

Physical Fitness Assessment at Adolescent Age

by

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Physical fitness refers to a physiologic state of well-being and functional capacity that allows adequately meeting the multiple demands of daily living including those coming from a physical overload, such as exercise. The higher the fitness levels of a person, the higher his/her ability to meet the demands of a functional overload. This overload may come not only from exercise but also from any other physical stress. Physical fitness makes reference to the full range of physical qualities, i.e., aerobic capacity, strength, endurance, speed, agility, coordination, flexibility... Nevertheless, other qualities, such as body composition, metabolism and body functional structure, also play an important role in meeting the demands of any physical overload. Consequently, they can also be considered as components of physical fitness. Health-related physical fitness includes those components of physical fitness that have shown to be more clearly related to health status. Well accepted health-related physical fitness components are aerobic capacity, musculoskeletal fitness, body composition and metabolism but other components could also be considered. There are associations among the different fitness components, for instance those subjects presenting higher cardiovascular fitness also have higher muscular strength, speed and agility, lower adiposity and a healthier metabolic profile. Physical fitness, and its different components, are determined by a variable combination of genetic and life-style determinants. Among the life style determinants are physical activity (particularly vigorous physical activity), healthy nutrition, adequate body posture and a positive psychological status. In adults, low physical fitness (mainly low aerobic capacity and low muscular strength) is a powerful predictor of cardiovascular and all-cause morbidity and mortality. Aerobic capacity is even a stronger predictor than other established risk factors. A number of important longitudinal studies have shown that the degree of physical fitness during infancy and adolescence largely determines one's physical fitness as an adult. In addition, poor physical fitness during these early stages of life is associated with present and later cardiovascular risk factors such as hyperlipidemia, hypertension, low grade inflammation markers and obesity. Physical fitness is also associated to psychological wellbeing including mood-status, anxiety and self-esteem. Even in pediatric cancer patients, improved fitness attenuates fatigue and improves life quality. Physical fitness assessment and improvement have important implications for health-orientated lifestyle intervention programs for people in all ages, both at the individual and the community level.

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