



کراچی یونیورسٹی
University of Karachi
THE NGDS PILOT PROJECT
The Sibling Growth Pilot Project



SF-GROWTH-AND-IMAGING LABORATORY

SAMPLE REPORT

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GROWTH-AND-OBESITY ROADMAPS OF G FAMILY*

SGPP Case Number: **SGPP-KHI-20131021-02** • Date of Report (Year-Month-Day): 2015-03-07

Father's Name: W/H • Mother's Name: W/H • e-mail: W/H • Paper Mail: W/H

Telephone: W/H • Best time to Call: 11 am on Saturday

Table 1. Adult-mid-parental (Target) and army-cutoff heights

Father's Height: † 167.16 cm • Mother's Height: † 160.16 cm

Adult-Mid-Parental (Target) and Army-Cutoff Heights	Boy †		Girl †	
	Target	Army-Cutoff	Target	Army-Cutoff
Height (cm)	170.16	162.56	157.16	157.48
Height (ft-in)	5 ft 6.99 in	5 ft 4.00 in	5 ft 1.87 in	5 ft 2.00 in
Percentile	18.95	2.72	18.14	19.36

*Please refer to page 5 regarding procedures adopted in compliance with confidentiality standards of the NGDS Pilot Project. Text in blue is not part of report handed out to parents of LG..

cm: centimeter(s) • ft: foot (feet) • in: inch(es) • kg: kilogram(s) • lb: pound(s) • oz: ounce(s)

MP: Mid-Parental • NA: Not Available • NM: Not Measured • W/H: Withheld to protect privacy

EC I: Energy-Channelization I (Tallness + Wasting) • EC II: Energy-Channelization II (Stunting + Obesity)

EC III: Energy-Channelization III (Puberty-Induced Energy-Channelization) • AM: Acute Malnutrition



ON: Over-Nutrition (Tallness + Obesity) • UN: Under-Nutrition (Stunting + Wasting)

- a) The mother, accompanied by father, could come and discuss strategies for long-term-health protection of their child(ren), on:
Monday, March 9, 2015 at 1520h
- b) For explanation of dress and behavior codes see *Manual for Anthropometric Measurements*:
http://www.ngds-ku.org/ngds_folder/M02.pdf
- c) WASTED (OBESE) means student has lesser (excess) weight-for-height (do not confuse with everyday meaning of wasted). Detailed guidelines to help maintain optimal weight-for-height are placed at:
<http://www.ngds-ku.org/BLA/Weight.pdf>
- d) Estimated-adult height is based on percentile of current height. Some helpful suggestions to increase heights of girls, who are considered short-for-age, are available at the link:
<http://www.ngds-ku.org/BLA/Height.pdf>
- e) This report includes an additional parameter, *Cumulative-Scoliosis-Risk Weightage (CSRW)*. A CSRW above 5.5, 6.5 or 7.5 after the first, the second or the third checkup, respectively, needs careful observation and follow up. CSRW is determined on the basis of the following criteria:
http://www.ngds-ku.org/BLA/Scoliosis_Risk.pdf
- f) Guidelines to guard against curvatures of spinal column are placed at:
<http://www.ngds-ku.org/Articles/A14.pdf>
- g) It must be realized that all diet-based interventions to maintain appropriate weight-for-height and proper height-for-age would be nullified, if children were suffering from vitamin-D deficiency (VDD). VDD may be the prime cause of weak bones, in particular, scoliosis, in school-aged children. The following link lists some indications as well as remedial measures to spot and overcome VDD:
<http://www.ngds-ku.org/BLA/VDD.pdf>
- h) Next checkup of your family is scheduled on:
Saturday, August 22, 2015 at 1007h
Please contact one week before the scheduled date (August 17-21, 2015) to confirm this appointment.
- i) Many thanks for your support and understanding of the work done by the NGDS Team.

Professor Dr. Syed Arif Kamal
Professor and Project Director
e-mail: profdrakamal@gmail.com

Table 2a. Growth-and-Obesity Roadmap of LG (SGPP-KHI-20131021-02/01)

Gender: Female ♀ • Date of Birth (year-month-day): 2007-08-15 • School: W/H • GR Number: W/H

Checkup	1 st	2 nd
Photograph		
Scanned Signatures	LG	LG
Class and Section	II-B	II-B
Date of Checkup (year-month-day)	2014-11-22	2015-02-28
Age (year-month-day)	07-03-07	07-05-23
Age (decimal year)	7.27	7.54
Dress Code	0/0.5	0/0.5
Behavior Code	0	0
Cumulative-Scoliosis-Risk Weightage	8.50	9.00
Height, h (cm)	126.96	139.92
Height (ft-in)	4 ft 1.98 in	4 ft 7.09 in
Percentile-for-Height, $P(h)$	74.37	99.01
Estimated-Adult Height (cm)	167.59	180.03
Estimated-Adult Height (ft-in)	5 ft 5.98 in	5 ft 10.88 in
Current-Age-MP Height (cm)	118.00	119.59
Δ Height w. r. t. Current-Age-MP Height (cm)	+8.96	+20.33
Algebraic Status (pertaining-to-height), $STATUS_{\pm}(h)$	+7.59%	+17.00%
Qualitative Status (pertaining-to-height)	1st-Degree Tall	2nd-Degree Tall
Current-Age-Army-Cutoff Height (cm)	118.26	119.86
Δ Height w. r. t. Army-Cutoff Height (cm)	+8.70	+20.06
Reference Height (cm)	126.96	139.92
Percentile-for-Reference-Height	74.37	99.01
Age of Prediction, $A+$ (years)	7.77	8.04
Reference Height, at $A+$ (cm)	130.09	143.24
6-Month-Height Management (cm)	+3.13	+3.32
Month-Wise-Height Management (cm/month)	+0.52	+0.55
Month-Wise-Height Management (in/month)	+0.21	+0.22
Gross Mass (kg)	23.66	25.69
Clothing Correction (kg)	0	0
Net Mass, μ (kg)	23.66	25.69
Net Weight (lb-oz)	52 lb 2.72 oz	56 lb 10.34 oz
Percentile-for-Net-Mass, $P(\mu)$	51.31	61.58
Estimated-Adult Mass (kg)	58.62	61.76
Estimated-Adult Weight (lb-oz)	129 lb 4.04 oz	136 lb 2.73 oz
BMI: Body-Mass Index (kg/m^2)	14.68	13.12
Estimated-Adult BMI (kg/m^2)	20.87	19.05
Optimal Mass (kg)	26.37	39.28
Δ Mass-for-Height (kg)	-2.71	-13.59
Algebraic Status (pertaining-to-mass), $STATUS_{\pm}(\mu)$	-10.28%	-34.60%
Qualitative Status (pertaining-to-mass)	2nd-Degree Wasted	4th-Degree Wasted
Optimal Mass for Reference Height, at $A+$ (kg)	28.09	42.21
6-Month-Mass Management (kg)	+4.43	+16.52
Month-Wise-Mass Management (kg/month)	+0.74	+2.75
Month-Wise-Weight Management (lb-oz/month)	+1 lb 10.05 oz	+6 lb 10.05 oz
Nutritional Status	EC I	EC I
$P(h) + P(\mu)$	125.68	160.59
Build	Medium	Big

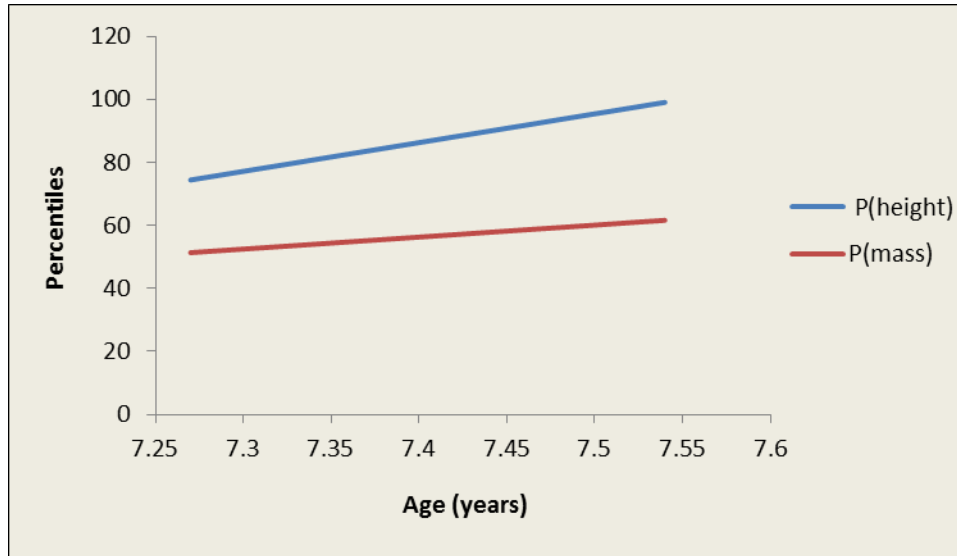


Figure 1. Time evolution of LG’s height and mass percentiles for her two checkups. Note that the gap between height and mass percentiles widened at the second checkup, also indicated by Growth-and-Obesity Roadmap

Table 2b. Month-wise-height and -mass (weight) management for LG

Targets (on specific dates of each month)	Height Management		Mass (Weight) Management	
	cm	ft-in	kg	lb-oz
March 28, 2015	140.47	4 ft 7.30 in	28.47	62 lb 12.54 oz
April 28, 2015	141.03	4 ft 7.52 in	31.26	68 lb 14.75 oz
May 28, 2015	141.58	4 ft 7.74 in	34.04	75 lb 0.95 oz
June 28, 2015	142.13	4 ft 7.96 in	36.82	81 lb 3.15 oz
July 28, 2015	142.69	4 ft 8.18 in	39.61	87 lb 5.35 oz
August 28, 2015	143.24	4 ft 8.39 in	42.39	93 lb 7.55 oz

Table 2c. Lifestyle adjustment, diet and exercise plans for LG to achieve month-wise targets

	Height Management	Mass (Weight) Management
Lifestyle Adjustment	Recommended daily dose of vitamin D (600 IU) through 10-15 minute guarded-graduated sun-exposure (early morning or late afternoon) with the child minimally dressed, 8-hour night-time sound sleep	
Diet Plans	3 relaxed and balanced meals, 10-12 glasses of water daily To gain height diet plan should include calcium-, protein- and fiber-rich diet (milk, fresh fruit, chicken and fish)	To put on mass (weight) diet plan should include milk, potato items and protein-rich diet
Exercise Plans	Guarded-graduated exercises preceded by warm-up and followed by cool-down routines To pick up height child should perform light-stretching exercises (bar hanging, mild-stretching, summersault, cartwheel)	To increase mass (weight) heavy exercises performed for shorter duration, consistently

Need to take care of the checked items:

- ⊗ 1. Optimal-weight management advised — note (c) on page-1 footer
- 2. Your child seems not to gain height, optimally; helpful suggestions available on the NGDS website — note (d) on page-1 footer
- ⊗ 3. Guard against your child acquiring scoliosis — notes (e, f) on page-1 footer
- 4. Signs of anemia observed; your child may have vitamin-D deficiency — note (g) on page-1 footer

Table 3a. Obesity Roadmaps of parents

Father's Date of Birth (year-month-day): † 1971-07-15 • Mother's Date of Birth (year-month-day): ‡ 1979-01-02

	Father †	Mother ‡
Date of Checkup (year-month-day)	2014-11-22	2014-11-22
Age (year-month-day)	43-04-07	35-10-20
Age (decimal year)	43.36	35.89
Dress Code	1.5/2	2/2
Height, h (cm)	167.16	160.16
Height (ft-in)	5 ft 5.81 in	5 ft 3.06 in
Gross Mass (kg)	62.96	71.46
Clothing Correction (kg)	0.30	0.30
Net Mass, μ (kg)	62.66	71.16
Net Weight (lb-oz)	138 lb 2.64 oz	156 lb 14.52 oz
BMI: Body-Mass Index (kg/m^2)	22.42	27.74
Optimal Mass (kg)	67.06	66.56
Δ Mass-for-Height (kg)	-4.40	+4.60
Algebraic Status (pertaining-to-mass), $STATUS_{\pm}(\mu)$	-6.56%	+6.91%
Qualitative Status (pertaining-to-mass)	1st-Degree Wasted	1st-Degree Obese
6-Month-Mass Management (kg)	+4.40	-4.60
Month-Wise-Mass Management (kg/month)	+0.73	-0.77
Month-Wise-Weight Management (lb-oz/month)	+1 lb 9.88 oz	-1 lb 11.03 oz

Table 3b. Month-wise-mass (-weight) management for parents

Targets (on specific dates of each month)	Father †		Mother ‡	
	kg	lb-oz	kg	lb-oz
December 22, 2014	63.39	139 lb 12.40 oz	70.39	155 lb 3.36 oz
January 22, 2015	64.12	141 lb 6.15 oz	69.62	153 lb 8.19 oz
February 22, 2015	64.85	142 lb 15.91 oz	68.85	151 lb 13.03 oz
March 22, 2015	65.58	144 lb 9.66 oz	68.08	150 lb 1.86 oz
April 22, 2015	66.32	146 lb 3.77 oz	67.32	148 lb 7.05 oz
May 22, 2015	67.06	147 lb 13.88 oz	66.56	146 lb 12.24 oz

Table 3c. Lifestyle adjustment, diet and exercise plans for parents to achieve month-wise targets

	Father †	Mother ‡
Lifestyle Adjustment	Active and carefree lifestyle, lesser screen time, outdoor activities combined with light reading and social interactions, 6-hour night-time sound sleep	
Diet Plans	3 relaxed and balanced meals, 10-12 glasses of water daily To put on mass (weight), diet plan should include milk, potato items and protein-rich diet	To shed off mass (weight), diet plan should include salad, yogurt and skimmed milk
Exercise Plans	Guarded-graduated exercises preceded by warm-up and followed by cool-down routines To put on mass (weight), father should perform heavy exercises for shorter duration, consistently	To shed off mass (weight), mother should perform light exercises longer duration, consistently



Figure 2. Signing ‘The SGPP Participation Form’

PROTECTING CONFIDENTIALITY OF G FAMILY

G Family was invited to come to SF-Growth-and-Imaging Laboratory after the Project Director of the NGDS Pilot Project received completed and duly signed (by both parents and the participating child) ‘The SGPP Participation Form’ (Informed Consent Form) — http://www.ngds-ku.org/SGPP/SGPP_Form.pdf (Figure 2). To safeguard G Family’s privacy, the photographs, included in LG’s Growth-and-Obesity Roadmap and on this page, do not show the actual child, whose profile is presented. These photographs are selected from the set of children, enrolled in Growth-and-Obesity-Monitoring Program conducted at SF Growth-and-Imaging Laboratory. In addition, family label (G) and initials of child (LG) are different from first letters in actual names (according to our group’s confidentiality standards). Same holds for the case number appearing in this report and the main document. Further, in place of scanned signatures, initials are given, again, to protect privacy. Dress code 1.5/2 (father) meant he was measured wearing T-shirt and trousers, barefoot, 2/2 (mother) meant she was barefoot and wearing *shalwar/kameez* (*shalwar* is a garment worn on the lower portion of body, resembling athletic trousers and *kameez* is a garment worn on the upper portion of body, resembling a long shirt, generally, in the Indian subcontinent, the Middle East and the Far East.) without *dupatta* (a garment put on shoulders on top of *kameez*, at times worn over head) at the time of measurement. (Female) child’s dress code 0/0.5 meant she was barefoot and examined completely undressed wearing only panties (Figure 3). Behavior code 0 meant she was relaxed and cooperative.

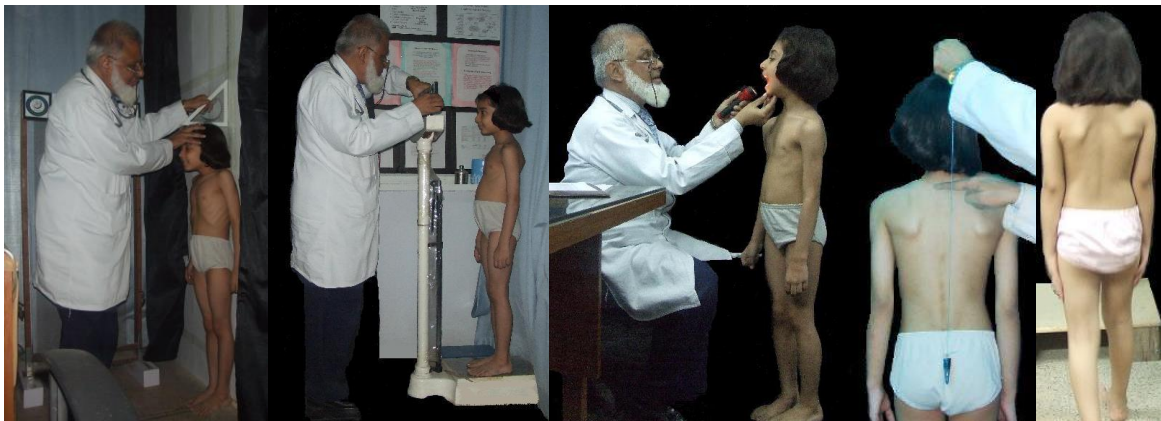


Figure 3. Anthropometry, mouth inspection for signs of anemia, body-alignment check and gait analysis in SF-Growth-and-Imaging Laboratory

This report is prepared as supplementary information to “Growth-and-Nutritional-Status Monitoring of Primary-School Children Enrolled in Armed Forces and Civilian Institutions located in Karachi”, published in AAHANG, **69** (2016) 145-150, magazine of Pakistan Broadcasting Corporation (Radio Pakistan)

Web address of this document: <http://www.ngds-ku.org/Articles/A28/Report.pdf>