of functional motor tasks. Accelerometers measure both static and dynamic acceleration. Three accelerometers can be easily incorporated into a single device, thus providing information on three-dimensional movement (tri-axial). They are currently used mainly in research settings; however, with recent advances, incorporation into clinical practice is feasible. Nowadays their most common clinical applications are in gait and balance evaluation, fall risk assessment, and mobility monitoring. Together with the evolution of these systems, the possibility of using wearable technology to assess the quality of movements while the patient performs functional tasks has motivated the realization of innovative and unobtrusive technology where sensing elements are embedded into garments such as gloves, leotards, or knee bands. Spandex fabric (Lycra) with sensing apparatus based on electrically conductive elastomers that give the fabric piezoresistive properties related to mechanical solicitations are the most recent proposal. The “new era” of wearable technology involves integrated systems that work as rehabilitation devices.

Research studies have been focused on integrating wearable technology with orthoses, prostheses, and mobility assistive devices. Three groups of devices will be described: a transportable continuous passive motion elbow device, a wearable electro-rheological fluid based knee resistance device, and a wearable electrical stimulation and biofeedback knee brace.

The experimental data obtained in a group of obese patients by a new portable device for evaluation of human daily physical activity (Intelligent Device for Energy Expenditure and Activity (IDEEA) will be presented.

References

Culhane KM at all., Accelerometers in rehabilitation medicine for older adults, Age and Ageing 2005; 34: 556-560.
THEORY AND PRACTICE IN THE ITALIAN MODEL OF INCLUSION:
CONTACT, COMMUNICATION, COLLABORATION AMONG PEERS,
COPING, RESILIENCY

BIANCO A.¹, PhD
1: SUISM (Scuola Universitaria Interfacoltà in Scienze Motorie e Sportive), Torino, Italy

Key words: inclusion, collaboration, communication, contact theory, coping, resilency.

Introduction
A brief historical illustration is given to comment upon the situation in Italy, where since 1975 there has been full integration in schools of all levels, from kindergarten to university. Special schools no longer exist. Data from MIUR (Ministry for University Education and Research) on the number of differently able pupils in normal classes and on the number of support teachers show that the situation is now stable.

The importance of the legislative framework concerning a family’s right to demand that their differently able child be enrolled in a school belonging to the normal system is stressed. This right must correspond to an obligation on the part of the school to accept such pupils. In countries where this right/obligation does not exist it is very difficult for full and effective school integration to be achieved. In Italy this obligation of acceptance by schools is established by law and it exists an educational continuity during the transition from one school to another (kindergarten/elementary/primary/secondary school). It is a system prevalently of the pedagogic type and operates in collaboration with a medical team.

After 35 years of school integration, it is now possible to reflect on the situation and on the changes that have come about: changes have occurred in terms of language, of social acceptance, and of the initiatives taken in particular with regard to physical activities and sports. It may be postulated that, through school inclusion, we have achieved social inclusion.

The model
We may now examine the concepts that comprise the theoretical foundation of the model that has been put in place: contact theory (Alport, 1954; Sherrill, 2004), communication (Gordon 1991; Rogers, 1980, collaboration among peers (Block&Zeman,1995; Hutzler & al, 1997; Sapucci, 2005). These are interlinked facets that must be logically integrated to achieve true inclusion; actions and proposals that must be induced and put in place by those surrounding the differently able child within a specific environment (school, social group, sports club) so as to stimulate individual mechanisms of reaction and response in the child: coping (Lazarus Opton, 1966, resilience (D.Janes M. Tortello, 1999; Di Brotini et al, 2001)

The result of the succession and integration of these stimulatory mechanisms (contact, communication, collaboration) and response mechanisms (coping and resilience) facilitate effective inclusion.

The presentation illustrates these theoretical aspects and their concrete form in practical class-work and physical/sports activities, including short films of some examples.

To conclude it must remember that politicians and public administrators possess the key to achieve school and social inclusion: in Italy they played a decisive part with the help of associations and trade union.

References
MAXIMAL AND SUBMAXIMAL 7TREADMILL TESTS IN A YOUNG ADULT WITH A FRAGILE-X SYNDROME

BRICOUT V-A.¹, FLORE P., EBERHARD Y., FAURE P., GUINOT M., FAVRE- JUVIN A.
I: CHU GRENOBLE SUD, Médecine du sport UF recherche, France

Key words: Fragile X, physical test, hormonal and metabolic responses.

Introduction
Fragile X syndrome is associated with expansion of a repeated triple CGG sequence of the FMR-1 gene, resulting in absence of production of FMRp protein. The consequences of this abnormality expressed in neuro-endocrine disorders (adrenal axis / macro-orchidism) and in the emergence of significant behavioural stress.

Research Methods
The authors report a hormonal study of one clinical case in a young adult with a X-fragile syndrome, focusing on the catecholamines and cortisol adaptations during a treadmill submaximal test. This patients showed significantly higher concentrations of epinephrine and norepinephrine concentrations; and cortisol levels were higher than the laboratory standard during the submaximal incremental test.

Discussion
The most important result of this work is the one of the catecholamines and cortisol variations during the submaximal incremental test. In this young FraX adult, in comparison with control subjects, we can observe hormonal variations that were much premature and ample during physical exercise; particularly catecholamines quickly rised, reflecting the "stress" effect induced by the physical exercise. Cortisol elevations were very significant from the beginning of the exercise test, and much larger than for controls subjects. Hessl et al. (2002) supported this result and demonstrated that children with FraX, had higher levels of salivary cortisol during cognitive and social challenge tasks. Hagerman et al. (1996) had already raised this possible overactivity of the sympathetic nervous system in these patients in response to environmental stimuli, and the Miller study conducted in 1999, using a direct electrophysiological measure of electrodermal responses to stimuli was a clear indication of this overactivity (Miller et al. 1999).

Conclusion
Despite the relatively consistent links between FMR1 gene function and outcomes in fragile X, considerable variability in stress-related behaviour problems exists. This variability can in part be explained by non-genetic factors, such as characteristics of the home environment and the effectiveness of educational and therapeutic services. Although there was a significant "stressful" effect of the submaximal incremental test, this young adult did not demonstrate harm-avoidance adaptation or even refusal, as evidenced by the quality of VO2max values achieved at the end of the submaximal incremental test.

References
APA AND PSYCHOGENIC OBESITY: A CLINICAL EXPERIENCE

CARRARO A., SCHIAVONE P., FIORELLINI A.

1: Università di Padova e Casa di Cura Parco dei Tigli, Villa di Teolo, Padova, Italy

Key words: Eating Disorders, Obesity, Physical Activity, Psychiatric Diseases.

Obesity is a chronic multifactorial condition in which excess body fat may expose the individual to serious health risk and to severe alteration of the psychosocial functioning and quality of life. Moreover, it can be associated with disordered eating, as overeating or binge eating disorder, depression, low self-esteem and impulsivity. This coexistent psychopathology may worsen the treatment outcome and produce early relapse.

Basic treatment of obese patients requires a comprehensive approach involving diet, regular physical activity, cognitive and behavioral changes, with an emphasis on long-term weight management rather than short-term excessive weight reduction (Annesi, 2007; Dietz, 2004). The intrinsic motivation is one of the most important factors supporting the compliance with patients in treatment. The motivation to physical activity and the change in the attitude of patients towards physical experience and physical self-efficacy are determining elements of the weight control treatment success (Berger, 2004).

The aims of this communication are to present the main characteristics of our program and the clinical results of an intervention in a sample of obese psychiatric inpatients.

Methods

In a clinical psychiatric setting, we have been running a program of adapted physical activity for overweight and obese in-patients with psychiatric symptomatology. We have developed a specific multidimensional program for these patients including an energy-restrict diet, individualized physical activity daily program, nutritional education, together with individual and group cognitive-behavioral psychotherapy.

Results

Our sample consisted of 35 inpatients (5 male e 30 female) with a mean age of 37.5 years (SD=14.4). The most frequent psychiatric diagnosis were Binge eating disorders and Borderline PD. On the basis of the BMI estimate 5 presented an overweight, 9 were in obesity class I, 7 were in class II and 14 were in class III. The mean BMI was of 39.23 kg/m² (SD=8.5). Results have been evaluated with several tools, including: biomedical parameters, improving BMI, psychometric scales (SCL-90, University of Rhode Island Change Assessment Scale, Dieter’s Temptations of Eating Inventory, Body Image Avoidance Questionnaire, SF-36, Borg scale), physical measurement, recording of fitness performance, and specific observation for physical activity patterns. The results obtained so far are compatible with the recommendations of the international guidelines for the cure of obesity (NHI, 1988): the mean weight loss was 5.9 kg corresponding to 5.5% of the initial weight.

Our findings lead us to support that APA could be an important functional element within a multidimensional therapy program aimed at the treatment of obesity with psychiatric co-morbidity.

References

DEAMBULATION CONTROL IN PARKINSONISM THROUGH EMISOME NEUROMOTOR ACTIVATION

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Key words: global proprioceptive, sectorial neuromotor activation and emisome.

Introduction
The Parkinson’s disease is a progressive chronic disorder of the extra pyramidal system, more frequent in aging people but often affecting younger adults as well. Typical manifestations of the disease are the reduced body kinesis, anaemia and tremor. Limited ambulation results in serious disadvantage for the patient, from both a psychological and physical point of view.

Objectives
The aim of doing this is to improve neuromotor control on lower limbs and to overcome the virtual barrier of freezing.

Methodology
The treatment of the disease this paper would like to present basically rests on two phases (1) a global, proprioceptive phase, in which postural balance is developed through perception improvement; (2) a sectorial, neuromotor activation phase, which aims at gaining control of neuromotor activity in the body side opposite to the affected side.

Results
After an average of 10 sittings (range 3-15), all patients improved their social life and achieved independence from anybody’s physical help.

Conclusions:
30 patients were treated by the presenter from 1993 to date (20 women and 10 men), their average age being 60 (range: 55-76), all of them from Northern Italy, with reduced ambulation from Parkinsonism, and all of them having suffered from the Parkinson syndrome for an average of 5 years (range 3-7). Treatment went through sittings of 50 minutes each.
The treatment used by the presenter has proved easy to be learnt and put into use, and easily applied to other cases, apart from the seriousness of the disease or its long-lasting course.

References
Introduction
In Italy, the physical education (PE) subject is included in the compulsory syllabus from primary to secondary school (students aged 3-19 years). The Educational Special Needs (ESM) and student with all disabilities are included and integrated in the regular schools by Italian laws from 1971-1977. The PE teachers in the secondary schools (students aged 11-19 years) are specialist and they attend at the Motor and Sport Science Faculty (3 years for Bachelor + 2 years for Master) and than they attend for national certification at School of Specialization for secondary school teachers (SIS) (2 years). (Council of Minister of Europe-Process of Bologna 2000).

Issues
The survey want to investigate the PE teachers perception about inclusion and integration of disabled students (DS) in the PE classes. The questions concern what they think about: a) teaching in inclusion of DS in the regular PE classes; b) teaching in the special PE classes.

Research methods
The survey is qualitative, data are collected by interviews, with descriptive statistical analysis (means, frequency, standards deviation, percentage).

Results
The sample consist of 220 subjects (124 female; 96 male); ranged in the age from 20 to 51, with mean age 35 years. The perception about inclusion and integration of disabled student in:

a. PE regular classes is positive 85.1%, (motivation: opportunity for development of motivation; social emancipation; inter-personality relationship; dignity; personality; social skills; motor skills with individualization; adaptation, simplification; graduality; special training for teachers; special instrumental for integration; comprehension of disabilities person from other people; whereas more complex organization; no-homogeneity workgroup; disabled students is a burden for other students)

b. PE special classes is positive 14.2%, (motivation: more simple organization; homogeneity workgroup; more specialization of teachers and instrumentals; more focus on the disabilities problems and rehabilitation; whereas no opportunity for development of: motivation, social emancipation, inter-personality relationship, personality, social skills, free life; segregation and marginalization)

c. other possibilities 0.1%, (motivation: alternation of phases/time in regular and special schools; low-medium disabilities students in the regular schools and seriously disabilities in the special schools).

Discussion
The trend about the majority is represented by positive thinking of inclusion and integration in the regular schools, whereas the negative thinking are minority. This probably due development of democratic pedagogical culture and the legislation of the last 30 years in the Italian society.

Conclusion
The inclusion and integration in special environment is more characteristic in medical and rehabilitation approach by sanitary department, whereas inclusion and integration in regular environment is more pedagogical approach in educational department, and both take part in DS life project by a multi-factorial and multi-modal educational model.

References


The improvement of balance ability and consciousness is an important point for reducing falls and increasing the quality of life. Increased body awareness and position sense is necessary to compensate functional limitation in balance disorders but also to maximize sport performance. Balance improvements may be achieved by adding artificial sensory information (sensory augmentation or substitution) that enlightens the brain about actual body posture and movements. This information may be coded into an appropriate sensory signal and conveyed to the user in real-time; in this case, brain and muscle activities, that are not normally controlled voluntarily, may be changed accordingly to the new information available. This is a typical example of biofeedback (BF), a training technique in which people are taught to improve their health and performance by using signals quantifying their own bodily functions. Interest in BF has waxed and waned since its inception in the 1960s; it is, however, undergoing something of a renaissance during the early 21st century. For example, it has been demonstrated that physical activity based interventions, including BF therapies, can improve functioning in older people. In specific elderly populations, such as older fallers and patients with Parkinson’s disease, there is evidence that interventions may improve both cognitive and motor functions. Available results suggests more effect when interventions take place over longer time periods, when they are individually tailored, and include exercises in the home environment (Ashburn et al., 2007).

During motor rehabilitation, therapists favour sensory integration by augmenting sensory information. Recent technological advances introduced miniature sensors and actuators and microelectronic systems, to produce a virtual therapist that can effectively monitor older people in their home environment and manage BF-like interventions that are tailored to individual needs (Chiari et al., 2005, 2008).

We designed several biofeedback devices able to convey augmented motor information via the ears or the eyes to the users. Motor information was sensed with portable sensors such as accelerometers or instrumented-insoles. A laptop computer or a palmtop was used to visualize, or modulate into a sound, the additional motor information.

We found that audio-BF of trunk acceleration decreased sway during stance proportionally to the extent of missing sensory information, and that subjects with sensory loss may benefit more than controls from BF systems.

We also observed as muscle activity and the level of co-contraction among leg muscles were not significantly different in trials with and without BF, suggesting that with BF the CNS is able to optimize performance without increasing muscular stiffness.

Depending on the BF coding and representation, the user may achieve different level of performance and choose different strategies for the control of posture.

References
THE APPLICATION OF AN ADAPTED PHYSICAL ACTIVITY INTERVENTION PROGRAMME FOR CHILDREN WITH AUTISM AND CO-OCCURRING LEARNING DISABILITIES

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Key words: motor activity, wearable technology, rehabilitation.

In recent years the need for monitoring motor activity outside of the laboratory during daily life activity has emerged. The development of miniature sensors has increased sharply the possibility to monitor functional motor activities of patients over extended periods of time also outside the clinical environment, thus providing information on the impact of clinical interventions on real life activities. A number of wearable devices for clinical applications in rehabilitation and sports medicine have been developed. The compact and lightweight characteristics of these advanced devices for monitoring motor activity allow them to be used with real-time computer control of the recorded parameters. The focus was initially on using accelerometers or a combination of accelerometers, electrogoniometers and electromyographic sensors to capture movement and muscle activity patterns associated with a given set of functional motor tasks. Accelerometers measure both static and dynamic acceleration. Three accelerometers can be easily incorporated into a single device, thus providing information on three-dimensional movement (tri-axial). They are currently used mainly in research settings; however, with recent advances, incorporation into clinical practice is feasible. Nowadays their most common clinical applications are in gait and balance evaluation, fall risk assessment, and mobility monitoring. Together with the evolution of these systems, the possibility of using wearable technology to assess the quality of movements while the patient performs functional tasks has motivated the realization of innovative and unobtrusive technology where sensing elements are embedded into garments such as gloves, leotards, or knee bands. Spandex fabric (Lycra) with sensing apparatus based on electrically conductive elastomers that give the fabric piezoresistive properties related to mechanical solicitations are the most recent proposal. The “new era” of wearable technology involves integrated systems that work as rehabilitation devices. Research studies have been focused on integrating wearable technology with orthoses, prostheses, and mobility assistive devices. Three groups of devices will be described: a transportable continuous passive motion elbow device, a wearable electro-rheological fluid based knee resistance device, and a wearable electrical stimulation and biofeedback knee brace. The experimental data obtained in a group of obese patients by a new portable device for evaluation of human daily physical activity (Intelligent Device for Energy Expenditure and Activity (IDEEA) will be presented.

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THE INFLUENCE OF REGULAR EXERCISE ON OLDER WOMEN’S SELF AND QUALITY OF LIFE

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Key words: older adults, exercise, Physical Self Perception Profile, Quality of Life.

The Physical Self Perception Profile (PSPP) measures physical self-reported perceptions and was originally developed by Fox and Corbin (1989) with American students. The PSPP has been submitted to different validation studies with other languages rather than the English and used with different groups. Sonstroem, Speliotis and Fava (1992) used the PSPP with older adults and suggested that further development was needed for this particular group. Recently Fox, Stathi, McKenna and Davis (2007) proposed the PSPP clinical version – PSPP-SC for older population.

The main purpose of this study was to examine the hierarchical structure, reliability and validity of the Portuguese version of the PSPP-SC (PSPP-SCp). The instrument was administrated to 237 Portuguese elderly adults (129 women and 108 men) mean aged 74,85±7.66 years. Male participants showed higher mean score values in all PSPP-SCp domains when compared with female. Principal components analysis showed that the original six-factor structure was not fully supported in both genders. Body Attractiveness and Physical Strength sub-domains in females and Body Attractiveness and Physical Health sub-domains in males were clearly defined. Cronbach Alpha values ranged from 0,62 to 0,76 for females and 0,62 to 0,85 for males showing an acceptable to good internal consistency. Zero order and partial correlation coefficient did not confirm the hypothesised hierarchical organisation of constructs with Physical Self-Worth functioning as a mediator between PSPP-SCp subscales and Global Self-Esteem in males, however this hierarchical organization was confirmed in females. Multiple regression revealed that Functionality, Physical Strength and Body Attractiveness sub-scales explained 38,9% for female and 65,6% for male of the total of variance. Further studies are recommended.

A second purpose of this study was to assess the effects of regular physical exercise in older women’s Self and Quality of Life through the assessment of variables such as Global Self-Esteem, Physical Self-Perceptions, Satisfaction with Life, Subjective Well-being and Perceived Stress. Exercisers showed higher mean scores values for Functionality and Physical Strength then non exercisers. No differences were found in Satisfaction with Life or in Global Self-Esteem among these groups. Results also revealed that Body Attractiveness was positively related with Exercise and that it seems to exist a week or no relation at all between Exercise and the variables used to assess Quality of Life (Satisfaction with Life, Subjective Well-being and Perceived Stress).

References
THE CAWTORNE AND COOKSEY PROGRAM APPLIED IN
PREVENTION OF FALLS IN OLDER PATIENTS:
PRELIMINARY STUDY

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Introduction
Human species is predispose to fall; this fact increase with age because of many factors like accidental and
environmental causes, balance trouble, muscular weakness, mental disorder, sight problems, and so on.
Falls may have serious consequence for old people’s life: in fact they can represent the passage from an
indipendent to a dipendent existence.
The loss of the balance capacity represent the second reason of fall in older people: in fact it coincide with
the 17%. Consequently, a balance exercises program could reduce the likehood of fall.
This search wants to adapt one of the current scientific balance exercises program, the Cawthorne and
Cooksey program, to older people to produce an effective reduction of their risk of fall.

Elaboration methods
For this search we used 100 subjects as sample (aged 60 – 75), divided in two equal parts: the control and the
perimental group.
From scientific test to value balance capacity we selected the Standind Balance Test by Bohannon. We
changed some parts of the original test to adapt it better to our sample subjects.
We administered the test at the beginnig, after 30 days and after 60 days from the starting of exercises
program.

Results
From our outcomes we can say:
- Balance capacity can also improve without a specific exercises program;
- The Cawthorne and Cooksey program offers a better improvement in balance capacity as regards to general
  motor activity.

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RECOMMENDATIONS FOR OPTIMAL ELECTRODE POSITIONING TO ACQUIRE HIGH QUALITY SURFACE EMG FROM MEDIAL GASTROCNEMIUS AND UPPER TRAPEZIUS MUSCLES

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Key words: High density EMG, Conduction velocity, Gastrocnemius medialis, Upper trapezius, Biofeedback.

Introduction
The use of surface electromyography (sEMG) in clinical and research fields has been growing in the last decades, mostly without standards. Many suggestions [1] are now obsolete because of the advent of multi-channel and bi-dimensional sEMG detection systems. Electrode positioning is a critical issue for obtaining good sEMG records and should be addressed according to specific muscles and tasks. This study provides guidelines concerning electrode positioning to record high quality sEMG signals from gastrocnemius medialis (GM) and upper trapezius (UT) muscle.

Methods
EMG signals were collected from different locations over the UT muscle of 20 subjects and the GM muscle of 10 subjects. A matrix of 64 electrodes (8mm IED) was positioned on the UT muscle half way between acromion and C7, whereas two arrays of 8 electrodes (5mm IED) covered two sites of gastrocnemius, defined as proper (distal) and improper (proximal), in accordance to the inclination and the degree of overlapping of GM fibers, as observed by ultrasound scanning. Single differential sEMG were recorded with torque and force (exerted by GM and UT, respectively) during isometric contractions of 10s at 30% and 70% of the maximal voluntary contraction (MVC). Conduction velocity (CV) values were estimated from single differential signals [2] for non-overlapped epochs of 0.5s, and used to identify GM portions that provide propagating sEMG signals. Maximum RMS and minimum MNF values were estimated from maps of sEMG distribution on UT muscle, according to its division into four portions: cranio-medial and -lateral and caudal-medial and -lateral.

Results
Estimates of CV in the improper and proper locations were higher than 100 m/s and 6 m/s with a coefficient of variation (COV) of 200% and 15%, respectively. CV estimated for UT had a mean±std of 6.62±1.98 m/s (N=40; 20 subjects x 2 contractions). The highest value of the RMS map and the lowest values of the MNF map were observed in the cranio-lateral quadrant in 70% and 40% of the contractions, respectively.

Conclusions
The GM distal portion provides propagating sEMG potentials with CV closer to the expected physiological value. The cranio-lateral quadrant of UT proves to be the most suitable portion for good sEMG recordings.

References
PHYSIOLOGIC PARAMETERS AND SPECIFIC WHEELCHAIR BASKETBALL SKILLS OF A TEAM ALONG COMPETITION SEASON

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Key words: testing, aerobic capacity, anaerobic capacity, skills proficiency.

Introduction
An elite wheelchair basketball team was assessed before and at the top of the competition season. In both test sessions were evaluated physiologic parameters (PP: aerobic, anaerobic, alternating aerobic-anaerobic metabolism, upper muscles strength) and specific wheelchair basketball skills (SWBS). Aim: evaluating improvements in PP, SWBS and the relationship between them.

Research Methods
Eleven male players, mean age 32 ±7 years, body mass 76 ±12 kg, height 1.8 ±0.1 m, performed an incremental protocol, at arm-cranking ergometer, to evaluate maximal oxygen consumption (VO2max) and heart rate (HR) using a metabolimeter. To assess the anaerobic capacity, a 30 second sprint test was adopted (adapted from Vanlandewijck). Dal Monte 5 sprints test was used to evaluate alternating aerobic-anaerobic metabolism. Assessment of upper muscles strength consisted of: 4 kilos ball throwing test, bench press and lat machine 1RM. Six field tests were used to assess basketball skills: lay-up (LU), figure-eight (F8), figure-eight + ball (F8+B), 20 meters sprint (20mS), zone-shot (ZS), pass for accuracy (PFA). Statistical analysis. ANOVA analysis was performed. Statistical significance was set for p \leq 0.05.

Results
The team slightly improved its VO2 max: from 33.6 ±6.2 to 34.9 ±6.7 ml/min/kg. Significant improvements were observed for: anaerobic power (from 99 ±13 to 101 ±13 m); aerobic-anaerobic metabolism (3th min recovery HR: from 101 ± 7 to 95 ±4 beats/min); strength (ball throwing: from 5.03 ±0.9 to 5.15 ±0.9 m; bench press: from 70 ±19 to 76.4 ±19 kg; lat machine: from 60.4 ±16 to 67 ±17 kg). Relating to SWBS, significant improvements were observed in: LU (from 28 ±4 to 30±4 score); F8 (from 18 ±1 to 19 ±1 score); 20mS (from 5.6 ±0.5 to 5.5 ±0.5 s); PFA (from 17 ±7 to 20 ±7 score); ZS (from 30 ±6 to 32 ±7 score). Among SWBS, in both test sessions, significant correlations were observed between: F8+B and all PP; 20mS and anaerobic power and muscle strength; PFA, ZS and muscle strength.

Conclusion
These results suggest that: improvements in PP and SWBS can be obtained also in an elite team along the competition season; SWBS are prevalently correlated with muscle strength. Thus players could profit by paying particular attention to strength training.

References
MOVEAT – AN OUT-PATIENT PROGRAMME FOR OVERWEIGHT YOUNG PEOPLE WITH DOWN SYNDROME AND THEIR FAMILIES

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Key words: persons with Down Syndrome, overweight, physical activity, nutrition, eating and moving behaviour.

Introduction
Recent studies on health of children and adolescents suggest that 15% of German children between 3 to 17y are evaluated to be obese (Kromeyer-Hausschild & Wabitsch, 2007). In Austria male pupils between 6 to 14y have too much weight (obesity and/or overweight) at a rate of about 20%, females of the same age group by about 18% (Zwieauer, 2007). American publications give a still worse initial status for individuals with Down Syndrome (DS). Rubin et. al (1998) suggest a prevalent rate of 45% of male and 56% of female persons being over weighted. Given this context and the additionally known individual circumstances of adolescents with DS – with respect to individual development, increased risk of coronary disease or other associated medical conditions, and special educational and social problems – the importance of health enhancing projects and initiatives is considered to be urgent.

Project Description
Initiated by the DS-Ambulanz in Vienna and by cooperation of the associations GEFÖ (Gesundheitsförderung Österreich), ZSW (Centre for Sports Sciences and University Sports, University of Vienna) and AFAPA (Austrian Federation of Adapted Physical Activity) - the project “MOVEAT” was created. MOVEAT is a long-term intervention programme for persons with DS – at the moment only 5 women between 18 and 32y participate. The participants meet once a week for three hours. They commit 90 minutes to movement and 90 minutes to schooling about nutrition. Both parts are using very practical activities - moving, playing, cooking and eating selected meals. The main aims are:
- stabilisation/ reduction of the weight
- improvement of eating and moving behaviour
- empowerment for self responsibility as regards the planning of recreational activities
- individually tuned improvement of psycho-social well-being
- social integration
- medical monitoring

Methods and Evaluation
The didactic intentions of the sport programme try to combine the improvement of motor functioning and emotional development through body awareness and joyful physical activity. The participants are encouraged to express their preferences and to decide about active and recreational parts of the unit. They have been assessed by a Pre-test – a variation of Eurofit Special Test Battery (Skowroński, 1999) in October and will have to undergo a post-test end of June. The results of the first year are expected to show the development of weight and health conditions (medical monitoring), their improvement of motor abilities (EFSTB), and to document their self reported enhancement of self responsibility and personal well-being (individual interviews).

References
The purpose of this study was to examine preservice teachers’ judgements about inclusion of students with disabilities in general physical education (PE). Participants were 55 PE preservice teachers (83%) from the five University of Puerto Rico campuses (Arecibo, Bayamón, Cayey, Rio Piedras, & Mayagüez) that offer a degree in PE who completed the validated Physical Educator’s Judgements About Inclusion Instrument (PEJI) (Hodge, Murata, & Kozub, 2002) and were later interviewed as a focus group. Nine questions were used in the interview regarding: (a) special education or adapted physical education (APE) courses, (b) practical experiences, (c) degree type, and (d) program strengths and weaknesses. Participants from Bayamón were completing a degree in APE that includes three APE clinical experiences prior to student teaching, while those finishing a secondary PE (three campuses) or elementary PE (one campus) had only to complete a 3-credit course in adapted physical education with 10-15 hours of field or clinical observations. Nonparametric statistics were used to compare PEJI results in its three judgement categories (inclusion v. exclusion, acceptance of students with disabilities, and perceived training needs) among campuses. Focus group interviews were qualitatively analyzed to look for common themes. Participants did not differ in their judgements about inclusion versus exclusion, except for those from Bayamón. More than 65% (55% from Bayamón) judged that all students with disabilities must be included in general PE. Participants from four campuses (50% from Bayamón) felt that students with severe disabilities should receive separate PE. All had strong acceptance of students with disabilities and felt they needed more courses, clinical experiences and training in inclusion. All participants (except from Bayamón) felt unprepared to teach PE to individuals with disabilities, in agreement with Kudlacek, Volkova, Sherrill, Myers, & French (2002) who found that Czech APE majors perceived themselves as more competent than general PE majors. Qualitative analysis of the interviews yielded three common themes: (1) Participants did not feel prepared to teach individuals with disabilities in inclusion; (2) Participants (except from Mayagüez) felt prepared to teach general PE; and (3) Participants, except those from Bayamón felt their current degree program was deficient in providing practical experiences teaching PE to individuals with disabilities.

References
ATHLETIC IDENTITY, SELF-ESTEEM, PHYSICAL SELF AND SUBJECTIVE WELL-BEING IN PORTUGUESE ATHLETES WITH DISABILITY

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Key words: Athletic Identity, Self-Perceptions and Disability Sport.

Introduction
Athletic identity is defined as the degree to which an individual identifies with the athlete role and looks to others for acknowledgement of that role (Brewer, 1993). According to Van de Vliet, Van Biesen, and Vanlandewijck (2008) athletic identity is related to health and physical fitness, self-esteem, social relationships and confidence as well as participation in physical activity and exercise. Research in individuals with disability revealed athletic identity as an important component of self-concept which was analysed on the premise that sport-related psychological benefits such as self-esteem, physical self and subjective well-being would be manifested most strongly in athletes whose self-concepts were strongly tied into the athlete role (Martin, 1999). The purpose of this study was to investigate athletic identity, global self-esteem, physical self-perceptions and subjective well-being in Portuguese athletes with disability and assess hypothesised relationships between variables.

Methods
Participants were Portuguese athletes with disability (N=37), 13 female (24.15±6.16) and 24 males (28.83±6.62), competing at two different levels: regional/national (RNL) and international/paralympic (IPL). All participants were assessed using Portuguese versions of the following instruments: Physical Self Perception Profile, Rosenberg Self-Esteem Scale, Athletic Identity Scale, Satisfaction with Life Scale, the Leader Scale and Perceived Stress Scale.

Results
RNL athletes reported higher levels of self-esteem, physical self-worth and physical strength whereas IPL athletes reported higher levels of physical confidence and body attractiveness, higher levels of satisfaction with life (both in general and at the moment) and perceived stress as well as higher levels of athletic identity (both global and in the four sub-domains). Comparison between groups revealed significant differences for physical strength (U= 102.5, p < .05), for the four dimensions of athletic identity: social identity (U= 54.0, p < .01), self identity (U= 12.5, p < .01), negative affectivity (U= 58.5, p < .01) and exclusivity (U= 26.5, p < .01) as well as for the overall value for global athletic identity (U= 29.0, p < .01). Marginal values were also found for physical self worth (U= 112.5, p=.073) and perceived stress (U= 107.5, p=.055) that due to the small sample size should be considered in future studies.

Discussion
Portuguese IPL athletes possess a strong positive athletic identity, perceived self and subjective well-being in which they identify themselves as being ‘real athletes’.

References
The aim of this study is to test the repeatability of some physiologically significant parameters calculated during a stabilometric test in one-leg and two-leg stance conditions. The study aims also to assess which relation exists between the two tests carried out in the two conditions: open eyes (EO) and closed eyes (EC). Twenty-six persons who regularly practiced sport at a not competitive level were investigated. Using the TecnoBody Prokin platform (PK 214 P) two tests were performed, one lasting 30 s and one lasting 60 s. The calculated variables were: the average movement of the the centre of pressure (CoP) in the frontal plane (mm) and its Standard Deviation (devst ml), the average movement of the the centre of pressure in the sagittal plane (mm) and its Standard Deviation (devst ap), the average speed in anterior-posterior direction (mm/sec), the average speed in medium-lateral direction (mm/sec), the ellipse area (mm$^2$), and the perimeter length (mm) described by the CoP during the test.

In the two-leg stance test the subject was barefooted in standardized position. In the one-leg stance position the subject was asked to use the dominant leg as a support and the other one with the knee flexed at 90°.

The above described protocol was adopted for three nonconsecutive days. Using the Interclass Correlation Coefficient (that is the variance due to subjects, ICC) and the ANalysis Of VAriance (ANOVA) the variances due to the trials, the days and the subjects were established.

The average speed in ap direction, the ellipse area and the perimeter length appeared the most repeatable variables in the one-leg stance position with EO (60%<ICC<70%). The ellipse area and the perimeter length resulted the most repeatable variables in two-leg stance EO (60%<ICC<70%). In OC conditions no variable was found repeatable (ICC < 60%). The devst ap, the devst ml, the average speed in ap direction, the average speed in ml direction, the ellipse area and the perimeter length showed standard error of the mean in the range 5%-10% in all tests. Average speed in ap direction vs perimeter length, average speed in ml direction vs perimeter length, devst ap vs ellipse area, and devst ml vs ellipse area were found to correlate (r > 80% and p < 0.05.)

Postural control was found worse in EC condition for all test (p<0.05).

References
EVERY DAY WHEELED MOBILITY SKILLS SURVEY –
A PILOT STUDY AMONG SCI ATHLETES

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Key words: hand rim wheelchair, mobility, survey, ADL wheelchair skills, spinal cord injury.

Wheeled mobility skills (WM) are key to daily functioning, and assumed to contribute to participation and quality of life of people with spinal cord injury (SCI). Measurement of WM can assist in diagnosis and monitoring of functional wheeling capacity, in the choice of skills to be trained in rehabilitation and allows evaluating systematic training interventions.

Objective
To develop a standard WM test, a survey among wheelchair athletes was initiated to collect SCI athletes’ opinions regarding the most essential skills for everyday life and to find out where they learned to perform these skills. The result of this pilot provides valuable feedback for refinement of the WM survey prior to testing at 2008 Paralympics.

Methods
Survey development was iterative. Finally, a list of 24 skills was presented. For all 24-items, the respondents were asked to state the essentiality of the skill (1-5 scale: Not essential at all to Extremely essential), and they were asked where they learned to perform each skill. In addition, they described the level of WM gained during their rehabilitation period (1-5 scale: Poor to Excellent).
The survey was piloted with a group of 25 wheelchair basketball players (Paraplegic, males/female: 23/2), playing in the highest league in Britain, USA, Belgium, The Netherlands, Greece and Israel.

Results
Preliminary results on 25 subjects (mean age: 31.6±8.6 yrs; mean time since injury: 14 ±9.9 yrs) are presented. The most essential skills were: transfer into/out of car (4.6±0.9), transfer from floor to wheelchair (4.3±1.3), ascending/descending 5cm sidewalk (4.2±1.0). Judged as less essential skills were: one handed wheelie (2.4±1.6), 20 meter sprint (2.6±1.3), and 5 minutes on a treadmill (2.8±1.5).

48% Of the respondents stated they learned to perform "very essential" and "extremely essential" skills in rehabilitation, while 44% claimed to have learned to perform those skills on their own. The mean score of 'WM skills gained in rehabilitation' was "good" (3.4±1.2). Britain's rehabilitation centers received a "very good" (4.3±1.1), whereas Israeli hospitals were graded "fair" (2.8±1.3).

Discussion & Conclusions
Nearly half of the very essential skills were self-taught. There seems a great importance to incorporate these skills in inpatient rehabilitation or in post hospital WM workshops. It is recommended to conduct a comparative study of rehabilitation programs in different countries in order to improve WM teaching methods. This pilot study provided the research team feedback for designing the final survey.

References
EFFECTS OF AQUATIC INTERVENTIONS IN CHILDREN WITH NEURO-MOTOR IMPAIRMENTS: A SYSTEMATIC REVIEW OF LITERATURE

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Purpose
The purpose of this article was to determine the effectiveness of aquatic interventions in children with neuro-motor impairments. A search of electronic databases that included Medline, Eric, PsychLit, PEDRO, SIRC, CINAHL and Cochrane between 1966 to January 2005 was conducted. We searched using the following key words: ‘hydrotherapy’, ‘aquatic therapy’, ‘water exercise’ and swimming”. An additional resource that was attained manually included the Aquatic Therapy Research Bibliography until 1999. Titles and abstracts were assessed manually according to the following inclusion criteria: (1) population (children with neuro-motor or neuro-muscular impairments) (2) intervention (aquatic program). Articles were reviewed according to merit of design, population participants and outcome measures with respect to International Classification of Function and Disability terminology (changes in body function, activity level and participation).

Results
Results extracted 11 articles of the 173 that were retrieved met the inclusion criteria. These included one randomized control trial, two quasi experimental, one cohort study, two case control studies and five case reports. Seven articles reported improvement in body functions, and seven articles reported improvement in activity level. Two of the four articles that investigated outcome measures regarding participation described positive effects while the findings of the other two revealed no change. None of the articles reported negative effects due to aquatic interventions.

Conclusion
According to this review, there is a substantial lack of evidence-based research evaluating the specific effects of aquatic interventions in this population.
APA AND MULTIPLE SCLEROSIS

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Key words: physical exercise, chronic disease, quality of life.

Multiple Sclerosis (MS) is a chronic inflammatory disease of the central nervous system that leads to the destruction of myelin, oligodendrocytes and axons that predominantly affects young adults in their most productive years. MS pathophysiology is characterised by many symptoms: fatigue, spasticity, poor balance, motor weakness, heat sensitivity and mental depression. These, and other, reduce individual ability to perform activities of daily living and social interactions and may lead to physical inactivity associated with the development of secondary diseases. A multidisciplinary approach to MS is important to improve and maintain functional abilities, management of physical exercise has an important role in this process.

In a clinical setting we have been run a program of adapted physical activity (APA) for people with MS, based on a specific training protocol that stimulated aerobic fitness, strength and flexibility. Moreover, emotional aspects and motivating atmosphere have been cared. The purpose of our study (designed as pre-post case study) was to evaluate the effects of an APA program on functional capacity, quality of life perception (QOL), fatigue and independence.

Eight clinically definite MS patients, 4 men and 4 women (mean age 46.63±8.18 years, mean disease duration 8.25±5.18 years), with mild to moderate disability (EDSS 2.5-4.5) participated in a 20-sessions exercise program. The intervention consisted of an aerobic, strength and flexibility circuit training with individualized intensity, practised 3 times/week and by 2 patients simultaneously. The sample were evaluated, at baseline and at 8 weeks, by means of different instruments: SF-36 (Short Form-36 Health Survey) and WHODAS II (World Health Organization Disability Assessment Schedule II) to assess health and QOL; FIM (Functional Independence Measure) and BARTHEL (Modified Barthel Index) to assess patients’ autonomy; FSS (Fatigue Severity Scale), FDS (Fatigue Descriptive Scale) and Modified Fatigue Impact Scale (MFIS) to evaluated fatigue perception. Moreover, functional tests were made to assess changes in maximal oxygen uptake (VO2max), in endurance (6-Minute Waking Test), in walking speed (T25-Foot Walk) and in upper extremity function (9-Hole Peg Test).

Compared with baseline the MS patients demonstrated a significant improvement of QOL (WHODAS II +10.20%, p<.01, role physical +120% p<.026 and vitality +33.85% p<.012) and of fatigue sensation (FSS +12.85% p<.034, FDS +12.20% p<.049). Even though the short duration of the training, also functional capacity had registered increments.

Our findings lead us to support that a specific APA program could be an important functional element within a therapy program aimed at the treatment of MS.

References
PLANNING OF SPORTS TRAINING FOR ATHLETES WITH DISABILITIES

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Key words: planning, scheduling, training, test.

Introduction
The performance of disabled athletes depends on the theoretical knowledge and practical abilities of the professionals working with them. The training planner schedules training times and methods enabling the athlete to achieve the best performance only after consulting the professionals below and customises athlete’s programme in line with their periodic assessments (Gollin, Vota 2004). Sport doctor checks that athlete’s physical condition enables him/her to perform the chosen activity. Physical therapist and orthopaedist evaluate any morphological and structural changes which might require biomechanical modifications to prostheses or ergonomic modifications to vehicles or training equipment. Personal trainer organises the exercises needed to improve general muscle and joint strength and recover the function of individual body regions. The trainer encourages and reinforces techniques and tactics aimed to the specific sport. The nutritionist manages nutrient intake in line with training and competition energy requirements. The psychologist manages the cognitive part, keeping high athlete’s motivation.

Methodology
A sports season planning method is proposed, based on the development of a grid for the scheduling of training methods, which can be adapted in line with athlete’s functional response to tests evaluating the development of his/her fitness (strength, resistance, speed), coordination and mental and physical health (Gollin 2006). Fixed on the grid are the training periods: basic, specific, competitive and transition: the weeks of each month (microcycles), grouped into larger units (mesocycles); the tests, training and selection trials; the trend of the quantity and intensity of the annual workload; and weeks of active recovery from training sessions.

Conclusions
Training without short, mid and long term assessments is risky and counterproductive. Training programmes for disabled athletes cannot neglect the organisation and management of the annual training schedule, which, if properly designed, focussed and subjected to regular assessments will help athletes to achieve their best sporting performance while respecting their physical, muscular and psychological wellbeing.

References
Gollin M., La costruzione di un modello teorico per la programmazione delle frequenze di allenamento settimanali, Professione Fitness, 2° parte, Settembre - Ottobre 2006, pp. 70 – 73.
THE POSSIBLE RELATIONSHIP BETWEEN THE TRADITIONAL CHINESE MEDICINE AND THE INTEGRATIVE MOTOR AND SPORT ACTIVITIES IN THE EDUCATIONAL CONTEST

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Key words: Traditional chinese medicine, motor and sport activities, disability educational contest.

The support teacher specialist in disability works to integrate the disabled person into society through every teaching activity which can contribute to the development of his/her autonomy and the strengthening of the vicarious skills. From this point of view, every didactic proposal, including the ones of motor and sport area, has an effect on the whole educational system. Therefore we think it is useful to reconsider some aspects of the teacher training process, such as the sense-emotional consciousness; the way in which the teacher could decipher the different behaviours of the subjects composing the class, getting crucial information for planning the didactic-educational action and choosing the most suitable strategies.

Here it is useful to underline that in Chinese traditional medicine the mind-shen is considered one of the life substances responsible for many activities concerning the training process such as thinking, consciousness, intuition, memory, invention, imagination. The techniques promoted by the Chinese traditional medicine, such as Tui-nà and An.Mò, Qi Gong gymnastics, transferred into an educational contest and adapted to the didactic and cultural boundaries of the school system, can go along with the supplementary activities and represent a new strategy in the learning process.

The proposal of a supplementary didactic workshop using some elements of the Chinese traditional medicine is also a tool for the expansion of the educational proposition for the disabled student with a sport and motor programme. In particular, Qi Gong is suitable in supporting the learning process because through its specific activities it fosters an energetic balance bringing harmony between the physiological and emotional functions while playing a physical activity.

The training of the support teacher is a good field for working towards the acquisition of a methodology in which elements of the Chinese traditional medicine can coexist with the sense-perceptive-motor listening techniques (Gamelli, 2001; Sotte-Pippa 2001) to facilitate the integration of the disabled student through specific physical activities, exalting the emotional value of the motor experience (D. Goleman, 1998). Such training would also represent an opportunity to strengthen the educational propositions for disabled students provided for by departmental programmes and to investigate new fields of the didactic research requested by the school.

References
SIMILARITIES AND DIFFERENCES BETWEEN COACHING VOLLEYBALL AND SITTING VOLLEYBALL

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Key words: Sport for people with physical disability, Sitting volleyball, Special training methods for people with disability

Introduction
Sitting volleyball is a team game, which was developed from volleyball for people with physical disability. The aim and the basic idea of this two games are the same, there are only some differences on the rules: the net is lower and the field is smaller in sitting volleyball game, and players must have contact with the court with the part of the body from the shoulders to the buttocks at all times when playing the ball. To stand up, raise or take steps is forbidden. Other difference is, that the front-row players are allowed to block the service of the opponent. (This is forbidden in volleyball.) We wondered if these rule differences influence the tactic of the sitting volleyball games.

Research
The aim of our research was to analyze and to compare the man and women volleyball and sitting volleyball game elements. Based on game analyzing we would like to summarize the specific sitting volleyball technic and tactic elements, which differ to volleyball game.

Methodology of the research
We analysed international male and female volleyball and sitting volleyball games filmed by a video camera. We used the method observation according to the observation principle of volleyball games by Rigler (Rigler, 1981). We analyzed 4342 ball touches of man and women sitting volleyball games. All ball touches (servings, blocks, receiving the serving, setting, attacks, defence) were registered and analyzed. The place of the executing, the techniques of every hits and the efficiency were registered and analyzed.

Results
As a result we have founded, that there are significant differences between two games, volleyball and sitting volleyball. Block is more often used in sitting volleyball, it is the most effective defending game element. In sitting volleyball overhand passes are more often used and are more effective like other technics. Because of the smaller field and lower net, sitting volleyball is a faster game than volleyball, so “saving” touches are more often used, and must be also practised on training. In our presentation we would like to show all the differences -considered to game elements- between the games and also assume the specific exercises, which must be practised on sitting volleyball training.

References
World Organisation Volleyball for Disabled: http://www.wovd.info/
KEYWORDS: students with disabilities, peer tutors, inclusion, physical education.

Researchers often cite the inclusion of students with severe and multiple disabilities (SMD) as being the most challenging, especially when one of the goals of inclusion is frequent, meaningful and spontaneous interactions between students with SMD and their peers (Place & Hodge, 2001; Slininger, Sherrill, & Jankowski, 2000). While applied peer tutoring strategies have been successful in enhancing the academic outcomes of students with disabilities with respect to motor engagement in GPE (Lieberman, Newcomer, McCubbin, & Dalrymple, 1997), empirical investigations on continuous multi-component behavioral interactions between students with and without disabilities has been limited. Given the extent and relevance of the reported information, there is need for research that examines specific behavioral interactions demonstrated by students with and without SMD in natural GPE environments.

This study investigated the effect of trained peer tutors on physical, instructional and social interaction behaviors between students with SMD and their peers without disabilities in inclusive elementary physical education. Additional measures addressed the activity time data of students with disabilities. The study was conducted under three instructional support conditions for students with SMD: (a) teacher-directed, (b) peer-mediated, and (c) voluntary peer support. Nine students without disabilities served as age appropriate peer tutors for three students with SMD. All peer tutors attended three, 30-minute training sessions across three consecutive days. A single subject delayed multiple baseline research design across participants was used. All observation sessions were collected on videotapes. The effect of peer tutoring on multi-component behavioral interactions was determined by the Computerized Evaluation Protocol of Interactions in Physical Education (CEPI-PE), a data collection program for multiple interaction behavior measures in inclusive physical education settings.

During teacher-directed conditions students with SMD indicated high level of interactions with adults. The presence of peer tutors during peer-mediated conditions had positive effects on increase of instructional and physical interaction behaviors between students with and without disabilities, while social interactions remained low. Also, interactions of students with SMD with peer tutors and with other peers were high during voluntary peer support conditions. The activity engagement time data increased for all students with SMD throughout intervention sessions. Interactions between students with SMD and teachers decreased towards the end of intervention. In this research, using age appropriate peer tutors were effective at assisting students with SMD in inclusive general physical education.
GAIT ABNORMALITIES IN PATIENTS SUFFERING FROM TYPE 2 DIABETES

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Key words: type 2 diabetes, gait analysis, fall prevention.

Introduction
It is well known that people with diabetes commonly develop damage to nerve tissue [1]. On average, symptoms become evident 10 to 20 years after diabetes has been diagnosed. Approximately 50% of people with diabetes will eventually develop nerve damage. Peripheral neuropathy develops in stages: at the beginning, intermittent pain and tingling is noted in the extremities. Later on, pain is more intense and constant. Finally, a painless neuropathy develops. One of the consequences of neuropathy is the decreased proprioception, which may lead to abnormal gait patterns [1,2]. This work presents a study carried out on type 2 diabetes patients to ascertain if they are affected by gait abnormalities more frequently than normal subjects. Moreover, we verified that participating a “Adapted physical activity promotion project for subjects suffering from Type 2 diabetes mellitus” may improve their locomotion capabilities and decrease their fall propensity.

Materials and methods
A pilot study carried out on a population of 9 patients demonstrated that they show a higher frequency of gait abnormalities with respect to a population of normal subjects of similar age. To validate these preliminary results, a group of more than 40 patients suffering from type 2 diabetes (pilot project to promote physical activity in Type 2 Diabetes Mellitus, a partnership ASL 1 To – SUISM – Circoscrizione 10 of Torino) underwent a first gait analysis evaluation before undergoing a cycle of adapted physical activity. At the end of the cycle they underwent a second evaluation session.

Each session consisted of recording foot-switch signals and knee joint angles in the sagittal plane, while the subject was walking back and forth over a length of 9 m for approximately 150s. The gait cycle types used by subjects were then obtained by using a user independent algorithm, and, for each relevant type, statistical gait analysis was applied to goniometric as well as to foot switch signals. Results were then evaluated to obtain a fall-propensity score for each subject.

Results and discussion
Although this study is still in progress, some preliminary results found during the pilot study seem to be confirmed. First, diabetic patients are more inclined to fall than subjects belonging to the control group. The most frequent gait abnormalities that we found are a) frequent forefoot contact, b) prolonged push-off phase, c) fast knee flexion in the weight acceptance phase, and e) stiff leg at the initial contact. During the congress we will present data relative to the entire study.

References
THE EFFECT OF A SWIMMING PROGRAM ON GROSS MOTOR FUNCTION OF CHILDREN WITH CEREBRAL PALSY

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Key words: Cerebral palsy, gross motor function, swimming program.

Introduction
The purpose of the study was to examine the effects of a 10-week swimming program on the gross motor function, range of motion and spasticity of 6 students (4 boys and 2 girls) with cerebral palsy (CP). Additionally, 6 students (3 boys and 3 girls) with CP, approximately of the same age, constituted the control group. The students were able to walk independently with or without a gait aid and were able to follow simple instructions.

Method
The program was held twice a week and consisted of: a) flexibility exercises and b) basic crawl and backstroke swimming, with training intensity of 60-80% of the maximal heart rate. Measuring instruments were the Gross Motor Function Measure (GMFM) (Russell et al., 2002; Thorpe & Reilly, 2000), a plastic goniometer and the modified Ashworth Scale (Bohannon & Smith, 1987). Independent variables were the experimental condition (experimental and control groups) and time (first and final measurement). Dependent variables were: a) the standing and walking GMFM scores, b) the active and passive range of motion (hip, knee), and c) spasticity.

Results
The 2 X 2 multivariate ANOVA revealed no interaction between experimental condition and time, with respect to the gross motor function (F = 3.16, p = .089). Further, the post hoc univariate analysis was not significant as well. Examination of the mean scores revealed that the experimental group increased the mean walking scores to a wider extend (M1 = 59.02, M2 = 65.04) compared to the control group (M1 = 59.02, M2 = 59.95). Similarly, no interaction was found with respect to the active range of motion of the hip (p = .076, F = 3.92) and the knee (p = .090, F = 3.52). Significant interaction was found with respect to the passive range of motion of the hip (p = .001, F = 20.97), knee (p = .045, F = 5.28), and spasticity of the adductors (p = .002, F = 16.35) and knee flexors (p = .049, F = 5.33).

Discussion
The present findings suggest that a swimming program may have a positive effect in gross motor function, range of motion and spasticity, in students with spastic cerebral palsy. Future researchers may evaluate the effectiveness of swimming programs with longer duration, a wider sample size, the retention of the effects in a follow up assessment, etc.

References
VALIDITY AND RELIABILITY OF THE QUALITY OF LIFE INDEX AND THE UCLA LONELINESS SCALE IN GREEK ELDERLY

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Key words: Quality of Life (QoL), Loneliness, Elderly.

Introduction
The present study was designed to provide validity and reliability evidence of the Quality of Life (QoL) Index (Ferrans & Powers, 1998; 1984) and the UCLA Loneliness Scale (Russell, 1996) in a sample of Greek elderly.

Method
Following translation validity evidence, 79 elderly were examined in the senior citizen’s clubs in Athens, Greece. Construct validity was tested through the following comparisons: a) gender: males vs females, and b) age: 60-74 years old vs 75 and above years old. Statistical analyses were based on multivariate (MANOVA) and univariate (ANOVA and t-tests) comparisons in order to support the hypotheses tested.

Results- Discussion
The results revealed that males had significantly higher quality of life and significantly lower loneliness than females. Moreover, males and females had significant differences at three factors of the QoL Index (health/functioning, socio/economic factor, psycho/spiritual factor). No gender differences were found for the family factor. Further, the 60-74 years elderly had significantly higher quality of life than the 75 years old and above group. The 60-74 years group had also significantly higher scores at three factors of the QoL Index, expect the psycho/spiritual. Finally, no significant differences, according to age, were found for loneliness. For concurrent validity, there was a significant intercorrelation between quality of life and loneliness (r = -.494, p ≤ .05). The internal consistency was tested with Cronbach alpha, with scores ranging from .656 to .825 for the four factors, and .890 for the QoL Index, while for loneliness the Cronbach alpha was .812. Further, the test-retest coefficients were .793 for the QoL Index, .805 to .916 for the four factors and .985 for loneliness. Overall, the measures obtained with the QoL Index and UCLA Loneliness Scale were sufficiently valid and reliable and may be used with confidence with senior citizens in Greece.

References
THE NATURE OF SERVICE DELIVERY IN ADAPTED PHYSICAL EDUCATION AND SUPPORT FOR INCLUSION

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Key words: Inclusion, Adapted physical education, Service delivery, APE consultants.

International studies (Kudláček, Válková, Sherrill, Myers & French, 2002; Lienert, Sherrill & Myers, 2001; Meegan & MacPhail, 2006) tell us that with a growing number of students with disabilities being included in general education, more and more physical education teachers are faced with the reality of teaching these students together with the rest of the children. In most cases teachers are not permitted to decide if they will have a student with a disability in their class, but they can decide to which extent they will include this student (Lienert et al., 2001). However support services are available only in some countries, states and school districts. From few published studies we know very little about the nature of work of adapted physical educators, their experiences and concerns related to providing support to inclusion. The study of Lytle and Hutchinson (2004), which focused on the nature of work of APE consultants in California, served as guidelines for present study. All studies published on the nature of work are from USA. Still we believe that in there is a difference in the nature of service delivery, quality and level of APE in different states. Therefore it is important to analyze adapted physical education services in a school district. The purpose of this study is to describe the nature of work of public school adapted physical educators in selected school districts in California, and Texas. The greatest significance of this study is creation of information base to guide improvement of service delivery and professional preparation. Participants included 6 females and 2 males with experience teaching (range of 2-23 years) in the field of adapted physical education. Data collection included individual in-depths interviews, demographic data sheets and interview notes. Results showed the differences in the nature of work among APE specialists. Participants had high teaching loads (44-90 students) and served wide range of schools (1-20), which creates quite different teaching profiles. Most teachers were involved in APE consulting. Results also indicated the needs to incorporate issues of consulting into teacher preparation and change the university studies more relevant to “real life teaching”.

References
ADVANCING PARALYMPIC SPORT THROUGH SCIENCE: INTERNATIONAL COLLABORATION

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Keywords: athlete classification, boosting, disability sport, elite sport, performance enhancement, skills testing, wheelchair rugby.

In January 2007, the International Network for the Advancement of Paralympic Sport through Science (INAPSS) steering committee was established. INAPSS is an initiative of the International Paralympic Committee Sports Science Committee (IPC SSC) and the steering committee comprises people from most IPC World zones.

INAPSS is a structure through which IPC SSC can ensure that important Paralympic sport science questions are addressed by experienced researchers who will provide quality answers. The geographically diverse membership of INAPSS guarantees an international and multicultural perspective and permits recruitment of comparatively large samples. In this way, IPC SSC and INAPSS are complementary in their tasks. A number of projects have been initiated and are described below.

Boosting in Paralympic Sport: “Boosting” refers to deliberate inducement of autonomic dysreflexia by athletes with high spinal cord injuries in order to enhance athletic performance. Boosting is extremely dangerous and IPC SSC has secured funding through the World Anti-Doping Agency to investigate the prevalence and attitude of athletes to its use. Data will be questionnaire-based and INAPSS partners have contributed to the design, distribution and analysis and results will inform a position statement on the practice of boosting in Paralympic Sport.

Evidence-based Classification in Paralympic Athletics: IPC Athletics has endorsed a project that will develop evidence-based methods for classifying athletes based on the extent of activity limitation resulting from impairment or, in other words, athletes are classified according to how much impairment impacts athletic performance (Tweedy, 2002). A large, multi-continental sample of athletes with disabilities is required and INAPSS partners will make a vital contribution to this effort.

Wheelchair Rugby: Identification of player motion characteristics during competitive wheelchair rugby games can be used to enhance coaching and training practices. Time-motion data has been collected by INAPSS partners during an international tournament in USA, and additional data will be collected during the Beijing Paralympic Games. INAPSS partners are also working to standardize fitness and skills testing protocols for wheelchair rugby players.

These projects indicate that, thus far, the INAPSS initiative has been successful although the true value of the network must be evaluated over a longer time period. INAPSS will continue to work toward the primary goals of optimizing sport performance in athletes with disabilities and addressing a variety of sport science issues to help drive the Paralympic Movement forward.

References
QUALITY OF LIFE COMPARISON BETWEEN ADULTS WITH CEREBRAL PALSY AND THE GENERAL POPULATION

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Key Words: CP, exercise, gross motor function, health survey, mental health, mobility, motor impairment, pain, physical disability, physical function, QOL, SF-12, well-being.

Introduction
Adults with cerebral palsy (CP) have activity and participation restrictions as a result of their physical and functional limitations. This paper examines QOL data on adults with CP enrolled in an exercise intervention study and compares it to QOL data for the General U.S. population (Ware et al., 2002).

Methods
Adults with CP who were able to follow directions, understand assessment questions and reported having pain were recruited to participate in an exercise intervention for pain management. Participants included 25 adults (16 females, 9 males) with a mean age of 42.4 years (± 11.5). Based on the Gross Motor Function Classification System (GMFCS), the breakdown of participants’ mobility status was as follows: Level I (n = 5), Level II (n = 1), Level III (n = 4) Level IV (n = 12), and Level V (n = 3). As part of the assessments, participants completed the SF12v2. Norm-based subscale (Physical Functioning (PF), Role Limitations due to Physical Health (RP), Bodily pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Limitations due to Emotional Health (RE), Mental Health (MH)) and summary scores (Physical (PCS), Mental (MCS)) were computed and compared to the General U.S. population norms and to a subset that reported limitations in use of arm(s)/leg(s).

Results
Comparisons indicate that adults with CP had lower PF and MH scores than either comparison group, however VT and SF scores were higher than the Arm/Leg Limitations group (Table 1). All other subscale scores were the same for the CP group and the Arm/Leg Limitation group. The CP group had a slightly lower PCS and higher MCS. A limitation of the study was the small size of the CP sample.

Table 1. Norm-based SF12v2 subscale and summary scores by group

<table>
<thead>
<tr>
<th></th>
<th>PF</th>
<th>RP</th>
<th>BP</th>
<th>GH</th>
<th>VT</th>
<th>SF</th>
<th>RE</th>
<th>MH</th>
<th>PCS</th>
<th>MCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>49.63</td>
<td>49.37</td>
</tr>
<tr>
<td>Cerebral Palsy</td>
<td>34.13</td>
<td>40.04</td>
<td>39.91</td>
<td>42.07</td>
<td>48.96</td>
<td>47.28</td>
<td>43.11</td>
<td>43.08</td>
<td>37.43</td>
<td>48.65</td>
</tr>
<tr>
<td>Arm/Leg</td>
<td>40.11</td>
<td>39.97</td>
<td>40.86</td>
<td>43.21</td>
<td>44.68</td>
<td>43.42</td>
<td>43.91</td>
<td>46.32</td>
<td>39.52</td>
<td>46.80</td>
</tr>
</tbody>
</table>

Conclusion
Given the large number of motorically impaired adults with CP in this sample, it is not surprising that PF and PCS were lower than both comparison groups. The higher VT, SF and MCS scores are interesting when considering the extensive motor impairment of the CP group, however, the majority of participants were engaged in community programs, which may have influenced these scores.

References
INCREASE OF THE ENDURANCE CAPACITY BY HAND BIKE ON A PARAPLEGIC MALE ATHLETE: A CASE STUDY

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Key words: SCI, hand bike, paraplegic, VO\textsubscript{2}max, training, endurance capacity, disabled people, APA.

Introduction
Several authors have emphasized the importance of physical exercise and sport in people with Spinal Cord Injuries (SCI) in order to maintain or improve adequate physical fitness levels. Some others also claim that higher fitness levels improve daily functioning and health status and, for SCI, physical training is an important part of the rehabilitation process, focused on reaching an optimal level of functional ability and independence. Among aerobic physical capacity measures, peak oxygen uptake and VO\textsubscript{2}max are closely related to the level of function of biological systems.

The aim of this case study is to give concrete indications about the possibility to improve the aerobic capacity, by using a hand bike with an active paraplegic athlete.

Methods
One paraplegic male athlete (age 32 yrs, BMI 24.53) volunteered to participate in the study and underwent the following tests performed on his own race hand bike twice with an interval of 121 days: 1) an incremental test till exhaustion, allowed the maximal mechanical power (W\textsubscript{max}) and the maximal aerobic power (VO\textsubscript{2}max) measurement on a breath by breath basis (Sensormedics, Italy); 2) an incremental intermittent test with blood lactate measured (Lactate Pro LT-1710) at the end of each of the 6 minutes step was used to draw the lactate/power curve and to calculate the mechanical power that elicits the blood lactate concentration at 2 and 4 mM (W\textsubscript{2} and W\textsubscript{4}). The disability of the athlete was a complete traumatic spinal cord injury at the level of the 10\textsuperscript{th} thoracic vertebra (Th10). All measurements were performed in the Human Performance Lab (Centro Mapie, Castellanza, Italy). During the four months of training the athlete completed: 1442 km at intensity between 70-78\% of maximal heart rate (HR\textsubscript{max}), 1420 km between 82-87\% of HR\textsubscript{max}, 180 km between 92-93\% of HR\textsubscript{max} and 427 km above 95\% of HR\textsubscript{max}.

Results and conclusions
An increase of all physiological parameters occurred: VO\textsubscript{2}max, 2.59 vs 3.25 l/min, W\textsubscript{max} 196 vs 211 Watts, W\textsubscript{2} 101 vs 150 Watts and W\textsubscript{4} 125 vs 179 Watts.

The hand bike ergometer seems to be interesting for SCI because it mimics the daily motor tasks of wheelchair users and allows for adjustment of the wheelchair. Furthermore, on the basis of the results of this study, it could be recommended to train at above 70\% of the maximum heart rate, to provide an enhancement of endurance capacity for people with SCI.

References
PRELIMINARY STUDY ON ADAPTED PHYSICAL ACTIVITY (APA) FOR PATIENTS SUBJECT TO HEMODIALYSIS: CONTRIBUTION TO CLINICAL IMPROVEMENT AND PERCEIVED LIFE QUALITY

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Key words: adapted physical activity, hemodialysis, chronic renal failure, anaemia.

Introduction
This study, still in progress, originated in the out-hospital HD facility of Settimo Torinese, affiliated to the ASL TO4 of Chivasso (Turin) where 34 out-patients with End Stage Renal Disease (ESRD) are treated by regular Dialysis treatment (RDT). The RDT is a physical therapy which substitutes the renal functionality, applied to persons affected by ESRD. this condition representing the last phase of many renal diseases. Among the pathologies with a chronic trend, the RDT is one of the most expensive medical treatments used in developed countries, the ESRD representing in Italy the second pathology for expenditure after diabetes mellitus. Nevertheless, patients subject to RDT may still retain symptoms of physical weakness leading, as a consequence, to a sometimes marked reduction of social life. As ESRD progresses, before RDT, circulatory diseases, anaemia, bone decalcification, peripheral neuropathy and loss of muscle mass may occur. As a result, the patient decreases his motor activity with a worsening of his cardio-circulatory, muscular and skeletal conditions. Related to RDT, patients may show: uneasiness and post dialysis asthenia, easy fatigue, cramps, state of depression.

Purpose
Along a scheduled period of two years the aim of this study is to evaluate if APA could have a positive influence by improving the quality of life of patients subject to dialysis, reducing their functional restrictions, the joint and muscular pains, the weight of possible cardiovascular complications, the reduction of stress and depression.

Method
The sample of our study is a group of 10 persons subject to dialysis, aged between 51 and 80 years, inserted for a two years period in a APA dedicated program. The activity takes place three times a week, in the out-patients RDT facility environment, before starting the dialysis therapy. The duration of the activity session is about 30 minutes, and, as months go by it may be increased. Every six months the effectiveness of our intervention is evaluated by examining the variations, by paired statistics, of the level of: haemoglobin, vitamin B12, ferritin, serum iron, folate, transferrin, beta2-microglobulin. Weekly dosage of erythropoietin and eventual blood transfusions are recorded. Then, tests have been carried out on some physical performances: articularity, resistance, flexibility.

Results
During each session a global work on different corporeal areas has been carried out. Moreover the attention was focused on equilibrium, proprioception, respiration and perception of one’s own body: these are essential elements in order to have a good quality life and to prevent the risk of relapses. Moreover this activity is favouring sweating in order to make that the greater loss of liquid allows a greater amount of drinking without affecting the need of ultrafiltration. Moreover the patients showed a positive attitude to take part of this APA activity, enhanced by the perception, among most of them, of a progress in their motility in the first six months interval of the study, while no variations were still found in the blood parameters taken under control.

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A QUANTITATIVE METHOD FOR THE ASSESSMENT OF MOTOR CAPACITY IN ELDERLY SUBJECTS

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Key words: level walking, accelerations, motor ability, elderly.

Introduction
The evaluation of the effectiveness of physical activity is usually performed at skills level using tests that provide semi-quantitative measures based on predefined scales. These tests are quick, inexpensive, and well-accepted by the subjects, but often lack of sensitivity and supply insufficient information about the causes of unsatisfactory performance. Instrumented movement analysis may allow overcoming these limitations. However, for field applications, experimental set-ups and protocols “economical” for the experimenter and minimally perceivable to the subject must be devised. This study proposes a method for the assessment of walking ability which can be implemented in the field using wearable sensors.

In able-bodied individuals the oscillations of head, trunk and pelvis during level walking are characterised by quasi sinusoidal trajectories and by an attenuation of the acceleration going from pelvis up to head level, allowing for a better control of equilibrium [1]. This ability to control head accelerations is expected to be compromised in elderly subjects, and its measure could be a suitable parameter for their motor capacity assessment [2].

Methods
A stereophotogrammetric system was used to reconstruct the displacement of markers located at head, shoulder, and pelvis level while 16 young (24±4 y.o.) and 20 older (72±4 y.o.) women walked along a linear pathway. The root mean square of the accelerations in the medio-lateral (ML), antero-posterior (AP), and Vertical (V) directions were calculated and were used to define three coefficients that quantified the attenuations of the accelerations going from pelvis to head, from pelvis to shoulder and from shoulder to head.

Results and discussion
The attenuation coefficients were independent from walking speed, and hence suitable for group and subject comparison.

Both groups attenuated the AP accelerations both from pelvis to shoulder and from shoulder to head. However, the reduction of the shoulder to head acceleration was less effective in older women, suggesting that, in this population, the ability to exploit the cervical hinge to attenuate the AP acceleration is challenged. Young women managed to exploit a pelvis to shoulder attenuation strategy also in the ML direction, whereas in the elderly group the head acceleration was even larger than the pelvis acceleration.

Conclusion
The loss of ability in controlling the head acceleration can be one of the causes for the reduced walking ability in elderly women and therefore a parameter sensitive to motor capacity variations. The accelerations of the trunk and head may be measured using wearable devices therefore making the method applicable in field situations.

References
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Key words: adapted physical activity, community-based program, rehabilitation.

Introduction
In chronic stroke survivors impairments lead to a sedentary life style. This in turn, causes new impairments (e.g., muscle atrophy, cardiorespiratory deconditioning, altered joint range of motion), functional limitations and disability which further decrease activity levels. This vicious circle is worsened by non-disease conditions such as depression, lack of volitional pursuits, architectural barriers and lack of family and social support. There is published evidence derived from studies in hospital or rehabilitation settings that this vicious circle can be reversed by adapted physical activity (APA) programs [1]. However, very little evidence is available about whether these APA experiences can be safely and effectively translated in a community setting.

Methods
We investigated the safety and effectiveness of a 12-month community-based APA program for chronic stroke survivors in 71 participants. The APA program was aimed at improving muscle force, joint flexibility and cardio-respiratory function.

The 6-minutes walking test (6MWT), the short physical performance battery (SPPB), and the Berg Balance Scale (BBS) were used to assess gait and balance functions at T0, and after 6 (T6) and 12 months (T12). Basic activities of daily living profiles, depression, and quality of life were assessed using the Barthel Index (BI), the Hamilton Depression Scale (HDS), and the Stroke Impact Scale (SIS), respectively.

Results and Discussion
The proposed program was safe and improved gait and balance functions. Travelled distance and velocity recorded during the 6MWT increased at T6 and remained stable at T12; SPPB values increased at T6 and T12, with the latter increase due to an improved rising from a chair ability; BBS increased at T12. As a result, enhanced basic activities of daily living profiles were found: BI values increased at T6 and then remain stable at T12. Depression and quality of life improved as well: HDS was reduced at T6 and even more at T12 and the physical, communication, ADL and dexterity components of the SIS were significantly improved.

Many of the adopted indicators already reached the highest/lowest value at T6, suggesting that instrumented tests should be added in longer term assessments.

Conclusion
These APA experiences can be safely and effectively translated in a community setting. Larger studies are needed to determine whether community-based APA programs improve rehabilitation and health outcomes in the chronic stroke population.

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References
Towards Evidence-Based Classification in Paralympic Athletics - What Is the Optimal Seated Throwing Position?

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Key words: disability athletics, classification system, biomechanics.

In 2008 the classification system used in Paralympic Athletics was significantly revised (International Paralympic Committee 2007). The new classification system aims “to minimize the impact of impairment on the outcome of athletic competition” (Tweedy and Bourke, 2007, p.8) and this will be achieved if athletes are placed into classes according the extent of activity limitation caused by impairment or, more simply, according to how much their impairment impacts on athletic performance. The following study is one of a suite that have been planned to develop evidence-based methods for quantifying the extent of activity limitation resulting from impairment in Paralympic Athletics.

Paralympic Athletics comprises a range of activities, one of which is, seated throwing the focus of this study. To develop evidence-based methods for estimating how much various impairments (e.g., impaired muscle power, impaired range of movement) will impact on seated throwing, knowledge of the optimal seated throwing technique is required. It is well established that the parameters that determine throwing performance are the speed, angle and height of implement release (Zatsiorsky, Lanka, & Shalmanov, 1981) however only a small number of studies have described the kinematics required for optimising these parameters in the seated position. Unfortunately, these studies are of limited value for the purposes of determining optimal seated throwing technique because the participants have various types and severity of impairment and therefore use positioning and technique that will minimise the impact of their impairment on performance. In order to definitively describe optimal seated throwing position and technique, the technique used by people with intact body systems and structures should be studied and described.

The rules of Paralympic Athletics permit seated throwers to use two main types of technique – one where the non-throwing hand is free and performs a similar function to the conventional throw technique and the other where the athlete holds onto a rigid pole with the non-throwing hand, using it to assist with stability and propulsion. The series of experiments described in this paper answer the following research questions:

- What is the optimal seated throwing position when the non-throwing hand is free?
- What is the optimal seated throwing position if the athlete can hold onto a rigid pole with the non-throwing hand?
- What is the most advantageous technique – with or without a pole?

Answering these questions will contribute to the development of an evidence-based classification system.

References
PHYSICAL ACTIVITY PROMOTION PROJECT FOR NIDDM AFFECTED PERSONS

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Key words: active lifestyle, group physical education, diabetes type 2, complications, glucose intolerance, cardio-freq. adaptation, BMI, glycosylated haemoglobin.

Introduction
Many scientific studies demonstrated effectiveness of an active lifestyle on the increasing of well-being and prevention among many chronic diseases (such as: hypertension, hyperlipidemia and glucose intolerance).
It has been developed a Project of Promotion of Physical Activity in collaboration with SUISM Torino, Circoscrizione 10 Torino and S.C. Diabetologia e M. Metaboliche O. Oftalmico (ASL TO1).

Objective
To increase daily physical activity with Adapted Physical Activity in group class course. It has been taken part by a champion of 36 persons affected by Non-Insulin-Dependent Diabetes Mellitus.
Motor qualities and variations of NIDDM complication predictive factors have been periodically evaluated and clinical parameters taken during ambulatory visits have been registered.

Method
The champion has been selected from the same category of age, residence, BMI and clinic diagnosis date of NIDDM. The course of APA has been conducted by two doctors in Sport Sciences, one of them specialized in APA (76/s) as tutor.
Tests evaluation have been done every three months for a period of 12 months, during which the champion took part to the course classes, of 1 hour, 2 times a week. Observed motor qualities: flexibility with “sit and reach test” and divarication measurement of lower limbs; strength of the lower limbs with isometric test of “wall sitting” and dynamic test of bending repetition; heart rate and blood pressure adapt and restore response to a low intensity aerobic exercise (6 minutes walking).
At the beginning and at the end of the course, ambulatory data (in repose conditions) of weight, height, BMI, heart rate, blood pressure and glycosylated hemoglobin have been recorded.

Results
It has been recorded gradual increasing of performance among all motor tests, above all in the aerobic test of walking with lower compensation of blood pressure and heart rate and shorter periods of restore.
There has been correlation between “Sit and reach test” and glycosylated hemoglobin values. No significant improvement have been observed among BMI and weight distributions.

Conclusions
We consider that practicing in group courses of non-sportive physical activity, but oriented to development of personal abilities, contrast many degenerative effects of the NIDDM, furthermore improve movement levels in lifestyle of the champion.

References
Diabetes Prevention Program Coordinating Center, Biostatistics Center.
AN EVALUATION OF GAME EFFICIENCY OF FEMALE SITTING VOLLEYBALL PLAYERS

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Key words: sitting volleyball, game efficiency, classification.

Sitting volleyball is a paralympic team sport for persons with locomotor disabilities. Athletes must have a minimum disability to be eligible to compete. The purpose of this study was to examine the game efficiency of elite female sitting volleyball players with regard to their type of impairment and arm reach. Forty nine female athletes representing 7 national teams competing at the 2006 World Sitting Volleyball Championships took part in this study. All tournament games were recorded on a videotape by two experts. The Game Efficiency Sheet for Sitting Volleyball was developed to evaluate 17 parameters of sitting volleyball efficiency such as types of attack, block, receiving the ball, service and defence. The post-game analysis was done by two sitting volleyball experts. All athletes were grouped according to the type of impairment and arm reach in the sited position. Comparison of the game efficiency parameters in relative values (calculated per total number of point actions in the game) did not show statistically significant differences among players with various types of impairments. The Kruskal-Wallis Test indicated significant differences in the block with scored point, block with ball in the play, attack with scored point and ball receive with lost point among athletes grouped with regard to the arm reach. In conclusion, players with higher arm reach presented significantly better game efficiency. Authors suggested correctness of WOVD classification system for sitting volleyball players.

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References:
RELATIONSHIP BETWEEN ANAEROBIC POWER AND SELECTED TESTS FROM THE BECK BATTERY OF QUAD RUGBY

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Key words: wheelchair rugby, quadriplegia, anaerobic power, skill tests.

Wheelchair rugby (WR) is a team game for persons with disabilities. It contains elements of wheelchair basketball, ice hockey and American football. It is a contact game composed of many sport-specific skills such as picking, blocking, passing or wheelchair maneuverability which depend on strength, speed, endurance, coordination, and flexibility.

In Poland as well as allover the world the majority of WR players are individuals with quadriplegia – persons with four limbs paralysis or paresis. WR combines short intense bouts of exercise depend on anaerobic fitness. No scientific evidence has been found regarding the relationships between anaerobic parameters and field tests in wheelchair rugby players with quadriplegia. The purpose of this study was to examine relationship between arm anaerobic power and selected tests from the Beck Battery of Quad Rugby Skill Tests in 33 polish wheelchair rugby players. To determine the values of peak power (PP) and (MP) with respect to body mass, the Wingate Anaerobic Test (WAnT) procedure was used with an arm crank ergometer. Three tests (test 1 - maneuverability with the ball, test 3 - picking and test 4 - sprinting) of Beck Battery were selected with respect to the duration (6 – 100 s) and work specific for short -, intermediate and long-term anaerobic performance.

All tests were executed with use of personal rugby wheelchairs in sport hall with wooden floor. The Pearson correlation coefficient showed significant relationships between PP and test 1 \( (r = .70, p = .000) \), test 3 \( (r = -.60, p = .001) \) and test 4 \( (r = -.74, p = .000) \). Significant correlations were also observed between MP and test 1 \( (r = .74, p = .000) \), test 3 \( (r = -.76, p = .000) \) and test 4 \( (r = -.84, p = .000) \). Significant correlations between WAnT parameters (PP and MP) and chosen Beck Battery tests (first, third and fourth) may suggest possibility to use them as a control tools for anaerobic performance during the training process of wheelchair rugby players.

This work was supported by grant No DS-89 from the Polish Ministry of Education and Science.

References


EVALUATION OF SWIM ACTIVITY EFFECTS IN AN AUTISTIC HYPERACTIVE CHILD

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Key words: Autism, hyperactivity, swim activity, valuation.

Objective
To evaluate the effects of a swimming training programme in an autistic-hyperactive child.

Patient and methods
A six year old autistic-hyperactive child, not verbal (he utters only few words in specific situations), he is not able to concentrate on the same activity for more than ten minutes. He expresses his anger through shouts and messy movements, able to observe and imitate, but he doesn’t accept to obey verbal commands. He isn’t able to communicate with the environment. The child underwent an Adapted Physical Activity (APA) program in a swimming pool. Assessment was made at the beginning and at the end of the educational project and it is based on three points: level of competence according to Sherrill’s model, “Water Orientation and Swimming Skill Inventory” test, assessment of changed behaviour observed by his family and the operator at the beginning and end of the APA program. The APA program consisted in a weekly meeting of an hour, for 16 weeks.

Results
It has been noticed, according to Sherrill’s first competence level “movement exploration” an acquisition of the point 5 and the point 9; in the second competence level “advanced exploration” an acquisition of points 1, 2, 3, 4, 5, 10; and in the level “swimming for beginners” the acquisition of the points 2, 7, 9, 10, 11. No variation verified in the others points. In the “water orientation and swimming skill inventory” test the child changed from a score of 48 to a score of 63. Both the family and the operator noticed that the child’s behaviour changed. In the swimming hyperactivity, shouts and angers disappeared. The child is now able to concentrate on is activity for an hour, to coordinate his movements in the water and to recognise the different parts of the body following the instructor’s. He has improved in the emotional level, keeping in touch with the instructor both on a gestural and on a verbal level. Moreover, when the child is at home, after this activity, he is still quiet and he is improved in the space-temporal level as he can recognise the day of the swimming activity in the calendar.

Conclusion
Through the activity in the swimming pool it has been possible to reduce the hyperactive behaviours, to teach the swimming basic elements and to improve the emotional and space-temporal aspects typical of the autism.

References
DISABLED CHILDREN AND SCHOOL INSTITUTION: INTEGRATION OR NOT INTEGRATION?

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**Key words:** school integration, society, disabled children, normal endowed children, model, imitation.

The presence of a law that enacts the integration in some countries or the lack of it in others, determines a different mentality, as the exploitation or not exploitation of the disabled person determines the orientation of the legislation.

The most important goal for a child is normality, that allows him to express his own abilities to the best and to have relations in an effective and autonomous way with the environment. The first channel of learning is the imitation, that asks for a "model" to which the child must aspire to build his own personality: at school the best model is constituted by peers. A disabled child that attends integrated school every day relates with normal gifted classmates; on the contrary, a child in a special school finds himself among children having the same problems like him.

Search:

* Paris, medical - educational institutes only attended by disabled children:
  - Normal gifted children don't relate with disabled children
  - Disabled children reveal big difficulties in social adjustment and scarce ability to react to relation difficulties.

* Italy, primary school, with disabled children integrated in the class groups:
  - Normal endowed children interact with disabled companions and sustain them, building relationships of cooperation and mutual respect.
  - Disabled children start processes of imitation showing motivation and need to join the group. If stimulated in the correct way, they are autonomous to find useful adaptations.

**Conclusion**

Disabled children are fundamental for the growth and the reading of the world for the other children, and so on the contrary.

Integration derives from adults: they must create favourable conditions for the peer education.

Obviously, every solution of integration should be analyzed with reference to every single case and the seriousness of the disability. It is also important the planning of individualized specialistic interventions with structures of support and diversified times of integration.

Which effect can you have without scholastic integration on society? You cannot educate to the respect of difference as a source of enrichment, to "normality" as a concept rich in different facets, to the unconditional respect of the person, to the cooperation and the responsibility.

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HIPPOTherapy USE AS A REHABILITATION TOOL FOR USERS WITH SCI AT BEITOSTOLEN HEALTH SPORTS CENTRE

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Key Words: Spinal cord injuries, Hippotherapy, and Exercise.

Beitostelen health sports centre (BHSS) is recognized as an official part of the national specialist health service system providing rehabilitation services in Norway. The users are admitted to the centre by application from a medical doctor, a rehabilitation team, special pedagogues or any other educational or rehabilitation professional. The users are usually involved in health sports activities designed to improve physical abilities and foster higher levels of mental, physical, and spiritual well being. The objective of the study was to explore and evaluate the effects of the hippotherapy program on users with spinal cord injuries (SCI) at BHSS with a keen interest in the aims and objectives for the users. The research questions addressed issues such as, the specific aim of the program for each user, reasons for only 3 users for hippotherapy, whether the different lesion levels determined the individuals program, the specific horse movement gaits applied or used, the outcome of the program whether beneficial or not, indications and contraindications for the users. The study was based on a case study approach with purposeful sampling, the data was derived from interviews, and observations which were later corroborated with the existing literature about SCI users and hippotherapy effects. Linkert scale of 5 was used to find out the effectiveness of the centre to the users objectives. There were a total of 13 users with different levels of SCI lesions but only 3 did therapeutic horse riding. The horseback riding program was done at least twice per week either indoors or outdoors. Each session lasted 30 minutes. The users were instructed on how to control the horse initially using the miens then later using their body limbs. By the end of the 3rd week the users were able to use their lower limb muscles to stop, start, change direction or speed of the horse which indicated a marked improvement either in their muscle trophie, tone or strength. All of them rated the program as extremely good on a linkert scale of 5. They also confirmed that they had achieved some of their objectives and goals e.g. pain relieve, improved endurance capacity, strong muscles and being able to do sit-ski for 2km. The general opinion gathered is that the program is good and is worth emulating by all people who believe in equality in terms of human rights and opportunities for everybody. However there is very little objective evidence in the research literature and therefore there is need for evidence based practice at BHSS by conducting objective tests and measurements. If all this activities is to command respect in the field of medicine, rehabilitation and education then more empirical studies need to be undertaken (DePauw, 1986). There was need for a psychiatrist at the centre among the multidisciplinary personnel at the centre.

References
AGE RELATED DIFFERENCES IN HUMAN CORTICOSPINAL EXITABILITY DURING SRT IN YOUNG ADULTS AND ELDERLY SUBJECTS EVALUATED WITH TMS

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Key Words: Transcranial Magnetic Stimulation, Reaction time, Excitability & Corticospinal tract.

The main aim of the study was to evaluate the corticospinal excitability profile of young and old adults as a measure of the integrity of the CNS during simple reaction time (SRT). In order to determine the difference between the two groups. Analysis of variance (2x2 ANOVA) with GROUP (elderly versus young adults) and SIDE (right level more versus left hand more) as factors was used to analyze the data. Contrast analysis was performed to know how the two groups differ in terms of their corticospinal excitability. Our observations showed significant (P=0.003) changes in the levels of excitability during the merits of the right versus left hands in older adults, which indicate that their inter hemisphere inhabitation is low. On the other hand the young adults exhibited better inhabitation control with a non-significant difference between the left hand move and the right hand move. In this respect, we suggest that the differences noticed could possibly be due to the age related changes that accrue to the corpus collosum or other cortical structures including the spinal motor neurons. The difference in excitability profile showed mutual build up in the elderly group as compared to the young adults who showed an immediate sharp rise ready for the reaction cue and response. This implies that the corticospinal process of stimulus identification and planning suggests processing time takes longer in adults. Nonetheless there was an indication of variability in RT both within the groups and between the subjects as a whole.

References
SOMATOTYPE AND BMI PROFILES OF BOTSWANA SPECIAL OLYMPICS ATHLETES

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Introduction
Studies on the somatotype and BMI of athletes with disabilities are very scarce. Those on Special Olympics athletes, particularly of African origin, are even almost non-existent. The aim of this study was to profile and compare the somatotypes and BMIs of male and female Botswana Special Olympics athletes.

Methods
The sampling design was purposive. Study participants comprised 11 male (15.5 ± 1.9) and 15 female (14.7 ± 3.1) randomly selected athletes with mild mental retardation. Measurement of the somatotype components – skinfolds, circumferences, breadths, lengths and heights were taken in line with the standards set by the International Society for the Advancement of Kinanthropometry (ISAK). Somatotypes were estimated with the Heath-Carter method. For the BMI, the procedure as described by Adams (2002) was adopted.

Results
Male participants had a mean somatotype rating of 1.7-2.0-3.3 (SD 2.0-1.1-2.3) while females had a mean of 3.4-3.6-2.6 (SD 1.9-4.6-1.6). Also, apart from the significant main effect of gender, $F(1, 24) = 4.67, p = .041$, on the endomorphy component of the somatotype of the participants, gender had no significant relationships: $F(1, 24) = 1.31, p = .264$ and $F(1, 24) = .66, p = .423$, respectively, at $p < .05$.

Conclusion
The above results indicate that the participants’ gender had very slight influence on the somatotype components of the Botswana Special Olympic athletes. The results have implications for the future selection of Botswana Special Olympics athletes and the scientific design of training programs that would prepare the athletes morphologically for such an elite competition as the Special Olympics.
PROJECT "PHYSICAL AND PLURISENSORY STIMULATION FOR PEOPLE WITH DISABILITY"

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Key words: multisensory stimulation (MSM) – sensory integration – gentle care – disability – adapted physical activity.

Introduction
Concerning the attention on the maintenance of the intellectual ability, social relationship and with in the environment by the people with disability, there is now a full consolidated experiences and studies on the plurisensory stimulation (SPs) importance.
The project is on a particular methodology in the field of SPs called “Snoezelen”. This term comes from the union of two dutch verbs, “sufflen” (“to search outside from” or “explore”) and “doezelen” (relax), that underline the sensory aspects of stimulation and relaxation from which Jan Julesge and Ad Verheul have started in 1975 for the first steps of the sensory stimulation.

Materials and Methods
“Snoezelen” is an approach that uses all the five senses and their interaction. It uses luminous, musical, auditive effects, forms, aromas and tactile surfaces; such effects are produced by specific instruments activated by the therapists in functions of the characteristics of the single subjects. The goal is that to arise interest, to facilitate the orientation space-time and to recognize the determined moments of the day.
The application of Snoezelen is based on:

☐ single or combined feelings
☐ creation of atmosphere and shared experiences
☐ sensory adventures

The project “The Magic Room” created at the Don Gnocchi Foundation Milan begin from the demand to create a specific space adapted, protected and structured, finalized to the plurisensory stimulation.

Some teachers have looked for new stimulations and tools to answer the demands of the students. So they have realized the “Magic Room”, a space created to live sensory and experiences of pleasure, wealth, relaxation and discovery.

Conclusions
The experience given by “The Magic Room” project is an important slice of the educational interventions realized at the school.
The project is going on since two year and the results obtained are very satisfactory.
The psychological and physical aspect of the students who take part in the project has had remarkable changes; the corporeal contact and the relaxation situations adapted to the person produce quiet, confidence and sensory pleasure. Also the attentive capacities and the use of the residual sensory channels have obtained some improvements.
The "Snoezelen" give the importance on what child is, what he knows, what he do and way he to come in contact with the world to improve the quality of life.

References
ADAPTED PHYSICAL ACTIVITY FOR THE BLIND PEOPLE

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Key words: adapted physical activity, blind people, chinesiology, global postural reeducation (RPG), balance and relaxation.

Introduction
This study originated from the cooperation between APA Italy and ANPVI (National Association for the Blind) of Turin.

Objective
The purpose of the project is to develop a program of adapted physical activity in order to improve the quality of life to blind people, increasing oxygenation and microcirculation through a better postural perception and invigorating the muscular chains, that are good for daily life, for the control of tensions and for the improvement of self-sufficiency.

Methods
This study intends to observe and to test a group of 10 persons with sight deficiency for a period of 10 months. The suggested physical activity takes place twice a week in a gym of chinesiology and functional reeducation and each session lasts 50 minutes.

6 tests have been used for this project, 5 concerning the physical field and 1 concerning the psychological and emotional sphere:
- Isocinetic test;
- Fukuda test;
- Test for the balance in bipodalic or monopodalic station;
- Test of the “2 scales” Test of flexibility;
- SAT-P.

The physical course planned for this project intends to work on the globality and oneness of the person with special attention to the improvement of the balance, the perception of one’s own body, hearing, relaxation and breathing.

For this purpose a programme of adapted physical activity has been developed, for individuals and for groups, of global postural reeducation (RPG) using the music too, as important eutonic means, that is able to cut the muscular hypertone down and to guarantee a more relaxed and efficient biologic environment.

Statistic analysis
Mann Whitney-Wilcoxon test showed significant statistic improvement between SR (starting results) and FR (final results) in Isocinetic Test and Flexibility Test. (p<0.05).

Results and conclusions
First assessments have underlined an improvement in the strength of the lower limbs, in the balance and in the posture in confirmation of the importance of active and passive movement in daily life.

The presentation of this project wants therefore to explain the methodology of work, the test used and the results obtained, underlining the course of physical, psychological and relational changes observed during the activity.

References


PHYSICAL FUNCTIONAL LIMITATION ASSESSMENT USING AN INERTIAL SENSING UNIT

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The integration of both movement sciences and bioengineering knowledge allows to design quantitative approaches for the assessment of physical functional limitation, so that relevant pragmatic issues, such as eligibility for adapted physical activity, physical exercise protocol definition, and outcome measure, can be addressed. This assessment should be performed during the execution of transitory motor tasks (e.g. rising from/sitting on a seat, ascending/descending a step) by both acquiring motion data from minimally-invasive and cost-efficient instrumentation and inputting such data to mathematical models of the musculo-skeletal system that embody the invariant aspects of both the modelled system and the specific motor task. As shown in previous investigations of this group [1], the best candidate for this purpose is the acceleration of the whole body centre of mass or of suitably selected point on the body surface. This study investigates the potential use of an inertial measurement unit for that purpose. In particular, answers to the following questions are sought: is the acceleration of the unit, emended from the gravitational acceleration, a sufficiently accurate representation of the whole body centre of mass acceleration when placed at L5 level? Is the displacement estimated using this accelerometric data adequately accurate?

A custom-made wearable and wireless inertial measurement unit (IMU) constituted by a 3D accelerometer and a 3D gyro was rigidly fixed on a subject’s body at L5 level (male, age 28, height=170cm, mass=70kg). Centre of mass acceleration was measured using a 6-component force platform (FP) and the displacement of a reflective marker placed on the IMU was measured using stereo-photo-grammetry (SPG). IMU and FP acceleration data (AIMU AND AFP, respectively) and SPG marker position data (PSPG) were acquired simultaneously (sampling rate = 120 samples/s) while the subject performed 5 repetitions of squat jump, a motor task purposely chosen to challenge the experimental setup in terms of artefacts involved. To evaluate differences, the correlation coefficient (r) and the root mean square (RMS) values where calculated between AIMU and AFP, and between PSPG and the displacement (PIMU) calculated as the numerical double integration of AISU [2]. Results demonstrated that AIMU is very similar to AFP (average r>0.95 and RMS<5% peak-to-peak value), and PIMU to PSPG (average r>0.95, RMS<3% peak-to-peak value). This shows that an inertial measurement unit, placed on a subjects body at L5 level, yields useful information that, when opportunely given as input to minimum measured-input models, can be used for physical functional limitation assessment.

References
AGEING, LONG TERM PHYSICAL TRAINING, AND BALANCE:
THE REPEATABILITY OF A STABILOMETRIC TEST

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Key words: repeatability of a measure, static postural stability, balance test, risk of falling, elderly athletes.

The aims of this study are to assess the repeatability and precision of a measure of static postural stability in a group of elderly athletes. Aging and inactivity are associated with a decrease in balance abilities that, in turn, increase the risk of falling. The present study investigated the effects of age and of a prolonged physical activity on balance capacities in two groups of elderly (>65 years) subjects: endurance and power trained athletes. We are interested in examining the relationships of these physical components for elderly athletes of power and endurance sports since findings will permit to design more specific exercise-based intervention programs aimed to improve balance and prevent falls during elderly. We assessed repeatability of a number of significant variables obtained during stabilometric test on a single force plate. Three stability tests were registered for each subject standing with one leg, one after the other, eyes open, for a total of six tests. Moreover, three stability tests, in narrow stance with eyes open and three tests with eyes closed. Hence, subjects performed twelve quiet standing trials in each of the three test sessions, settled on different days. Repeatability was investigated using Interclass Correlation Coefficient (ICC) and the Standard Error of the mean between subjects (SEMb) and within subjects (SEMw). The standard deviation in the anterior-posterior (A-P) and medium-lateral (M-L) axis, the average speed in A-P and M-L axis (mm/s), the perimeter length (mm) and the ellipse area (mm²) described by the COP have SEMw and SEMb in the range 5 - 10%. Moreover, since both the average speeds (A-P and M-L) and the perimeter length described by the COP would be the variables suited to quantify balance performance and to track it in time. In all the four conditions correlation coefficient (CC) showed that the average speed in A-P plane was positively correlated with the perimeter length (r>0.85; p<0.05) and also the average speed in M-L plane (r>0.89; p<0.05). The standard deviation in A-P plane was positively correlated with the ellipse area of the COP (r>0.82; p<0.05) and also the standard deviation in M-L plane (r>0.86; p<0.05). In narrow stance in both visual conditions, the average speed in A-P axis was positively correlated with the average speed in M-L axis (r=0.85; p<0.05). From the analysis of the Mann-Whitney U test we can concluded that endurance trained athletes have worst one-leg stance in eyes open and closed condition (p<0.05) than power group. On the contrary, in narrow stance, power trained athletes show an increase of postural sway for ellipse area and standard deviation in A-P and M-L plane in both visual conditions (p<0.05).

References
LONG TERM BENEFITS OF A SIX MONTHS ADAPTED PHYSICAL ACTIVITY TRAINING PROTOCOL IN SEDENTARY ELDERS

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Key words: adapted physical activity, exercise, training, elderly, functional evaluation.

Introduction
Physical activity produces several benefits on health. Lesser is known about the lasting of that benefits after detraining, i.e. inactivity after a period of structured physical activity. The aims of the study were: studying the effects of a six months duration moderate intensity training program on cardiovascular parameters and on physical efficiency; verifying if after a subsequent six months period of detraining that benefits still exist.

Methods
To accomplish our purposes, 80 over 60 aged sedentary subjects, without invalidating illness, were enrolled. Before starting the observational period, 18 months, all subjects underwent a clinical assessment (particularly focused on resting and submaximal ergometric effort, on a cycloergometer, ECG, heart rate and arterial pressure registration), and functional evaluation by means of the following tests: 2 minute walk test (2MWT), repeated chair stand test (RCST), timed up & go test (TUPGT), 1RM test. All subjects were randomly assigned to 2 subgroups (“A” and “B”).

The observational period has been divided in 3 phases, each one of 6 months duration: the first one represented the training phase for “A”, while “B” continued to be sedentary; the second phase represented the detraining phase for “A” and the training one for “B”; the third phase represented the detraining phase of “B”. Both groups underwent clinical and functional evaluations at the end of each phase.

Training protocol: 1 hour per session, three times a week, for six months. The 40-50% of heart rate reserve and 50% of 1RM were set as upper limits of training intensity.

Results
“A” (20 male and 20 female) mean age was 68±5 years, body mass 74±18 kg, height 166±9 cm (13 drop out); “B” (20 male and 20 female) mean age was 69±5 years, body mass 70±11 kg, height 166±8 cm (13 drop out). Statistical analysis showed no significant differences between “A” and “B” at the first evaluation and after the training phase. Both groups significantly improved in all parameters after training. “A”, after detraining, significantly worsened in all parameters, maintaining only cardiovascular parameters significantly better than before training. “B” group’s after detraining data are expected on next September.

Conclusion
Our data suggest that a moderate intensity training protocol determines benefits in both cardiovascular and functional parameters; that benefits still remain after a six months detraining period only in cardiovascular parameters.

References
EFFICACY OF ADAPTED PHYSICAL ACTIVITY IN SUBJECT WITH MENTAL RETARDATION INSTITUTIONALIZED

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Key words: Adapted Physical Activity, intellectual disability, physical training, well-being.

From some years in the Fondazione is developed a regular APA for institutionalized subjects with mental retardation with a systematic estimation of the effectiveness of regular physical activity in terms of improving quality of life, physical performance and muscular mass.

All the subjects are periodically submitted to multidimensional assessment, physical examination, functional status (Barthel Index and Lawton Scale for instrumental activities of daily living), risk of fall (Tinetti Scale), affective-cognitive status, the behavioural symptoms (Neuropsychiatry Inventory) and status of health (Severity Index and Comorbility Index of Cumulative Illness Rating Scales). We measure also the biceps and calf circumference and the physical performance are assessed by Walking Test (WT 6 minutes).

The subjects involved, carry on intense physical activity ninety minutes twice a week in a gymnasium equipped with supervision of a teacher ISEF. Nursing home physician and teacher ISEF were agreed on the personal program for every participant. For every subject was created a personalized card of work. Monthly the physician and the teacher ISEF verify the performances of subjects. Our activity show that continuous physical exercise is a basic element in order to guarantee psycho-physical well-being to institutionalized patients

The results reached to all today have allowed us to increase the base of the frequenting ones and to plan programs of widened APA.

Some studies are in progress on groups of patients submitting the subjects to a series of evaluations with the execution of anthropometric and functional measures more detailed in comparison to how much already realized; adopting new tools (utensils for the mobilization personalized) and experimenting new strategies to improve the learning of the motor (memory training) gesture.

References


GOAL BALL RELATED INJURIES AMONG IRANIAN ELITE FEMALE

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Key words: goalball, injury, female, elite athlete.

Introduction
Goalball was established to help rehabilitate blinded war veterans in 1946. It was introduced to the world at the 1976 Paralympics in Toronto, Canada. Since then Goalball has increased in popularity and is now played globally1. However there is little data regarding the incidence and the rate of sport related injuries in this sport.

Issues
To review one year injury frequency data for women's goal ball and identify potential areas for injury prevention initiatives.

Research method
Using a questionnaire, the sport related injuries among 36 players with the minimum of 3 years experience in national Iranian goal ball team were collected. Interview was used to get more specific details in some cases.

Results and discussion
The subject’s mean of age was 24 (±5) mean of height was 162 (±9) and weight was 59 (±6). The mean of blindness and VL was 16 years. Birth Related Causes was the main reason for VL among the subjects. All of the subjects reported some injury experience in goal ball. In total 187 injuries reported. Many goal ball related injuries occur in the upper limb (%37.8) followed by lower limbs (%34.4) and other limbs such as trunk, head, face etc (%28.3). In upper limbs, more injuries reported in hands and wrists (%53.3), in lower limbs in knee (%25.5), in other arias, abdomen and face. Results showed tipology of more frequent injury of muscular-tendon (%59.4), joint and ligament (%32), skin (%7.5) and bone (%1.6).

Interviewing the players and the coaches, it was reported that the technical fault, non standard facilities around the play yard and bad court surface conditions was the associated factors in goal ball related injuries. As goalball athletes spend the majority of the game throwing themselves onto the ground to block the ball, injuries in upper limbs and especially contusions (bruises) on this arias are very likely2. If the equipment and the court surface are not up to the standards, then the rate of injury among goal ball players even could be rise.

Recommendations
Providing standard equipment (goal post, cloths, and good court surface of the ground) as well as evidence-based injury prevention interventions (eg, protective equipment such as taping/bracing) and educating good techniques may be viable prevention initiatives for reducing injury rates in women's goal ball players.

References
LEISURE-TIME PHYSICAL ACTIVITY OF CHILDREN WITH A LONG-TERM ILLNESS OR DISABILITY IN FINLAND

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Key words: physical activity, long-term illness, disability.

The knowledge base concerning the prevalence of childhood long-term illness or disability is limited. The prevalence of young people with long-term illnesses and/or disabilities in Finland is 10-20%, depending on the method of classification.

Physical activity is assumed to have special benefits for children and adolescents with disabilities: not only in terms of better coping with a disability and decreasing symptoms, but also socialization into peer groups. Children with physical disabilities are frequently excluded by classmates and discouraged from participating in such typical childhood experiences as physical activity. This kind of isolation may lead to voluntary avoidance of physical activity later in life.

The purpose of this study was to examine, first, the prevalence of children (13 and 15 years of age) with a long-term illness or disability in general education in Finnish schools. A further purpose was to assess the leisure-time physical activity frequency and its duration among children with and without a long-term disability. The sample consisted of Finnish pupils (n=3459) in 7th grade and 9th grade. The study used the data from a WHO-coordinated cross-national survey of school children’s health and life-style (Health Behaviour in School-Aged Children, the HBSC Study). Every fifth (19.8%) of the pupils had a long-term disability, illness or medical condition (e.g., allergy, asthma, diabetes), but 51% of them experienced no difficulties in daily life. The most common difficulty was related to breathing, followed by moving. There were no differences between girls and boys. Children with a long-term illness or disability were equally active whether or not they reported (disability related) difficulties in daily life. In addition, children with a long-term disability were as active as those without a long-term disability. There were differences among boys and girls, and within age groups. However, the only statistically significant difference was that the 13-year old girls with a disability were more active than those without any disabilities. The pupils with a disability were as active as the pupils without a disability. Future research should address the different determinants which are involved in daily life and/or sports that either support or hinder physical activity.

References


APA PROGRAMME OF YOUNG AND ADULT RECOVERING DRUG ADDICTS UNDER RESIDENTIAL CARE

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Objectives:
To evaluate the effects of different training protocols (football with five people and acrosport) on the motor abilities and on the physical self-concept of young individuals and formerly drug addicted adults under residential treatment.

Methods
Sample: 12 men, aged between 19 and 35 (M 28.5 ± SD 4.93). 24 sessions of 60 minutes each twice a week have been planned. For the evaluation of the motor abilities the tests Eurofit for adults (Oja, Tuxworth, 1995), the Six minute walking test and the Step test (Rikli, Jones, 1999) have been used. For the assessment of the physical self-concept we have used the Italian version (Meleddu, Scalas, Guicciardi, 2002) of the Physical Self-Description Questionnaire- PSDQ (Marsh et al, 1994).

Results
From the results of the Eurofit test for adults, the most influenced abilities have been flexibility and abdominal muscular resistance. From the analysis of the data of the six minute walking test and of the step test we found that the performances of the participants were the same or slightly higher than those of the normative group of 60 years old. The analysis PSDQ points out a very significant correlation (p< .01) in the retest between the subscales SPRT and COOR (r= .832), ESTM and BFAT (r=.788), FLEX and COOR (r=.712), FLEX and SPRT (r=.715), ESTM and GPSC (r=.903).

Pearson’s correlations between the tests Sit and Reach, Standing Broad Jump, 50 m Shuttle Run, BMI and some subscales of the PSDQ (Flexibility, Strength, Endurance and Obesity) revealed a significant negative correlation (p <.05) comes out in the test between the Endurance test and the Endurance subscale of the PSDQ (r= -.601) and (p <.01) between BMI and the body fat subscale of PSDQ(r= -.854). In the retest there is no significant correlation between motor tests and the subscales of PSDQ while is evident a significant negative correlation (p <.05) between the BMI and the body fat subscale of the PSDQ(r= -.854).

Discussion
This study point out limited effects of the training on the motor abilities of the participants due to the alterations of the functions or systems in the body that drugs addiction causes. The results of PSDQ show that the physical self-concept is still dysfunctional. Therefore, further research is needed to define a dose of physical activity necessary to improve motor abilities and to examine relationship between physical activity and various aspects of mental health for drug addicted treatment.

References


ISSUES IN THE IDENTIFICATION OF DEVELOPMENTAL COORDINATION DISORDER (DCD)

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Key words: DCD, identification, self-perceptions.

When identifying motor difficulties such as DCD, there is dissension as to what cut points should be used in research and intervention. These cut points are generally based on motor performance test scores and range from the 5th to the 15th percentile. The adoption of the lower point should be challenged because many children, who also have movement related psychosocial difficulties and low fitness, may not be identified. Two limitations arise from using the 5th percentile as a cut-score: a) given the multi-causal nature of DCD, research using a low cut-off might limit what we can ever know; and b) the research findings will have limited generalisability to future practice. The controversy surrounding cut points, and the heterogeneous nature of DCD, highlight the need for more data-based work to broaden our understanding of the limitations we impose by selecting a specific cut point.

Our purpose was to identify clusters based on fitness and physical self-perceptions of adolescents with extremely low to marginal motor performance scores. We looked to see whether these clusters provided support for a motor performance cut point that was 2 SD below, 1.5 SD below, 1.25 SD below or 1 SD below the mean of the MAND Neurodevelopmental Index (McCarron, 1997). The 14-year-old participants (N = 317) completed the athletic subscale of the Self-Perception Profile for Adolescents (Harter, 1988), three questions on enjoyment and ability in physical activities, and fitness measures: BMI, upper limb strength; abdominal endurance; flexibility; and PWC170.

A two-step cluster procedure (SPSS v.15) that deals with categorical and continuous data, yielded two clusters. Cluster 1 (n = 182) was characterized by significantly better strength, endurance, a lower BMI, and more positive physical self-perceptions than Cluster 2 (n = 135). The cut point groups were distributed through both clusters. The poorer performing Cluster 2 comprised 60% of the SD2 group, 36% of the SD1.5 group, 38% of the SD1.25 group and 46% of the SD1 group. Gender differences were also apparent, 53% of girls and 32% of boys were in Cluster 2.

The data indicate that all participants in Cluster 2 are at risk of low participation in physical activity and support the use of a generous cut-point in the identification of DCD.

References
OBESITY AND PHYSICAL ACTIVITY AMONG ADOLESCENTS WITH MENTAL DISABILITY

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Key words: obesity prevalence, % fat mass, waist circumference, BMI, mental disability, physical activity.

Introduction
Reduction of obesity prevalence is one of the main stakes of the XXIst century. Obesity increases exponentially, hitting particularly youngest generations, up to 35.8% of overweight or obese children in Europe, and 18% in France, but little is known about people with mental disability (MD). The present study investigates prevalence of obesity among MD children-adolescents attending specialized school in the Rhône Alpes region (France), and the relationship between obesity indicators and Physical Activity.

Research methods
Anthropometric assessments were conducted: weight, height and calculation of BMI, waist circumference (WC), and assessed by “bio-impedance” [Bodystat®1500]. Actually, 142 healthy volunteer children-adolescents with MD participate to the study (84 boys and 58 girls, aged 7-18 years). The activity level was evaluated using PA questionnaire: PAQAP®, allowing estimation of VO$_{2\text{max}}$ according to the usual PA.

Results
According to the threshold of the 97th percentile for the BMI, 20.24% of boys and 24.14% of girls are found “obese”. Considering fat mass (FM) [1], and waist circumference (WC) [3] makes thinks even worse: over FM is found among 48.19% of boys, and 57.14% of them are identified with health risk WC. Among girls, figures are 63.79% for FM, and 89.65% for WC.

The study of the relationship between obesity and PA was conducted among adolescents (N=97). Regression analyses showed that significant highest levels of FM and WC were found among less active adolescents (respectively: r =0.3173 for boys and r =0.4546 for girls, P<0.001). When adolescents are dispatched into lean/standard and obese sub-groups, VO$_{2\text{max}}$ is significantly lower among obese adolescents than their leaner peers (P<0.05).

Discussion
At the stage of the study, the results enhance awareness of the high prevalence of obesity among these adolescents and there risk comorbidities development. The consequences will be increases of restriction of participation and health troubles. Fifty five percent of students participating at this study have higher fat mass, and more than 70% have a higher level of abdominal fat which is related to the development of cardiovascular and metabolic disease [3]. Important links are underline between obesity and higher sedentary life style, as can be find in literature [2].

On the other hand, PA benefits were demonstrated especially for reducing WC and increasing cardiovascular fitness. That why, at the same time as increasing the number of participants, we are going to pursue this study focusing on obesity prevention and/or weight lost training by Adapted Physical Activity for this population.

References
GAIT ANALYSIS FOR DIABETIC FOOT PREVENTION

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Introduction
Diabetes mellitus is a chronic disease widely diffused in the population and continuously increasing. The disease long term complications are multiple and invalidating, among these the diabetic foot, drifted from the contemporary presence of peripheral neuropathy and vasculopathy, that altering the biomechanics of the foot, can carry to callosity formation and ulcerations. The social and economic weight of the diabetic foot can be reduced through a prompt diagnosis and treatment from the very beginning.

Material and Methods
In the present study were presented the results of a wide clinical investigation conducted on 38 subjects, 10 healthy (C) and 28 diabetic patients, in order to assess the function of the diabetic foot patients. Therefore a combined test obtained by means of posture analysis [1], gait analysis and stair ascending and descending [2]test was used. In order to provide a simple and effective description of the execution of the motor tasks, movement analysis was performed by means of a 120-60 Hz 6 cameras stereofotogrammetric system (BTS S.r.l, Padova), 2 force plates (Bertec Corporation, USA), 2 plantar pressure systems (Imagortesi, Piacenza). The signals coming from all systems were synchronized.

Results
The present study confirmed that, from a biomechanical point of view, peripheral neuropathy results in significant alterations of gait, not just in terms of foot-to floor interaction, but also at the level of the lower limbs joint complex, in terms of limited joint mobility. This study included also the association of the alterations of the biomechanical parameters measured with concurrent alterations of physical and clinical parameters of diabetic patients, with or without neuropathy. More specifically, the study highlighted the following alterations of diabetic patients gait: loading times percentage increased with respect to the duration of the whole stance phase; push-off time was drastically reduced; lower limbs joint mobility was reduced mostly in the neuropathic and vasculopathic group. Neuropathic patients significantly reduced moments during flexion-extension (sagittal plane) at each joint.

Discussion
Our results shows feasibility of this approach for studying diabetic foot. This study is being extended to a larger sample in order to obtain more statistically significant results.

References
ROLE OF PHYSICAL ACTIVITIES IN PREVENTION OF BODY IMAGE DISTRESS

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The present work is meant as a theoretical contribution about body image and physical activities, also useful for a consequent practical perspective.

The concept of “body image” originated in different fields such as the neurological, psychoanalytic, philosophical and psychological ones and was referred to the picture of the body built by the individual. Currently, it can be considered as a multidimensional construction about perceptions and attitudes that individuals refer to their body and in particular to their appearance (Cash 2002). There is a very common opinion that athletes with “perfect” bodies also have a great satisfaction for their bodies. In point of fact it should be said that physical activities may play the part of both a negative and a positive influence on body image. The body image distress in some gymnasts and the dysmorphophobia in some bodybuilders are typical examples of possible negative influences of sport in this psychological dominion. Anyway it was also showed that athletes have generally more satisfaction for their bodies in comparison with other people. But an interesting fact is that when physical exercises are centered on appearance they influence body image in a negative way, while recreational physical activities influence positively body image. It has also been proved that fitness activities have positive influences on body image through an improvement in body conditioning (endurance, strength and flexibility), body composition, skill learning, perception of wellbeing and self-efficacy (Martin & Lichtenberger 2002).

Finally, we can say that the influences exerted by physical activities on body image depend on more than one variable such as the kind of activities, the gender of participants and the degree of commitment and particular psychological features of individuals (Davis 2002). Some cornerstones should be considered in promoting programmes of adapted physical activities centered on body image distress prevention. First of all, the fact that individuals with a poor body image show greater improvements implies the possibility to obtain good results with people with disabilities; secondly, the activities should have an intensity range from moderate to high; thirdly, it should be borne in mind that enjoyment increases the positive effects of physical exercise on body image; finally, it is very important to focus on the improvement of physical function, strength and endurance rather than on changing in physical appearance.
STRESSORS IN COMPETITIVE WHEELCHAIR BASKETBALL
A QUALITATIVE INTERVIEW STUDY

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Key words: wheelchair basketball, stressors, performance.

Introduction
(Peak) performance in wheelchair basketball requires both highly developed physical and psychological skill levels. In (wheelchair) basketball, effective stress coping is seen as a crucial factor to reach the best performance in competitive games. Therefore, it is important to know stressors players are encountered through competitive games. The following study focus exclusively on stress sources in competitive games, non-competitive stressors are not in our focus (see Campbell & Jones, 2002).

Method
In the year of 2006, eleven head coaches of elite-level German wheelchair basketball teams were interviewed. The coaches were holders of the highest coaching certificate and current or former coaches of national teams and Division 1 German club teams. They were experienced in top-level coaching as well as playing. The participants represented the whole range of IWBF-classification system. Structured interviews were conducted. After defining the terms stress and coping, the coaches were invited to report about important stressors in competitive games. It was stressed to focus on situations and conditions of interest for basketball in general as well as those typically emerging in wheelchair basketball. The interviews were analyzed with qualitative methodology, especially with inductive content analyze.

Results
We found two general dimensions resulting from 14 first and seven second-order themes. The general dimensions can be named as external vs. internal stressors. That is, the latter are closely associated with the own team, coach, and playing behaviour. Conversely, the first address the opponent and environmental conditions (players, coaches, playing behaviour). In regard to internal stressors, second-order themes are named wheelchair (e.g., a broken chair), own coach (e.g., substitutions despite good performance), teammates (e.g., ineffective communication), and own playing behaviour (e.g., failed blocks). External sources of stress are the playing time (e.g., decisive last minutes), referee (e.g., wrong decisions), and opponent (e.g., provocation).

Discussion
The study details competition related stressors. The findings show that there are sources of stress being very similar to those of able-bodied basketball (e.g., wrong referee decisions; failed throws) and others unique for wheelchair basketball. Especially technical problems with the wheelchair, falling out of it, substitutions because of not exceeding the allowed team-balance (14 player’s points) instead of playing poor, or unrealistic expectations of the coach in regard to stronger impaired players seem to be such stressors. Hence, sport psychology consultants should conduct PST programmes – also – to address these sources of stress.

References
ELDER AGE AND DIABETES 2:
HOUSE ASSISTED PHYSICAL ACTIVITY

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Key words: diabetes 2, personalized activities at home, guide Canada’s physical activity.

Introduction
The project, carried out in cooperation with the Diabetology ward of Ospedale Ottalmico di Torino, Circosrizione 10 and SUISM, consists of the implementation of a course of “home assistance physical activity” for people affected by type 2 diabetes, the elderly and overweight, who do not participate to APA activities in the gym, because they suffer from motion problems, have low motivation, and / or an inactive lifestyle.

Goal
The importance of physical activity for diabetics is acknowledged, but usually medical recommendation is not respected. The aim of this project is to try and modify this lifestyle, so that these people will feel more comfortable with gym activity.

Method
Work is carried out individually in the subject’s home. First of all, they were given a questionnaire to be completed, in order to become familiar with their daily routine, and motion problems. The group consists of 29 subjects, divided into 3 subcategories, monitored by 3 final year students. We proposed a weekly personal file. Different and personalized activities are proposed every day. Each daily file requires 30 minutes activity which can be spread over the course of the day, simply 10 minutes at a time if so desired. The key aspect of this lies in such activity into the subject’s daily routine (taking care of themselves, their homes, their families), being followed by our proposed activities at home, establishing a strong link of trust. This should allow the subjects to perform regularly and continuously through the day. We used evaluation tests concerning motion, and a questionnaire on life quality.

Final Comments
One of the main problems we have faced has been initial distrust, as well as the difficulty of verifying the subject’s commitment to the project in our absence. Even if the project is still in the pipeline, we observed a better understanding in the delivery and execution methods. We were also pleased to observe an increase in initial motivation, and for some, an improved lifestyle (for instance, some now enjoy going for a walk, whereas initially they preferred to stay at home). At present, we are thinking of formulating a system of standardized testing, in order to produce assessable, accurate scientific data.

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SPORT AND DISABILITY IN THE ITALIAN SCHOOL

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Key words: Didactic Programmes, Teacher training, Professional competences, Handicap.

The scientific reflection is finalized to the location and the analysis of the professional employed competences in the Italian school for the promotion of sports for disabled through a study of the evolutionary distance that has accompanied the teaching training. The comparative analysis of the legislative Italian procedure and the various programmatic indications from the Casati’s Law of 1859 to the recent Indications for the Nursery School Curriculum and the First Educational Cycle of 2007 has pointed out a slow and potential graduated process of interest for the social educational integration of disabled accompanied to a reconsideration of abilities and plurals unexplored capabilities and potentially interacting in the motor field (OMS, 2001). The law n.104, 1992 besides previewing to article 23 to support and to promote without any limitation the sports practice for disabled, has established the obligation to assign a specialized staff into the school, contextually adapting equipments and educational staff, sports and free time and adopting a coordinate programming of the services you drained to us with those recreated and sportswomen to you managed from private public agencies and. The transformations in the Italian university system, the birth of four-year distances of bachelor finalizes the teacher formation in the school of infancy and primary with competences in the field of the disability, the existence of a previewed "extraordinary" formation from the qualifying course and a schools of specialization for the secondary instruction comprehensive of curriculums of additional Didactics, evidence the attempt of the Italian formative system to comply with law 104 through distances not always adapted to the particular requirements of the disability. A study that puts into effect the curriculums for the formation of teaching specialized for the instruction to the disabled pupils, compared to the analysis of the enforced programs of 1985 and of 1982 relatively to the destined part to the motor education and the physical and sport education, that highlights a total inadequacy. The inclusive specificity of the motor and sport field in educational areas, its potentialities, its reeducational aspects and the adaption, would demand the marking of an epistemological frame of the integrating-educational depositor of the destined scholastic sport of disabled. An epistemological base of the propedeutical field to the definition of the knowledge, the abilities and the indispensable resources to the instruction would demand a reconsideration of the relationships between areas of search of sciences of the education and motor-sports sciences, reaching to the wealth to interdisciplinary of the neuroscience. The development of the sports activities for the disability would demand moreover the construction of specific competences, informative-orientative, of the teacher specialized in this field, in those base and t physical and sports education, indispensable to the definition of extrascholastic sport opportunities and to the construction with the various subjects of the territory (CIP, Special Olympic, Associations of the field, etc), of support nets of the right to the sport.

References
CONFIRMATORY FACTOR ANALYSIS OF THE 18-ITEM STANDARDIZED ASTHMA QUALITY OF LIFE QUESTIONNAIRE-AQLQ(S) IN GREEK ADULT PATIENTS WITH ASTHMA

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Key words: Construct validity, Asthma Quality of Life Questionnaire-Standardized, AQLQ(S).

Introduction
The present study was designed to examine the validity of the 18-item Standardised Asthma Quality of Life Questionnaire-AQLQ(S), through a confirmatory factor analysis, in a sample of 223 Greek adult patients with asthma.

Method
The sample selection was purposive and the participants were 223 Greek adults (65 men and 158 women) with current asthma, all out-patients of the asthma department of the ’Amalia Fleming’ Hospital in Athens, Greece. The 18-item AQLQ(S) (Grammatopoulou et al., 2008), derived from the 32-item AQLQ(S) (Juniper et al., 1999), was administered to the participants. The questionnaire consists 18 items grouped under four factors: Symptoms (5 items), Activity Limitations (6 items), Sleep (3 items) and Exposure in Environmental Stimuli (4 items). Grammatopoulou and colleagues (Grammatopoulou et al., 2008; Grammatopoulou et al., 2007) have reported sufficient construct validity, cross-sectional validity and responsiveness, along with satisfactory test-retest reliability and internal consistency evidence, in Greek patients.

Results-Discussion
The confirmatory factor analysis provided further construct validity evidence for the 18-item AQLQ(S) (e.g. $\chi^2/df$ ratio = 2.47, NNFI = .93, CFI = .95, SRMR = .05). Furthermore, the questionnaire showed a high internal consistency (Cronbach alpha reliability coefficient ranged from .82 to .96). Overall, the 18-item AQLQ(S) may be used with more confidence in the future for the assessment of quality of life, in Greek adult patients with asthma.

References
OVERWEIGHT AND OBESITY AMONG GREEK CHILDREN WITH MENTAL RETARDATION AND THE INFLUENCE OF PARENTAL NUTRITIONAL HABITS

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Key words: overweight, obesity, mental retardation, nutritional habits.

Introduction
The aim of the present study was to investigate the frequency of overweight and obesity among children with moderate mental retardation. A secondary purpose was to examine the relationship between the body mass index (BMI) of children with mental retardation with: a) the nutritional habits of their parents and b) the intention of their parents to adopt healthy eating.

Method
The participants were 73 children, 17 girls and 56 boys, between 7 and 12 years old, from public special elementary schools in Athens, Greece. Further, a total of 41 parents participated by filling out the Planned Behavior Theory (TPB)(Ajzen, 1985) and the Consuming Food Frequency (CFF)(Cavadini et al., 1999) questionnaires. The SPSS was used for statistical analyses.

Results-Discussion
The percentages of mentally retarded children with obesity and overweight were 20.5% and 28.8%, respectively. Furthermore, it was found that the girls had higher percentages of obesity (23.5%) and overweight (42.2%) in comparison with the boys (19.6% and 25%, respectively). Comparison of our findings with a control group of Greek children without mental retardation revealed that children with mental retardation had higher percentages of obesity (Lin et al., 2005). Further, the BMI scores of children with mental retardation and their parents were positively related (mothers: r = .295, p = .128; fathers: r = .081, p = .814).

The parental responses concerning nutritional habits were related to the BMI of their children. In addition, the intention of parents to adopt healthy eating was in general positive. Significant differences though were found between the responses of mothers with overweight and obese children, regarding their attitudes to adopt healthy eating. Particularly, the mothers of obese children had more positive attitude than mothers of overweight children. Further, the “perceived behavioral control” of the mothers was the only significant factor predicting the children’s BMI. Concerning the father’s responses, interesting findings emerged for the subjective norm factor. Specifically, the fathers whose children participated in physical activities scored higher in the “subjective norm” factor than fathers whose children did not participate.

Finally, regarding the examination of nutritional habits, the results showed that there was significant difference with respect to the consumption of lactationally products. Specifically, the mothers whose children participated in physical activities were consuming higher amounts of lactational products comparing to mothers whose children did not participate. Overall, the present findings are indicative for the frequency of obesity for children with mental retardation and the parental role in Greece.

References
PEERS AS RESOURCES FOR LEARNING. A SITUATED LEARNING APPROACH TO APA IN REHABILITATION

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Key words: Rehabilitation, Wheelchair activities, Situated learning.

Introduction
A number of recent studies have pointed to the value of disability-specific settings in APA (cf. Goodwin & Staples, 2005). These studies draw our attention to the ways that peers can be resources for each other. However, none of these studies have investigated the learning outcome of such peer interaction. The purpose of this study was to investigate the learning that took place when people with disabilities interacted in a rehabilitation setting.

Theory
Situated learning provides “a conceptual framework for thinking about learning” (Wenger, 1998: 11), where acts are not explained and understood in light of the mental states of the individual, but rather “in terms of what goes on between individuals, and between individuals and situations” (Marton & Booth, 1997: 11). More specifically, situated learning gives primacy to the learners’ perspective and active involvement in the learning process. In the context of this study, situated learning provides a lens through which we can study the learning that happens in addition to – and sometimes in spite of – the activities controlled by the rehabilitation professionals.

Method
A explorative investigation was undertaken. Data were generated through qualitative interviews and close observation. The context of the study was a rehabilitation program consisting of basic wheelchair skills and adapted physical activities. This case was chosen, because the participants represented a wide range of skills and experiences, from novices to experts having used wheelchair for 30 years.

Results / Discussion
The analysis of the data revealed four themes: (a) learning together, (b) understanding my struggles, (c) getting a measuring stick, and (d) the wheels are my shoes.

The results and discussion indicate that peers are a resource for each other’s learning in a variety of ways: they act as models for imitation, regardless of whether this is intended by the instructors or not. Also, peers are discussion partners who can help each other to find solutions to common challenges and be critical discussion partners. By having a variety of skill and experience levels, newcomers find measuring sticks for where they stand and orientation points for where they can go. By both giving and receiving help, the participants in this study contributed to the development of others as well as developing themselves. Through discussions and interactions, participants developed a language in which to make sense of their situation as wheelchair users.

References
EVIDENCE BASED PRACTICE IN ADAPTED PHYSICAL ACTIVITY: 
A CRITIQUE

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Key words: Evidence-based practice, Professional practice, Critical examination.

Both in the health care sector and the educational domain, evidence-based practice (EBP) has been heralded as the method to improve practice and to bridge the theory-practice gap. To a very limited degree, EBP has been debated in APA. An exception is Hutzler (2006), who defines it as “the conscientious, explicit and judicious use of current best evidence in making decisions about the professional service provided to participants in APA programs” (p. 13).

In this presentation I shall, by way of employing philosophical arguments, offer a critique of some of the assumptions underlying EBP, as it relates to professional practice of APA. In order to do so, I will first describe what kind of practice professional practice of APA is. By drawing on central texts in APA, I will maintain that professional practice of APA requires meeting the participants in a learning situation, rather than a treatment situation. It is thus an educational, rather than a medical practice. This is consistent with the critique of the medical model of disability advanced in the APA literature.

Further the presentation draws on the critique mounted against EBP in the educational domain (cf. Berliner, 2002; Biesta, 2007). More specifically it will be argued that:
(1) the hierarchy of knowledge specified by EBP is perhaps suitable for medicine, but it’s relevance for an educational model of professional practice in APA must be questioned.
(2) a conceptualization of professional practice as an intervention is not sufficient for APA
(3) the strong emphasis put on self-determination in APA is in conflict with underlying assumptions of EPB

A critique of EBP is not the same as a rejection of the idea that research can inform practice. Therefore, the presentation will end with a positive reconstruction of the possible benefits of Evidence-based research in APA. This also involves the claim that the notion of evidence should be re-conceptualized and broadened.

References
THE IMPACT OF THE EFFECTIVENESS OF THE USE OF FORCE FUNCTIONAL EXERCISES ON SOME SKILLS AND PHYSICAL VARIABLES AND DYNAMIC PERFORMANCE LEVELS AND THEIR RELATIONSHIP TO THE PLAYERS HANDBALL

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Introduction
The training of the force career included multiple movements trends multi-directional and lead exercises by focusing on one side, making it a single limb of the best exercises used to improve muscle strength Center (mid-body) and balance and functional exercises aimed at reducing the power generated through the slow movement of joints and lead movements in the multi-layered and integrated does not depend on external stabilizers, but the backbone is used to facilitate movement

Goal of research
Research aims to try to identify the effectiveness of the functional exercises of force:
1 - variables and physical skills of emerging Handball.
2 - to the dynamic changes arising Handball.

Research assumptions
1 - There are significant differences between measurements before and after the pilot group of variables in the physical and skills under discussion for telemetric.
2 - There are significant differences between the two sets of measurements Badin pilot and the dynamic changes in the law under discussion for telemetric of the pilot group.

Curriculum research
Use a researcher experimental curriculum so as to suitability for research and application procedures, the use of experimental design is a measurement before and after two sets to one pilot and the other officer

Research community sample
Has been selected sample of search arising from the manner intentional hand ball, and the strength of community research (40) stems have been excluded (10) Young Men them to conduct their survey sample into the search (30) stems were randomly divided into two equal one pilot and another officer from the strength of each Sample (15) has conducted an emerging researcher homogeneity in height and weight and age and age training schedule and parity between the two variables in the physical and skills

Tools and devices used
Use a researcher tools and devices for measuring changes following research:
Balance of medical standards - to measure body weight, body Stammer - to measure the body from the high ground, medical balls, ropes sided, the weight of different weights, a Swiss Balls

Treatments Statistics
Use the following statistical researcher treatments: Average - the standard deviation, a test T, correlation coefficients

Discuss the results
1 - a statistically significant differences between the two sets of measurements Badin experimental measurements in the law firm balance and muscle strength back and Athletic crooked ball for telemetric of the pilot group.
The researcher attributed to the impact of the proposed functional strength exercises to improve those variables and physical skills
2 - a statistically significant differences between the two sets of measurements Badin pilot and officer in the dynamic measurements for telemetric of the pilot group

References
A LONGITUDINAL ANALYSIS OF AN A.P.A. HOME-CARE SERVICE FOR ELDERS WITH DISABILITIES

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Key words: adapted physical activity, ageing, subjective well-being, self-efficacy, social support, quality of life.

In industrial countries aging boom has produced a real emergency, since the society did not prevent the development of frailty and disability of elders. In Italy, laws for wealth and welfare rationalization try to find a balance for assistance of chronic diseases of elderly. Personal autonomy is one of the most important demand from ageing citizens and from society. Diseases, multi-pathologies, inactivity, depression increase the risk of disability and demand of intensive and extensive assistance. According World Health Organization (2002), measures to keep elders healthy and active are a necessity, not a luxury. Regular, soft and adapted physical activity (A.P.A.) can contrast the progression of disability and can improve the quality of life of elderly, as long as possible. A.P.A. is defined as "the whole physical experiences motivated from therapy, rehabilitation, education, recreation or competition" (De Pauw, 2000).

This study takes place in Liguria, the region where the presence of elderly is the highest in Italy (25,4% of people in Liguria are more than 65 years old, while Italy’s national percentage is 18,6%). The Course of Bachelor in Sport Sciences of the University of Genoa and the Sanitary Aging Department of Genoa have realized an A.P.A. home-care service. The general purpose of the service is to bring A.P.A. to the elderly at home. Specific aims focus on the improvement of personal autonomy and reduction of pain, increasing subjective well-being and improving self-efficacy. The study investigates some physical abilities and functionalities (Barthel Index; A.D.L.), measuring rising, walking and getting up independence (Timed Up and Go Test), estimating different physical measures of strength, global and district flexibility (Physical Balance Test). The research focuses on subjective well-being (GHQ-12), self-efficacy and perceived social support from significant others. Examined subjects are two groups of elders, former patients of the Sanitary Aging Department, previously physically rehabilitated, in consequence of acute pathological events. The first group of 9 subjects (M = 2, F = 7) (experimental group), whose age varies from 69 to 94 years (medium age: 78 years) have participated since 2003 to the adapted physical activity home program. The second group is composed by 9 subjects (M =2, F = 7) (control group), whose age varies from 62 to 89 years (medium age: 75). The longitudinal analysis stands out improvement or adaptation of physical activities and deepen the role of some psychosocial factors. In the disability field, successful aging defines a condition associated with wellness and with the possibility for elders to best handle personal autonomy as long as possible. Successful aging is a criterion that distinguishes people who positively grow old from those who experience difficulties and problems (Lang & Tesch-Romer, 1993). From results important suggestions come out, supplying information to develop the theoretical debate on adapted physical activity and aging, useful to support interventions promoting health and wellness.

References
BIOMECHANICAL ANALYSIS IN SOCCER, ARTIFICIAL VERSUS NATURAL FIELD AND IDENTIFICATION OF THE RIGHT SOCCER BOOTS TO USE

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Key words: Soccer field, synthetic turf, natural grass, soccer boots, studs, pivot point.

Background
The issues related to the artificial grass are well known in terms of maintenance and management, but there is few existing literature on the biomechanical response of these surfaces, particularly if compared to natural grass, moreover the question about the type of shoes to use remain without clear answer. We analyze one of the most critical movement in soccer, the cutting movement, in order to find the answer.

Hypothesis
Many players report different sensations playing on synthetic turf as compared to natural grass. Could this mean that playing on an artificial surface can change the way that athletes play on these surfaces? Is there more risk of injury? What stimuli are generated by the synthetic turf versus natural grass? Which shoes is better to wear? Which shoes is better to prevent injury?

Methods
The study was carried out on 11 semi-professional soccer players. The testing was performed over a 2 year period at a frequency of three times per year. We compared a natural grass surface with 6 artificial grass surfaces using two areas for each test. Two different types of artificial fields were tested, one with SBR infill and the second with thermoplastic material used as infill. The study on the shoes involve, with the same methods, 9 semi-professional players during one season of game.

Results
We recorded higher vibrations in synthetic grass with SBR infill, whereas the synthetic grass with thermoplastic proved to be very close in behaviour to a natural grass surface. The pressure data and the time of contact during testing showed that the field with thermoplastic infill is very similar to natural grass in terms of biomechanical behaviour. Moreover with the same instruments we analyzed the contact pressure results to identify the pivot point of the foot at the moment of a change in direction, useful to identify right shoes. We read a higher pressure in synthetic field respect the natural ones, the athletes develop a higher maximum force in cutting movement on the synthetic surfaces. From the result of this study we projected a new type of shoes with a new technology.

Clinical Relevance
Together with existing literature related to the behaviour of artificial grass surfaces and the shoes used with different stud shape, the results from this analysis can contribute to the discussion as to how we can increase safety and performance on different surfaces, reducing the risk of injuries.

References
PHYSICAL ACTIVITY IN LOW BONE MINERAL DENSITY POST-MENOPAUSAL WOMEN

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Key words: osteoporosis, exercise, postmenopausal women.

Introduction
In women with menopause there is an increased catabolic bone turnover due to a decrease of estrogen production which could lead to osteopenia/osteoporosis (1). That entails a bone strength reduction and so a higher risk of fracture.

Exercise is considered one of the most important means for osteoporosis and fracture risk prevention (2, 3), because it allows to maintain and/or improve muscle mass and strength, besides improved balance.

Aim
To evaluate the effects of an adapted physical activity program on bone mass, bone quality and physical function of a post-menopausal group of women with low bone mineral density.

Methods
125 post-menopausal women with osteopenia/osteoporosis underwent a bone mass (Dual-Energy X-ray Absorbimetry, DEXA), bone tissue quality (phalangeal osteosonography) (4), and physical function assessment (handgrip, arm-curl, 2-min step, Modified Sit & Reach, back-scratch, Modified-Clinical Test for Sensory Interaction in Balance (M-CTSIB). 58 of the participants took part in a 10- month adapted physical activity program (PA), being a multi-component exercise scheme aimed to improve strength, aerobic capacity, balance and joint mobility, performed both on ground and in the water, alternating group and home exercise periods. The other represented a control group (C) that did not exercise. At the end of the exercise program all the subjects were re-evaluated.

Results
With respect to osteosonography, group C showed a significant decrease of all bone quality parameters (p<0.05), whereas the PA group showed no differences before or after the program. Regarding the physical function results, there was a significant decrease in handgrip and Modified Sit & Reach tests for the C group (p<0.05). The 2-min step and back-scratch tests showed stable results, while in the arm-curl test there was a significant increase (p<0.05). The PA group, on the other hand, significantly improved for all evaluated physical function parameters (p<0.05). Concerning bone mass (DEXA) no differences were detected within and between groups.

Conclusions
The results showed that an adapted physical activity program targeting osteoporosis is useful to improve physical function capacity, to reduce the physiological bone loss and to maintain a good bone quality in a group of post-menopausal women with low bone mineral density.

References
EFFECTS OF A BIKE TRAINING PROGRAM ON PATTERNS OF PHYSICAL ACTIVITY IN CHILDREN WITH DOWN SYNDROME

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Keywords: Down syndrome, cycling, physical activity.

Introduction
Children with Down syndrome (DS) have gross motor delays that impact their physical activity (PA) patterns. These delays often inhibit their ability to learn to ride a 2-wheel bicycle without training wheels. Increasing the repertoire of recreational activities of children with DS may increase physical activity levels and decrease the likelihood of excessive weight-gain and associated health risks. Only about 10 percent of children aged 8-15 years can ride a 2 wheel bicycle. The purpose of this study was to describe the effects of a bike training intervention on PA patterns of children with DS over a 1-year period.

Methods
Children with DS ages 8-15 years were randomly assigned to an experimental group (EXP, n=21) or control group (CON, n=21). EXP subjects received a bike training intervention for 5 days while CON subjects received no intervention. PA measurements were taken prior to the start of the bike program (Pre), approximately 2 months (Post-1), and at 1 year post-intervention (Post-2) using an accelerometer for 7 days at each time point. A mixed model analysis was used. Bonferroni’s adjustment was used for post-hoc analyses.

Results
Sixty two percent of the participants learned to ride a two wheel bicycle. Time spent in moderate PA (MPA) decreased in CON from Pre to Post-2 while this measure increased in EXP subjects. Time spent in moderate-to-vigorous PA also decreased from Pre to Post-2 in CON while EXP increased their time. Total counts and average counts/min showed similar results. Males spent more time in light PA, vigorous PA (VPA) and total counts of activity. Further analysis of EXP revealed that those who successfully learned to ride had less time spent in sedentary activity and more VPA than those who did not learn. Discussion: Teaching DS children to ride a 2-wheel bicycle should be a regular part of their education program and improves physical activity levels up to 1 year post-training. More studies are needed to characterize general PA levels of DS children. A discussion on reasons given by parents why some children stopped riding after they learned to ride will be presented with recommendations to reduce non-riding.

References
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THE RELATIONSHIP BETWEEN FITNESS VARIABLES & LEVEL OF PHYSICAL ACTIVITY IN DOWN SYNDROME CHILDREN

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Keywords: Down syndrome, physical fitness, physical activity.

Introduction
Research consistently indicates that children, adolescents, and adults with Down syndrome (DS) display major constraints in all areas of physical fitness. Most of this research literature indicates that quality of life and health is negatively impacted as a result of deficits in these fitness parameters. There has been an increase in the number of studies designed to improve muscular strength and endurance in individuals with DS and other intellectual disabilities and many of them have reported meaningful gains following a 12 week fitness treatment program. It is quite common that the researchers make a hypothesis that as a result of increased physical fitness, the participants with DS will be expected to be more physically active. Unfortunately, they seldom test this hypothesis or the hypothesis that when the fitness program finishes following the standard 12 week treatment, the participants will continue to engage in fitness routines. This is a major weakness in some of these investigations resulting in less useful scientific knowledge for professionals in adapted physical activity.

Methods
We conducted a two year research project involving bicycle training and 8-15 year old youth with DS and collected pre-training data on 40 individuals. Measures that were taken on all participants included: height, weight, sum of skinfolds, standing balance on the right and left foot, BMI, and peak knee flexion and extension strength. Physical activity was measured using acticals attached to their trunk for a minimum of 4 days with at least one weekend day. We analyzed the data to determine if there were any relationships between the variables and level of physical activity employing partial correlation controlling for age.

Results
The following significant relationships were found: percent body fat & time spent in light activity ($r = -.32, p = .05$), height & time spent in vigorous activity ($r = .36, p = .02$). Although there are significant correlations, none of the variables contribute much to explaining the variability in physical activity level. Discussion: In the future, we will increase the number of participates in each age group and analyze the relationships by age and after they learn to ride a two wheel bicycle. A discussion of other potential variables that might help explain the variability seen in level of physical activity will be presented including psychosocial variables, emotional, and cognitive development.

References

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Key words: ageing, adapted physical activity, postural stability, balance, prevention.

The aim of this work was to define the influence of the physical activity adapted on the postural stability on (the) elderly people as means of prevention of the loss of balance one through a program in Adapted Physical Activity (A.P.A.). Used methodology considers the program called PEM (Posture Equilibrium Motricity) that has allowed to study the influence of this practice on the postural abilities of the old people thanks to the specific evaluations of the grates PEM, to the monopodal and to the stabilometric tests with open and closed eyes.

The examined population was constituted by 19 old people between the ages of 70 and 80 years of age divided in two groups, the first one with more men than women and the second one with a higher score of female presence. After 12 weeks of practice, we have put in evidence the influence of this activity on the postural stability of the old people. The three PEM grates determine « the individual motor profile » (PMI), particularly the group B has passed by a score of 69.8 to one of 84.3 on 90; the group C is improved of 8 points. The evaluation of the functional abilities of the tests monopodal and stablymetric show that postural control suffers of the improvements but with some difference within the 2 groups. For the monopodal test both groups, B and C, they have improved in the test of the monopodal open eyes and closed eyes Rx and Lx, where the group B has obtained better result than the group A. In the stabilometric tests with opened eyes the group B has had less difficulty in comparison to the group C to make the examined abilities evolved. For the stabilometric test with closed eyes, the two groups have gotten the same positive results with interindividual differences. On account of this, we have compared the gotten results with the literature’s data, and we have brought forth a critical analysis on the benefits and the limits of this type of program on the postural stability of the elderly ones. Results of it that the adapted physical activity addressed to improve the specific elements of the motor control has had a beneficent influence in the postural stability and in the monopodal and bipodal balance. These proposed activities must draw near to a multisensorial program and combined holding in consideration of a person’s level and initial potentialities.

References
THE INCLUSION: A NEW CHALLENGE FOR THE ADAPTED PHYSICAL ACTIVITIES

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Key words: cultural evolution, "marginalising" paradigm, "differencializing“ paradigm, "including" paradigm, disabilities, human categories, inclusive sport, innovation, "Baskin".

Considering the human civilisation as a cultural evolutive process, we notice that the relation that the society builds towards the minorities follows different steps. In a first phase, it seems to dominate the cultural "marginalising" paradigm, with hostile, pitiful or uninterested attitudes... In a second phase, since the process of democratisation demonstrates it more recently, it tends to be recognised progressively the rights of the minorities in the different spheres of the life (education, work and free time), through the creation of different activities that fit to each human category inside institutional specific contexts. The second phase is then dominated by the cultural “differencializing”paradigm. The third phase, which enters a superior degree of cultural maturity, encourages to recompose the unity and the cohesion of this world fragmented in different categories, under the paradigm of the inclusion.

It is necessary to suppose that, as far as it looks after the minority of disabled persons, our society has already started trying the application of the inclusive paradigm, even if essentially inside the educational sphere, replacing the special schools by the inclusive schools. But it is possible to notice how much it is still difficult today to extend the application of the inclusive culture in other fields of the life like the work or the free time, still dominated by the differencializing principle (“special work” in protected contexts, or adapted recreational activities). The recent development of “ A.P.A. ” (Adapted Physical Activities) and the present sporting offer applied to disabled persons demonstrate perfectly as pedagogical engagement is still concentrated at “specialised” proposals and not at inclusive proposals yet: adapted sport or special sport, for persons with physical or mental disability.

The cultural evolution of each field of life, how schematically described above (from the first one to the third phase), follows a trajectory that has its own rhythms. Accordingly, it can be very interesting to observe the original field of the physical education, since really the resulted one of the crossing of two trajectories: that one of the school and that one of the sport. In fact, if on the one hand the educational institution is already compared to the inclusion, giving to the teachers the task of facing a high heterogeneity in class, on the other hand the sporting activities at disposal of the teacher of physical education are not much practicable in inclusion because of their internal logical. It is then necessary to innovate, even if with difficulty, opening the approving cage of the already existing reality, to overcome the second phase and to invent new sporting inclusive practices. The BASKIN in fact is a good example of inclusive innovative sport that is developing in some Italian provinces, starting from Cremona, and that Italy can be proud in our opinion to present to other European countries in occasion of this EUCAPA 2008.

References
APA TERMINOLOGY IN CZECH REPUBLIC:
COMPARISON OF ATTITUDES OF TEACHERS

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The APA terminology is usually based on English origin terminology. There is no very easy to translate – with the same semantic connotation – into other languages, specially Slavic languages. Language understanding, appropriate polite as well as exact official terminology seems to be very important in the framework communication of specialists (social workers, teacher, educators).

Terminology can influence on persons attitudes, attitudes can influenced the terminology. It was the reason of the concept of international study lead by Anna Bianco (2007). Categorical scaled questionnaire (Anna Bianco) was applied to different groups of respondents in Czech Republic. The results – opinions of the teachers – are presented in oral presentation.

Participants

Teachers: obligatory school with children up to 15 (secondary school)
No of participants aged years of birth interview
30 more than 27 1949-1979 22, 23.12.11.06

As there is legislation (school law) about integration, from 0 to several students can attended the schools, mostly wheelchairs or with hearing disability. Teachers can go continuously through different courses and workshops with the topic “integration”, not all of them do it. They can achieve additional education or information in „special education“, not APA. Not everybody does this.

Teachers: obligatory school with children from 15 to 19 (middle school)
No of participants aged years of birth interview
30 more than 27 1949-1979 22, 23.12.11.06

As there is legislation (school law) about integration, 0-several students attended the schools, mostly wheelchairs or with hearing disability. Teachers can go continuously through different courses and workshops with the topic “integration”, not all of them do it. They can achieve additional education or information in „special education“, not APA. Not everybody does this. In comparison of secondary school teachers they have less opportunities for additional education in “special education” or in “integration”. But – as the “class-masters” or “profession -advisors” they should be oriented in future university education for their students.

Results

There are small differences between both groups of teachers, but crucial phenomenon can be considered educational experience and real contact with persons with disability, not the level of school. Contact theory (Sherill) is confirmed. Vocational training including personal practice and experience seems to be necessary for APA understanding, in general.
ANALYSIS OF SERVICE-RETURN EXECUTION OF ELITE TABLE TENNIS ATHLETES WITH INTELLECTUAL DISABILITIES

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Key words: intellectual disability, visual-spatial intelligence, table tennis.

Introduction
In a sport context, we have limited understanding as to how deficits in intellectual functioning influence potential and performance in training and competition. Intellectual disability is the result of complex interactions between a person’s intellectual functioning and his/her ability to use the conceptual, social and practical skills needed in meeting life demands (e.g., taking care of yourself, learning, communicating; AAMR, 2002). Intelligence, the basis for intellectual functioning, is a mental capability that is essential for reasoning, planning, solving problems, understanding complicated or abstract ideas, learning, and transferring learning from one situation to another.

One can expect that deficits in intellectual functioning are closely linked with a lower visual-spatial intelligence (Vickers, 2007). This could be a reason why table tennis players with ID would perform significantly worse compared to their generic peers on a table tennis specific test measuring tactical skills/visual-spatial intelligence.

Methodology and instruments
The data used in this study are derived from 39 athletes with intellectual disability (age = 28.3 yr ± 7.3) and a reference group of 8 athletes without disabilities (age = 22.7 yr ± 10.3). The table tennis specific test consisted of a table tennis robot, dispensing 16 series of 15 serves to the player. The table tennis robot was adjusted so that each of the 15 balls within one series had the same speed, direction and spin. Four effects were used in all series: topspin (T), backspin (B), left sidespin (L) and right sidespin (R). For each player, the protocol consisted of 16 different series to be returned to a specified target (A4 paper size) on the other side of the table.

Results and conclusion
The results of this research show that the service-return accuracy of athletes with ID is poor compared to able bodied athletes. Elite athletes with intellectual disabilities are able to adapt their return according to specific spin characteristics of the serve, but this cognitive process progresses significantly faster in able bodied athletes.

References
EUROPEAN BEST PRACTICES AND POLICIES FOR PROMOTION AND IMPLEMENTATION OF APA FOR ELDERLY–THENAPA II

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Introduction
Although there is some awareness about the benefits of physical activity and many of the issues regarding elderly persons (with and without a disability) are being discussed nowadays, there is still a long way to go to achieve full awareness and inclusion of older and especially older disabled people. The challenge is to expand the concept of an active lifestyle for all elderly persons.

Methods
During three years experts in the domain of ageing and disability from 27 European countries worked together to face this challenge. As a network THENAPA II developed a wide spectrum of products that facilitate the process of awareness rising in the domain of APA for the Elderly.

Results
The project has reviewed the information and statistics, gathered by all the partners on good practices and policies extending throughout Europe. This research made the identification and the fulfilment of relevant educational programmes in the students’ curricula possible. In turn these programmes have to motivate students from different academic domains to work with and for the elderly population and at the same time – to help expand the concept of active lifestyle for the elderly.

In order to achieve the objectives of the project THENAPA II developed Recommendations to be proposed to the European Commission and its member states. The recommendations give the necessary information to all policy makers about the current situation of APA for elderly. The THENAPA II working group recommends that the European Commission and EU member states implement its findings under 3 different headings: (1) the policy, (2) research and/or education programmes and (3) the individual (elderly person with/without a disability).

To better serve the ultimate goal which is to motivate all older adults regardless their abilities to participate in different physical activities other products were developed – the motivational movies and resource cards. The DVD ‘Never too old to be active, The joy of movement’ which is accessible in 18 languages contains three motivational movies that are meant to convince elderly themselves to participate in Adapted Physical Activities. “Active Ageing Activity Cards” are an excellent tool for everyone who wants to organize an exercise session for older adults with or without disabilities. Those products complement each other; their specification gives a possibility to reach not only one type of end user, but a whole spectrum of other potential users.
TOWARDS EVIDENCE-BASED CLASSIFICATION IN PARALYMPIC SPORT – OVERVIEW OF THE ISSUES

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Key words: evidence-based classification, sport performance determinants.

In 2008, classification in disability sport is not evidence based. The determinants of sport-specific performance are not well understood, and, what is more, the causal relationship between sport-specific determinants and sport outcome has not been proven. The complexity of the research question is demonstrated in the model of sport proficiency developed by the Sport Science Committee of the IPC. According to that model, reaching an elite level in sport requires the transfer of physical potential, the firm execution of fundamental skills, and the ability to apply learning across different contexts, into sport-specific high-standard game or race situations. Disciplined practice and a sound athletic profile with a performance-driven attitude and personality will improve this acquisition process and enable the individual athlete to perform to their maximum potential. Environmental prerequisites, such as optimized quality of training and access to training and competition facilities, will facilitate this process.

The relationship of sport-specific determinants and sport outcome is further obscured by the diversity in impairment profiles of athletes with a disability. A fair number of studies have been conducted to describe performances of athletes in different classes. Some of these studies conducted detailed technique analyses in elite athletes to identify the optimal movement pattern to maximize performance. The optimal movement pattern characteristics were then related to the impairment characteristics of individuals within a specific class. While these studies are important they are of limited value for identifying an optimal technique because the participants in the studies all had impairments of body structures and functions and would therefore have selected techniques that would minimise the impact of their impairment on performance. In order to describe definitively optimal technique, the technique used by people with intact body systems and structures should be studied and described.

This presentation serves three purposes: 1) the outline of the conceptual framework of the evidence based approach in classification of athletes with a disability, which aims at minimizing the impact of impairment on the outcome of competition by classifying impairments according to the activity limitation they cause, 2) the introduction of two experiments conducted to understand the relationship between unrestricted body function and athletic performance (these experiments will be presented in separate oral presentations on wheelchair sprinting and seated shot put performance), and 3) the application of the concept to the eligibility issue of athletes with an intellectual disability (this application will be presented separately).

References
PERFORMANCE DETERMINANTS IN WHEELCHAIR SPRINTING: A BASIS FOR A NEW ATHLETICS CLASSIFICATION SYSTEM IN DISABILITY SPORT

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Key words: biomechanics, functional potential, kinematics, wheelchair propulsion.

Introduction
Following the 2008 Beijing Paralympic Games, a new classification system will be officially implemented "to minimize the impact of impairment on the outcome of athletic competition by classifying impairments according to the activity limitation they cause". The purpose of this study was to investigate the impact of trunk movement restrictions and the hand rim wheel size ratio as defining components in wheelchair sprinting.

Methodology
This project consisted of a maximal velocity study (VEL) and an acceleration study (ACC). Two groups of 15 male moderately active participants with no wheelchair propulsion experience completed 2 test series to establish test-retest reliability. Each test series was comprised of 20 sprint manoeuvres performed on a roller ergometer: 2 sprints with 5 varying movement restrictions (90-0, 90-45, 90, 0 and 45-0) using ADL wheels and track wheels. The sprint time for the ACC and VEL study were 10 and 20 seconds respectively. Paired T-test and Intraclass Correlation Coefficients (ICC) were calculated to assess test-retest reliability. ANOVA for repeated measures with a Tukey Post-hoc with maximal speed and mean acceleration in the first 3 seconds as dependent variables, and hand rim wheel size ratio and movement restriction as independent variables were used for the effect analysis.

Results
The sprint tests using ADL wheels were considered reliable although a training effect did occur in VEL. Regarding track wheels reliability, ICC for VEL data were rather low. As well, acceleration capacity was significantly lower during the retest possibly due to fatigue, muscle soreness and the occurrence of blisters. Maximal speed and acceleration capacity were significantly higher in 90-0 versus 90-45 and 90, and in 90-45 versus 90. As well, there were no differences between 90-0, 0 and 45-0. Regarding the hand rim wheel size ratio, maximal speed was higher using track wheels compared to ADL wheels. However, acceleration capacity was not different between both wheel sets.

Conclusion
These results indicate that upright movement restrictions lead to lower maximal speed generation and lower acceleration capacity, whereas the impact of prone movement restrictions remains unclear. In addition, data suggest that a higher hand rim wheel size ratio is associated with a lower maximal speed generation and a higher acceleration capacity. Further analyses are now necessary to investigate the relationship between trunk movement and movement restrictions, both in an able-bodied and a disabled population.

References
THE ANALYSIS OF POSTURE BY MEANS OF A GEOMETRIC METHOD
FOR THE DETERMINATION OF THE SIMMETRY LINE OF THE
VERTEBRAL COLUMN

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Key words: postural analysis, symmetry line detection, reverse engineering.

Traditional techniques for posture and vertebral column detection, based on cutaneous marking, can be replaced with modern techniques based on 3D scanner. These techniques offer new detection and diagnostic capacities. Compared to other technologies and MR, 3D scanners are not invasive, give accurate measurements with acceptable costs and allow that posture detection is not conditioned from instrument. The limits are due to the fact that the evaluations are included in those ones referable to what can be found from outside by means of the traditional estimative-experimental techniques. In fact, one of the most frequent problems is correlated to the body morphology: it can happen that a region of emisoma points out some gibbosities or alterations that can have no correlation with the column vertebral derivations and that can be due, merely, to defective or incorrect postural attitudes assumed by the subject because of algies or attitudes taken by daily working and/or sporting habits.

The geometric information related to the back of the patient, as those obtained after the acquisition by means of 3D scanner (point cloud), can not be directly used for posture analysis; data processing becomes, therefore, necessary in order to recognize the characteristic elements of the back. This configuration, based on outside detection, is given by the position of the vertebra spinal apophyses (symmetry line, S.L.); from this, taking into account the thickness of the soft parts that cover the vertebra, a spinal midline (S.M) could be determined.

The techniques for symmetry line recognition that have been developed in previous research activities, need to be tested in symmetry line detection from real subjects. This activity will be done and monitored by experimentations in which, properly selected subjects, will be involved. In particular the postures acquired from a sample of healthy subjects of both sexes and performing different physical and sport activities will be analysed. The proposed method for postural analysis will be compared with traditional techniques and the results will be critically discussed.

The persons who participated in the experiment were 80 students of the Faculty of Human Movement and Sport Sciences of the University of L’Aquila. The sample was not pre-selected. The experiment was conducted at the Design and Industria Method Laboratory of the Faculty of Engineering of the University of L’Aquila. Each participant replied to an informative questionnaire and personal data were treated according to the current law on privacy rights (L. 675/96, 1996). Each subject underwent a preliminary classical morphological postural test, done following the directives described in Raimondi et al. (2006).

The Digital acquisition of the back through 3D Scanprobe of points of precise form represented by the back of the person was performed in two postures, the most interesting in evaluating posture: the erect posture and the seated posture. The results obtained after Digital acquisition were elaborated and compared with those available in the literature. The comparison showed a good overlap that needs to be properly quantified and further validated in order to establish the relative percentage due to individual variability and the technical problems related to the 3D Scanprobe.
ASSESSMENT OF SKI RESORTS FOR ADAPTED SKIING PRACTICE:  
A CASE STUDY (SAN ISIDRO SKI RESORT, SPAIN)  

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Key words: adapted alpine skiing, accessibility, safety, personal and material resources.  

Introduction  
In the field of adapted physical activity coexist multiple models of practice and services delivery (sports, recreation, education or rehabilitation), which closely connect this practice to social wellness and quality of life. One example of physical activity which is being practiced by increasing numbers of individuals with disabilities is adapted skiing.  

Issues  
The research presents an analysis of San Isidro Ski Resort (Leon, Spain) for adapted alpine skiing practice. To do so, we have carried out a revision of the rules concerning general accessibility and safety at ski resorts (covering items such as car parks, buildings, access to pistes and lifts), and their fulfilment at the ski resort. Another element studied is the design of the different ski areas in order to know which are more appropriate for beginners, intermediate and expert skiers. Finally other services offered, such as instructors with specific formation, adapted material (Sit-Ski, stabilizers, guide systems…) or the role of institutions that promote the practice of this sport, have also been assessed.  

Research method  
A questionnaire was designed including 30 descriptive basic items and subitems related to the above aspects: barriers, transport, lifts (type, number, access and safety, tickets), ski areas (situation, lifts, type of pistes, difficulty degree for adapted alpine skiing), personal and material resources, institutions that promote this activity, and users in the last two seasons.  

The questionnaire was completed by direct observation, data collection among the institutions that offer services at the ski resort and 2007-2008 season adapted ski practitioners.  

Results  
San Isidro Ski Resort presents acceptable conditions for adapted alpine skiing. There are elements such as accessible buildings, piste safety taken into account, lifts that allow their use by, for example, sit-ski users, ski pistes suitable for beginners with different disabilities, a significant number of pistes for intermediate and expert users, instructors with formation in adapted alpine skiing, facilities to use specific material and institutions that promote the sport.  

Discussion  
According to the data obtained in this study, since the adapted alpine skiing practice in San Isidro Ski Resort is increasing, it may be necessary to design a programme of improvements in the elements more directly related to the initiation of the sports practice (promotion, types of pistes and lifts), or accessibility in some of the service buildings.  

References  
ELDERLY PEOPLE AND PHYSICAL ACTIVITY: EQUAL OPPORTUNITIES?

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Key words: elderly people, physical activity, playground.

Physical activity increase is important for all age groups, in particular for elderly people; due to the lack of suitable places it is often difficult for them to practice it. For this reason several projects have been planned to encourage elderly persons to do physical activity in order to improve their health and quality of life.

The first initiative has been carried out at the Preussen-Park in Berlin where an area featuring several pieces of equipment conveniently created for over-65 and those with a height of at least 1.5 m. The project cost about 20,000 euros. A similar playground has been built in Manchester, UK. This park is located close to a children playground and some of its equipment can also be used by disabled people. On what concerns Italy it is important to highlight initiatives undertook by Turin town hall in partnership with SUISM. It is already ten years that ‘Giochi d’Argento’ (Games for elderly people) are carried out in the city. This event is reserved to over 60s and it takes place every year from January to June. It features a series of competitions and tournaments of athletics, swimming, tennis, chess, bowling etc. Furthermore during this event promotional physical activity is also offered and it is carried out and supervised by highly qualified trainers. Preparatory meetings are provided for activities such as swimming, gymnastics, etc.

The project for a playground for elderly people has been recently carried on again in the city of Turin following the example given by Berlin and Manchester. The idea consists of creating these areas firstly in council houses’ gardens and then in public gardens such as ‘Pellerina’ and ‘San Valentino’. The aim of all these projects is to promote an active lifestyle among elderly people so to improve their health and their quality of life. These activities should be organised in every Italian city in order to give elderly persons the opportunity for a healthy living as well as socialise with others; as a matter of fact, these aspects are fundamental for the life of old person who tend to suffer from laziness and loneliness.

References


Objective
The present study aimed to evaluate the effects of strength training on the basal levels of IGF-1 and functional autonomy in the neurogenic and myogenic phases of sedentary elderly women.

Material and methods
The sample consisted of 24 elderly women volunteers, randomly subdivided in two groups: experimental group (EG, n = 13; 65.62±5.36 years-old) and control group (CG, n = 11; 71.45±5.72 years-old). The maximum repetition protocol (1RM) was utilized to evaluate the maximum muscular strength (BAECHLE & GROVES, 1992); the Chemiluminescence’s protocol - IMMULITE – DPC MED LAB, for IGF-1 and the Latin-American Development Group for Maturity (GDLAM – VALE, 2005) protocol to evaluate the functional autonomy. The Kruskal-Wallis’ test was utilized (EG, in relation to the three moments) followed by Dunn’s multiple comparisons; the Wilcoxon’s test (CG, in relation to the two moments) and the Mann-Whitney’s test (inter-group comparison) (THOMAS, NELSON & SILVERMAN, 2005).

Results
It was revealed a significant increase (p<0.05) in IGF-1 (CG20weeks x EG20weeks - \Delta=54.29\ ng/ml, p=0.009 – graph 1) and a decrease in the execution time in all tests from the GDLAM’s protocol, reflecting in significant decrease on the GDLAM – IG index (CGpre-test x EG4weeks - \Delta%=-8.05%, p=0.0089; EGpre-test x EG20weeks - \Delta%=-25.47%, p=0.0001- graph 2).

Conclusion
This way, it could be concluded that the muscular strength training inferred in significant increase of the serum levels of IGF-1 only in the myogenic phase of EG and significant decrease of GI in the neurogenic and myogenic phases of EG.

References
LONG TERM ATHLETE DEVELOPMENT-INCLUSIVE OF ATHLETES WITH DISABILITIES

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Key words: long term athlete development, inclusive sport, stage by stage development.

Introduction
Long Term Athlete Development (LTAD) is rooted in a philosophy that values both podium performances and physical activity for life. The LTAD model, based in scientific research and practical coaching experience, is a framework for optimal training, competition, and a recovery schedule for each stage of athletic development. There was concern or questions raised regarding the inclusion of athletes with disabilities (both intellectual and physical). In Canada they have gone one step further, making sure that official Special Olympics and Paralympic sports include athletes with a disability (physical or intellectual), in their athlete/participant development models.

Issues
The LTAD includes a stage by stage approach that acknowledges developmental age as being a key feature to how an individual progresses through the various stages. But what do we know about athletes with disabilities and developmental age, progression, and these stages? Should there be more, or less, or different stages for athletes with disabilities? What do we know, what do we not know?

Research Methods
A Long Term Athlete Development Expert Committee was developed and included two individuals (Bluechardt and Higgs) with a focus on athletes with disabilities. Each National Sport Organization established Steering Committee’s who worked with the experts in consultation with the larger sport community, in the development of their models. A special committee of consultants developed what is entitled “No Accidental Champions,” specific to persons with disabilities to assist in developing the sport models. Various methods such as survey and questionnaire’s were used to gain greater insight into the inclusive nature of various sports across the country.

Results
The results highlight some of the reasons for LTAD for athletes with disabilities. Some of these include: gaps in the current development pathway for athletes with a disability; lack of a streamlined, efficient system that is progressive and aligns the right opportunities with the developmental level of the participants; lack of communication between the partners (e.g., levels of government, National Sport Organizations, Multi Sport Organizations and other organizations providing physical activity opportunities for people with disabilities); to facilitate lifelong enjoyment in, and benefit from, physical activity.

Discussion
The Long Term Athlete Development project has resulted in the need for two additional stages in order to result in an inclusive model. The results indicate it is possible to have an efficient and inclusive sport system, regardless of ability. As this project continues to evolve, we are seeing a coming together, a common language being used in sport, by the coaches, athletes, parents, sport administrators, and government officials.

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SELF-ESTEEM AND SELF-EFFICACY IN ATHLETES WITH INTELLECTUAL DISABILITIES

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Keywords: Self-Esteem; Self-Efficacy; Intellectual Disabilities.

Introduction
Self-perception measurement in the physical domain has developed dramatically in recent decades (Fox, 1998), but investigations of selfperceptions in the area disability sport are still in a holding area. The self-efficacy construct is one of the most influential psychological constructs thought to affect achievement strivings in sport (Feltz, 1988). People with high self-efficacy perceive difficult tasks as challenges rather than threats; whereas, people with low self-efficacy avoid difficult tasks and perceive them as personal threats (Bandura, 1994). One way to boost the improvement of positive selfperceptions in individual with a disability is to promote the participation in sports, recreational or competitive nature (Fox, 2000).

Issues
The purpose of the present study was to investigate physical competence and self-esteem, of athletes with intellectual disabilities.

Research Methods
Various psychometric instruments have been developed to assess self-efficacy for physical activities, but we choose the ten-item subscale of Perceived Physical Ability (has a range from 10 to 60) of the Physical Self-efficacy scale (Ryckman, Robbins, Thornton, & Cantrell, 1982), a 22-item scale that requires participants to indicate the extent to which they believe each item reflects their own capabilities. The PPA was used exclusively as a measure of physical self-efficacy in the current analyses.
To assess self-esteem we used the Rosenberg Self-esteem scale (Rosenberg, 1965). The measure is a well-validated 10-item assessment of one’s overall evaluation of selfworth. The RSE has been widely used in several domains of self-esteem research including physical activity.
This study involved a sample of 37 portuguese athletes with intellectual disability, 11 female and 26 male, aged between 12 and 42 years (mean = 23.65, sd = 6.16).

Results
There were no statistically significant differences found and results show that male athletes are perceived in a more positive view of self-efficacy. Female athletes have higher levels of global self-esteem.

Discussion
The current study attempted to combine the constructs of physical self-efficacy and self-esteem with athletes with intellectual disabilities. Although the findings were not statistically significant, the information gained through this study is beneficial.
This study was exploratory in nature and was intended to open the door for more research about self-efficacy and self-esteem in athletes with intellectual disabilities.

References
POSTURE-PROPRIOCEPTIVE A POSSIBLE AND MEASURABLE RELATIONSHIP

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Introduction
In the postural construction the Proprioceptive is often used, the methodic is based on the variation of the stimuli more than on the intensity and on the load, the effectiveness of this methodic is of difficulty measurement.

The aim of this study is to test and quantify the effects of the Proprioceptive analyzing the assignments that the involved structures must acquit as the Postural control.

To study the effects has been analysised the Foot, an articular that is particularly solicited by the load Analysis is turned to a competitive sport sector as the volleyball that surely constitutes an example of important solicitation, the results that come out will easily transferred, with due methodological adaptations, in those situation of adapting people where it is lent necessary to work on the posture.

Results of the study

Methods of elaboration
Two groups have been individualized, one stressed on the work/charge and one of control, chosen after having checked 400 questionnaires sent to seven volleyball sporting club .After having verified with a statistic investigation "t" to P < 0,05 the homogeneity among the groups the two groups choosen were constituted by 10 girls of fourteen years old.

The group of work/charge has been submitted to an intense work of Proprioceptive for seven weeks with three weekly sessions. To the beginning and at the end of the program the 20 girls, convocated in alphabetical order, where mixed between work/charge and Control, has been submitted to analysis on a computerized Baropodometrica platform with evaluation of the surface, of the load, both with closed and open eyes, for a total of 640 data, realized by external operator to guarantee its impartiality. For the interpretation a run of normalization of the values is used reporting them to a staircase -4 +4 considering the approach or the leaving to the charts of normalcy.

Discussion of the results
The analysis of the values has brought to underline a marked improvement especially in the statics and middle values have passed by -0,33 to 0,45 for the group of work/charge in comparison to -0,33 -0,35 for the group of control, with values of HS "t" p > 0,01, confirmed by the cross analysis, Before Job / Control and Before / After Control of Homogeneity p < 005.

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Key words: Athletics Tracks, Disabled Athletes - IRD, Italian Championships.

Introduction
In Italy, the efficacious Coordinating Institution I.P.C. promotes sport activity for people with Intellective-Relational Disability – IRD. Data today indicate 5290 athletes having an IRD membership card and 395 Sport Associations being I.P.C. – IRD affiliated. Standard participation at competitions has been subdivided in basic and advanced levels. Purpose of this study is to certify that between 2004 and 2007 at Italian Track and Field Championships for disabled people there was: 1) an increase in quantity of athletes (linear increase of number of people practicing this sport) and also in quality (increased number of athletes participating in 2007 at advanced level competitions) 2) if a substantial increase of Sport Associations adhering to Championships.

Methods
The analysis has been carried out based on data received by I.P.C. as regards the number of athletes, who participated at the Italian Track and Field Events, which took place in: Sciacca (2004), S.Donato Milanese (2005), Rovigo (2006), Scandiano (2007). Differences among the participants as to their gender and competition level were analysed with Pearson’s Chi-square test and confirmed by the O.R. (odds ratio) values.

Results
Data indicate an increased number of both genders in the whole four-year period, with males significantly prevailing on females. Number of athletes having a basic level membership card was higher than those at advanced level, however, with a progressing decrease of this difference. Quantity wise, a linear increase of number of participants at the Italian Championships is evident: year 2005 (+ 26% in 2004), year 2006 (+ 11, 9% in 2005), year 2007 (+ 12, 92 % in 2006) giving a total increase of 59, 38%. As for the participating Sport Associations the trend is not linear but, after a decrease in the two central years, the number of Sport Associations has become significant again. Participating Associations were 55 in 2004, 47 in 2005 (-15% in 2004), 46 in 2006 (-2 % in 2005), 56 in 2007 (+27, 7% in 2006). The reasons for this discontinuous tendency could be ascribed to the difficulties encountered by Sport Groups to organise temporary transfers away from their sites.

Conclusions
Data show a progressive increase in number of athletes but a stationary situation of the number of Associations. The significant increase of participating athletes may be due to an efficacious promotion by the Territorial Bodies and by IPC Sport Associations among people with IRD. The mentioned increase, at both basic and advanced levels, during the four-year period, seems also to indicated that the Associations, even if low in numbers (56 in Italy), are working well. As regards the gender, the fact that 2/3 of participants were males, suggests that maybe, through an appropriate revision and adaptation of competitions, a higher number of females could be involved, unless, the type of disability is the leading factor for many female athletes to abandon sport activity.

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INCLUSION & INTEGRATION OF DISABLED STUDENTS IN REGULAR PE: QUANTITATIVE INVESTIGATION ABOUT TEACHERS POINTVIEW

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Introduction
In Italian regular school, the inclusion and integration of all disabled students are implemented with four steps in the last century: 1st) early 1900s: general pedagogy based on the affirmation of individual difference as resource for democratic society and education; 2nd) 1970s: closing of special schools by legislation and laws; 3rd) 1980-1990s: special pedagogy trained special resources for Special Educational Needs (SEN) (support teacher, special methodology of teaching & learning, special instrumentals...); 4th) 1990-2000s: integration of APA training in the regular university curricula of Motion and Sport Science Faculty.(Council of Ministers of Europe-Charter of Sport for all Person with Disabilities, 1987).

Issues
The research aims at investigating the PE teachers point of view about inclusion and integration (II) of disabled students (DS) in the regular PE. The questions concern: a) Demographic Data (gender, age); b) APA training; c) APA teaching experience; d) Positive perception-readiness to adaptation of PE teaching for II of DS teaching in inclusion. Aims at investigating whether if there is different point of view about PE teachers attend MSSF and SIS. MSSF students are trained in APA for 3CFU (Credit Formative in University) for total 24 hours. SIS students are trained in APA for 3CFU + 3CFU for total 48/50 hours.

Research methods
The survey is quantitative, data are collected by interviews, statistical analysis is descriptive (means, frequency, standards deviation, percentage)
The sample consist of 220 subjects from 2 groups: 1. students at MSSF (Bachelor) (n1=110); 2. students at SIS (specialization) (n2=110).
Results: a. Demographic data a. Gender MSSF (Female 31,8%- n=35, Male 68,2%- n=75); SIS (Female 56,6%- n=59; Male 43,4%- n=51); Age MSSF (22,2 years; ±20-30), SIS (37,2 years; ±30-51); b. APA training MSSF (No 88,3%- Yes 16,6%); SIS (No 9,3% - Yes 90,7%); c. APA teaching experience MSSF (No 70,83%- Yes 29,17%); SIS (No 6,78%- Yes 93,22%); d. Positive perception- Readiness to adaptation of PE teaching for II of DS teaching in APA (MSSF (Yes 75%- No 25%); SIS (Yes 95,3%- No 4,7%)
Discussion: the finding prove that in the MSSF group the majority is represented by men (68,2%), whereas in the SIS group the women count for 56,6%. This probably due to fact that far more women than men choose to teach in the school after they graduate.
The older age (x= 37,2 years), more APA training (90,7%) and experience (93,22%) about SIS group confirm the more competence in APA teaching.

Conclusion
The data confirm the indication of Charter of Sport for all (1987) about the importance of APA training at all level of University curricula.
The APA PE teachers training is important in a society where is a steady growth in the number of subjects with special needs as stated in the European Council of Lisbon (2000). Special needs far from being a burden, students with special needs are on the contrary a special resources for better society.

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LABORATORY CONFIGURATION FOR THE KINETICS, KINEMATIC, AND PHYSIOLOGICAL STUDIES OF THE SPINAL CORD INJURY IN THE PROPULSION OF WHEELCHAIRS

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Keywords: Spinal Cord Injury, Wheelchairs, Propulsion, Biomechanics, Physiology.

Objectives
To develop a methodology that will allow the study of the biomechanical behavior of the upper limbs of people with spinal cord injury when wheelchair propulsion takes place; also study their physiological behavior and its adaptations to the effort. On the other hand we expect to emphasize the functional model of this methodology in a hospital environment as scenario of initiation of athletic skills for disabled people. Once the methodology is taken into action and proven to work we intend to design and customize a wheelchair that will reduce the work overload of the anatomic structure of the upper body part and its implications on functionality and, in athletic skills, having into account from high performance in sport to sedentary populations, focusing in health and injury physiology among others, taking part in the promotion of Physical Activity as a rehabilitating factor inside the hospital.

Method and Materials
Due to the lack of movement analysis laboratories that study this methodology we have reviewed bibliography, visited many centers and interviewed many experts in the area.

Results
We present acquisition results of the equipment and the tasks necessary to equip a complete laboratory that include a treadmill, adapted with a load-cell, an EMG system (Noraxon), a portable metabolic test system (Cortex-Metamax 3B) synchronized with a Cardiac Frequency register (Polar), a Kinematic Analysis Equipment (kinescan-IBV), and a kinetic analysis System (Smart-Wheel) based on instrumental wheels with dynamometers that allow to obtain force and moment that the hand applies on the hand-rim in contact with the propelled wheel. In addition, there has been finalized the model of upper limbs which, departing from the previous data, allows to obtain joint forces and moments.

Commentaries and Conclusions
We present all the operational, structural and programming tools to make effective this biomechanical and physiological analysis of the wheelchair propulsion. We also conclude in regards to future investigation lines applied to physical activity in a hospital-athletic environment.

References
SPORT, MOTOR ACTIVITIES AND DISABILITY IN EDUCATIONAL FIELDS: FEATURES AND POSSIBILITIES OF APPLICATION OF THE MOVEMENT ASSESSMENT BATTERY FOR CHILDREN

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Keywords: Motor assessment, motor activities, school.

The assessment of motor-sporting activities in educational fields requires on the part of the teacher, the functional integration of scientific instruments and didactic methodologies, suitable to insert surveys harmonically into the formative school offer. The instrumental features and the methodological profile of the Movement Assessment Battery for Children represents as a whole an original model of integral use of a formal evaluation and of a less formal evaluation. The former concurs to obtain numerical scores, the latter gives stress to the qualitative information as a consequences of the motor and behavioural observations and from the consideration of the possible presence of deficit or difficulties that can influence the motor performances of children. The didactic potential of this model is findable in the complementary employment of two instruments: the Tests and the Check-list. They help to delineate, through playful activities of easy realization, a profile of the difficulties of the children in relation to the different motor actions and the various learning atmosphere sets, organizing effectively and with consciousness, a global and balanced rehabilitation program (Henderson ET al., 1999). The playful features of the Tests, the easiness and familiarity of the behaviours to observe in the Check-list, permit to create a flexible and easy searching instrument to insert in the curricular and extracurricular school activities predisposing spaces that receive the complexity of the didactic search such as a “praxis oriented to the improvement of the teaching and learning processes” (Kemmis, S. & McTaggart R., 1988). The surveying model, as well as representing a scientific procedure according to the method of the action-research, can favour a process of motor assessment of the differently-abled children through playful activities. The methodology can favour the work of the differently-abled support teacher that operates in the primary school in order to read and contextualize the functional diagnosis of the disability, gathering a lot of indispensable information in order to predispose the dynamic and functional profile. In conclusion the Movement Assessment Battery for Children can represent a preliminary, intermediate and final type of assessment to use in the personalized educational plan for differently-abled children in the primary school for the part dedicated to the motor area.

References
FITNESS AND SPORTS FOR DISABLED PEOPLE WHO LIVE IN LOMBARDY: A COGNITIVE SURVEY THROUGH SPORT CLUBS

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Key words: APA, Disabled people, Sport clubs.

Introduction
The choice of this research concerning the motor skills and physical fitness of disabled people living in Lombardy, a region in northern Italy, is to uncover the present major problems. It is to propose suitable solutions and to understand what necessary components are needed to allow sports affiliated institutions such as clubs be able to function at their maximum capability to assist those with disabilities.

Materials and methods
By conducting a survey, consisting of questions and answers and multiple choices, 86 sports clubs and gyms in and around the Lombardy area were asked to participate.

Results
The results emphasized the clubs that had a greater number of disabled athletes (between 125 and 150) had also a higher number of employees as well: instructors, volunteers and some physical education teachers. There were three basic facilities used: a gym, a swimming pool and depending on the situation either horse riding grounds or a soccer field. It showed that within the employees, a complete medical staff of specialists (40% doctors, 22% pedagogues and 38% psychologists) were included. The results also demonstrate that the clubs with a higher amount of facilities can offer a wide range of sports therefore satisfying the different needs of disabled people and above all: preserving their rights. A problem arose when the presidents and their staff's need to select the appropriate activities to be assigned suitably to each disabled athlete. Another problem was the choice of hiring a non-specialized staff (76% volunteers, 4% physical educational teachers and 20% sports instructors), even if there was an economic advantage, it seemed it could deprive the maximum of services available to these athletes. The lack of a qualified staff could hinder or limit the availability of these athletes taking part in various sports events (less than 50% take part in competitions).

Conclusion
The research revealed that even today it is still necessary in dealing with the knowledge and requirements of the disabled athlete, it is not only the good effort or to improvise but above all the need and use of a professional staff.

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AN INTERVENTION IN ORDER TO DEVELOP AND STRENGTHEN THE ADAPTED PHYSICAL ACTIVITY IN SCHOOL: THE EXPERIENCE IN THE PAVIA AREA

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Key words: APA, Disabled people, Primary and secondary school.

Introduction
The recent theories underline that in the educational field in order to allow the best learning, it is necessary "the know how " in the first place and this is particularly true when dealing with disabled pupils. In APA, a system of planning development and control has been developed, and it offers the tools for school inclusion of disabled students, connecting online with the different educational and institutional agencies. The data collected in 2005 from an inside survey in the primary and secondary schools of Pavia’s Province and those of the scholastic year 2007/2008, confirm that the relationship between support teachers and disabled students is 1:3. This situation during the physical education lessons worsens, because the support teacher must integrate as much as possible with the activities proposed to the student. It is considered useful for a physical education graduate to have a role in order to combine mental and motor learning together and to try to prevent "learning troubles and scholastic delay" (ICD-10, DSM IV) recorded important in secondary school.

Materials and methods
The "Project for disabled people" has been structured and realized: it involves 16 disabled children in the primary and secondary schools, managed by a tutor in cooperation with physical education and support teachers. The systematic observation, compiled through 7 global survey check-lists, has furnished both qualitative and quantitative data. APA proposals have been applied psychomotor intervention methodologies. For each school, there are elaborated interventions already in progress corresponding with the province’s project.

Results
From the data’s analysis it reveals that:
- at the motor level: an improvement of balance and general dynamic coordination; better knowledge of the body scheme and therefore structuring the knowledge of space;
- increase of the integration between the disabled students and their companions.

During a.s. 2007-2008, the interventions have been widened to primary school (with two mental retardation students and an Asperger Syndrome), and to lower secondary school (a mental retardation and an ADHD Syndrome) and to higher secondary school (two blind students) and the results have been achieved:
- relationship: better integration of disabled students inside the class;
- better motor learning with a particular reference to the attention capacity.

Conclusion
The formative tools, currently available in school, are inadequate to satisfy the requirements of the ministerial curriculum. The realization of a project, whose aim is the integration and the actual development of meaningful didactically activities is possible. It is desirable through a net’s system to propose offered didactic meaningful offered within the APA, through the organization coordinated by the territorial potentials.

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DIFFERENT ABILITIES - YOUTH AND LIFE: A PROJECT FROM THE TOWN OF TRIESTE

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Key words: APA, Disabled people, Secondary school.

Introduction
The project had involved more than 800 students who attend all the high schools in Trieste and also included the Slovenian minority and had been created in Trieste (2003) by Marco Drabeni, counsellor for the disabled, youth, education and promotion for voluntary work. It has been prolonged for 5 years and it is still being reiterated in its contents and adaptation to meet new needs.

Materials and methods
The main issue, that is characterized also in its the originality, has been to encourage young people to identify with the reality of the disabled through sport, but also with reflections and connections with everyday living, relationships, work life, studying and leisure time activity. Particular attention has been given to the educative, social, cultural, didactic and methodological aspects with a comparison between Italian and European realities of life.

The project has been structured in many different formative and operative steps. From times of common comparison during the initial, middle and final stages through meetings, work groups and personal elaboration. The project has received the teachers’ support who are bonded with local, national and international realities.

The second meeting (2005), had been planned during the EUPEA forum in Trieste (25 UE countries) dealing with the education of youth and disability (500 students).

In laboratories, students had identified themselves with practical experiences in different sports (for example: torball, blind climbing, diving, athletics for amputees, soccer for the deaf). Young people and reporters had transcribed their own sensations and impressions. In fact abstracts (Drabeni, 2007) and the book “L’attività fisica adattata: per i disabili: la realtà italiana ed europea” (Drabeni, Eid, 2008) have been published.

Results
For young people it has taken on the meaning of being constant and not occasional. It has had a great resonance over the territories and regional, national and international values, also involving great coverage with the mass media, both in print and on TV.

The project has found the support of the Ministry of Education, which has considered it as one of Italian’s best experience: the support and legal representation of Friuli Venezia Giulia Region and Trieste’s Province, many different European, national, regional and local realities, such as the EUPEA, university of Trieste and Udine, Medical sport regional centre, many other associations in the volunteers’ world and many sport testimonies. It has been created a pool of “testimonials of different abilities” giving awareness to the different categories of the life of a disabled; work, study, sports and age with consultative and purposeful functions.

References

Physical Education (PE) classes present different kind of sports to students with disability, offer them sociability and help them to be more self-sufficient in the future. PE classes have good effects on students and they are the reason for them to be into sports rest of their lives. Therefore, the aim of this study was to examine PE course experiences of students with physical disabilities from their point of view.

A total of 32 students (6th, 7th and 8th grade pupils) aged between 14-16 years old from special school for children with physical disabilities participated to this study. Four focus group interviews were conducted by two researchers and data were subjected to a qualitative analysis. Each focus group composed of eight students and each focus group interview took approximately 60 minutes. The data obtained from interviews were classified as; attending to PE (physical education) course; interaction during the PE course and bodily experiences in PE course.

According to theme of attending to PE course, the most significant participation reasons for students were to relax mentally, to gain physical strength, to play games and to taste winning / loosing by doing sports. With regard to the theme of interaction during the PE course, despite having disabled organs in different parts of their body, they tried to do their best performance during the exercises, they competed with each other and having disabled body was not a factor to feel embarrassment in any situation for them. On the other hand, female students felt uncomfortable when a male PE trainer touched disabled parts of their body. With respect to theme of bodily experiences in PE course, the hardest physical activities for them were stretching exercises. However, being disabled was not a handicap for them to force their limits to achieve the movements, moreover, they had a desire to do different types of activities which were expected to be practiced in PE courses. Students also required to had various activities which were not included in PE courses for disabled students.

As a result, physically disabled students were eager to participate in PE courses. During the course period, they had good attitudes towards each other and they didn’t have fear to force their limits. However, female students felt indisposed when a male PE trainer touched to disabled parts of their bodies.
MODELED PHYSICAL ACTIVITY: ENHANCING LIFE QUALITY OF A BRAIN DAMAGE SUFFERER THROUGH MOTORIAL RECOVERY

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Key words: brain damage, motorial recovery, modeled activity, balance, gym, sense, perception.

This work describes a two year modeled physical activity with a 10 years old female infant affected by a serious perinatal cerebral damage. The target is to prove that consistent activities and drives, based on the single individual peculiarity, can increase autonomy degree of a brain damage sufferer, enhancing his/her life quality. The project is focused on the balance, on the deambulation aimed to enhance movements capability, on the sensory perception aimed to sensorial drive and finally on social integration purpose. It's important to highlight the motorial playful aspect of this work, as the whole activity has been driven in this way and through this the infant has been able to execute all proposed activities. All work locations (gym and amusement park) have been proposed as new environment to be uncovered and experienced, letting the whole initiative to the infant, actual main character of the whole project. To be appreciated the great results in every interest field that came out from specific tests about balance and deambulation, in addition to the analysis of an evaluation survey. Since the peculiarity and seriousness of this case study (even under medical study research), please note that data from this study are not outlining an absolute certainty, but surely they provide a guideline, also practical, about the intervention of a motor science graduated.

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INCLUSION OF STUDENTS WITH DISABILITIES IN REGULAR PHYSICAL EDUCATION CLASSES, CITY OF BAURU, BRAZIL

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Key words: Inclusive physical education, visual impairment, physical education schools.

This research was developed in order to bring public attention to the issue of inclusion in physical education (P.E.) classes in regular school settings, and to investigate teaching strategies. Community projects at the State University of São Paulo (UNESP), Bauru, provide university students with an opportunity to learn through experience, practice, and research. In the current study, it provided the setting to investigate issues related to inclusive P.E. The goal of the study was to investigate the dynamic of inclusion on P.E. classes that included a student with multiple disabilities, and one with a visual disability. The method used was systematic observation, through videotaping, of P.E. classes. In the case of the student with multiple disabilities, it was first proposed that she would participate in the activities along with the other students. Yet, it was immediately discovered that this was not possible, and a change in strategy was required that utilized the dynamic of individualized activities, and which took into consideration her individual physical, social, affective, and cognitive abilities. The student with a visual disability participated in classes with the assistance of a peer tutor (Lieberman, et al, 1997). He was communicative, observant, and participatory. He often sat with his face in a downward position, like that of someone who is thinking, but with his fingers over his eyes. He required detailed explanations in order to execute the exercises. An analysis of the data revealed that inclusion represents many notions. In both classes, a state was reached in which all students participated. The use of the strategy of employing a peer tutor seemed to make inclusion easier. Therefore, it appears that an informed physical education teacher is essential to the process of successful inclusion. So, the second part of the research with of the teacher through the Pedagogical Consultancy specific for the Inclusion. Interviews took place both before and after the videotaping, and helped to identify the important points for researchers and teachers to consider. They include talking about specific disabilities; criteria for the selection of course content; analysis through videotape; and searching for optimum teaching strategies. We concluded that effective inclusion in physical education classes is highly dependent up in the efficacy is the physical educations teacher.

References
THE PEDAGOGICAL PRACTICE OF PHYSICAL EDUCATION TEACHERS’ IN INCLUSIVE CLASSES

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Key words: students with disabilities; inclusion; pedagogical practice.

At the moment, Brazilian schools are passing through a difficult and complex transition period, with regards to the challenges of the inclusion process and to move from an integration paradigm, where the differences are considered something of a run away "normality", to the inclusion one, which visualizes them as a wealth source. The inclusion paradigm demands a change in attitudes, mainly in relation to teachers’ pedagogical practice, in which they have to promote changes for the construction of a school for all. In this context and believing the relevance of the teaching action as the central aspect in the inclusion process of pupils with disabilities, we analyze Physical Education teachers’ knowledge in inclusive classes in schools of Maceió city in relation to strategies that respect diversity, as well as analyze their pedagogical practice in these groups. This was a qualitative research, involving 8 Physical Education teachers, who worked in inclusive classes. In particular, there were students with physical or hearing disabilities in these classes, who were enrolled during the school year of 2006 and 2007. For the collection of data the semi-structuralized interview was used, as well as direct observation of the teachers’ classes. The results pointed to teachers’ under training with regards to diversity in their lessons, and revealed the necessity of more engaged attitudes to the education of all students. Pedagogical practice observations indicated that the majority of teachers were not able to motivate the pupils to participate; sports were valued in comparison to other activities (such as dance, gymnastics, fights, and games); the activities developed had competitive and/or individualistic aims; and that the activities were organized by gender criteria. These aspects affirm that homogeneity is a strong value to these teachers in contrast to values attributed to diversity. In addition, the pupils with some disability or lesser fitness had huge difficulties in taking part in these lessons. In this context, the inclusion process will only be a reality, when Physical Education teachers change their attitudes, have consciousness of their function as an educator and their requirement to promote the education of all the pupils, independent of their condition.

References
The various features of children’s development and maturation, during their growth, lead to different school-based activities and time scales. Therefore individualized intervention is often necessary in the motor field, as well. When carrying out school-based and extracurricular activities, impairment of controlled and coordinated movement can negatively influence the child’s learning strategies and self-esteem, especially if the child presents motor problems, dyspraxia, motor adaptation difficulties or developmental coordination disorders, not related to pervasive developmental disorders, cerebral palsy, hemiplegia, muscular dystrophy and mental retardation (Apa, 2000, p. 56). It is estimated that more than 6% (Apa, 2000, p. 57) of developmental coordination disorders is found in children between the age of 5 and 11. Therefore, the teacher’s task is to give accurate assessment of the child’s motor skills, which are necessary for his autonomy. An internationally respected and backed method, which can also be used in the educational field, is the Berry-Buktenica Developmental Test of Visual-Motor Integration, reference no. VMI, which provides a sequence of various tasks using 27 items at the most. The Berry WMI is made up of a visual ability test (in which the individual must be able to recognize 27 geometric forms in 3 minutes) and motor coordination test. In both test the individual must trace stimulus forms following a certain route in 5 minutes so that a comparison between the individual’s visual and motor performances can be made. A further educational-integrative assessment model is the Piaget-Head Battery, reference no. guaranteed by Nadine Galifret-Granjon, which helps study the laterality and the controlled and coordinated movement of a child from the age of 6 to 14. Children’s movement assessment in primary school, paying particular attention to physical disorders, must therefore be carried out according to the educational structure, features and functions of the activity. Furthermore, it requires an original interdisciplinary approach based on a psychopedagogic view of the educational-integrative intervention.

References
THERAPEUTIC HORSEBACK RIDING AND WATER SPORTS AS INTEGRATION MEANS FOR DISABLED CHILDREN

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Key words: adapted physical activity, hippotherapy, therapeutic riding, water sports, disabled children.

Introduction
The role of adapted physical activity and sport as a means of meeting the needs of individuals with disabilities will be always discussed and programs will be develop.

The aim of the paper is to present the practice of adaptive physical activity with integration of horseback riding and water sports (swimming, rowing, sailing) for disabled children organized by Sport club “Special Olympics - Triadiza”; Sport club “Para Olympic - NSA” ,Ustrem” Association, and “Vassil Levski”-National Sports Academy.

Methodology and physical activity
Every year 15-20 children participate in Hippotherapy, or Therapeutic riding program twice weekly with duration 20-30 min for 6 months. Training by Hippotherapy and Therapeutic riding are included in the education of Adaptive physical activity. By the end of the Therapeutic riding course there is special competition for disabled children.

The activities of water course are connected to the organization of 14 days of summer water sport school for the same children with disabilities at the town of Nessebar (Black sea).

The courses of Therapeutic riding and water sports are supported by Master students of National Sports Academy with specialization in Adapted physical activity.

Results
The courses stimulate the positive emotions and develop the social integration of children and adolescents with disability. The sport activities improve educational quality and professional training of students in the field of the Adapted Physical Activities by mean of practical university programs.

Conclusion
This initiative is a model for coordination of cooperative activity in the above field with partners of non-governmental part of the civil society. It is an example for concrete realization of the social politics according to the European criteria for equality, accessibility and a society without barriers.

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WHEELCHAIR DANCE (Joy for Dance)

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Key words: disability, adapted-dance, self-expression.

Introduction
Wheelchair Dance is an Adapted Physical Activity for people who are on a wheelchair. This activity gives people with a handicap in their movement, the possibility to dance, to enjoy the music and to express their own personality and artistry. The wheelchair is for these people a way to take revenge for themselves: it’s a means not an aim, to do something.

The fundamental aims of the activity are: an improvement of their movement ability, co-ordination, memory, spatial and temporal orienteering, social integration, socialisation. All of these can bring to an increase of self-evaluation, and give more importance to how they really are instead of how they appear…

Issue
The presentation and the 4-years experience with our girls and boys.
In order to perform this activity we need an open space without obstacles, fairly big and accessible to everybody (usually the gyms of the schools are fine).
If the physical conditions of the guys allow it, they will use sport wheelchair adapted to the activity (lighter, with lower backrest and bell-mouthed wheels). If not, they will use their own wheelchairs.
All teachers are qualified.

Methodology
All people with a movement handicap can practise WHC: in fact, is not important how far is the movement, but understand which is the direction of movement and try to do their own best to get the result.
People who can’t push their wheelchair, need an assistant, who will dance with them. The assistants can move, dancing, from a disabled to another, so we can reach the best integration between people with a disability and people without.
Every disabled isn’t simply a sitting people; he/she is somebody who listens, has emotions, communicates (as far as he/she can), has its own ideas… with WCD we let them express themselves with the movement, in the music.
All different types of Dance can be explored: ballroom, latin, popular, free-style…
Good results has been reached using different “objects”: loops, sticks, scarfs: a new way for disabled to discover new movements and to move with their partners.
As a consequence there is the necessity to design programs of improvement for this activity and to promote it as much as possible.

Results
It’s incredible how much people with no habit to move, apart the ordinary movements needed for their life, can improve the range of their movement… and it’s incredible how much people who can move only one arm, can be expressive in the dancing…

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THE ASSESSMENT OF THE AESTHETICS OF THE MOVEMENT AT CHILDREN WITH VISUAL IMPAIRMENT

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Key words: disability, exercise, physical activity, motion, aesthetic, visual impairment.

Introduction
Physical activity of blind people is to a large degree limited as a result of a loss or defect of vision. As a consequence, mobility and physical fitness, aesthetic of these people is low. This affects destructively spontaneous imitation, limits the possibility to correct movements, causes motor passivity. On the basis of physiological and psychological analysis it may be said that the reasons for the limitations, e.g. in lightness, tempo, harmony, precision of movement, are mainly deficiencies in precise verbal information on the scope and form of movement. In general, it may be said that due to the lack of vision aesthetic movement is significantly limited and movement is carried out over a longer time.

Issues
In order to specify the differences between groups with various levels of vision defect a study was carried out, the aim of which was to assess the aesthetic movements of blind children and children with a partial loss of vision aged 6-15 years and to compare it to the fitness of healthy children.

Methods
Participants: 145 children with visual impairment, aged 7 to 15 years, were included in the assessment project, and control group consisted of 310 primary school children of the same age. The study group was divided into two groups, blind children and children with a partial loss of vision, which were further divided by age and sex. Only children who did not have any contraindications for physical exercise from ophthalmological point of view took part in the study. In individual tests the following aesthetic features were tested: precision, rhythm, lightness, tempo, harmony, dynamics, advisability.

Results and a discussion
Clear differences can be seen in executions of aesthetical features related to the level of visual impairment. In both groups (with visual impairment - without visual impairment) was the very different distribution of the percentage of mean values. This can be assumed that the level of the aesthetics of the movement is determined a greater extent by a vision defect and to a smaller extent by age. The study showed, the greater the vision organ defect, the greater developmental deficiencies in terms of aesthetic movements. On the basis of the analysis of the results it can be said that in blind children and in children with a partial loss of vision the general level of aesthetic movements is lower than in the group of their contemporaries.

References
LIFE STYLE AND ENVIRONMENTAL FACTORS AFFECTING THE RELATION ROMANY MINORITY TO SPORT AND MOVING ACTIVITIES

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Introduction
The presentation focuses on the issues of movement activities among Romany minority population in relation to their life style. There are limited sources related to this topic. We describe historical backgrounds and current situation and we also highlight the possibilities of positive influence of movement activities on this population.

Research methods
The paper is based on the review of literature related to Romany and ethnical minorities in general. We have also studied relevant literature from the area of physical education, sport and recreation.

Issues
In history we can find multiple factors which shaped lives and life style of this minority. We argue that appropriately structured movement activities can play crucial role in facilitation of socialisation and inclusion in mainstream society. Frequent movement activities have also positive influence on overall health and well being. (Trost, Pate, Saunders R, a kol., 1997; Freedson, 1991).

Results and discussion
We argue that only optional and free behaviors can facilitate the improvement of issues related to some issues of socialization of Romany in Czech society. In movement activities we use certain principles that resonate with the values and characteristics of Romany. In this presentation we focus on the environmental factors influencing Romany in relation to movement activities. We argue that it is crucial to not use „traditional“ sport based and performance driven activities (e.g. physical education), but we should use more holistic approach to physical activities based on the social-personality development models, which can facilitate inclusion of ethnic minorities into mainstream society.
EUROPEAN INCLUSIVE PHYSICAL EDUCATION TRAINING (EIPET)

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Key words: Inclusion, Adapted physical education, Teacher training

The purpose of this poster presentation is to introduce the project European Inclusive Physical Education Training (EIPET; LLP/LdV/TOI/2007/IRL-502). The project aims to tackle difficulties that arise associated with the inclusion of people with disabilities into mainstream education; and associated current deficiencies in initial and continued physical education teacher training to deal with same. A functional map of the physical education teachers role will be developed and the knowledge competence and skills requirements of PE teachers given the rapidly changing work environments resulting from the aforementioned changes. The main aim is to adapt the model and modules of inclusive PE teacher training in ITT Tralee to the partner countries and beyond through dissemination and valorisations into the wider PE teacher training environment. We will be hosting an International Conference in Tralee in 2009 to launch our project results and resource pack.

Aims of the project:
(a) To transfer the innovative model at the Institute of Technology, Tralee, of teaching inclusive physical education to partner organisations in initial and continued vocational training, thus improving the quality and volume of cooperation between institutions in Europe.
(b) To critically examine and adapt the inclusive physical education training module in ITT with the guidance of internationally acclaimed partner organisations and associated APA network contacts.
(c) To progress towards the Education and Training work programme 2010 priority areas through; advancing peer learning activities, facilitating the development of innovative practices, promoting excellence and equal opportunities, enabling learning to cater for rapidly changing work environments, and enabling efficiency and equity in education and training systems.
(d) To empower teacher training providers and PE teachers with the knowledge, skills and competence to operate effectively in the work environment.
(e) To facilitate equity of opportunity in Physical Education for all.
(f) To develop a resource pack to accompany the model and modules and make it available for download from the project website or available on cd.

References
POSTURAL CONTROL IMPROVEMENTS AFTER A 20 WEEKS TRICYCLE PROGRAM IN CHILDREN WITH CEREBRAL PALSY

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Key words: Cerebral palsy, posture, tricycle.

Introduction
Children with cerebral palsy (CP) show spasticity of muscle and developmental disorders of movements and posture [1]. Tricyclism is an adapted physical activity that could improve functional ability in CP. The issue of this study was to show improvement of postural control after a tricycle program.

Research Methods
16 children (13.7±2.7 years) with CP (Hemiplegic, diplegic and quadriplegic) were included either in a control group (CG, n=8) or in a tricyclism group (TG, n=8) during 20 weeks. TG was trained 1h40min a week. Subjects were asked to perform trials in normal quiet stance eyes open (EO) and with eyes closed (EC) at the beginning (T1), at 10 weeks (T2) and the end (T3). Postural sway parameters: Area (A), Velocity (V), Medio-lateral path (PML) and Antero-posterior path (PAP) were collected during 25.6s from a posturographic platform (SATEL). The differences between CG and TG groups and between EC and EO conditions were identified by paired Wilcoxon test. The P level of significance was set at 0.05.

Results
No significant differences are reported between CG and TG in T1. In CG, a significant decrease of A is reported between T2/T3 in EC condition. In TG, an increase is reported for A (T1/T2) and decreases are reported for PML, PAP, V (T2/T3) in EO condition (P<0.05).

<table>
<thead>
<tr>
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<th>CG</th>
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<th>TG</th>
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<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>T1</td>
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<tr>
<td>AREA</td>
<td>EO 727.2±461.8</td>
<td>686.0±628.9</td>
<td>617.3±347.4</td>
<td>632.6±390.9</td>
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<tr>
<td></td>
<td>EC 1195.8±1173.8</td>
<td>1343.3±197.5</td>
<td>747.9±693.6*</td>
<td>1701.1±213.9</td>
</tr>
<tr>
<td>PML</td>
<td>EO 269.9±133.7</td>
<td>284.3±168.7</td>
<td>256.0±126.9</td>
<td>272.0±156.1</td>
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<td></td>
<td>EC 341.5±292.4</td>
<td>347.7±224.8</td>
<td>279.3±183.9</td>
<td>336.7±251.3</td>
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<tr>
<td>PAP</td>
<td>EO 289.6±148.3</td>
<td>288.7±139.5</td>
<td>302.2±152.4</td>
<td>240.2±96.8</td>
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<td>EC 393.1±317.8</td>
<td>368.8±219.7</td>
<td>313.9±204.6</td>
<td>329.6±216.6</td>
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<td>Velocity</td>
<td>EO 15.0±7.8</td>
<td>14.9±9.1</td>
<td>14.7±7.7</td>
<td>13.3±6.8</td>
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<td></td>
<td>EC 19.2±15.8</td>
<td>18.9±12.4</td>
<td>15.7±11.1</td>
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Discussion
As previously describe, postural parameters recorded in CP are more important than those reported in typically developmental children [2]. The decrease in postural parameters after 20 weeks of tricyclism shows an improvement of postural control in EO. This confirm that tricyclism involve postural system in turns and in the phases of acceleration and deceleration. We hypothesize that the improvement shown here in CP might be caused by the increased stimulation of foot sole on the pedals and increased activity of the ankle muscles during exercise.

References
THE ROLE OF THE COACH IN THE INTERVENTION PROGRAMS ABOUT PHYSICAL ACTIVITIES ADDRESSED TO THE ELDER PEOPLE: AN EXAMPLE IN A RESIDENTIAL HOUSE

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Key words: physical activity, older people, coach.

The rapid increase of older people in the population, and particularly of those older than 75-80 years and with physical or psychosocial disabilities, represents a significant challenge for the whole society and especially for health services. In order to promote the well-being of senior citizens it is necessary to individualize efficient intervention programs; these interventions should also be inexpensive and easy to implement. Senior citizens who engage in regular, moderate physical activity are more likely to maintain satisfactory physical and psychological health, personal interest in life and good social relationships. Successful programs aimed at increasing the physical activity of older adults appear to have positive effects through increasing self-efficacy and the enhancing the ability to successfully master activities of daily living. However, little is known about the role of coaches in these intervention efforts. Little research has explored the role of the coach in physical activity programs, especially those targeting older adults. The present study, which is part of a larger research project, was aimed at evaluating the effectiveness of an aerobic intervention for older people (N = 20, all of them were independent, the mean age is about 84 yrs) on their self-efficacy and quality of participation and social relationships. The intervention was administered by coaches (N= 6 coaches; the mean age was about 24 yrs; they were all trained at S.U.I.S.M), who worked in 2 groups with a different modality (group 1 had a central coach; in group 2 the coaches shared leadership). We administered a questionnaire at pre-test and post-test to the seniors and coaches and we observed the behaviours of the coaches and of the seniors during activity (on site and with video-registration) using a check-list. The main results (we used non parametric statistical techniques) showed that: a) self-efficacy of the seniors in both groups increased between pre and post-test; b) coaches had an increased sense of professionalism between the first and the final sessions of the intervention; c) seniors preferred the modality with a central coach; and d) the coaches preferred an equal distribution of responsibility among them. These results underline the importance of good training of the coaches and of careful planning of the physical activity programs addressed to seniors.

References
THE TEACHERS OF PHYSICAL EDUCATION PERFORMANCE INSIDE OF THE INCLUSIVE PERSPECTIVE

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Key words: Inclusive Physical Education, Pedagogical Practice, Teacher’s performance, Conception of Inclusion.

In perspective of inclusive education, every child has abilities and individual needs and also has the right to an education that respects these special characteristics. For a long time now, physical education professionals are discussing the matter of inclusion of students with special educational needs inside of the regular class where activities can be developed in a diversified atmosphere. Starting from this premise, the present investigation tries to analyze physical education teachers’ performance in inclusive classes, considering the following aspects: the concept of inclusion, the professional development of the teacher, the student’s situation with his/her deficiency in physical education class, the methodological strategies utilized, possible obstacles found in the development of the inclusive pedagogical practice and the relationship between teacher and student. For this investigation, qualitative research has been used with the participation of seven teachers of physical education that work with inclusive classes in private schools of early childhood and elementary education in the city of Maceio-Alagoas-Brazil, during the year of 2006. We used the semi-structured interview for the collection of data. The results obtained show us that one of the biggest problems found was related to the lack of the professional’s preparation causing a distorted vision of inclusion, of special education needs, and its importance for this group. The investigation also revealed the prejudice on the part of the students provoked, sometimes, for lack of knowledge about the special education needs. It was still indicated by the teachers that there were no pedagogical supports in their physical education classes and they told that most of the obstacles found concerns the discrimination of some professionals. It is essential for a larger commitment on the part of all those people inserted in the education context, of the competent authorities, of the schools, of the teachers, of the professionals, and of the parents. It is urgent to make a continuous and qualified education for these physical education teachers’ that contemplates and respects the human diversity.

References
ADAPTED PHYSICAL ACTIVITY: SWIMMING, FROM THEORY TO PRACTICE

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2: Municipal Department of Education of Rio de Janeiro, Brazil

Key words: swimming, disabled, education.

Introduction
In the School of Physical Education at the Universidade Federal do Rio de Janeiro we deal with disabled children in partnership with the School Club Program of the Municipal Department of Education of Rio de Janeiro. The lessons are given in a semi-olympic pool, to a depth of 1,5 m, with no heating, in a class of 10 pupils, children and teenagers with multiple disabilities: Down Syndrome (2), autism (1), cerebral palsy (3), mental retardation and psychomotor retardation (2), Rett Syndrome (1) and Turner Syndrome (1). We use both the global and the analytic methods, having as main purposes: to experience a variety of movements both in and out of water; to take part in different activities aiming of making easier the learning of reading and writing as well as the accomplishment of daily task; collaborate with the process of socializing of the disabled pupils through the integration of them with those free from physical or mental disorders, university professors and future practitioners in activities in and outside water. We try to work out: equilibrium, propulsion and breathing, change of body positions, perception, inter-personal relationships (Burkhardt & Escobar, 1985).

Methodology
Open questions to be answered by the disabled children’s parents due to the impossibility of these children answer them.

Results
In a class of 10 pupils, only five disabled children’s parents answered the questions and in their opinion the swimming lessons are helping their children (100%), however, the affected areas informed are diverse: improvement in attention (40%), improvement in the socializing (80%), improvement in autonomy (80%), with regard to swimming specifically: 100% move themselves without help in the pool, while 40% of the pupils perform kicking without help and 100% with the help (of the teacher or of the swimming board), according to the parents.

Conclusion
Although the parents themselves have difficulty in answering the questions in writing (they had to have assistance of the teacher), probably because of being functionally illiterate, it is easy to identify that the activities developed with the children in the swimming pool are reflected in their daily routine, improving their life quality.
Maintaining body balance plays a key role in development of motor abilities, physical fitness and special orientation in blind and visually impaired children. The aim of the study was to investigate the balance abilities of children with visual disability with respect of sex, age and degree of impairment and to evaluate the influence of participation in extracurricular sports activities on this component of the fitness.

A group of 190 boys and girls, aged 9 to 19 years, students at both special schools for visually impaired children in Bulgaria, were tested by measuring the time in sec. for balancing on one leg. The children were divided in groups with respect of the degree of visual impairment and of the level of physical activity. Ordinary statistics for describing variations were employed by calculation of means and standard deviations. Statistical significance between means was tested by Student’s t-test.

The performance means of the two sexes were similar. The group of students with low or partial vision don’t demonstrate significantly better body balance in comparison with the group of blind children. This is probably connected with the level of development of compensatory vestibular and proprioceptive mechanisms in children with different severity of visual impairments. The main changes observed in ability of maintaining balance coincided with the age of starting extracurricular sports activities and participation in sports competitions. In both sexes and in all age groups participation in additional sports activities (athletics, goal ball, judo, martial arts) results in significant improvement of balance abilities of visually impaired children and adolescents. The results of present study confirmed the high importance of adapted physical activity and sports for considerable compensation of visual loss-related delay in body balance development of visually disabled children and adolescents.
INTELLETTIVE SPORTS AND DISABILITY: REALITY AND EDUCATIONAL PERSPECTIVES OF SPECIAL OLYMPICS IN CAMPANIA

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Key words: Special Olympics Italy, intellective disability, training and competitions, scholastic institutions, school teams, sport unified.

Special Olympics is a recognized international organization from the International Olympic Committee that takes care of persons with intellective disability offering the opportunity to develop their sport physical and mental abilities through training and competitions. Special Olympics Italy is an Onlus recognized from the CONI like the Association itself, in which the Campania Team has been operating for three years with the objective to diffuse the associate-educational program through sports events and manifestations dedicated to the intellective disability, interacting with the University of Salerno and the group of researching on the disability MPI-ANSAS Campania. The Campania team in these years has promoted the sports practice for people with intellective disability operating in scholastic structures and rehabilitation centers and interacting and contributing to the spread of a culture that identifies the persons based on their state of health and not for the consequences of a pathology or of a whichever difficulty (WHO, 2001). the job of the team have previewed through the collection given on disability (ISTAT, CENSIS, local Plans of zone, Administrations) a mapping of the territory. The reading of the needs of the territory and the analysis of the data found in relation of the target of reference that has concurred to define the customary contours of the participation in information and formation activities for the teaching of students and parents, beyond the organization of an advising service, supported and coordinated for scholastic institutions and the conduction of motor activities and turned to students with intellective disabilities and the job has been accompanied constantly to a monitoring and searching activities. At the end of the three years from an exclusive participation of rehabilitative sports centers and associations has been involved beyond forty schools of the Campania region and it is arrived to the constitution of seven school teams they have joined to the program of Special Olympics for the development of sports participations for intellective disability people, thanks also to the plan of searching (MPI-IRRE Campania, 2006) of the Campania team. The experimental constitution of school teams opened also to parents and voluntary students, and also to propose itself as a modality in order to support the educational and didactic action of the teacher in the performance of plans of sport activities for the disability, it concurs to the spread of competitions to unified character, favoring the development of an integrational culture through the sport.

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MPI-IRRE Campania (2006). Special Olympics Italy "cognitive Surveying on the practice of sports and social and scholastic integration of the students with intellective disabilities", Rome-European Youth Games.
MOTIVATION IN TENNIS COMPETITIONS BETWEEN WHEELCHAIR TENNIS PLAYERS AND STANDING TENNIS PLAYERS

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Key words: wheelchair tennis player, motivation factors, standing tennis players.

Introduction
The world of disability is generally characterized by little specialization and a lack of sports culture. This study examines in detail the motivational factors of wheelchair tennis players vs. normal players using the Italian version of the Gill, Gross and Huddleston Participation Motivation Questionnaire.

Methods
Their relationship with the main enabling factors and the results obtained in terms of national and international ranking are investigated by means of the Pearson analysis. The studied population consists of 55 wheelchair tennis players (out of a total population of 105) and 42 normal tennis players.

Results and conclusion
Statistically relevant differences exist at the level of the motivational factors. In particular wheelchair tennis players appear to be much less status conscious than their standing colleagues (-18%). They give more importance to the factors “fun” (+4%) and “spending energy” (+4%).

For both the wheelchair tennis players and tennis players, the strongest relation is between the factors “fun” and “affiliation” (Pearson analysis 0.832 for the wheelchair tennis players and Pearson analysis 1 for the tennis players).

Striking is the apparent lack of relationship between athletic training and results in terms of ranking. Hence professional trainers, specialized in the world of disability, are required.

References
RESEARCH AND DEVELOPMENTAL PROGRAM AT BEITOSTØLEN HEALTHSPORTS CENTRE

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Key words: Adapted Physical Activity, Beitostølen Healthsports Center, Rehabilitation, Research.

Beitostølen Healthsports Centre (BHC) is a resource centre for re-habilitation, education and research, with APA as the primary service delivery and field of research. The centre is a national specialized rehabilitation institution within the official health service system in Norway. Embedded in the APA provisions are a unique pedagogical, medical and social cooperation directed towards the optimal goal of lifelong activity and participation in local environments for the users of the centre. It’s an ambition of the centre to be in the front also in scientific documentation of processes and effects in the field of APA. Over the past few years this ambition has led to allocation of more resources to academic work in this field. As of today there are e.g. 4 doctoral students, funded by health authorities and foundations, working on projects at the centre. The projects are deeply rooted in practice at the centre and are cross-professional. All of these projects are carried out within the doctor program at Norwegian School of Sport Sciences. Further there are several developmental projects at different levels with different partner institutions and universities. This presentation will give an overview of recent and present R&D involvement at BHC. It reflects what is regarded as some of the most important developmental tasks in the field of APA at BHC, and even in Norway, due to the national responsibility of BHC in specialized rehabilitation end education by means of APA. One purpose of this presentation is to announce the comprehensive program, with its’ projects in progress and those who are planned. It may lead to fruitful international collaboration and/or exchange of information between specialists in the actual fields.

(See enclosed program overview)

References
PHYSICAL ACTIVITIES AT CIRCUS AND AUTISM

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**Key words:** Autism, A.P.A., circus, stereotyped behaviours, alternatives appropriate behaviours.

Physical activity in the circus can be introduced among the different educative approaches in the area of Adapted Physical Activities (A.P.A.). This work aims at observing and verifying, whether this kind of activities can reduce the «Restricted repetitive and stereotyped patterns of behaviour, interests and activities» in a thirteen-year-old boy with autism. The intervention, developed in a period of four months, with a weekly frequency for one hour thirty minutes each lesson, took place in a circus during the course directed to «normal» teenagers. Three ways to check A.P.A.'s effects: (1) observation, by means of video about activities, is made comparing the number of stereotyped behaviours presented during the activity in the beginning and in the end of the programme (individuation and counting of stereotyped behaviours presented during the activities); (2) a taxonomy in different levels for each exercise, to evaluate abilities learnt in the end of programme; (3) a questionnaire, given to the family to determine more changes. After the end of activities' programme, and appropriate adaptations, we verified: a 56% reduction of stereotyped and inappropriate behaviours during activities; learning of new motor skills: in balance's activities reaching fourth level for wire and second level with globe, in juggling reaching fifth level with the balls and the second with clubs; greater opening of interests' and activities' field of the teenager, due to the learning of alternative behaviours and to the big variety of activities that circus proposes, checked by the questionnaire submitted. Future research needs to be engaged with a larger number of cases.

**References**


CARA ADAPTED PHYSICAL ACTIVITY CENTRE: A COORDINATED APPROACH TO ADAPTED PHYSICAL ACTIVITY IN IRELAND

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2: Institute of Technology Tralee, Co Kerry, Ireland

Background
In 2003 and 2005, The Institute of Technology Tralee, supported by the Irish Sports Council organised the first two National Adapted Physical Activity Conferences to be held in Ireland. These conferences highlighted three main issues.

(1) The low levels of participation among people with disabilities in sport and physical activity.
(2) The lack of information throughout Ireland regarding sport and physical activity opportunities available to individuals with disabilities.
(3) The lack of awareness within sporting and disability organisations with regards to the needs of people with disabilities.

Following the 2005 Adapted Physical Activity conference ‘Getting it Right—Including People with Disabilities’, a report by the National Disability Authority ‘Promoting the Participation of People with Disabilities in Physical Activity and Sport in Ireland’ indicated the urgent need for a coordinated approach to accelerate progress in achieving access, inclusion and quality participation in sport and physical activity. In November 2007, supported by the Irish Sports Council and the Institute of Technology Tralee, the CARA Adapted Physical Activity Centre was established

The CARA Adapted Physical Activity Centre:
The main aim of the CARA APA Centre is to facilitate an increase in the number of people with disabilities participating in sport and physical activity, through increasing opportunities to participate, improving access, providing information on and organising/delivering training.

Additionally the CARA APA Centre will undertake and coordinate research, support APA developments at third level institutions and assist in the developments of both local and national sport and physical activity strategies. To enable the CARA APA Centre achieve its main aim the following objectives were developed.

(1) To coordinate and support the work of 21 Sports Inclusion Disability Officers (SIDOs) throughout Ireland and (2) To develop as a National Resource Centre working in partnership with Local Sports Partnerships, National Governing Bodies, Disability Organisations, National Disability Authority, Schools, International links and other relevant sporting organisations. The role of the SIDO within the partnership structure is to promote greater sport and physical activity participation for people with disabilities. National SIDO objectives have been developed by the CARA Centre, these include, establishing new clubs/sessions, supporting existing clubs, providing information and advice on disability sport, organising and delivering education and training courses, improving access and supporting the developments of a local strategy on sports and physical activity for individuals with disabilities. Through effective working partnerships with key stakeholders, the CARA Adapted Physical Activity Centre has began to develop a national framework that will make full participation in sport and physical activity for people with disabilities a reality rather than an aspiration.

References
Disability Sport Wales: National Community Development Programme. (DSW)
English Federation of Disability Sport (EFDS)
THE MODEL OF PROFESSIONAL TRAINING IN ADAPTED PHYSICAL ACTIVITY AT NATIONAL SPORTS ACADEMY

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Key words: adapted physical activity, professional training, program.

Introduction
The National Sports Academy is the unique University in Bulgaria in the area of Physical Education, Sport, Recreation and Physiotherapy. It has been integrated to the higher education policy of the European countries and follows the modern tendencies in the area of physical education, physiotherapy, adapted physical activity and sport. The Master’s degree of education was established in 1998.

The aim of the paper is to present the Bulgarian model of professional training in adapted physical activity and sport for disabled people at National Sports Academy.

Methodology
In 2003-2004 educational year was approved a specialization in Adapted Physical Activity and Sport at school at The Faculty of Kinesitherapy, Tourism and Sports Animation. It was included in the Master's program "Sport for high achievements". The Master's program in Adapted Physical Activity and Sport was established as a separate part of the Master’s degree of education in National Sports Academy in 2004. Program training and educational process extend the fundamental theoretic and methodic knowledge, practical skills and abilities in Adapted Physical Activity and sport. The curriculum is based on 60 ECTS in two semesters and includes seven subject fields:
1. Obligatory theoretical modules - 9 credits
2. Obligatory special modules - 17 credits
3. Elective Modules - 6 credits
4. Teaching practice with examination lesson – 8 credits
5. Water course - 5 credits
6. Facultative modules
7. Preparation and defense of graduation work -15 credits

Results
In these 4 years from the beginning of the Master's program in Adapted Physical Activity and Sport in National Sports Academy took part a lot of Bulgarian and foreign students especially from Cyprus, Greece, Turkey, Macedonia, Albania ecc.

Conclusion
The best positive aspect in the Master’s program in National Sports Academy is the integration of the theory and the practices.

References
Mileva, El., D. Dasheva, M. Nikolova, European dimensions in the master’s degree education at the National Sports Academy in Bulgaria; The International symposium on training teachers of physical education and sports in Bologna process, 11-12 May, 2007, Symposium proceedings, 352-357.
SECONDARY SCHOOL PHYSICAL EDUCATION TEACHERS’
ATTITUDES TOWARD CHILDREN WITH INTELLECTUAL DISABILITY

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Key words: Physical Education Teachers, Attitudes, Children with Intellectual Disability.

Introduction
In many countries, the trend toward increased integration of children with and without disabilities can be observed (Lienert, Sherrill, & Myers, 2001). Although inclusion practices in Turkey started in the early 1980s, they have had legal ground since 1997 with Act Number 573 (Küçüker, Acarlar, & Kapci, 2006). There is no study on physical education (PE) teachers’ attitude toward children with intellectual disabilities (ID) in Turkey. However, attitudes constitute an important determinant of behaviour in educational setting. With this in mind, a sound theoretical foundation of attitude research is important so that educational practice such as inclusive physical education can be explained and controlled (Tripp & Sherrill, 1991). So, the aim of this study was to investigate PE teachers’ attitudes toward children with ID in the secondary school.

Research methods
Data were gathered by a survey method. A 39-item ‘Teachers Attitudes Toward Children with Intellectual Disabilities Scale’ (TACIDS) with a 5 point Likert was applied to 746 (530 men, 216 women) secondary school physical educators who determined by random in seven different geographical areas in Turkey.

Statistics
Principal component factor analysis with oblique VARIMAX rotations was used to analyse the scale structure following by a reliability analysis. The impact of the demographic attributes on seven factors of the scale was measured by means of independent sample test and one-way ANOVA with post hoc test.

Results
Factor analysis found seven factors accounting for % 58.3 of variance. Reliability analysis (Cronbach’s α) followed each factor. The Cronbach alpha coefficient was found to be .87 for Factor 1, .82 for Factor 2, .62 for Factor 3, .65 for Factor 4, .59 for Factor 5, .62 for Factor 6, and .47 for Factor 7. Total internal consistency was found (Cronbach’s α=.84). The statistical analysis revealed significant effects on attitudes to age ($F(7,737)=2.244, p=.029$) and employment period($F(6,738)=4.630, p=.000$) in Factor 2, marital status in Factor 3 ($t=3.065, p=.002$), Factor 4 ($t=2.195, p=.029$), Factor 5 ($t=1.991, p=.047$), Factor 6 ($t=3.572, p=.000$), Factor 7 ($t=1.988, p=.047$), having acquaintance with ID in Factor 1($t=2.572, p=.010$) and in Factor 2 ($t=2.400, p=.017$). There was no significant difference in terms of sex and previous experience in the seven factors of scale. The results provide evidence that PE teachers having longer employment period need in-service training to promote positive attitudes toward teaching children with ID.

References
“It’s a clear, sunny day. A group of paddlers are an outrigger canoe. Watching them paddle up and down the shoreline in almost perfect unison shows that a book truly can never be judged by its cover, because some member of the crew has a physically disability. You’d never know from standing on the beach”. You don’t see a team of adaptive paddlers. You see a team of highly skilled athletes”.

Italy discover the outrigger canoe (called va’a) only on the year 1999 and thanks to the Italian team the International Va'a Federation (IVF) have included adaptive events in the 2004 World Sprints and the sport is growing in popularity amongst adaptive paddling athletes and more outrigger canoe paddling is a sport accessible to all as people/athlete with a wide range of disabilities can participate in the same canoe and/or race as paddlers without disabilities.

The speach will explain the story and the experience of a group of people not all athlete some with disabilities and other without that has decide to get their life back sitting in an outrigger canoe and going to the World Sprint Championship and more the use of the outrigger to improving the quality of life, the biological environment, self-esteem and integration.
DIRECT AND ON-COURT MEASUREMENT OF MAXIMAL AEROBIC PERFORMANCE OF ELITE WHEELCHAIR BASKETBALL PLAYERS

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Key words: Field test, oxygen uptake, wheelchair.

Introduction
Aerobic performance assessment is today one of the main tool in adapted sports for health evaluation and players’ performance follow-up, and even, for reference profiles determination. Wheelchair Basketball (WB) is a world-famous adapted sport, but there are not investigations about direct measurement of aerobic power in the same sport context.

Issue
The aim of this study was to measure maximal physiological parameters and estimating ventilatory thresholds of high performance WB players, in order to characterize their aerobic physical condition and to offer reference profiles according to type of functional classification (FC) and gender.

Methods
As part of their seasonal physical evaluation, 4 players (3 men and 1 woman: 33.75±2.63 years; 171.75±11.09 cm; 66.45±19.39 kg; 2.0±0.9 FC) from one elite WB team underwent a continuous, incremental shuttle run field test until exhaustion (Pérez 2003, adapted from Léger & Lambert’s 1982) in two different moments (October and February). The test protocol started at 6 km/h increasing 0.5 km/h minute along the 28m basketball court length. Players used their own sport-wheelchair. A portable telemetric system (Oxycon Jaeger®) was used for physiological data collection along the test.

Results
For moment 1 data collected were: VO$_2$max 2511.8±667.6 ml/min, HRmax 184.3±8.5 b/min, percentages for aerobic (VT1) and anaerobic (VT2) thresholds regarding VO$_2$max were 62±9.3% and 82.8±5%, respectively, distance 1729±470m and total test time 11’58´´±2´28´´. For moment 2 data collected were: VO$_2$max 2556.8±749.5 ml/min, HRmax 187.3±6.2 b/min, percentages for aerobic (VT1) and anaerobic (VT2) thresholds regarding VO$_2$max were 56.8±15.6% and 74.3±13.9%, respectively, distance 2156±544.4m and total test time 13´57´´±2´45´´. For all test maximal criteria for aerobic power maximal test were achieved. A good relationship was found between player’s FC and VO$_2$max (Spearman, r=0.68; p=0.06) and VO$_2$max shown a strong correlation with distance covered (Pearson, r=0.73; p<0.05).

Discussion
In our knowledge, there are no previous studies about aerobic performance measured directly in the WB court, apart from Bernardi (1999), who measured directly cardiorrespiratory data in an organised game. Data are similar to those how estimated VO2max from laboratory test in this population (Goosey-Tolfrey et al., 2008, 2005; Vanlandewijck et al., 1999).

Conclusion
The test is suitable for measuring the maximum aerobic power of WB players in the sport context. More samples are needed in order to offer players’ profiles related FC.

Financing
Research project granted from Spanish Ministry of Science and Education (DEP2006-28535-E code).

References
CONDUCTIVE EDUCATION AND LEISURE TIME EXERCISE ACTIVITIES IN THE PETO INSTITUTE

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Key words: central nervous system disorders, conductive education, PE, Wii-therapy, physical endurance, perseverance.

Conductive education, also called as the Pető-method is a scientific method developed fifty years ago to improve the motor functions of those with central nervous system disorders. Although few publications have appeared about it, it is still a scientific discipline recognized worldwide. The objective is complex development of the personality, with a view to the development of learning abilities, learning to conduct an active life and development of a personality capable of problem solving. All this can be realized if the child is managed in a social peer-group under the care of a conductor, who “conducts” the work through facilitation, while small-group development activities are also provided.

More and more orthopedic complaints emerge age. These are accompanied by incorrect posture and obesity due to anatomic changes accruing in adolescence. Attention is paid in the complex daily routine of children at the Peto Institute to learning the different modes required to change posture and place, which they do by practicing sequences developed specifically according to their individual needs. Beside motor development integrated into the daily routine, sport exercise as a form of leisure activity plays an important role in developing the basic skills of special need children.

Students at the Pető Training School have weekly regular opportunities to taste the excitement of exercise and sports. Monitored by the school principal, two PE teachers and conductors, the children spend one hour moving, exercising every part of their body that moves, in a standing, sitting or prone position. Maintaining and developing body fitness is done using the basics of gymnastics, athletics and ball games, always with consideration of age characteristics.

Our children have a great desire for exercise. When we cannot make it to the gym, we have them play sports with the Nintendo Wii Sports console that they could never play before. Among the first in Europe, we have the handicapped play tennis, golf, bowling, baseball and boxing individually, in pairs or in a team.

Sports activities have a motivating effect on the lives of these children, because it makes exercise realistic and playful. The experience is something that they have not known before, something that allows them in yet another area to live a life similar to that of their peers. They no longer look on sports with distrust, competition and the importance of team spirit gains a positive attitude.

Our presentation also contains a film about our work.
A COMPARATIVE STUDY ON SOCIAL MATURITY OF HANDICAPPED ATHLETES AND OTHER ATHLETES IN HAMEDAN, I.R. IRAN

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Key words: social maturity, personal competence, interpersonal competence, social competence, handicapped athletes.

The social maturity refers to the mellowness of personal, interpersonal and social skills. So, the main goal of this research is to compare the social maturity between handicapped athletes and other athletes in Hamedan. In order to attain this goal, a number of 70 handicapped athletes who had participated in Iranian Sport Olympiad in 2007 have been selected by using random sampling. Also, a number of 70 handicapped non–athletes who had the same characteristics as handicapped athletes in sex, age, stature, and weight have been selected. By using Raow social maturation scale, the rate of their social maturity has been evaluated and the data have been analyzed according to three dimensions of personal, interpersonal, and social competence. The formal validity of this scale has been proved by specialists in psychology. Through a preliminary studies, the reliability coefficient has been calculated according to Cronbachs Alpha Method. The results were as follows: 0.73 for whole scale, 0.74 for any dimension of personal competence, 0.73 for interpersonal competence, and 0.71 for social competence. In order to analyze the data, the statistical t-tests have been used for independent group, one–way between group, ANOVA, one –factor within subjects, ANOVA, Mauchlys test of sphericity. Also, in order to determine the normality of data distribution, the Kolmogorov–Smirnov test has been used, and the Leven statistics has been used for determining the coherence of variance among groups. In this field, the SPSS has been used for analyzing the data. The results of t–test for independent groups showed that the average of handicapped athletes’ social maturity was significantly more than handicapped non–athletes’ one (p < 0.01). Also, in the triple dimensions of social maturity, the results showed that the average of handicapped athletes’ personal competence, interpersonal competence, and social competence was significantly more than handicapped non–athletes’ ones (p<0.01). Meanwhile, the results showed that among handicapped athletes, the average of individual athletes’ personal competence was more than of group athletes’ one, and the average of group athletes’ social competence was more than of individual athletes’ one (p<0.01). Therefore, one can conclude that the orderly participation in sport activities not only have influences on handicapped athletes’ social maturity, but also the kind of sport activities (individual – collective) has influences on the training of a particular dimension of social maturity. As a result, the individual sports lead often to training of personal competence while the group sports often provide the training of social competence.

References
Evidence suggests that micronutrient deficiencies may be associated with problems in early growth. Iron (Fe) and Zinc (Zn) deficiency (D) are prevalent during gestation in low-income countries. For pregnant dams, adequate amount of these micronutrients are needed in the diet to ensure the capacity for increased physical growth. In this study the role of Fe and Zn dietary restriction of pregnant rats on physical growth of litters was investigated. Pregnant rats after to mating were divided to three groups. Control group fed a standard diet and a FeD group fed a diet deficient in Fe and a ZnD group fed a diet deficient in Zn. All the diets exposed during the last third of pregnancy.

The results showed serum Fe and Zn concentration after to exert dietary as compared before to exert dietary in FeD and ZnD groups was significant. There was significant difference in physical growth indexes (body weight, body length, tail length, and head length) between FeD and ZnD groups as compared to Control group, but was not seen significant difference in head width and brain weight between FeD and ZnD groups as compared Control group. The results of this study suggest that adequate Fe and Zn affect on physical growth of litters.
ADAPTED PHYSICAL ACTIVITY IN A NURSING HOME FOR PEOPLE SUFFERING FROM PSYCHIATRIC DISEASES

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Key words: Adapted physical activity; psychiatric diseases; physical abilities; quality of life.

Regular, soft and adapted physical activity (A.P.A.) can contrast the progression of disability and can improve quality of life, as long as possible. A.P.A. is defined as “the whole physical experiences motivated from therapy, rehabilitation, education, recreation or competition” (De Pauw, 2000). We discuss and present an experience of A.P.A. carried out in a Nursing Home for people suffering from psychiatric diseases. The general purpose of this experience was to improve personal autonomy and well-being, reducing psycho-physical frailty for participants. Different types of physical proposals were used to stimulate articulation mobility, perception, balance, muscle flexibility, strength and coordination. Inspired to ‘soft gymnastics’, the way of execution of the A.P.A. program was always adapted to the group and to the subject. We examined 13 subjects (F=13), with a clinical diagnosis (54%) or a probable presence (46%) of Dementia of the Alzheimer Type (DAT), whose age varies from 74 to 95 years (medium age: 86 years old). Subjects participated to an highly adapted and subjectively modulated physical activity program twice a week for 12 months. Longitudinal analysis was conducted to evaluate some physical abilities and functionalities. A Physical Balance Test measured segmental and global flexibility, balance and strength. The Timed Up and Go Test estimated physical performance in relation to balance, strength and endurance. Barthel Index, Activities Daily Living and Instrumental Activities Daily Living were administered to measure functionalities and autonomy. The Vineland Adaptive Behavior Scales evaluated three psycho-social factors: communication competences, day-life abilities and socialization. Analysis of variance for repeated measures within subjects were conducted to verify the presence of significant differences between measures identified across time from t₀ (baseline, 2007) and t₁ (2008). Significant differences were found related to global strength and global flexibility that increase, while balance decreases. Results show how this A.P.A. program have helped to keep stable the functional state and to prevent physical aggravation for such frail participants. From this study important suggestions come out, supplying information to develop this A.P.A. program and the theoretical debate on this field (Jeffrey and Cummings, 1997; Hazzard et al., 1994).

References
HOW THE DESIGNED EDUCATION ALLOWS AUTISTIC PEOPLE TO CARRY ON PHYSICAL TRAINING WITH THE PURPOSE OF INTRODUCING THEMSELVES

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The designed education
The general purpose is to help autistic people to get over the relations uneasiness in order to encourage the autonomy bringing to their introduction and integration.
The anticipated performances are understood in terms of activity organically structured with partner-pedagogic finality, partner-rehabilitative, partner-educational and of expansion of the attitudes to the social integration, you insert online with interventions multi-disciplinary of other corporate body or institutions.
We have individualized 5 integrated areas:
Area of partner-rehabilitation
Area of the social integration
Area of the educational trial
Area of the formation and training finalized to creative and occupational activity
Area of the interdisciplinary integration
The project of motor activity is inserted in the project of education structured with objective contemplated to the attainment of the finalities above you quote.
According to the project, every individual learns to know his/her own body, little by little in the action, to physical layer, mental and record and to use him/it in operation of the stimuli of the surrounding environment. He gradually takes conscience of the power that can practice on himself, it inhibits his/her movements, it his/her pulsionis, it directs and it checks his/her gestures, it becomes available to listen and to fix his/her attention to focus himself/herself/themselves on an activity.
The project of motor activity founds him on a methodology that favors the passage from the concrete level of the lived body, to the abstract level of the mental image, through a series of passages contemplated to the acquire re-acquire of the various intermediary levels of objectives.

Aims
The body: to get conscious of the lived and known body.
The movement: to get conscious of the movement and its temporal-space structuralization (voluntary action)
Introduction/integration: to get relations with other people in a normal context.

Methodologies
Time planning by the use of a diary following the approach TEACCH and P.C.S. (augmentative and alternative communication).

Results
- better integration in the knowledge of body description
- Increase of the co-ordination ability
- Better liveness of movements
- More ability in controlling and aiming the movement
- Better ability in understanding and carrying out an order
- Development of skill in under standing a learning in a sheltered place from an exterior place (athletics round)
- possibility of introduction in a normal situation together with other athletes of the ground where the activity is carried on
BRAZIL: THE SESC SYMPOSIUM ON ADAPTED PHYSICAL ACTIVITIES AND ITS CONTRIBUTION TO THE AREA

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Introduction

SESC has tried during its history to promote social welfare not only for its priority public but also for the whole community. Therefore, it develops works in areas known for its significance and assumes a social-cultural project whose actions and results aims at the incorporation by individuals of virtues and values of citizenship. Adopting these guidelines widely the SESC unit in the city of São Carlos (SP), which has a natural vocation due to the absence of architectural barriers and with a technical expert in the area, develops a work along with people with disabilities. Within this principle, actions are taken that enable the proposal to offer the public diverse activities (physical, recreational, cultural, sports and competition).

It also seeks to disseminate existing knowledge in the area. Therefore, it was proposed to hold the SESC SYMPOSIUM ON ADAPTED PHYSICAL ACTIVITY (1997) which aims to encourage the scientific technical development of this area and allows a discussion in the community on issues related to persons with disabilities and special needs; it also presents as a differential the fact that this discussion is held in a private entity which is not connected to universities.

Methodology: This symposium holds conferences, courses (theoretical / practical), experiences (practical), reports of experience (with organizations working in the area), poster sessions, cultural and sports activities (with the disabled).

It presents as a result, the participation of more than 5,000 people from many cities of several Brazilian states and other countries, along with the most important teachers (national and international) and professionals with a reputation related to the areas of arts, sports and representative associations.

It was concluded that the event has reached a great scope and has contributed to the dissemination of information to a specific audience, students in physical education and the like, teachers who work in the area, in addition to the community in general, thus contributing, through more appropriate social attitudes for the improvement of the quality of life of people with disabilities and special needs.

References


MINISYMPOSIUM
MODELLING THE HUMAN-HORSE INTERACTION CAN HELP UNDERSTANDING THE EFFECTS OF HORSEBACK RIDING THERAPY

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Introduction
One of the requisites for understanding the effects of the horseback riding therapy is to analyse the features of the movement and to quantify the mechanical stimuli that affect the rider as a consequence of its interaction with the horse. Actually some interaction forces and moments develop along the saddle, the horse belly, the stapes. The resultant of these forces and moments are related to the acceleration of the upper body parts, and can be estimated through the analysis of the linear and angular accelerations of the rider’s body segments.

Based on these considerations, a biomechanical model has been developed which allows us to quantify the resultant forces and moments in the human-horse interaction and their effect at the lumbar and cervical spine level.

Method
Data acquisition was performed in a riding school (Maneggio AVRES-ONLUS di Nus, Val d’Aosta) by an arrangement of 10 TV cameras in two parallel lines about 6 m apart each other and 12 m long. The horse with the rider went jogging along the sides of the riding school and eventually passed through the sets of TV camera. A motion analyser (Smart System, BTS, Italy) processed the images by allowing us to obtain the trajectories of reflective markers located on the subject and on the horse in proper locations. The obtained kinematic variables were used to animate a biomechanical model of the rider. The pelvis was defined in space by the six free coordinates corresponding to three displacement vectors and three rotation angles. Because of its dynamic coupling with the upper body segments, the forces and moments associated to its linear and angular accelerations were calculated.

Results and conclusions
After preliminary application of the method our results show that the different paces of the horses can dramatically change the time course and the frequency of the mechanical stimuli applied to the rider. The size and attitude of the horse can also have an effect, as they change the amplitude and frequency of the movement. Through our mechanical model it was possible to simulate the stiffness at the lumbar and neck level due to muscles involved in keeping the proper posture. From this point of view, within the limits of the simplifications adopted, our modelling approach seems to be a useful tool to understand the properties of the motor control mechanisms and to improve the rehabilitation programs.
HIPPOTHERAPY USE AS A REHABILITATION TOOL FOR USERS WITH SCI AT BEITOSTOLEN HEALTH SPORTS CENTRE

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Key Words: Spinal cord injuries, Hippotherapy, and Exercise.

Beitostolen health sports centre (BHSS) is recognized as an official part of the national specialist health service system providing rehabilitation services in Norway. The users are admitted to the centre by application from a medical doctor, a rehabilitation team, special pedagogues or any other educational or rehabilitation professional. The users are usually involved in health sports activities designed to improve physical abilities and foster higher levels of mental, physical, and spiritual well being. The objective of the study was to explore and evaluate the effects of the hippotherapy program on users with spinal cord injuries (SCI) at BHSS with a keen interest in the aims and objectives for the users. The research questions addressed issues such as, the specific aim of the program for each user, reasons for only 3 users for hippotherapy, whether the different lesion levels determined the individuals program, the specific horse movement gaits applied or used, the outcome of the program whether beneficial or not, indications and contraindications for the users. The study was based on a case study approach with purposeful sampling, the data was derived from interviews, and observations which were later corroborated with the existing literature about SCI users and hippotherapy effects. Linkert scale of 5 was used to find out the effectiveness of the centre to the users objectives. There were a total of 13 users with different levels of SCI lesions but only 3 did therapeutic horse riding. The horseback riding program was done at least twice per week either indoors or outdoors. Each session lasted 30 minutes. The users were instructed on how to control the horse initially using the miens then later using their body limbs. By the end of the 3rd week the users were able to use their lower limb muscles to stop, start, change direction or speed of the horse which indicated a marked improvement either in their muscle trophia, tone or strength. All of them rated the program as extremely good on a linkert scale of 5. They also confirmed that they had achieved some of their objectives and goals e.g. pain relieve, improved endurance capacity, strong muscles and being able to do sit-ski for 2km. The general opinion gathered is that the program is good and is worth emulating by all people who believes in equality in terms of human rights and opportunities for everybody. However there is very little objective evidence in the research literature and therefore there is need for evidence based practice at BHSS by conducting objective tests and measurements. If all this activities is to command respect in the field of medicine, rehabilitation and education then more empirical studies need to be undertaken (DePauw, 1986). There was need for a psychiatrist at the centre among the multidisciplinary personnel at the centre.

References
A MOVEMENT ANALYSIS APPROACH TO ANALYSE THE ACTION MECHANISMS OF HORSEBACK RIDING THERAPY

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Introduction
Horseback riding therapy seems to work very effectively on several pathological situations on condition that patients are carefully selected and therapy programs are well structured and personalised (Pauw, 2000; Hammer et al., 2005). The emotional and psychological aspects are probably among the fundamental factors of such an effect, although many different sensory systems are simultaneously stimulated: visual, vestibular, somesthetic, proprioceptive. A thorough biomechanical analysis can help understanding the involvement of these systems and their action mechanism in the horseback riding therapy. Our first approach was to analyse the movement in a movement analysis laboratory. The same approach is then to be used in a real situation during trials performed in a riding school.

Method
The riders sat on a saddle that was mounted on a fixed quadripode. They were asked to assume a similar posture as the one they used in real riding, and to flex-extend the hips and knees according to the different horse paces: walk, trot, gallop. Four subjects were skilled horse riders, exempt of any history of motor disease. Two other subjects were very acquainted with horse riding, but affected by different motor diseases. A motion analyser composed of six TV-cameras located around the subject and connected to a TV-image processor (Smart System, BTS, Milano) was used to collect kinematic data in a volume 2m long, 1.5 m wide, 2 m high. Twenty eight reflective markers were positioned on the main anatomical landmarks and on the saddle. Data acquisition lasted for 5 minutes in each trial.

Results and conclusions
The time course of joint angles of hip, knee, ankle, and the space oscillation of shoulder, trunk and pelvis were analysed. The fundamental frequency of the movement was 0.8 Hz at walking pace, 1.3 Hz at trot, 1.8 Hz at gallop. The range of flexion extension angles at the hip, knee, ankle were relatively small: 3°, 10°, 3° respectively at walking pace, slightly more at trot and gallop. The shoulders oscillation was different in the different simulated paces, but always in the order of 5-6 cm in the anterior-posterior direction, and 1.5-2 cm in the medio-lateral direction. These variables have shown a good reproducibility among the healthy subjects examined, while interesting differences were observed in relation to the pathologic patients. These preliminary data are still under investigation, and will constitute a basis for future ‘on the field’ studies.

References
WORKSHOP
BASKIN – AN INCLUSIVE BASKET-BALL

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Key words: Baskin, disabilities, inclusive sport, integration, innovation, differentiation of roles.

« Baskin » is a new sport, thought and practiced to let youngsters with and without disability playing together in the same team (made of boys and girls!). It is a sport inspired by the normal Basket, using the same general structure and keeping the same main objectives, but changing some rules in order to make the activity adapted to everybody. Actually, Baskin allows the active participation of players who have whatever kind of handicap (physical or mental; the only condition is to be able to realize a shot in a basket).

This possibility to open the game to everybody is based on a differentiation of roles, permitting the decisive contribution of each one inside the team; because the common success depends really on everybody! So this differentiation of roles permits in a positive way to overcome the charitable tendency to offer physical activities for disabled people.

The Baskin has been created, from a pedagogical point of view, taking into account the 4 main kinds of adaptation in APA’s world:

- **material:** 4 baskets: 2 normal ones, and 2 small ones laterally situated (with a special dimension)
  - possibility to replace the normal ball by another one lighter and/or smaller, in case of shoot in the lateral baskets

- **space:** «protected area» to allow a shoot in good conditions in the lateral baskets

- **rules:** Each player has a role defined by his specific motor skills and has so a direct opponent with the same livel. Thanks to the definition of these roles, numbered from 1 to 5, the rules will be a bit different, giving like this to everyone an adapted challenge. For exemple:
  - limited number of shoots during each period
  - tollerance (accepted by rules) for dribbling
  - defense authorized only on the direct opponent
  - communication: attribution of a tutor (chosen inside the team) permitting the orientation of another player if needed (especially in case of mental disability)

It is necessary to indicate that this innovative activity, result of a low empiric process (and which has not maybe acquired its definitive aspect), is born in a scholar context, thanks to the active cooperation between some teachers of physical education and parents directly sensitive to disability’s world (in Cremona, North Italy). We can understand actually the enormous educative potential that this activity can carry inside the school.

References


This experience of school integration for disabled persons wanted to turn upside-down the principle of inclusion.
We wanted “to adapt” the normodotatis class to the disabled person particularities putting him in the centre of planning: the proposed activities to each group were selected in function of the disabled person’s better developing potentialities.

Objective
The proposal aims to create for each person the occasion to find a new expressive and creative itself that gives him the opportunity “to play” new rules, so that he can discover a different side of himself and show himself to the others under a new light for a better relationship with his mates.
The purpose is to strengthen the expressive abilities of people living an uneasiness situation through those techniques that are perceived as more spectacular and, therefore, that mostly strike boys’ imagination, having also the advantage to charm them as an out of ordinary ability.

Assumptions
Basic physical activity and expressive activity are a formidable vehicle for the discovery of oneself and one’s own potentialities, as well as a way of personal communication.
Expressive activities and communication are the strength points to compact groups, while physical communication is a powerful vehicle for transmission of ideas, but especially of emotions and it allows to show, pretending in a game, concepts otherwise hardly expressible.
Comparing one another, everybody employs dramatization and bodily expression techniques to make others know his own feelings and his own problems, as well as to create an immediate feeling of liking with his interlocutor.
To improve the ability of introduce himself, even concerning his own abilities image, means to try to improve the integration because to improve some coordination abilities, but above all, to make accessible denied activities, means to improve the disability condition…
We chose the techniques of circus skills, with its acrobatic elements, because they are perceived as more pleasant, gratifying, spectacular and therefore they mostly strike the imagination of everyone. Moreover they have the charm of out of ordinary abilities and are more easily usable to improve abilities of “introduction of himself” and ”communication”.

Methods and results
The experience was valued trough the systematic observation and social investigation techniques (time sampling, sociometry, behavioural observation…) noticing fundamental increases of the integration degree in different types of disabled persons. Appreciable improvements don’t appear in very serious disables. We did not make observations on the improvement of the disability.

References
Pope, A. e altri, “Migliorare l'autostima” Un approccio psicopedagogico per bambini e adolescenti, Ed. Erickson, Trento.
THE WORKSHOP ON INTRODUCTORY APA COURSES

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Key words: Inclusion, Adapted physical education, Teacher training.

Physical education should be delivered on an equal basis to students of all abilities; however research examining the impact of inclusion of students with disabilities has shown that equal opportunities are not being afforded to this cohort (Meegan & MacPhail, 2006). It is important that future physical education (PE) teachers be prepared to work with individuals with disabilities in inclusive settings. Sherrill (2004) organizes the competencies that future PE teachers need to acquire under (a) philosophy, (b) attitude, (c) knowledge, and (d) skill. Positive teacher attitudes can greatly influence the success of students with disabilities in general education settings (Kudláček, Válková, Sherrill, Myers & French, 2002). Antonak and Livneh (2000, p. 221) emphasized that “academic institutions and related training programs should engage in direct efforts to consciously modify students’ and trainees’ attitudes towards persons with disabilities.” To achieve this goal, measurement instruments must be available to enable university professors to examine the efficacy of their instruction in facilitating attitude change in future public school teachers.

The purpose of this workshop (minisymposium) is to discuss the issues related to the preparation of competent PE teacher with the emphasis on the inclusion of students with disabilities in general physical education. The aims of the workshop are:
(a) To gather the information and experiences from European universities and highlight the examples of good practice;
(b) To discuss professional competencies needed for inclusive PE;
(c) To prepare recommendation about the nature and structure of the course;
(d) To discuss and make recommendations in relation of practicum experiences in APA courses.

References
The Organization Committee declines all responsibilities related to contents as well as English/Italian translations.