



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



THE SYED FIRDOUS GROWTH AND IMAGING LABORATORY

GROWTH-AND-OBESITY PROFILES OF N. FAMILY

Authenticity

No handwritten notes except original signatures.
This report is official only after signed by
Project Director.

Abbreviations

MP mid-parental NC non-computable
NA not available ND non-determinable
ft feet in inch(es)

SGPP Case Number: SGPP-KHI-20090205-02

Date of Report (Year-Month-Day): 2009-04-02

Father's Name: W/H (withheld to protect privacy); Mother's Name: W/H; Paper Mail (Mailing Address): W/H; Telephone Numbers: W/H; Best Time-Slot to Call: anytime; e-mail: none

Table 1. Parents' Obesity Profiles

Checkup	Father	Mother
Date of Checkup	2009-02-05	2009-02-05
Date of Birth	1970-01-13	1973-11-04
Age (years)	39.08	35.25
Dress Code §	2/2	3/3
Height (cm)	169.30	154.90
Height (ft-in)	5 ft 6.65 in	5 ft 0.98 in
Percentile for Height	16.00	10.53
Gross Mass (kg)	71.4	50.7
Clothing Correction (kg)	0.4	0.5
Net Mass (kg)	71.0	50.2
Net Weight (lb-oz)	156 lb 8.88 oz	110 lb 11.06 oz
Percentile for Net Mass	51.47	17.31
BMI: Body-Mass Index (kg/m ²)	24.77	20.92
Optimal Mass (kg)	60.25	48.39 *
Optimal Weight (lb-oz)	132 lb 13.62 oz	106 lb 11.24 oz *
Δ Mass-for-Height (kg)	+10.75	+1.81 *
Δ Weight-for-Height (lb-oz)	+23 lb 11.26 oz	+3 lb 15.82 oz *
Status (pertaining to weight) **	17.84% OBESE	3.74% OBESE *

FATHER has 10.75 kg EXCESS mass (OVERWEIGHT by 23 lb 11.26 oz) for height [17.64% OBESE]. MOTHER has 1.81 kg EXCESS mass (OVERWEIGHT by 3 lb 15.82 oz) for height [3.74% OBESE] — Father should set a target of losing 1 lb PER WEEK for 24 weeks and mother for 4 weeks (please see note below regarding pregnancy).

Warning: DO NOT try to lose weight rapidly. It could be dangerous for your health.

Table 2. Adult-Mid-Parental (Target) Heights

BOY/GIRL=(FATHER+MOTHER± 13)/2	Boy	Girl
Adult-MP (Target) Height (cm)	168.60	155.60
Adult-MP Height (ft-in)	5 ft 6.38 in	5 ft 1.26 in
Percentile of Adult-MP (Target) Height	13.67	13.00

* Valid if the mother is NOT PREGNANT. In case of pregnancy, add estimated weight of fetus and re-determine difference of mass (weight)-for-height and status.

** Status (pertaining to weight) is considered normal if weight (mass) varies around ±1% of the optimal weight (mass). For example, 0.98% (+) means, more weight than optimal, in the normal range. Similarly, 0.98% (-) means, lesser weight than optimal, in the normal range. Likewise, in children's report, status (pertaining to height) is considered normal around ±1% of the mid-parental height.


§ See Note (c) on next page (page number 2) for explanation of "Dress Code"

**F. N.**

Gender: Female
GR Number: W/H
Class & Section: IV-A

Date of Birth: 1999-12-05
Birth Weight: 6 lb
School: W/H

Table 3. Growth-and-Obesity Profile of F. N.

Check up	1 st
Photograph #	
Scanned Signatures #	FN
Date of Checkup	2009-02-05
Age (years)	9.17
Dress Code (Undressing)	1.5/2 (0/0.5)
Height (cm)	128.15
Height (ft-in)	4 ft 2.45 in
Percentile for Height	18.45
Estimated-Adult Height (cm)	157.14
Estimated-Adult Height (ft-in)	5 ft 1.87 in
Cutoff height for induction in the Armed Forces: 5 ft 2 in	
Mid-Parental-Height Percentile	13.00
Current-Age-MP Height (cm)	126.88
Δ Height-for-Age (cm)	+1.27
Δ Height-for-Age (in)	+0.50
Status (pertaining to height)	1.00% (+)
Gross Mass (kg)	18.9
Clothing Correction (kg)	0
Net Mass (kg)	18.9
Net Weight (lb-oz)	41 lb 10.79 oz
Percentile for Net Mass	< 3
Estimated-Adult Mass (kg)	< 45.25
Estimated-Adult Weight (lb-oz)	< 99 lb 12.42 oz
BMI: Body-Mass Index (kg/m ²)	11.51
Optimal Mass (kg)	25.11
Optimal Weight (lb-oz)	55 lb 5.85 oz
Δ Mass-for-Height (kg)	-6.21
Δ Weight-for-Height (lb-oz)	-13 lb 11.06 oz
Status (pertaining to weight)	24.73% WASTED

Notes:

- Estimated-adult height and estimated-adult mass (weight) are based on percentiles of current height and current mass (weight), respectively; for armed-forces career in Pakistan, cutoff height for girls is fixed at 5 ft 2 in (i. e., 157.48 cm) and for boys at 5 ft 4 in (i. e., 162.56 cm)
 - STUNTED means child is short for age, based on mid-parental height, taken as reference; WASTED means child has lesser weight for height (do not confuse with everyday meaning of 'wasted')
 - For explanation of dress code (undressing) see *Manual for Anthropometric Measurements* at the address http://www.ngds-ku.org/ngds_folder/M02.pdf
- # Photograph and scanned signatures on the day, check up was conducted. In order to protect the privacy of N. Family, the photograph, inserted in this Growth-and-Obesity Profile, does not show the actual child.

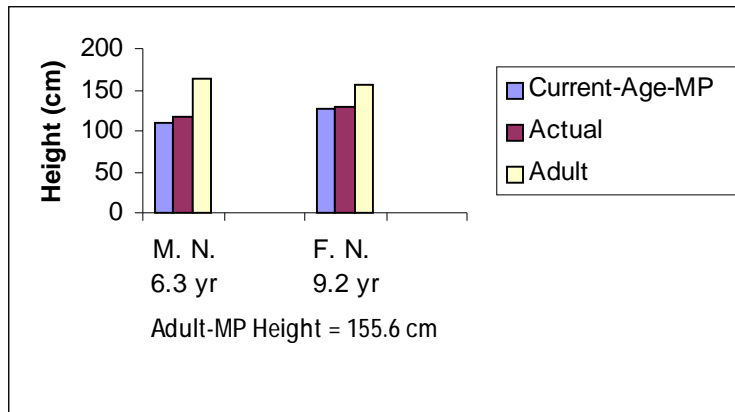


Fig. 1. Bar chart representing heights of girls

Height Profile of F. N. (mid-parental percentile = 13.00, taken as reference): At the age of 9.17 years, (average) height of F. N. comes out to 128.15 cm (4 ft 2.45 in), which lies at 18th (18.45 to be exact) percentile [1.00% (+)]. F. N. has 1.27 cm (0.50 in) EXCESS height with respect to current-age-mid-parental (reference) height (126.88 cm), but is not considered tall. Based on this percentile, her estimated -adult height comes out to be 157.14 cm (5 ft 1.87 in).

Mass Profile of F. N.: At the age of 9.17 years, (average) net mass (weight) of F. N. comes out to 18.9 kg (41 lb 10.79 oz), which lies below 3rd percentile [24.73% WASTED]. F. N. has 6.21 kg LESSER mass (UNDERWEIGHT by 13 lb 11.06 oz) for her height. Based on this percentile, her estimated-adult mass (weight) comes out to be less than 45.25 kg (less than 99 lb 12.42 oz). Her body-mass index (BMI) is computed as 11.51 kg/m².

Implications for F. N.: Excessively lesser weight (at less than 3rd percentile) of F. N. may

- a) Affect vital organs
- b) Cause diabetes
- c) Hamper to achieve the desired-adult height

The child is, already, showing signs of trunk deformity and gait with toes converging.

Recommendations for F. N.: Detailed orthopedic assessment for presence of scoliosis as well as gait analysis to be done. Being 14 lb underweight, the child needs to consume diet with high protein content (meat, fish, milk, etc.). To increase her height (tissue synthesis), she must consume food with fiber (bread, etc.), which, also, prevents constipation. In addition, her sleep duration may be increased (minimum sleep recommended = 9 hours) combined with light stretching exercises. A relaxed (unhurried), complete breakfast, followed by nutritious lunch and proper dinner are keys to good nutrition. Avoid junk food and snacks except mid-morning one.

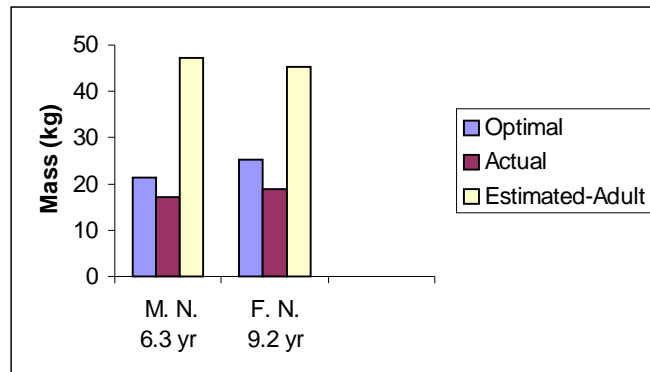



Fig. 2. Bar chart representing masses of girls; yellow bar for FN gives upper limit (her mass lies at less than 3 percentile)

**M. N.**

Gender: Female
GR Number: W/H
Class & Section: KG-II

Date of Birth: 2002-10-28
Birth Weight: 7 lb
School: W/H

Table 4. Growth-and-Obesity Profile of M. N.

Check up	1 st
Photograph #	
Scanned Signatures #	MN
Date of Checkup	2009-02-05
Age (years)	6.27
Dress Code (Undressing)	1.5/1.5 (0/0.5)
Height (cm)	117.15
Height (ft-in)	3 ft 10.12 in
Percentile for Height	56.67
Estimated-Adult Height (cm)	164.57
Estimated-Adult Height (ft-in)	5 ft 4.79 in
Cutoff height for induction in the Armed Forces: 5 ft 2 in	
Mid-Parental-Height Percentile	13.00
Current-Age-MP Height (cm)	110.47
Δ Height-for-Age (cm)	+6.68
Δ Height-for-Age (in)	+2.63
Status (pertaining to height)	6.04% TALL
Gross Mass (kg)	17.2
Clothing Correction (kg)	0
Net Mass (kg)	17.2
Net Weight (lb-oz)	37 lb 14.82 oz
Percentile for Net Mass	6.87
Estimated-Adult Mass (kg)	47.15
Estimated-Adult Weight (lb-oz)	103 lb 15.58 oz
BMI: Body-Mass Index (kg/m ²)	12.53
Optimal Mass (kg)	21.49
Optimal Weight (lb-oz)	47 lb 6.17 oz
Δ Mass-for-Height (kg)	-4.29
Δ Weight-for-Height (lb-oz)	-9 lb 7.30 oz
Status (pertaining to weight)	19.80% WASTED

Comments after the Growth-and-Obesity Profile of F. N. are, also, applicable in this case.

Height Profile of M. N. (mid-parental percentile = 13.00, taken as reference): At the age of 6.27 years, (average) height of M. N. comes out to 117.15 cm (3 ft 10.12 in), which lies at 57th (56.67 to be exact) percentile [6.04% TALL]. M. N. has 6.68 cm (2.63 in) EXCESS height with respect to current-age-mid-parental (reference) height (110.47 cm). Based on this percentile, her estimated-adult height comes out to be 164.57 cm (5 ft 4.79 in).

Mass Profile of M. N.: At the age of 6.27 years, (average) net mass (weight) of M. N. comes out to 17.2 kg (37 lb 14.82 oz), which lies at 7th (6.87 to be exact) percentile [19.80% WASTED]. M. N. has 4.29 kg LESSER mass (UNDERWEIGHT by 9 lb 7.30 oz) for her height. Based on this percentile, her estimated-

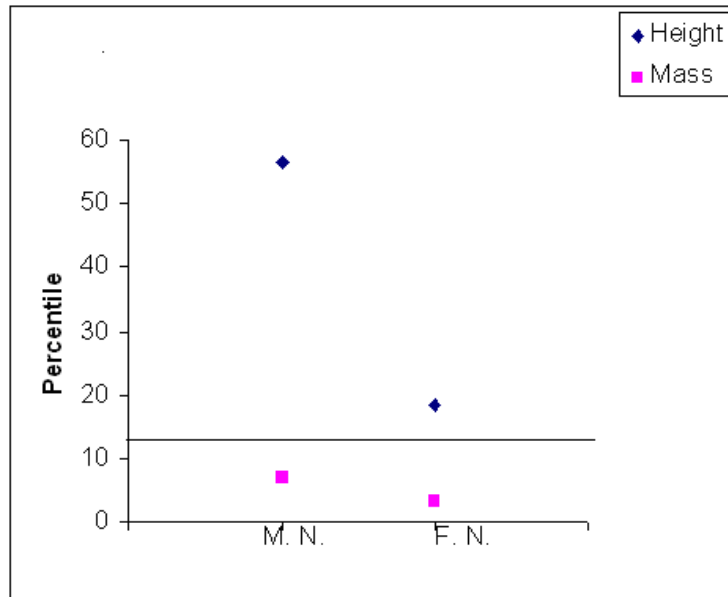


Fig. 3. Percentiles of heights and masses of girls; pink square for F. N. gives upper limit (her mass lies at less than 3 percentile) — solid line gives mid-parental (reference) percentile

adult mass (weight) comes out to be 47.15 kg (103 lb 15.58 oz). Her body-mass index (BMI) is computed as 12.53 kg/m².

Implications for M. N.: Lesser weight of M. N. may

- a) Affect vital organs
- b) Cause diabetes
- c) Hamper to achieve the desired-adult height

The child is, already, showing some signs of trunk deformity.

Recommendations for M. N.: Detailed orthopedic assessment for presence of scoliosis/condition of knees to be done. M. N. needs to put on 10 lb to bring her weight in line with her height. To increase her weight, her diet should include high protein content (meat, fish, milk, etc.). To increase her height (tissue synthesis), she must consume food with fiber (bread, etc.), which, also, prevents constipation. In addition, her sleep duration may be increased (minimum sleep recommended = 10 hours) combined with light stretching exercises. A relaxed (unhurried), complete breakfast, followed by nutritious lunch and proper dinner are keys to good nutrition. Avoid junk food and snacks except mid-morning one.

Concluding Remarks: Kindly, refer to SGPP Case Number (page 1, line 5) in each correspondence. Please, SMS on cell number and e-mail

Timeline	Purpose
Immediately	To confirm receipt of report
Within one week	To set-up appointment for discussing report ¶
Between 4 th & 5 th months from checkup date	To schedule a follow-up visit

¶ Kindly, bring along a PRINTED COPY OF THIS REPORT at the time of discussion.

Experts agree that a follow-up examination, scheduled within 6 months of this checkup, would ensure a healthy and a happy childhood, adolescence and old age — the best gifts parents can give to their kids.



Many thanks for your interest in the NGDS Pilot Project.

Professor Dr. Syed Arif Kamal

Project Director

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Directions: <http://www.ngds-ku.org/kamal/contact.htm#Directions>

END OF REPORT

Source: Kamal SA, Jamil N, Khan SA, Growth-and-Obesity Profiles of Children of Karachi using Box-Interpolation Method, *International Journal of Biology and Biotechnology* 8(1) 2011, 87-96, available at: <http://www.ngds-ku.org/Papers/J29.pdf>

Detailed Growth-and-Obesity Calculations (for the benefit of researchers, teachers and graduate students): http://www.ngds-ku.org/ngds_folder/Protocols/Growth_Calculations.pdf

Informative Article (for teachers, parents and students): Kamal SA, Growth-and-Obesity Monitoring of Primary-School Children, e-publication of the NGDS Pilot Project, University of Karachi, available at: http://www.ngds-ku.org/ngds_folder/BLA/Growth_Monitoring_BLA.pdf

Web address of this document: http://www.ngds-ku.org/ngds_folder/Protocols/Growth_Profile.pdf