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Human Growth in Sickness and in Health

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Abstracts

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motor traits and selected functional respiratory system parameters were analysed in this work. The following results were analysed: body height and weight, physical fitness test performance (standing jump, tapping test, 1 kg ball throw, 10x5m running test). A Pony electronic spirometer was used to measure the effectiveness of the respiratory system. Peak expiratory flow (PEF), forced 1s expiratory volume (FEV1) and forced expiratory middle flow (FEF25-75) were used to divide subjects into quartile subgroups. To avoid the influence of differences in age and sex, all data were standardised. To estimate differences between subgroups one-way analysis of variance (ANOVA) was used.

Analysis: Morphofunctional factors differ according to the subgroups based on PEF quartiles. Moving from the first to the fourth quartiles we can observe that children become taller and heavier in a statistically significant way. Also, the motor development of the children from the third and fourth PEF quartiles is higher. FEV1 is the differentiating factor for the tapping test and hand strength of the children examined. Going to the fourth quartile, the children examined have higher somatic and motor development levels. Despite analogous tendencies there were no statistically significant differences in the standing jump or 10x5m running tests. Similar changes were observed across subgroups based on FEF25-75 quartiles.

Conclusions: We can conclude, that a high level of biometric performance, which reflects a higher level of physical development, is linked to a better-functioning respiratory system.

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Obesity and Physical Fitness Among Children (6-10 years) from Azores Islands (Portugal)

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The prevalence of obesity and of lower levels of physical fitness seems to be a major problem for the public health. The WHO designates obesity as one of the most important public health threats because of the significant impact of chronic conditions associated with obesity. Physical fitness could act as a protective factor for various diseases, e.g. cardiovascular diseases.

The purposes of this study are: to determine the prevalence of obesity among school children (6-10 years old) from Azores islands (Portugal) by means of body mass index (BMI), to identify the levels of health related physical fitness (HPF), and to investigate the difference between obese and non-obese children in HPF.

The sample comprises 3742 children of both genders between 6-to-10 years of age from Azores islands Portugal, which is approximately 25% in each gender and age of the residents in each island. The children were evaluated in height and weight and then the BMI (weight in kilograms divided by the square of height in meters) was calculated. HPF was evaluated with FITNESSGRAM: 1-mile run/walk, curl-ups, push-ups, and trunk lift. To classify the children as obese or non-obese we used the cut-off values proposed by Cole et al. (2000). The difference between obese and non-obese in HPF was analysed with MANCOVA, with age as covariate.

We found that the prevalence of obesity was between 10.9% and 13.7% for girls and between 8.2% and 13% for boys.

The ratios of success in tests of HPF both in boys and girls were low. In girls there was a substantial decrease of ratio of success between 6 and 10 years of age. In 10-year-old girls the global ratio of success was only 18%. In boys the ratios of success had also a tendency

to diminish along age. In 10-years-old boys the global ratio of success was 39%. The results of MANCOVA show that obese children of both genders have lower HFP levels (girls: $\eta^2 = 0.887$; $F(4, 1782) = 51.05$; $p < 0.001$; boys: $\eta^2 = 0.852$; $F(4, 1880) = 81.37$; $p < 0.001$). In conclusion, there is a high prevalence of obesity in children of both genders from Azores islands. The failure in passing the rates of FITNESSGRAM tests is relatively high. The obese children have lower HPF levels than the non-obese.

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The Relationship Between Obesity, Eating Habits and Sport Activities in a Piedmont Preadolescent Sample

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The rationale for this study derived from the rapidly increasing prevalence of obesity in young people, which is a major global public health concern, not only because of the health consequences in childhood and adolescence, but also because of the greater risk of obesity in adulthood.

The aim of our research is to evaluate obesity among preadolescents in Piedmont and its relationship with possible eating disorders and unhealthy living patterns.

We carried out a survey about eating and sport habits on a sample of 311 secondary school students from Piedmont aged 12-14 years (with about 50 individuals from each age and gender class). We measured 26 anthropometrical variables and three skinfolds. Through a questionnaire we obtained information about various aspects of their eating habits and motor activity at school and at home.

We found out that, according to the BMI values, 19% of the boys and 22% of the girls were obese. About 76% say that they know the alimentary principles. In fact they eat mainly pasta and rice, meat and vegetables, but a large percentage of them seldom eat fruit and end their meals with dessert; besides they eat little fish and vice versa they eat a lot of salami, ham, etc. During the day they drink many soft drinks and fruit juices.

The surveyed children eat very frequently during the day (up to 5 or 6 times). This fact isn't negative in itself, but during extra meals a great part of the sample consumes snacks consisting of different kinds of pastries, crackers, pizzas, sweet and salted biscuits. About 80% of the sample consumes ready-made snacks, rather than home-made food prepared by a family member. We found out as well that 34% of males and 49% of females say that they often eat out of boredom and tiredness, even if they are not hungry and that 80% of the boys and girls eat in front of the TV set.

The data also highlighted the fact that 14 % of the sample does not practise any sport.

We analysed if there are different eating and sport habits between obese and non-obese subjects: we could not find out big differences in eating habits, probably since we could not get precise quantitative data on food consumption, because of the young age of the sample. We find out significant differences in sport practice between obese and non-obese subjects, especially in their free time activities without a teacher: 74% of obese versus 34% of non-obese preadolescents do not practise any of these activities.

The results obtained also highlight the importance of improving teachers' and families' knowledge and understanding of correct eating habits and the importance of motor activity, in order to reduce the risk of obesity and related health problems in young boys and girls.

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