

# PEDIATRIC

## Exercise Science



August 1999

Volume 11

Number 3

# Symposium Poster

## XXth INTERNATIONAL SYMPOSIUM OF THE EUROPEAN GROUP OF PEDIATRIC WORK PHYSIOLOGY

### Poster

1. Anaerobic Performance of Prepubescent Boys and Girls Compared With Adults  
E. DORÉ, O. DIALLO, M. BEDU,\* E. Van PRAAGH  
Université Blaise Pascal Clermont-Ferrand, UFRSTAPS, \*Université d'Auvergne, UFR  
Médecine, France
2. Effects of 10-Week Training and 8-Week Detraining on Athletic Performance in  
Prepubescent Boys  
O. DIALLO, E. DORÉ, C. HAUTIER, P. DUCHE, E. Van PRAAGH  
Université Blaise Pascal (UFR STAPS), Clermont-Ferrand, France
3. The Comparison of Motor Abilities in Russian Speaking Inhabitants and Estonians  
Living in Estonia  
T. MATSIN, T. JÜRIMÄE, J. JÜRIMÄE, G. VELDRE\*  
Institute of Sport Pedagogy, \*Centre of Physical Anthropology, University of Tartu,  
Tartu, Estonia
4. Motor Fitness and Children's Participation in Organized Sport: The Sportslinx Project  
G. STRATTON  
Centre for Physical Education, Sport and Dance, Liverpool John Moores University,  
Liverpool, UK
5. Valuation of the First 5 Months of Activity of a Sport Pediatrics Center  
M. MONETTI,<sup>1</sup> S. GHIGLIA,<sup>2</sup> O. MONETTI,<sup>3</sup> F. MOSCA<sup>1</sup>  
<sup>1</sup>Operative Unit of Pediatric and Neonatology, <sup>2</sup>Department of Paediatric Cardiology,  
Regina Elena Hospital (I.C.P.), <sup>3</sup>Children's Hospital "De G De Marchi," Milan, Italy
6. Valuation of Body Composition With Bioelectrical Impedance Method Adjoining  
With the Anthropometry on a Group of Young Patients Related to a Center of  
Sport Pediatrics  
M. MONETTI,<sup>1</sup> S. LOI,<sup>2</sup> O. MONETTI,<sup>2</sup> F. MOSCA<sup>1</sup>  
<sup>1</sup>Operative Unit of Paediatric and Neonatology, Regina Elena Hospital (I.C.P.),  
<sup>2</sup>Children's Hospital "De G De Marchi," Milan, Italy
7. Extreme Performance Groups Analysis of Physical Activity and Body Fat Effects in  
Pubertal Children's Physical Fitness  
V.P. LOPES, T. BARBOSA, P. MAGALHÃES  
Higher School of Education, Bragança, Polytechnic Institute, Bragança, Portugal
8. Gender, Socioeconomic Status and Maturation Differences in Pubertal Children's  
Physical Activity  
T. BARBOSA, P. MAGALHÃES, V.P. LOPES  
Higher School of Education, Bragança, Polytechnic Institute, Bragança, Portugal
9. The Involvement in Sport Training Classes and Health-Related Behavior  
D. EENSOO, M. HARRO, J. ALEP

Variable	Group 1	Group 2	Group 3
HTSDS	0.72 ± 1.37	-0.70 ± 0.88 <sup>m</sup>	1.09 ± 0.91 <sup>m</sup>
WSDS	0.38 ± 1.01	-0.80 ± 0.33**	2.05 ± 1.14**
BMISDS	0.18 ± 0.45	-1.13 ± 0.24**	2.83 ± 1.58**
MAMCSDS	-0.17 ± 0.62	-0.17 ± 0.62**	-0.84 ± 0.83**
AMASDS	-0.22 ± 0.7	-0.84 ± 0.83	0.45 ± 0.67*
AFASDS	-0.04 ± 1.33	-0.72 ± 0.69	1.18 ± 1.16*
RXSDS	-0.49 ± 1.97	0.59 ± 1.69 <sup>m</sup>	-0.88 ± 1.4 <sup>m</sup>
XCSDS	-0.26 ± 0.94	0.95 ± 0.65**	-1.00 ± 1.04*
PASDS	0.33 ± 1.51	0.58 ± 1.65 <sup>m</sup>	-0.13 ± 1.51 <sup>m</sup>
DSDS	-0.10 ± 1.17	0.88 ± 0.57*	-0.71 ± 1.08 <sup>m</sup>
BMIC	3.31 ± 0.51	2.72 ± 0.32**	4.05 ± 0.51**
AEI	11.72 ± 1.03	12.79 ± 0.76*	11.26 ± 1.05

\* $p < .05$ . \*\* $p > .01$ .

The BIA and anthropometric parameters above show: Hydration of all three groups is normal, with no difference at all between them (AEI, PA); the increase of BMI on Group 3 has to refer to a significant growth of both fat and fat free mass; the average of BMI on Group 2, below the 25th percentile, has to refer sometimes to a below normal height growth, but it is also seen as a lack of fat free mass.

*Conclusions:* On this preliminary study, the percentage of overweight children is definitely higher than that of below normal children. Further studies, even transverse ones, may give more information in the future regarding the trend of the body composition changes linked to dietetic contribution and intensity of the sport activity.

Bioelectrical impedance, together with anthropometry, become useful in the long run to monitor body composition changes among children who have to be considered normal from the bioelectrical point of view, as is shown by the parameters drawn from phase angle and distance, which are nutritional and hydration indexes.

### Extreme Performance Groups Analysis of Physical Activity and Body Fat Effects in Pubertal Children's Physical Fitness

V.P. Lopes, T. Barbosa, P. Magalhães, Higher School of Education, Bragança, Polytechnic Institute, Bragança, Portugal

The purposes of this research was to identify the effects of extreme performance groups of (a) physical activity (PA) and (b) body fat (BF) in physical fitness (PF) of pubertal children. The sample comprises 223 children (11.21 years old) of both genders (111 girls, 112 boys). The physical fitness was evaluated according to the Fitnessgram test battery: back saver sit-and-reach (SR), curl-ups (CU), 90° push-ups (PU), and 1-mile walk/run (MRW). The BF indicator was the sum of subcutaneous adipose tissue (including skin) measured by B-mode ultrasonography, using a real-time linear electronic scanner, with a 7.5 MHz scanning head (EcoCamera Aloca SSD-500), at 4 sites: triceps, subscapula, suprailiac, and medial calf. The PA was estimated by the Godin Leisure-Time Exercise Questionnaire. Only the individuals, in each gender, with PA < P25% or PA > P75% and the individual with BF < P25% or BF > P75% were considered in data analysis. The *t* test was used to analyze the differences between the PA and BF extreme groups. The results indicate

no difference in any FP item in both genders between the extreme groups of PA. This might be due to the lack of precision of this kind of instrument (self-report) to measure the PA of children. In boys, significant differences between extreme groups of BF in all PF items were found, except in SR:  $MWR - t(52) = 5.58, p < .001$ ;  $CU - t(52) = 2.39, p = .020$ ;  $PU - t(52) = 3.95, p = .0002$ . The same results were found in girls:  $MRW - t(50) = 5.58, p = 0$ ;  $CU - t(50) = 2.16, p = .035$ ;  $PU - t(50) = 3.66, p = .0006$ . In both genders and in all PF items the best performance was obtained by the BF < P25% group—that is, by the children with less BF. In conclusion, the PA in this sample has no effect on PF performance. The BF has a negative effect on children's PF performance.

### Gender, Socioeconomic Status, and Maturation Differences in Pubertal Children's Physical Activity

T. Barbosa, P. Magalhães, V.P. Lopes, Higher School of Education, Bragança, Polytechnic Institute, Bragança, Portugal

The purpose of this study was to identify differences in the physical activity of pubertal children according to their gender, their socioeconomic status (SES), and their stage of maturation (SM). With that aim, 223 children were studied (11.21 years old), 111 of them male and 112 female. The Godin Leisure-Time Exercise Questionnaire (Godin and Shephard, 1985) was used to estimate the habitual physical activity (HPA). The SM was estimated, according to the Tanner's method (1962), for: (a) pubic hairs for both genders, (b) genitalia development for males, and (c) breast development for females. The SES was estimated according to the father's occupation using the Portuguese Classification of Jobs (1994). Data analysis was made using the ANOVA with Sheffe as post-hoc test. The reliability of the Godin Leisure-Time Exercise Questionnaire was of 0.68. No significant interactions were found between gender, SES, and SM. The males presented higher values of HPA than females [ $F(1, 221) = 40.29, p < .0001$ ]. In the same way, there were some significant differences in the HPA, according to the SM [ $F(3, 219) = 7.89, p < .0001$ ]. Those significant differences occurred between Stages 1 and 4 ( $p = .0006$ ) and between Stages 2 and 4 ( $p = .0012$ ). In both cases, the children in Stage 4 of maturity presented higher values of HPA than children in Stages 1 and 2 of maturity. However, there were no significant differences according to the SES. Therefore, the results of this study point out that: (a) There is no relationship between the HPA and the SES of pubertal children; (b) males presented higher values of HPA than females; and (c) children in Stage 4 of maturity presented higher values of HPA than children in Stages 1 and 2 of maturity.

### The Involvement in Sport Training Classes and Health-Related Behavior

D. Eensoo, M. Harro, J. Alep, Department of Public Health, University of Tartu, Tartu, Estonia

The purpose of this investigation was to study the association between the involvement in sport training classes (STCL) and health-related behavior. The participants of the study were 1,575 eighth grade students. The children filled in a questionnaire in which they reported their involvement in STCL, alcohol and drug usage, smoking habits, and sexual activities. The number of children who reported to be involved in STCL was 728 (47% of studied children). No significant differences were found in health-related behavior between children who were involved and not involved in STCL. Nevertheless, there was a tendency that children who were involved in STCL smoked and used alcohol less frequently than