

Increasing Height through Diet, Exercise and Lifestyle Adjustment

Syed Arif Kamal[¶], Chaudhry Muhammed Shakir Manzoor[#] and Shahid Ali Khan[#]

[¶] [#]SF Growth-and-Imaging Laboratory, 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

Stunting is a condition in which a child has lesser height-for-age. The best course of action to treat is condition is through diet, exercise and lifestyle adjustment. To gain height, the child should consume food high in calcium and protein as well as fiber (bread, *etc.*), the last one, also, prevents constipation and decreases consumption of salt and fat. Diet-based interventions shall be effective, only, if the student is not suffering from vitamin-D deficiency <http://www.ngds-ku.org/Presentations/VitaminD.pdf>. A student, who has excess height-for-age, is considered *tall*, taking current-age-mid-parental height as reference. Taller students run a higher risk of acquiring scoliosis <http://www.ngds-ku.org/Presentations/CSRW.pdf>, if they do not maintain optimal weight-for-height <http://www.ngds-ku.org/Papers/J29.pdf>. Stunted children should perform light-stretching exercises (dressed minimally, giving the body an opportunity to breathe) in a park just after sunrise, *e. g.*, hanging from bar, mild stretching, summersault, cartwheel <http://www.ngds-ku.org/Presentations/Fitness.pdf>. They may be encouraged to exercise even during TV-watching and not sit still with upper torso taking a curved posture as the muscles get tired, possibly inducing kyphosis, neck pain and backache. Such children should be mandated to exercise for 5 minutes after each class (stretching, bending, touching toes as well as performing head-, neck-, eye- and wrist-exercises), while attending school. In addition, parents should make sure that their sleep-duration is increased to 9 hours or more. For the children to sleep soundly and achieve maximum from bedtime, the authors recommend performing light exercises, massaging with olive oil, taking bath with lukewarm water, changing into fire-resistant pajama-shorts (discourage sleeping in day clothes or underwear), drinking a glass of milk, brushing teeth, getting into bed on time in a room with subdued lights (artificial lights should be absent). While in bed, the parents or caretakers should ask about day-routine, including good and bad things (to uncover any internal frustrations) followed by telling a story or reading a poem. Those children, who sleep in air-conditioned rooms, should cover their body from neck to feet throughout the night with a thick sheet or a blanket to avoid catching cold. A 3-minute, slow-stroke back massage has shown to improve quality as well as quantity (by about 36 minutes) of nighttime sleep in patients suffering from dementia.

Keywords: Optimal weight, stunting, tallness, diet-based intervention, school-age child, vitamin-D deficiency

Conflict of Interest Statement: No potential conflict of interest is identified for this work

Grant Sponsor: Dean's (Science) Research Grant, University of Karachi, number DFSR/2009

Research Ethics: Project initiated after Institutional Review Process and conducted in compliance with ethical and human-right standards in our region.

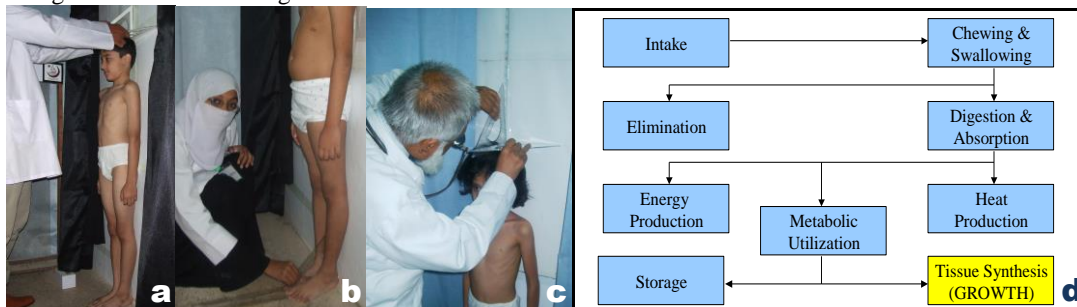


Fig. 1a-d. Measurement of height of (a) a boy, placement of setsquares (b) to align feet and (c) on head to record height; (d) journey of a chunk of bite resulting in tissue synthesis (height gain) — *Growth Monitoring and Assessment, Seminar of Dr. Salahuddin Sheikh*

Web address of this document: http://www.ngds-ku.org/Presentations/Height_Management.pdf

HTML version: <http://www.ngds-ku.org/pub/confabstA.htm#C108>:

[¶]PhD (Mathematical Neuroscience); MA, Johns Hopkins, Baltimore, MD, United States; Project Director, the NGDS Pilot Project; Associated Professor, Malmö General Hospital, Sweden (1988); Visiting Faculty, the Albert Einstein College of Medicine, New York, United States (1990); Sessional Faculty, the Aga Khan University Medical College (1996-2006); Master Trainer for Anthropometry, Tawana Pakistan and Department of Special Education, University of Karachi (2006); Member, Subject Committee for Physical Education, Health and Sport Sciences, National Testing Service Pakistan; Ex-Member, American Association for Health, Physical Education, Recreation and dance (AAHPERD); Head, Anthromathematics Group, University of Karachi; *paper mail*: Professor and Chairman, Department of Mathematics, University of Karachi, Karachi 75270, Pakistan; *telephone*: +92 21 9926 1300-15 ext. 2293; *homepage*: <http://www.ngds-ku.org/kamal>; *project URL*: <http://ngds-ku.org>

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