

Growth in primary school-children: a longitudinal study in three age-groups

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The growth of primary school-children was investigated in three different age-groups.

On October 2007, weights and standing heights of 261 (116 girls; 145 boys), 277 (142; 135), and 289 (139; 150) respectively 6, 7, and 8yr-old primary school-children were measured in Voghera (Pavia, Italy). Body Mass Indices (BMI) were calculated. The measurements were repeated 1 and 2 years later. Within group of age, descriptive statistics of each parameter were computed within age, sex and session of measurements. Comparisons were performed by ANOVA (F1, factor 1, sex; F2, factor 2, age; F1×F2 interaction). Statistical significance was set at 5% for all comparisons. Frequencies and percentages of school-children relatively under- (<3rd percentile), and overweight (>97th percentile) were computed, while comparing BMI to reference data for Italian children (1, 2).

On average, weight, height, and BMI were larger in boys than in girls. Differences between sexes were significant (F1, $p < 0.001$) in 8yr-old group. Boys and girls significantly grew with age (F2, $p < 0.001$ for all comparisons). In 6yr-old group, the effects of age on height increments were larger in boys than in girls (F1×F2 interaction, $p = 0.017$). In boys of 6 and 8yr-old groups, BMI was too high in a larger percentage than in girls. In 6yr-old group, the percentage distribution of participants whose BMI was too low was larger in girls than in boys, and increased with age. In 7 and 8yr-old groups, this distribution decreased with age in both boys and girls.

School-based anthropometric investigations represent a useful approach to address children and their families to correct life habits. The study allowed the monitoring of growth in school children during a 2yr life span. Further investigations on this matter should be extended to adolescents, and prolonged as much as possible.

1) Cacciari et al. *Eur J Clin Nutr.* 2002;56:171-180

2) Turci et al. *IJAE.* 2010;115 S1/2:170.

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