

Physical Fitness Normative Reference Values among Lithuanian Primary School Students: Population-Based Cross-Sectional Study

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Abstract : Background. Health-related physical fitness refers to the favorable health status, i.e. ability to perform daily activities with vigor, as well as capacities that are associated with a low risk for development of chronic diseases and premature death. However, in school-aged children it is constantly declining, while some aspects of fitness declined as much as 50 percent during the last two decades, which prognosticates increasingly earlier onset of health problems, decreasing the quality of life of the population and financial burden for the society. Therefore, the goal of the current study was to indicate nationally representative age- and gender-specific reference values of anthropometric measures, musculoskeletal, motor and cardiorespiratory fitness in Lithuanian primary school children from 6 to 10 years. Methods. The study included 3556 students in total, from 73 randomly selected schools. Ethics approval for research by the Kaunas Regional Ethics Committee (No. BE-2-42) was obtained. Physical fitness was measured by the 9-item test battery, developed by Fjortoft and colleagues. Height and weight were measured and body mass index calculated. Smoothed centile charts were derived using the LMS method. Results. The numerical age- and gender-specific percentile values (3rd, 10th, 25th, 50th, 75th, 90th, and 97th percentile) for anthropometric measures, musculoskeletal, motor and cardiorespiratory fitness were provided. The equivalent smoothed LMS curves were performed. The study indicated 12.5 percent of overweight and 5 percent of obese children in accordance with international gender and age specific norms of body mass index. This data could be used in clinical and educational settings in order to identify the level of individual physical fitness within its different components.

Keywords : fitness, overweight, primary school children, reference values, smoothed percentile curves

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