

Physical fitness levels among European adolescents The HELENA study

by

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Objective: To report sex- and age-specific physical fitness levels in European adolescents.

Methods: A sample of 3456 adolescents aged 12.5 to 17.49 y from ten European cities in Austria, Belgium, France, Germany, Greece (an inland city and an island city), Hungary, Italy, Spain and Sweden, was assessed in the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) study between 2006 and 2008. Muscular fitness, speed/agility, flexibility and cardiorespiratory fitness were assessed using 9 different fitness tests: hand-grip, bent arm hang, standing broad jump, Bosco jumps (squat jump, counter movement jump and Abalakov jump), 4x10m shuttle run, back-saver sit and reach, and 20m shuttle run tests.

Results: Sex- and age-specific normative values for physical fitness in the European adolescents were derived using the LMS statistical method, and expressed as tabulated percentiles from 10 to 100 and as smoothed centile curves (P5, P25, P50, P75, and P95). The figures showed greater physical fitness in the boys, except for the flexibility test, and a trend towards increased physical fitness in the boys as their age increased, whereas the fitness levels in the girls were more stable across ages.

Conclusions: The normative values hereby provided will enable evaluation and correct interpretation of European adolescents' fitness status.

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