

GROWTH-AND-OBESITY CALCULATIONS OF N. FAMILY

SGPP-KHI-20090205-02

Table 1. Fractional Ages, Heights (*ft-in*) and Weights (Parents)

<i>Date Format</i> Year-Month-Day	<i>Father</i> (valid if A > 21 years)	<i>Mother</i> (valid if A > 19 years)
Date of Birth (DOB)	1970-01-13	1973-11-04
Fractional DOB	1970.03561643835	1973.84383561643
Date of Exam (DOE)	2009-02-05	2009-02-05
Fractional DOE	2009.09863013698	2009.09863013698
Age, A (years)	39.06301369863	35.25479178082
Height, <i>h</i> (cm)	169.3	154.9
Height (<i>ft-in</i>) §	5 ft 6.65354330708 in	5 ft 0.9842519685 in
Gross Mass (<i>kg</i>)	71.4	50.7
Dress Code ¶	2/2 #	3/3 @
Clothing Correction (<i>kg</i>)	0.4	0.5
Net Mass, <i>m</i> (<i>kg</i>)	71.0	50.2
Net Weight, <i>W</i> (<i>lb-oz</i>) = 2.205 <i>m</i> (<i>kg</i>)*	156 lb 8.88 oz	110 lb 11.056 oz
Body-Mass Index, BMI (<i>kg/m</i> ²)	20.5294737922	21.54245608

§ h (in) = $\frac{h(cm)}{2.54}$; 1 ft = 12 in; ft stands for feet and in for inch(es)

¶ For explanation of dress code (undressing), see *Manual for Obtaining Anthropometric Measurements*, available at: http://www.ngds-ku.org/ngds_folder/M02.pdf

Full-sleeved shirt, trousers

@ *Abaya* (an outer garment worn by Muslim women)

* 1 lb = 16 oz

Table 2. Height Percentiles, Optimal Masses and Mass Percentiles (Parents)

	<i>Father</i> (valid if A > 21 years)	<i>Mother</i> (valid if A > 19 years)
$h < (cm)$	167.50	154.75
$h (cm)$	169.3	154.9
$h > (cm)$	172.00	159.00
$P(h) <$	10	10
$P(h)$	16.0000000000	10.5294117646
$P(h) >$	25	25
$m_{opt} < (kg)$	58.25	48.25
$m_{opt} (kg)$	60.2500000000	48.39117647056
$m_{opt} > (kg)$	63.25	52.25
$W_{opt} (lb-oz)$	132 lb 13.62 oz	106 lb 11.2407058812 oz
$m < (kg)$	70.50	48.25
$m (kg)$	71.0	50.2
$m > (kg)$	79.00	52.25
$P(m) <$	50	10
$P(m)$	51.47058823525	17.3125
$P(m) >$	75	25

Table 3. Obesity Profiles (Parents)

	<i>Father</i> (valid if A > 21 years)	<i>Mother</i> (valid if A > 19 years)
Dm (kg) = $m - m_{opt}$	+10.75	+1.80882352944
DW (lb-oz) = 2.205 Dm	+23 lb 11.26 oz	+3 lb 15.8152941185 oz
$100 \frac{ Dm }{m_{opt}} \% \text{ } ^{\text{©}}$	17.8423236514%	3.7379201362% *
STATUS $^{\text{©}}$	OBESE	OBESE

Table 4. Adult-Mid-Parental (Target) Heights and Percentiles

<i>Adult-MP Height Formula</i>	<i>Boy</i> = $\frac{M + F + 13}{2}$	<i>Girl</i> = $\frac{M + F - 13}{2}$
$h_{adult-MP} < (cm)$	167.50	154.75
$h_{adult-MP} (cm)$	168.60	155.60
$h_{adult-MP} > (cm)$	172.00	159.00
$h_{adult-MP} (ft-in)$	5 ft 6.3779527559 in	5 ft 1.25984251968 in
$P_{MP} <$	10	10
P_{MP}	13.6666666666	13.0000000000
$P_{MP} >$	25	25

* 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.

$^{\text{©}}$ Pertaining to weight (mass) $\left[100 \frac{|w - w_{opt}|}{w_{opt}} = 100 \frac{|m - m_{opt}|}{m} = 100 \frac{|Dm|}{m_{opt}} \right]$

Table 5. Fractional Ages, Heights (*ft-in*) and Weights (Children)

<i>Date Format</i> Year-Month-Day	<i>F. N.</i>	<i>M. N.</i>
Gender	Female	Female
Date of Birth (DOB)	1999-12-05	2002-10-28
Fractional DOB	1999.92876712328	2002.82465753424
Date of Exam (DOE)	2009-02-05	2009-02-05
Fractional DOE	2009.09863013698	2009.09863013698
Age, <i>A</i> (years)	9.1698630137	6.27397260274
Height, <i>h</i> (cm)	128.15	117.15
Height (<i>ft-in</i>)	4 <i>ft</i> 2.45275590551 <i>in</i>	3 <i>ft</i> 10.122047244 <i>in</i>
Gross Mass (<i>kg</i>)	18.9	17.2
Dress Code (Undressing) [¶]	1.5/2 (0/0.5) [§]	1.5/1.5 (0/0.5) [®]
Clothing Correction (<i>kg</i>)	0	0
Net Mass, <i>m</i> (<i>kg</i>)	18.9	17.2
Net Weight, <i>W</i> (<i>lb-oz</i>) = 2.205 <i>m</i> (<i>kg</i>)*	41 <i>lb</i> 10.792 <i>oz</i>	37 <i>lb</i> 14.816 <i>oz</i>
Body-Mass Index, <i>BMI</i> (<i>kg/m</i> ²)	11.5086553156	12.5326774079

[¶] See note on page 1

[§] T-shirt, long skirt (undressed to panties only, barefoot, stripped to waist)

[®] T-shirt, skirt (undressed to panties only, barefoot, stripped to waist)

Table 6. Height and Mass Percentiles (F. N.: Female)

$$h = 128.15 \text{ cm}$$

<i>Percentile</i> <i>Age (years)</i>	10		25
$A < = 9.0$	125.50		129.00
$A = 9.1698630137$	126.1794520548	128.15	129.6794520548
$A > = 9.5$	127.50		131.00

$$P(h) = 18.4452054793$$

$$m = 18.9 \text{ kg}$$

<i>Percentile</i> <i>Age (years)</i>	—		3
$A < = 9.0$	—		21.50
$A = 9.1698630137$	—	18.9	21.8397260274
$A > = 9.5$	—		22.50

$$P(m) < 3$$

Table 7. Optimal Mass and Estimated-Adult Height (F. N.: Female)

<i>Height Percentile</i>	10	18.4452054793	25
$m_{\text{opt}} \text{ (kg)} [A \leq 9.0 \text{ years}]$	23.50	24.62602739724	25.50
$m_{\text{opt}} \text{ (kg)}$ $[A = 9.1698630137 \text{ years}]$	23.8397260274 [¥]	25.10920623004 [¥] 25.10920623004 [¥]	26.09452054795 [¥]
$m_{\text{opt}} \text{ (kg)} [A > 9.5 \text{ years}]$	24.50	26.0482876712	27.25
$W_{\text{opt}} \text{ (lb-oz)}$		55 lb 5.85279579568 oz	
$h_{\text{estimated-adult}} \text{ (cm)}$	154.75	157.14280821913	159.00
$h_{\text{estimated-adult}} \text{ (ft-in)}$		5 ft 1.86724733036 in	
$Dm \text{ (kg)} = m - m_{\text{opt}}$		-6.20920623004	
$DW \text{ (lb-oz)} = 2.205Dm$		-13 lb 11.0607957956 oz	
$100 \frac{ Dm }{m_{\text{opt}}} \% \text{ } ^{\text{©}}$		24.7288033447%	
STATUS [©]		WASTED	

Table 8. Estimated-Adult Mass and Weight (F. N.: Female)

<i>Mass Percentile</i>	—	< 3	3
$m_{\text{estimated-adult}} \text{ (kg)}$	—	< 45.25	45.25
$W_{\text{estimated-adult}} \text{ (lb-oz)} =$ $2.205m_{\text{estimated-adult}}$		< 99 lb 12.42 oz	

[¥] The entries in blue font show alternate method of constant-age route, which could, also, be used to compute m_{opt} as 25.10920623004 kg, with identical result 25.10920623004 kg as obtained from constant-percentile route (maroon font).

[©] See note on page 3

Table 9. Computations of Mid-Parental Height at the Current Age (F. N.: Female)

<i>MP-Height Percentile</i>	10	13.0000000000	25
$h_{MP} (cm) [A < = 9.0 \text{ years}]$	125.50	126.2000000000	129.00
$h_{MP} (cm) [A = 9.1698630137 \text{ years}]$	126.1794520548 [¥]	126.8794520548 [¥] 126.8794520548 [¥]	129.6794520548 [¥]
$h_{MP} (cm) [A > = 9.5 \text{ years}]$	127.50	128.2000000000	131.00
$Dh (cm) = h - h_{MP}$		+1.2705479452	
$Dh (in) = \frac{Dh (cm)}{2.54}$		+0.50021572645	
$100 \frac{ Dh }{h_{MP}} \% \text{ } ^{\text{³}}$		1.00138196108%	
STATUS ^³		(+)	

[¥] See note on page 6

^³ Pertaining to height

Table 10. Height and Mass Percentiles (M. N.: Female)

$$h = 117.15 \text{ cm}$$

<i>Percentile</i> <i>Age (years)</i>	50		75
$A < = 6.0$	114.50		118.00
$A = 6.27397260274$	116.14383561644	117.15	119.91780821918
$A > = 6.5$	117.50		121.50

$$P(h) = 56.66515426475$$

$$m = 17.2 \text{ kg}$$

<i>Percentile</i> <i>Age (years)</i>	05		10
$A < = 6.0$	16.50		17.00
$A = 6.27397260274$	16.91095890411	17.2	17.68493150685
$A > = 6.5$	17.25		18.25

$$P(m) = 6.86725663715$$

Table 11. Optimal Mass and Estimated-Adult Height (M. N.: Female)

<i>Height Percentile</i>	50	56.66515426475	75
$m_{opt} (kg) [A \leq 6.0 \text{ years}]$	20.00	20.66651542647	22.50
$m_{opt} (kg) [A = 6.27397260274 \text{ years}]$	20.82191780822 [¥]	21.48843323469 [¥] 21.48843323469 [¥]	23.32191780822 [¥]
$m_{opt} (kg) [A \geq 6.5 \text{ years}]$	21.50	22.16651542647	24.00
$W_{opt} (lb-oz)$		47 lb 6.11192451984 oz	
$h_{estimated-adult} (cm)$	163.50	164.56642468236	167.50
$h_{estimated-adult} (ft-in)$		5 ft 4.78993097729 in	
$Dm (kg) = m - m_{opt}$		-4.28843323469	
$DW (lb-oz) = 2.205Dm$		-9 lb 7.29592451984 oz	
$100 \frac{ Dm }{m_{opt}} \% \text{ } ^{\textcircled{c}}$		19.9569377062%	
STATUS [©]		WASTED	

Table 12. Estimated-Adult Mass and Weight (M. N.: Female)

<i>Mass Percentile</i>	5	6.86725663715	10
$m_{estimated-adult} (kg)$	46.50	47.153539823	48.25
$W_{estimated-adult} (lb-oz) = 2.205m_{estimated-adult}$		103 lb 15.5768849553 oz	

[¥] See note on page 6

[©] See note on page 3

Table 13. Mid-Parental Height at the Current Age (M. N.: Female)

<i>MP-Height Percentile</i>	10	13.0000000000	25
$h_{MP} (cm) [A \leq 6.0 \text{ years}]$	108.00	108.5000000000	110.50
$h_{MP} (cm) [A = 6.27397260274 \text{ years}]$	109.91780821918 [‡]	110.47260273972 [‡] 110.47260273972 [‡]	112.69178082192 [‡]
$h_{MP} (cm) [A \geq 6.5 \text{ years}]$	111.50	112.1000000000	114.50
$Dh (cm) = h - h_{MP}$		+6.67739726028	
$Dh (in) = \frac{Dh (cm)}{2.54}$		+2.62889655916	
$100 \frac{ Dh }{h_{MP}} \% \text{ } ^{\text{‡}}$		6.04439208877%	
STATUS [‡]		TALL	

[‡] See note on page 6

[‡] See note on page 7