

Fitness for Primary-School Children

Syed Arif Kamal[¶] and Shahid Ali Khan[#]

SF Growth-and-Imaging Laboratory, the NGDS Pilot Project and Anthromathematics Group, Department of Mathematics, University of Karachi, Karachi 75270, Pakistan; [¶]Subject Committee for Physical Education, Health and Sport Sciences, National Testing Service Pakistan; profdrakamal@gmail.com



Fig. 1. Strengthening the spinal column through mid-stretching exercise

Synaptic connections of brain are fully developed by the age of ten. New connections are formed, while learning a motor skill. An efficient and an effective primary-physical-education curriculum, formulated by taking into account differences in growth trajectories and variations in the developmental-milestones achieved, due to hereditary (based on precedence graphs — temporal ordering) as well as environmental factors (based on influence graphs — spatial ordering), may form the bases of lifelong physical, mental, emotional as well as social fitness. The importance of fitness for primary-school children can never be underestimated. During a preparticipation physical examination of boys and girls enrolled in schools run by the Armed Forces of Pakistan, the first author was shocked to find out that the students (sons and daughters of active servicemen) were not able to touch their toes without flexing knees and lacked stamina. Fitness testing must be integrated with unclothed-physical examination. Tests should evaluate strength, muscular endurance, flexibility and height-weight rating or body composition. These examinations should be based on performance considerations and improvements achieved as compared to previous semester as well as psychological disorders (trends of anorexia and bulimia). These evaluations should include thorough checks of posture and gait (walking and running). During these checkups, students' heights and weights should be recorded to generate their growth-and-obesity profiles <http://www.ngds-ku.org/Papers/J29.pdf> that guide students to achieve proper height[@] and maintain optimal-weight-for-height[¥]. Students learn from classmates as well as teachers, often copying others and sometimes helping friends. At times, they work as individuals, *e. g.*, walking heel-to-toe (motor coördination) or touching toes without flexing knees (flexibility) and, on other occasions, they work in unison, without competition, *e. g.*, during PT display. There are activities, which involve coördination and competition, *e. g.*, team sport. Peer learning is no substitute for learning from teachers, who have a wealth of knowledge and a multitude of personal skills. A guarded-graduated-training routine should ensure health- as well as skill-related fitness (performance considerations), at the same time preventing exercise-related injuries (safety considerations). *Guarded* conveys the concept that different body ligaments are in stable equilibrium, locally, during various exercise phases and *graduated* means that sequential exercise phases are related by infinitesimal transformations. Physical activities should be preceded by proper warm up and end with appropriate cool down, accompanied by proper milk/water intake and the students properly attired. Gymnastic clothing should *neither* be loose enough to get caught into the apparatus/fall into face *nor* so tight to restrict free movement. It should not have zippers to damage the equipment or straps, which get tangled into the apparatus. American Academy of Pediatrics (Committee on Sports Medicine) recommended lightweight clothing for the exercising child. Gym clothing should expose maximum skin and have only one layer of absorbent material in order to facilitate sweat evaporation. Students should be barefoot indoors and wear sneakers outdoors. Boys should be stripped-to-waist, younger ones dressed in briefs only, whereas older students may put on figure hugging half-pants, reaching to knees. Girls can wear leotards combined with stockings, if desired.

Keywords: Health-related fitness, skill-related fitness, fitness testing, motor examination, principles of training

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[¶]PhD (Mathematical Neuroscience); MA, Johns Hopkins, Baltimore, MD, United States; Project Director, the NGDS Pilot Project; Director, SF Growth-and-Imaging Laboratory; Member, Subject Committee for Physical Education, Health and Sport Sciences, National Testing Service Pakistan; Head, Anthromathematics Group, University of Karachi • *paper mail:* Professor and Chairman, Department of Mathematics and University of Karachi, PO Box 8423, Karachi 75270, Pakistan • *homepage:* <http://www.ngds-ku.org/kamal> • *project URL:* <http://ngds-ku.org> • *telephone:* +92 21 9926 1300-15 ext. 2293;

[#]MSc (Health and Physical Education); Director, Physical Education, Government Degree Boys College, Korangi, Karachi 74900

[@]Extended abstract: http://www.ngds-ku.org/Presentations/Height_Management.pdf

[¥]Extended abstract: http://www.ngds-ku.org/Presentations/Optimal_Weight.pdf