

X INTERNATIONAL CONGRESS OF AUXOLOGY

Human Growth in Sickness and in Health

Under the High Patronage of the President of the Republic of Italy

*July 4-7, 2004 - Firenze (Italy)
Palazzo Vecchio and Convitto della Calza*

Abstracts

President of the Congress: Ivan Nicoletti, Florence, Italy

Congress Committees

Organizing committee: L. Benso, V. Bruni, N. Cameron, B. Chiarelli, C. de Sanctis, G.F. De Stefano, O. Eiben, V. Fano, L. Goffredi, R. Hauspie, L. Iughetti, H. Lejarraga, S. Milani, F. Morabito, C. Pavia, R.J. Rona, R. Salti, L. Schell.

Scientific committee: K. Ashizawa, S. Bernasconi, G. Bona, L. Cavallo, V. De Sanctis, H.G. Doerr, G.P. Donzelli, P.B. Eveleth, F. Galluzzi, G. Gilli, L. Hagenäs, R.M. Malina, M. Pignotti, L. Reinken, G. Saggese, R. Salti, L. Tatò, B. Zemel.

Scientific Secretary: L.Tafi

Executive Committee of the International Association for Human Auxology

G. Gilli (Germany) Secretary General; N. Cameron (UK) Associate Secretary General; K. Ashizawa (Japan), L. Benso (Italy), E.B. Bodzsár (Hungary), M.F. Cachera (France), H. Danker-Hopfe (Germany), O. Eiben (Hungary), P.B. Eveleth (USA), T. Gasser (Switzerland), L. Hagenäs (Sweden), R. Hauspie (Belgium), M. Hernández (Spain), U. Jaeger (Germany), F. Johnston (USA), H. Lejarraga (Argentina), G.W. Lindgren (Sweden), E. Marubini (Italy), I. Nicoletti (Italy), M. Prokopec (Czech Republic), L. Schell (USA), C. Susanne (Belgium), J.M. Tanner (UK), G. Townsend (Australia).



EDIZIONI CENTRO STUDI AUXOLOGICI

P-112

Univariate and Multivariate Study of Physical Fitness. Effects of Biological Maturation, Body Size, Body Fat and Socio-Economic Status of Children and Adolescents from Maputo, Mozambique

S. Saranga, A. Prista, A.T. Marques, V.P. Lopes, J. Ribeiro Maia

Faculty of Physical Education, Pedagogical University, Maputo, Mozambique; Faculty of Sport Sciences and Physical Education, University of Porto, Portugal

Background: in 2001-2002 a study concerning health, growth and physical fitness (performance and health-related) of children and youth from Mozambique was conducted, covering somatic growth, body composition, biological maturation, health-related physical fitness, physical activity, metabolic fitness, cardio-vascular risk factors and parasitology.

Aims: (1) study mean changes in physical fitness across age and gender; (2) identify the effects in fitness of such covariates as height, weight, biological maturation, socio-economic status, and body fatness.

Methodology: sample size comprises children and adolescents aged 8 to 17 years (males, n=1199; females, n=1304) from the Maputo area. Physical fitness was evaluated according to standardized test batteries that included: sit and reach, trunk lift, sit-up's, standing long jump, bent arm hang, curl-up's, hand grip, 10x5 meters, and 1 mile run-walk. Statistical analysis included univariate and multivariate analysis of variance and covariance. All calculations were done in SYSTAT 10 and SPSS 10.

Results: data quality control and reliability estimates were assessed in a series of pilot studies, and intraclass correlation coefficients were good, ranging between 0,85 and 0,98. All fitness tests showed significant ($p < 0,05$) mean increases across ages, favouring boys except in sit and reach where girls out performed boys. A similar trend occurred even when results were adjusted for differences in height and weight. A very clear sexual dimorphism is also evident (always favouring boys) when an adjustment was made for biological maturation, and socio-economic status. Yet these differences are only pronounced and significant ($p < 0,05$) after 13 years of age. Separate analysis by gender with 3 different groups of body fat (low, "normal" and high) did not show clear trends favouring fitness levels of low and "normal" fat boys and girls. An exception is made for bent arm hang, hand grip, and 1 mile run-walk. Multivariate profiles (significant F values in each age group) of physical fitness (adjusted for height and weight) showed a clear sexual dimorphism with a bi-polar nature: muscular strength and speed with aerobic capacity.

Conclusions: physical fitness results showed a clear sexual dimorphism where boys outperformed girls. This is a net result of body size and biological maturation, more evident around the age of peak height and weight velocity. Moreover, the higher the socio-economic status, the greater the fitness. Higher fat levels are negatively associated with fitness. This calls for a clear interpretation of such kind of results within school setting, motor development, and also in epidemiological studies.

P-113

Design of the Mixed-Longitudinal Study of Growth, Motor Development and Physical Activity of Viseu (Portugal) Children

J. C. V. Ferreira

School of Education, Polytechnic Institute of Viseu, Viseu, Portugal

Background: Infancy seems to represent a golden age to start to promote healthy and