



**GROWTH-AND-OBESITY PROFILES OF CHILDREN OF
KARACHI USING BOX-INTERPOLATION METHOD:
GROWTH PROFILE OF Z. L. Z.**

SGPP-KHI-20001126-02

Syed Arif Kamal[£], Syed Firdous and Shah Jamal Alam



Additional File 2
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University of Karachi
THE NGDS PILOT PROJECT
The Sibling Growth Pilot Project



GROWTH-AND-IMAGING LABORATORY

Authenticity: No handwritten notes except original signatures. This report becomes official only after bearing signatures of Project Director.

NATIONAL GROWTH AND DEVELOPMENTAL STANDARDS (NGDS) FOR THE PAKISTANI CHILDREN

THE SIBLING GROWTH PILOT PROJECT (SGPP) — GROWTH PROFILE OF Z. L. Z.

The SGPP Case Number: SGPP-KHI-20001126-02 (AHS)
Date of Report: January 6, 2003
Date Format: All dates are in the format (year-month-day)

You are welcome to discuss these results with the Project Director on: MONDAY, January 6, 2003 at 1800h (6 p. m.)

BASIC INFORMATION

- Father's Name: W/H (W/H: Withheld to protect the privacy of family members)
- Father's Education: B. E.
- Father's Occupation: Government Service
- Mother's Name: W/H
- Mother's Education: B. A.
- Mother's Occupation: Housewife

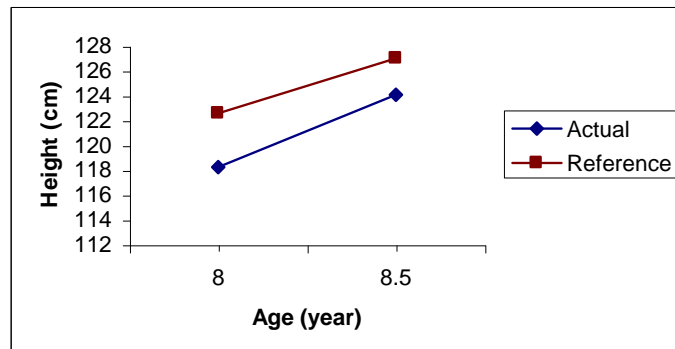


Fig. 1. Height profile in graphical form

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January 6, 2003

[£]Homepage: <https://www.ngds-ku.org/kamal> • project URL: <https://ngds-ku.org> • e-mail: profdrakamal@gmail.com

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ADDITIONAL FILE 2: GROWTH PROFILE OF Z. L. Z.

- g) Paper Mail (Mailing Address): W/H
- h) e-mail: W/H
- i) Telephone Number: W/H
- j) Best Time-Slot to Call: 1700h-2000h
- k) Class: II
- l) School: W/H
- m) Gender: Female
- n) Date of Birth: 1994-05-19
- o) Father's NIC: W/H
- p) Mother's NIC: W/H

GROWTH PARAMETERS

Adult-MP (Target) Height [MP stands for 'mid-parental']

Your child's adult-MP (target) height is 159.6 cm, which is equivalent to 5 feet 2.8 inches.

Adult-MP Mass (Weight) [corresponding to adult-MP height]

Your child's adult-MP mass is 53.58 kg, which corresponds to a adult-MP weight of 118 lb 2.1 oz.

CDC-Growth-Curve Percentile [corresponding to MP height]

28.75

GROWTH PROFILE BETWEEN THE FIRST AND THE SECOND CHECKUP

Height-for-Age Profile

Your child is 5.85 cm SHORT for age, which is equivalent to 2.30 inches. Your child is STUNTED, in technical terms.

Height Velocity-for-Age Profile

Your child's height velocity is 1.95 cm/year MORE than the reference value, which is equivalent to 0.77 inch/year. Your child is growing FAST.

Height Prediction

121.94 cm, which is equivalent to 4 feet 0.008 inches at 8 years 6 months.

Table 1: Actual growth parameters (interpolated at reference ages)

Age	8 years	8 years 6 months
Height [cm]	118.25	122.60
Height [feet-inches]	3 feet 10.6 inches	4 feet 0.3 inches
Percentile-of-height	4.75	9.32
Mass [kg]	18.31	19.57
Weight [lb-oz]	40 lb 5.9 oz	43 lb 2.3 oz
Percentile-of-weight	<3	<3

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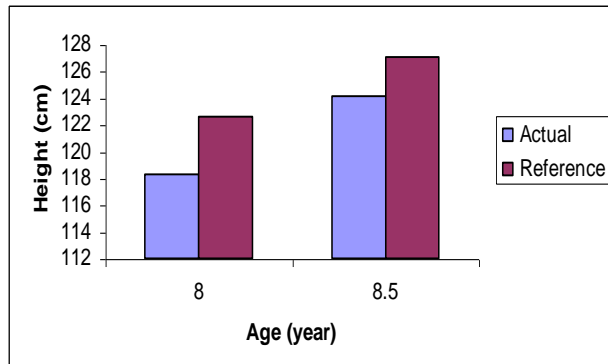


Fig. 2. Height profile in bar-chart form

Mass-for-Age (Weight-for-Age) Profile

Your child has 5.06 kg LESSER mass for age.
Your child is UNDERWEIGHT for age by 11 lb 2.8 oz.

Rate-of-Mass-Gain-for-Age (Weight-Gain-for-Age) Profile

Rate of mass gain is 2.24 kg/year MORE than the reference value, which is equivalent to a rate of weight gain of 4.95 lb/year. Rates of mass and weight gain are HIGH.

Mass (Weight) Prediction

21.04 kg, which is equivalent to a weight of 46 lb 6.2 oz at 8 years 6 months.

Obesity Profile

Your child's body-mass index (BMI) is 1.17 kg/m² LESSER than the reference value. Your child tends to be LEAN.

Mass-for-Height (Weight-for-Height) Profile

Your child has 1.63 kg LESSER mass for height. Your child is UNDERWEIGHT for height by 3 lb 9.5 oz. Your child is WASTED, in technical terms. DO NOT confuse with everyday meaning of 'waste'.

GROWTH PROFILE BETWEEN THE SECOND AND THE THIRD CHECKUP

Height-for-Age Profile

Your child is 4.43 cm SHORT for age, which is equivalent to 1.74 inches.
Your child is STUNTED.

Rate-of-Mass-Gain-for-Age (Weight-Gain-for-Age) Profile

Rate of mass gain is 2.05 kg/year LESS than the reference value, which is

Table 2: Reference growth parameters

Age	8 years	8 years 6 months
Height [cm]	124.1	127.03
Mass [kg]	23.38	24.45

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ADDITIONAL FILE 2: GROWTH PROFILE OF Z. L. Z.

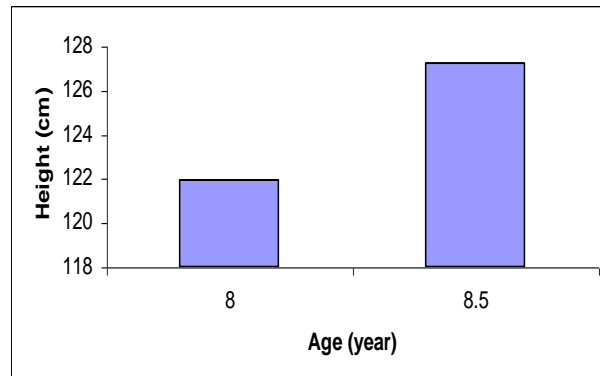


Fig. 3. Height Prediction

equivalent to a rate of weight gain of 4.52 *lb/year*. Rates of mass and weight gain are LOW.

Mass (Weight) Prediction

20.24 *kg*, which is equivalent to a weight of 44 *lb* 10.1 *oz* at 9 years.

Obesity Profile

Your child's body-mass index (*BMI*) is 1.45 *kg/m²* LESSER than the reference value. Your child tends to be LEAN.

Mass-for-Height (Weight-for-Height) Profile

Your child has 2.30 *kg* LESSER mass for height. Your child is UNDERWEIGHT for height by 5 *lb* 1.2 *oz*. Your child is WASTED.

Table 3: Growth profile

Δ (Growth Parameter) = Reference Value - Actual Value	Between 1 st & 2 nd Checkup	Between 2 nd & 3 rd Checkup
Δ Height-for-age [cm]	- 5.85	- 4.43
Δ Height-for-age [inch]	- 2.30	- 1.74
Status	STUNTED	STUNTED
Δ Height-velocity-for-Age [cm/year]	+ 1.95	+ 3.67
Δ Height-Velocity-for-Age [inch/year]	+ 0.77	+ 1.44
Status	Growing FAST	Growing FAST
Δ Mass-for-age [kg]	- 5.07	- 4.88
Δ Weight-for-age [lb-oz]	- 11 lb 2.8 oz	- 10 lb 12.3 oz
Status	UNDERWEIGHT	UNDERWEIGHT
Δ Rate-of-mass-gain-for-age [kg/year]	+ 2.24	- 2.05
Δ Rate-of-weight-gain-for-age [lb/year]	+ 4.95	- 4.52
Status	Rates HIGH	Rates LOW
Δ Body-mass index [kg/m ²]	- 1.17	- 1.45
Status	LEAN	LEAN
Δ Mass-for-height [kg]	- 1.63	- 2.30
Δ Weight-for-height [lb-oz]	- 3 lb 9.5 oz	- 5 lb 1.2 oz
Status	WASTED	WASTED

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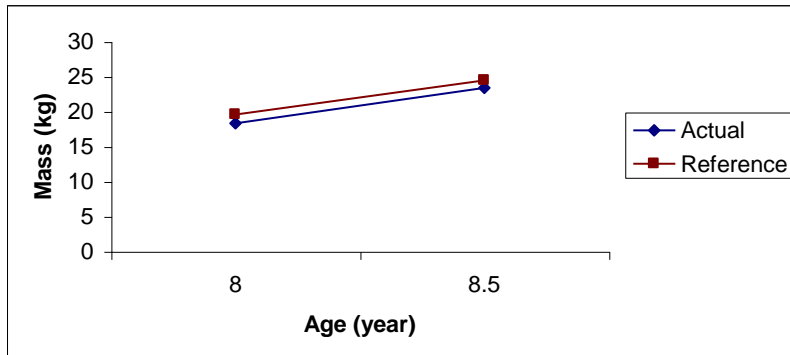


Fig. 4. Mass Profile (Graphical)

Height Velocity-for-Age Profile

Your child's height velocity is 3.67 cm/year MORE than the reference value, which is equivalent to 1.44 inches/year . Your child is growing FAST.

Height Prediction

127.22 cm , which is equivalent to $4 \text{ feet } 2.1 \text{ inches}$ at 9 years.

Mass-for-Age (Weight-for-Age) Profile

Your child has 4.88 kg LESSER mass for age. Your child is UNDERWEIGHT for age by $10 \text{ lb } 12.3 \text{ oz}$.

SUMMARY OF FINDINGS

- Gap between the reference and the actual heights is DECREASING.
- The child is growing FASTER and the height velocity has further INCREASED.
- The child, however, remains EXTREMELY UNDERWEIGHT. Her weight is BELOW the 3rd percentile, and the prediction at age 9 years remains the same.
- The rate of weight gain has decreased from HIGH to LOW.
- The child is wasted, the situation WORSENERD from the previous checkup.
- BMI is lesser, the situation WORSENERD from the previous checkup.
- The child is showing signs of TRUNK DEFORMITY.

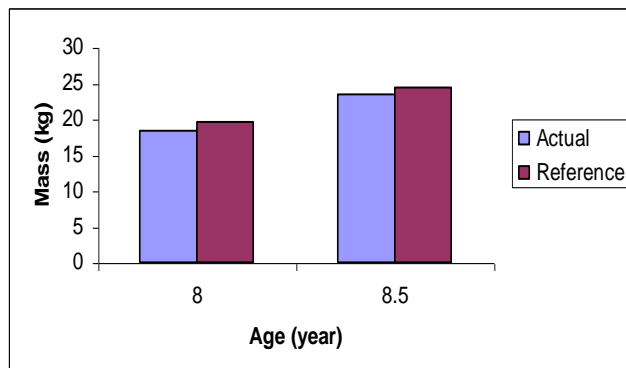


Fig. 5. Mass Profile (Bar Chart)

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ADDITIONAL FILE 2: GROWTH PROFILE OF Z. L. Z.

Table 4: Growth prediction
(Extrapolated at the Reference Ages)

Age	8 years 6 months	9 years
Height [cm]	121.94	127.22
Height [feet-inches]	4 feet 0.008 inches	4 feet 2.1 inches
Percentile-of-height	8.24	17.38
Mass [kg]	21.04	20.24
Weight [lb-oz]	46 lb 6.2 oz	44 lb 10.1 oz
Percentile-of-weight	5.18	<3

IMPLICATIONS

A constant low weight may, a) affect vital organs, b) cause diabetes and c) hamper to achieve the desired final height. The child is, already, showing signs of trunk deformity.

RECOMMENDATIONS

The child should be put under the care of pediatrician/nutritionist. A program must be chalked out to increase weight of the child.

Notes

- Please refer to the SGPP Case Number in all future correspondence.
- For appointments/rescheduling/discussion of results:
e-mail: sakamal@uok.edu.pk
- Please e-mail during the last week of March 2003 for the next appointment.
- Please check the accuracy and the completeness of your child's data and e-mail us back any corrections/omissions.
- These results were processed manually.

Thanks for your interest and your coöperation.

Privacy Considerations

Child's initials do not correspond to first letters in her name (as per confidentiality standards). Same is true about case numbers appearing in the main and the auxiliary documents. They are

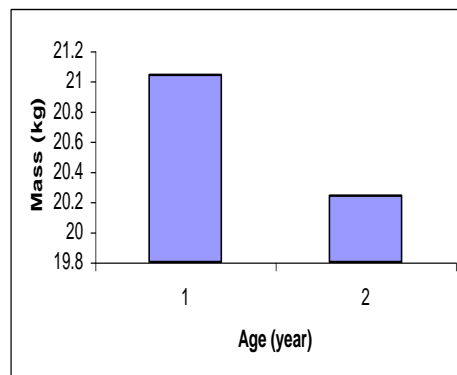


Fig. 6. Mass Prediction

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not the ones, which are used to classify patient record and appear on the reports issued to patients. However, the NGDS Team can, immediately, track the actual cases from the coded numbers included in this document.

Prof. Dr. Syed Arif Kamal

PROJECT DIRECTOR

The NGDS Pilot Project

University of Karachi

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End of Report

Web Address of the main document:

AN INVESTIGATION OF GROWTH PROFILES OF THE PAKISTANI CHILDREN

<https://www.ngds-ku.org/Papers/J26.pdf>

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Additional File 2: Growth Profile of Z. L. Z.

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