

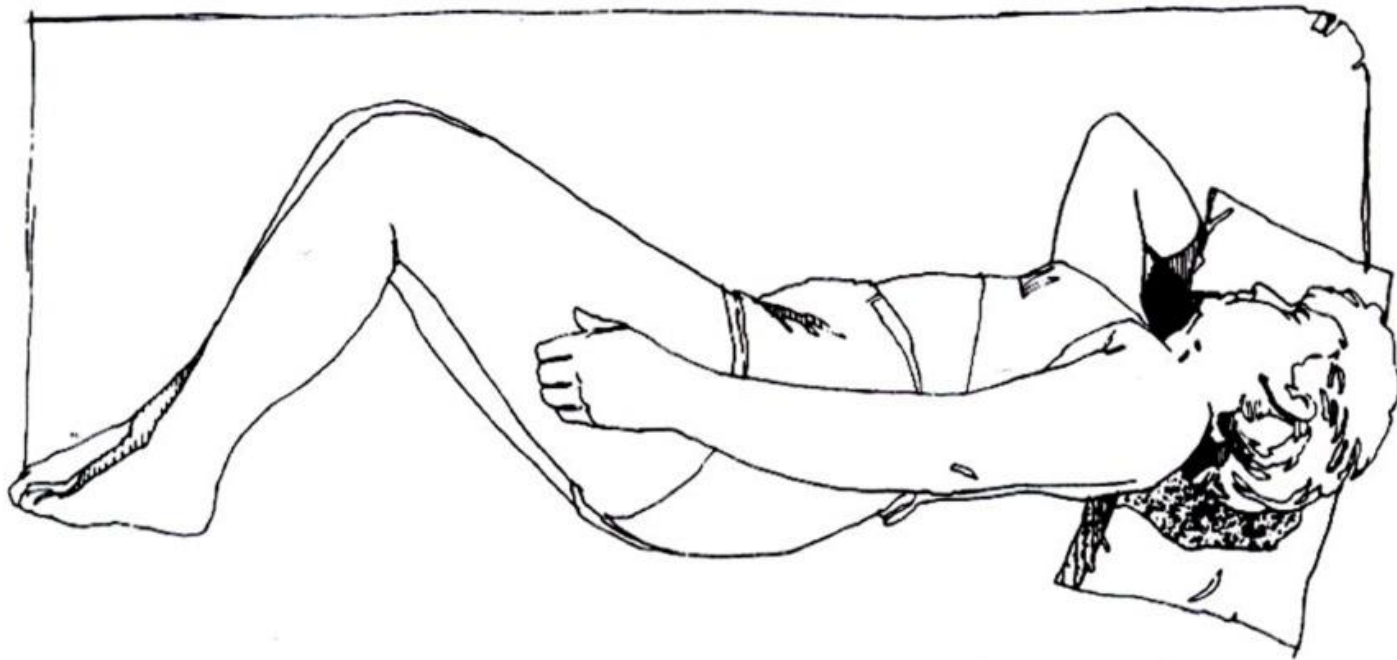
MISURAZIONI ANTROPOMETRICHE NELL'ADULTO MATURO E ANZIANO



Misurazioni antropometriche tipiche nell'anziano

- Altezza del ginocchio
 - Peso
 - Statura seduto
- Circonferenza vita
- Diametro gomito

Possibile posizione di misurazione



Altezza del ginocchio

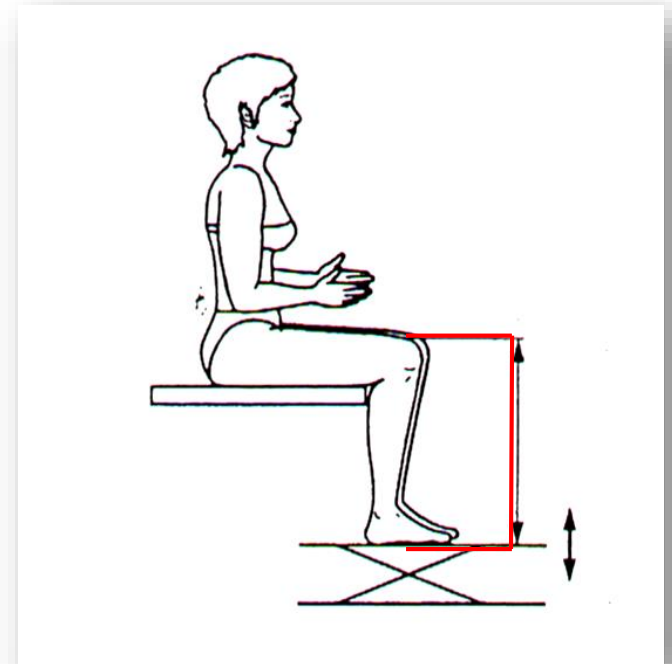
POSIZIONE SUPINA



Altezza del ginocchio

POSTURA ASSISA

- Distanza verticale dalla superficie di appoggio dei piedi (punta) al punto più alto del ginocchio (margine superiore della rotula)
- Il soggetto siede su uno sgabello con i margini in corrispondenza del poplite. L'arto inferiore deve essere piegato di 90°

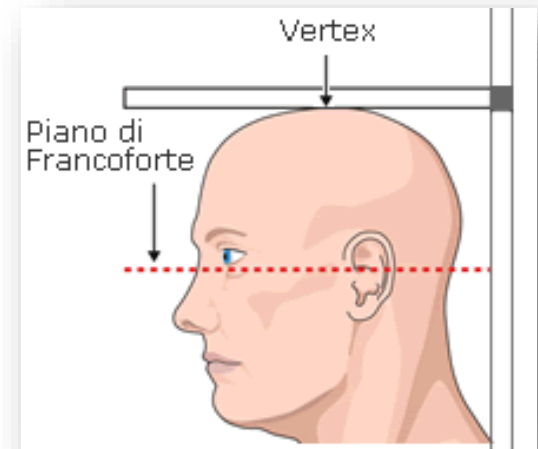


STRUMENTO DI MISURAZIONE: antropometro smontabile

Statura da seduto

Statura seduto: distanza tra vertex e ipoischiale

- Il soggetto siede su di una superficie con le mani che poggiano sulle cosce. Il soggetto è senza scarpe
- Posizione eretta.
- La testa è orientata nel piano orizzontale di Francoforte.



PERIMETRO VITA

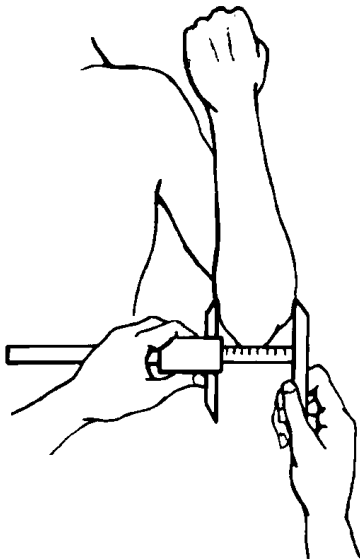


Perimetro vita:

L'operatore si trova di fronte ad un soggetto in:

- posizione eretta;
- con l'addome rilassato;
- le braccia pendono ai lati del corpo;
- i piedi sono uniti;
- la misura viene effettuata alla fine di un'espiazione normale;
- dove si apprezza il punto più stretto dell'addome, con il metro nel piano orizzontale.

DIAMETRO GOMITO



Misura: distanza epikondylion-epitrocleare

- Corrisponde alla distanza tra i due epicondili omerali.
- Il soggetto solleva il braccio sinistro fino a portarlo nel piano orizzontale.
- Flette il gomito di 90° in modo che il dorso della mano guardi in avanti.
- L'operatore si pone di fronte al soggetto e ricerca con la palpazione gli epicondili mediale e laterale dell'omero.

Pressione arteriosa sistemica



Statura (cm) =

$$84.88 - (0.24 \times \text{età}) + (1.83 \times \text{altezza ginocchio})$$

Indice Cormico =

$$\text{Statura seduto (cm)} / \text{Statura (cm)} \times 100$$

Frame Index 2 =

$$\text{Diametro gomito (mm)} / \text{Statura (cm)} \times 100$$

Body Mass Index (BMI) =

$$\text{Peso (kg)} / \text{Statura}^2(\text{m})$$

Means, standard deviations, and percentiles of sitting height index (sitting height/stature x 100) by age for males and females of 1 to 74 years

Age (yrs)	N	Mean	SD	Percentiles								
				5	10	15	25	50	75	85	90	95
Males												
2.0-2.9	520	58.9	1.9	55.9	56.7	57.0	57.8	59.1	60.1	60.6	61.0	61.7
3.0-3.9	714	57.5	1.9	54.6	55.4	55.8	56.4	57.5	58.6	59.1	59.5	60.4
4.0-4.9	709	56.4	2.1	53.3	54.1	54.6	55.3	56.6	57.4	57.9	58.2	58.8
5.0-5.9	674	55.4	1.8	52.5	53.3	53.7	54.4	55.5	56.5	57.0	57.3	58.0
6.0-6.9	298	54.5	1.5	52.2	52.6	52.9	53.7	54.5	55.4	56.0	56.2	56.7
7.0-7.9	312	53.7	1.7	51.5	52.1	52.3	52.8	53.8	54.7	55.2	55.5	55.9
8.0-8.9	296	53.5	1.9	51.0	51.4	51.8	52.4	53.6	54.4	55.0	55.4	55.7
9.0-9.9	322	52.7	1.5	50.3	50.8	51.1	51.8	52.8	53.8	54.2	54.4	54.8
10.0-10.9	332	52.3	1.7	49.6	50.6	50.8	51.4	52.4	53.3	53.6	54.0	54.3
11.0-11.9	324	51.7	1.5	49.4	50.0	50.3	50.8	51.7	52.7	53.2	53.6	53.9
12.0-12.9	349	51.4	1.4	49.3	49.8	49.9	50.5	51.4	52.3	52.8	53.1	53.6
13.0-13.9	349	51.3	1.4	49.0	49.6	49.8	50.3	51.3	52.2	52.7	53.1	53.6
14.0-14.9	358	51.2	1.6	48.6	49.5	49.8	50.3	51.2	52.2	52.7	53.1	53.6
15.0-15.9	358	51.5	1.6	49.0	49.6	49.9	50.6	51.6	52.6	53.0	53.6	54.1
16.0-16.9	346	51.8	1.6	49.3	49.8	50.2	50.9	51.9	52.9	53.3	53.6	54.1
17.0-17.9	338	51.8	1.5	49.4	49.9	50.4	50.9	51.8	52.8	53.3	53.6	54.3
18.0-24.9	1749	52.3	1.5	49.7	50.4	50.8	51.4	52.4	53.2	53.8	54.1	54.7
25.0-29.9	1253	52.5	1.4	50.2	50.8	51.2	51.7	52.6	53.5	53.9	54.3	54.8
30.0-34.9	943	52.6	1.5	50.3	50.9	51.3	51.8	52.6	53.5	54.0	54.3	54.8
35.0-39.9	837	52.5	1.4	50.3	50.8	51.1	51.6	52.5	53.4	53.9	54.2	54.6
40.0-44.9	828	52.5	1.4	50.2	50.7	51.1	51.7	52.6	53.5	53.9	54.2	54.6
45.0-49.9	871	52.5	1.5	50.1	50.7	51.0	51.8	52.6	53.4	53.8	54.2	54.7
50.0-54.9	880	52.4	1.4	50.0	50.5	50.9	51.5	52.4	53.4	53.8	54.2	54.7
55.0-59.9	805	52.3	1.4	50.0	50.5	50.8	51.4	52.4	53.3	53.7	54.1	54.7
60.0-64.9	1257	52.3	1.4	49.9	50.5	51.0	51.5	52.4	53.2	53.7	54.0	54.5
65.0-69.9	1770	52.1	1.5	49.8	50.2	50.6	51.1	52.2	53.1	53.5	53.9	54.4
70.0-74.9	1251	51.9	1.6	49.2	50.0	50.4	51.0	52.1	53.0	53.4	53.8	54.3
Females												
2.0-2.9	463	58.5	1.8	55.6	56.4	56.7	57.5	58.6	59.8	60.2	60.6	61.2
3.0-3.9	651	57.0	1.7	54.1	54.9	55.4	56.0	57.1	58.2	58.7	58.9	59.5
4.0-4.9	677	55.9	1.6	53.3	53.9	54.3	55.0	56.0	56.9	57.4	57.7	58.4
5.0-5.9	671	55.0	1.9	52.2	52.8	53.3	53.9	55.1	56.0	56.5	56.9	57.4
6.0-6.9	296	54.1	2.0	51.3	52.1	52.6	53.3	54.3	55.1	55.6	55.8	56.3
7.0-7.9	331	53.5	1.6	50.8	51.5	52.0	52.7	53.6	54.5	55.0	55.4	55.8
8.0-8.9	276	53.2	1.6	50.7	51.2	51.7	52.1	53.2	54.0	54.6	55.0	55.7
9.0-9.9	322	52.5	2.1	49.5	50.4	50.8	51.5	52.5	53.5	54.0	54.5	54.8
10.0-10.9	330	52.1	1.3	49.9	50.2	50.7	51.2	52.1	53.0	53.5	53.7	54.1
11.0-11.9	302	51.9	1.4	49.4	50.1	50.5	51.0	51.9	52.8	53.2	53.6	53.9
12.0-12.9	324	51.9	1.6	49.1	49.8	50.2	50.8	51.9	52.8	53.5	53.9	54.5
13.0-13.9	361	52.0	1.5	49.5	50.0	50.3	51.0	52.0	53.0	53.5	53.9	54.4
14.0-14.9	369	52.3	1.5	49.6	50.4	50.8	51.4	52.3	53.4	53.9	54.3	54.8
15.0-15.9	308	52.4	1.5	49.8	50.6	51.0	51.5	52.4	53.3	53.9	54.2	55.1
16.0-16.9	342	52.8	1.4	50.5	51.0	51.4	51.8	52.9	53.8	54.2	54.5	55.0
17.0-17.9	293	52.8	1.5	50.1	51.0	51.4	51.9	52.9	53.7	54.2	54.7	55.1
18.0-24.9	2590	52.9	1.5	50.4	51.0	51.5	52.1	53.0	53.9	54.4	54.8	55.3
25.0-29.9	1934	53.1	1.5	50.8	51.4	51.8	52.3	53.1	54.0	54.4	54.9	55.5
30.0-34.9	1627	53.3	1.5	50.9	51.5	51.9	52.4	53.3	54.2	54.7	55.0	55.5
35.0-39.9	1455	53.2	1.5	50.8	51.4	51.8	52.3	53.2	54.1	54.7	55.0	55.6
40.0-44.9	1398	53.1	1.5	50.6	51.2	51.6	52.1	53.1	54.1	54.6	54.9	55.5
45.0-49.9	967	53.2	1.4	50.9	51.4	51.8	52.3	53.3	54.2	54.6	55.0	55.4
50.0-54.9	1011	53.1	1.5	50.8	51.3	51.7	52.1	53.1	54.0	54.5	54.9	55.3
55.0-59.9	887	52.9	1.5	50.4	51.1	51.4	52.0	53.0	54.0	54.5	54.7	55.3
60.0-64.9	1387	52.8	1.5	50.4	51.1	51.4	52.0	52.8	53.7	54.2	54.6	55.1
65.0-69.9	1946	52.8	1.5	49.8	50.3	50.6	51.3	52.5	53.5	53.9	54.3	54.8
70.0-74.9	1482	52.2	1.6	49.7	50.2	50.6	51.2	52.2	53.2	53.8	54.1	54.6



Table II.5.
Categories of frame size derived with reference to Frame Index 2 ([elbow breadth (mm) / stature (cm)] x 100), by age and by height

Frame Index 2 = [elbow breadth (mm) / stature (cm)] x 100						
Age (yrs.)	Male			Female		
	Small	Medium	Large	Small	Medium	Large
	Frame Index 1: elbow breadth (mm)					
18.0-24.9	<38.4	38.4 to 41.6	>41.6	<35.2	35.2 to 38.6	>38.6
25.0-29.9	<38.6	38.6 to 41.8	>41.8	<35.7	35.7 to 38.7	>38.7
30.0-34.9	<38.6	38.6 to 42.1	>42.1	<35.7	35.7 to 39.0	>39.0
35.0-39.9	<39.1	39.1 to 42.4	>42.4	<36.2	36.2 to 39.8	>39.8
40.0-44.9	<39.3	39.3 to 42.5	>42.5	<36.7	36.7 to 40.2	>40.2
45.0-45.9	<39.6	39.6 to 43.0	>43.0	<36.7	37.2 to 40.7	>40.7
50.0-54.9	<39.9	39.9 to 43.3	>43.3	<37.2	37.2 to 41.6	>41.6
55.0-59.9	<40.2	40.2 to 43.8	>43.8	<37.8	37.8 to 41.9	>41.9
60.0-64.9	<40.2	40.2 to 43.6	>43.6	<38.2	38.2 to 41.8	>41.8
65.0-69.9	<40.2	40.2 to 43.6	>43.6	<38.2	38.2 to 41.8	>41.8
70.0-74.9	<40.2	40.2 to 43.6	>43.6	<38.2	38.2 to 41.8	>41.8
Frame Index 2: Elbow breadth by height						
Height (cm)	Male			Female		
	Small	Medium	Large	Small	Medium	Large
	Elbow breadth (mm)					
141-146	—	—	—	<56	56 to 61	>61
147-152	—	—	—	<57	57 to 62	>62
153-158	<66	66 to 70	>70	<60	60 to 63	>63
159-164	<66	66 to 71	>71	<61	61 to 65	>65
165-170	<68	68 to 72	>72	<61	61 to 65	>65
171-176	<70	70 to 73	>73	<62	62 to 65	>65
177-182	<71	71 to 75	>75	<62	62 to 66	>66
183-188	<71	71 to 76	>76	—	—	—
189-194	<73	73 to 76	>76	—	—	—

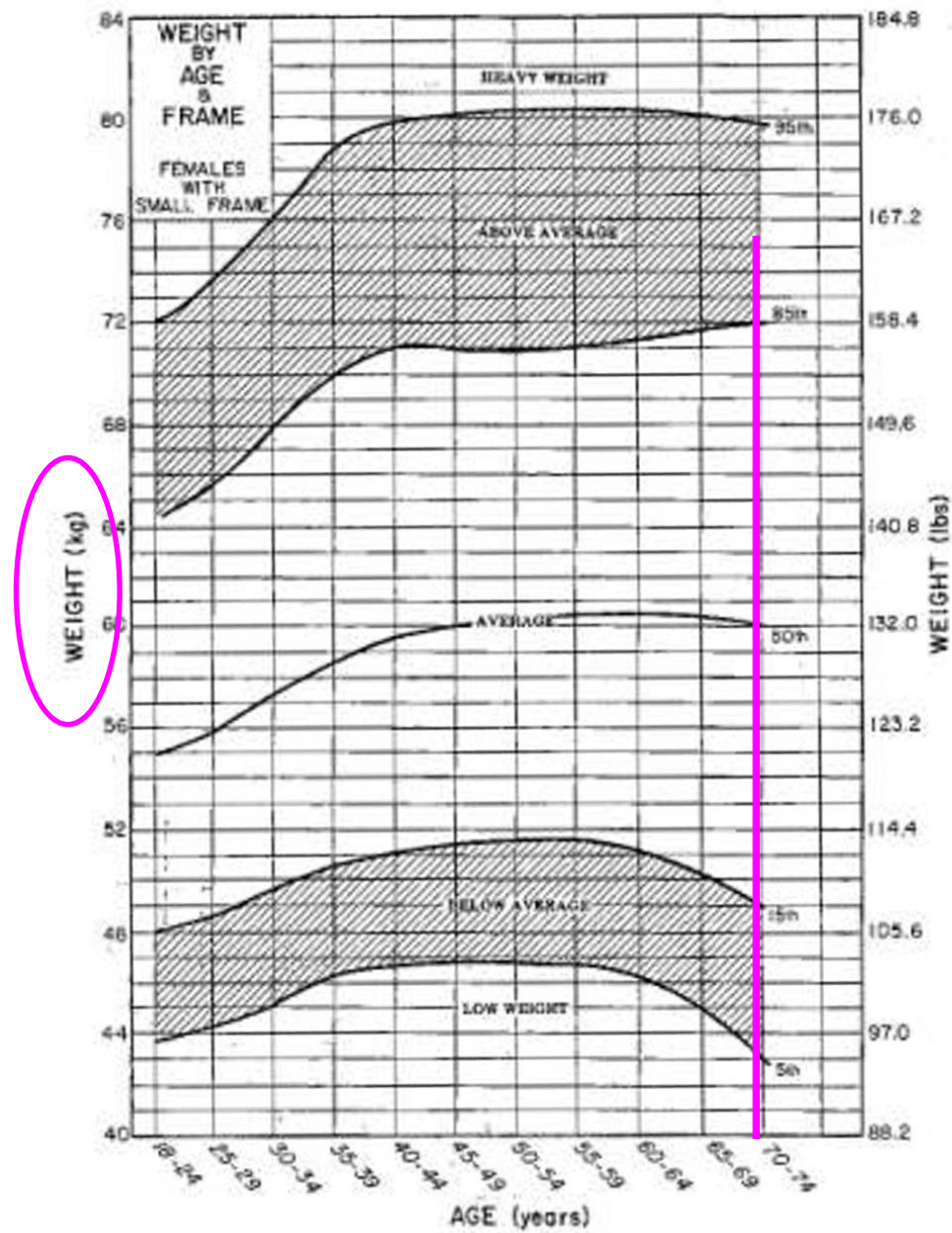


Fig. IV.46. Percentiles of weight by age for adult females with small frame.

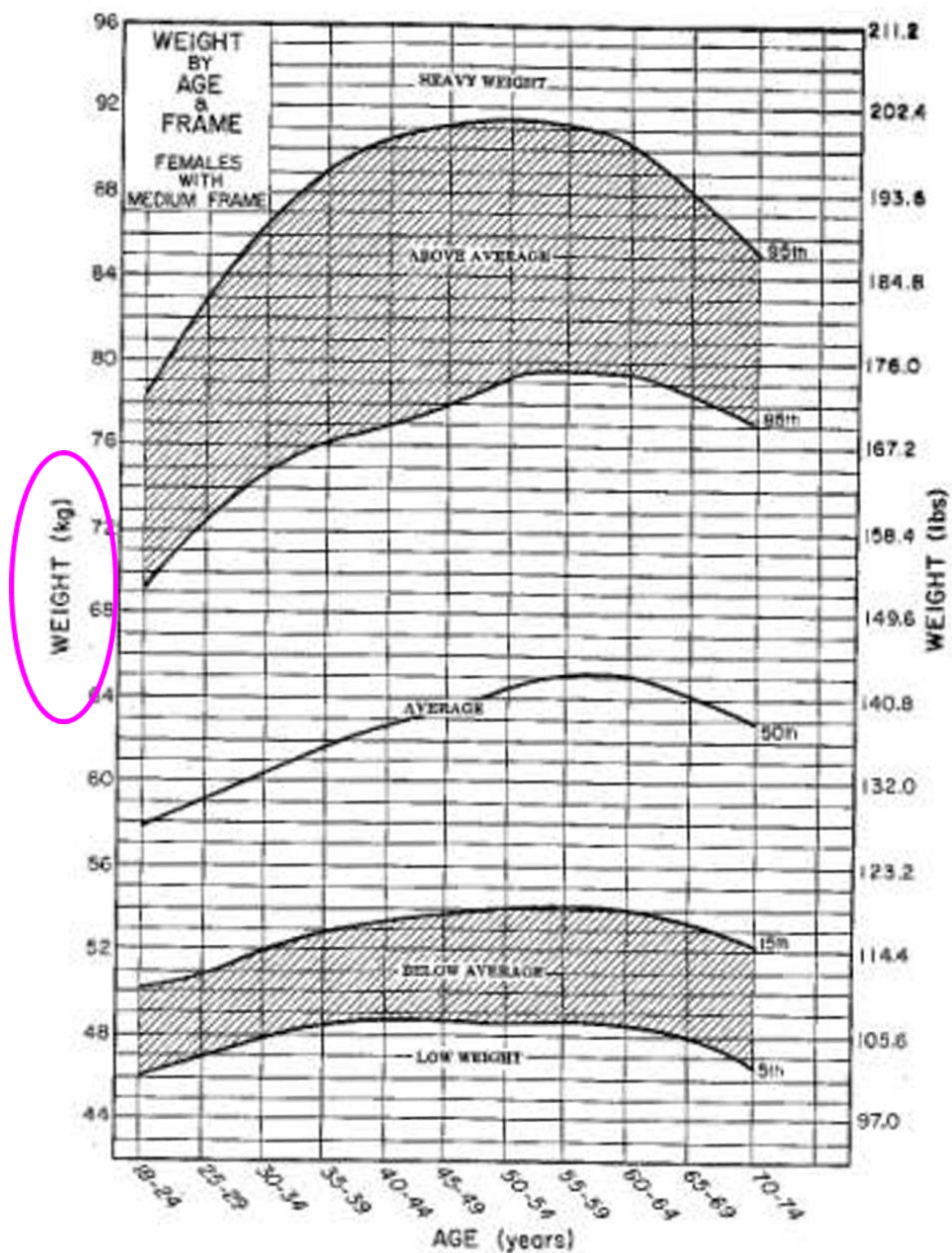


Fig. IV.47. Percentiles of weight by age for adult females with medium frame.

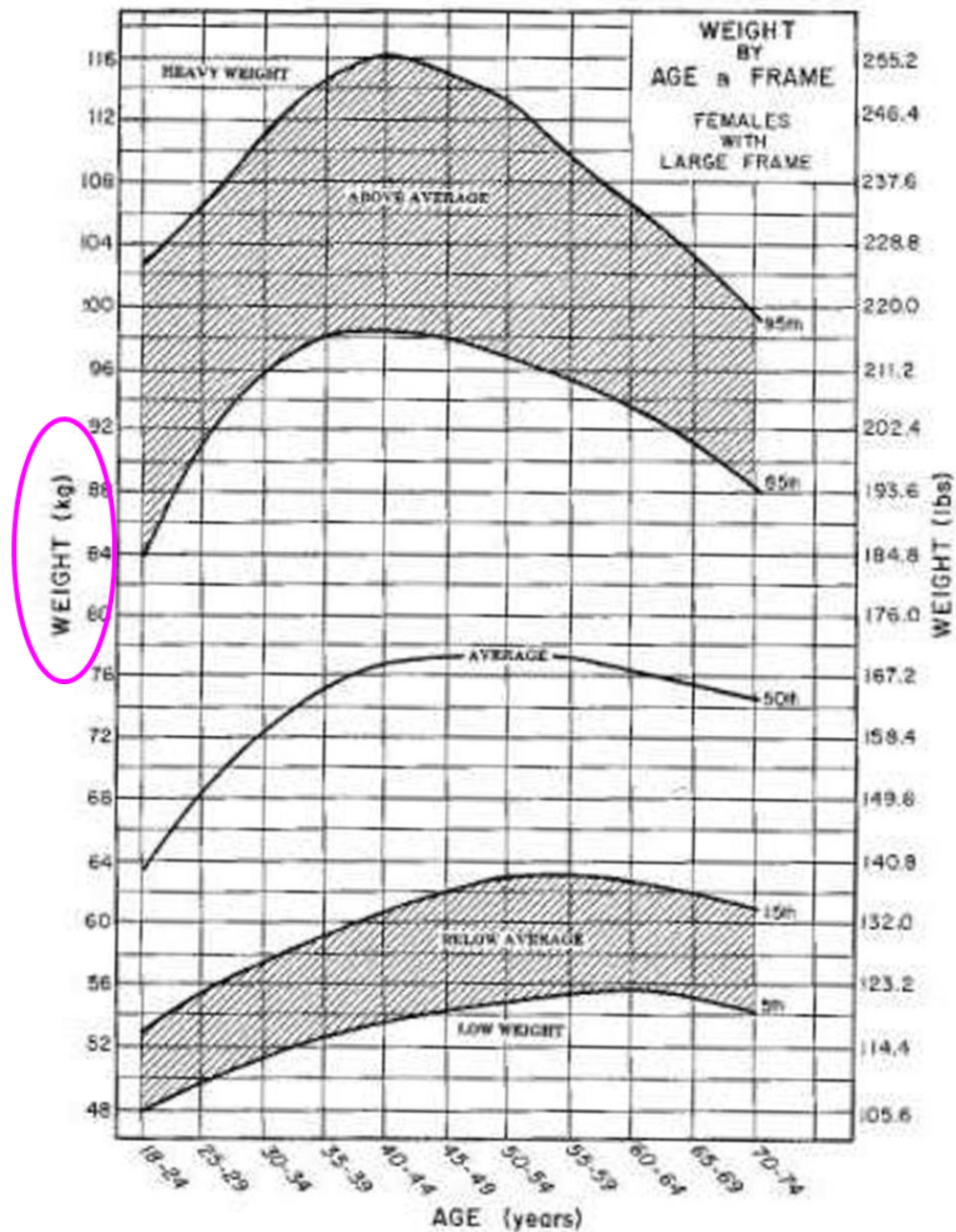


Fig. IV.48. Percentiles of weight by age for adult females with large frames.

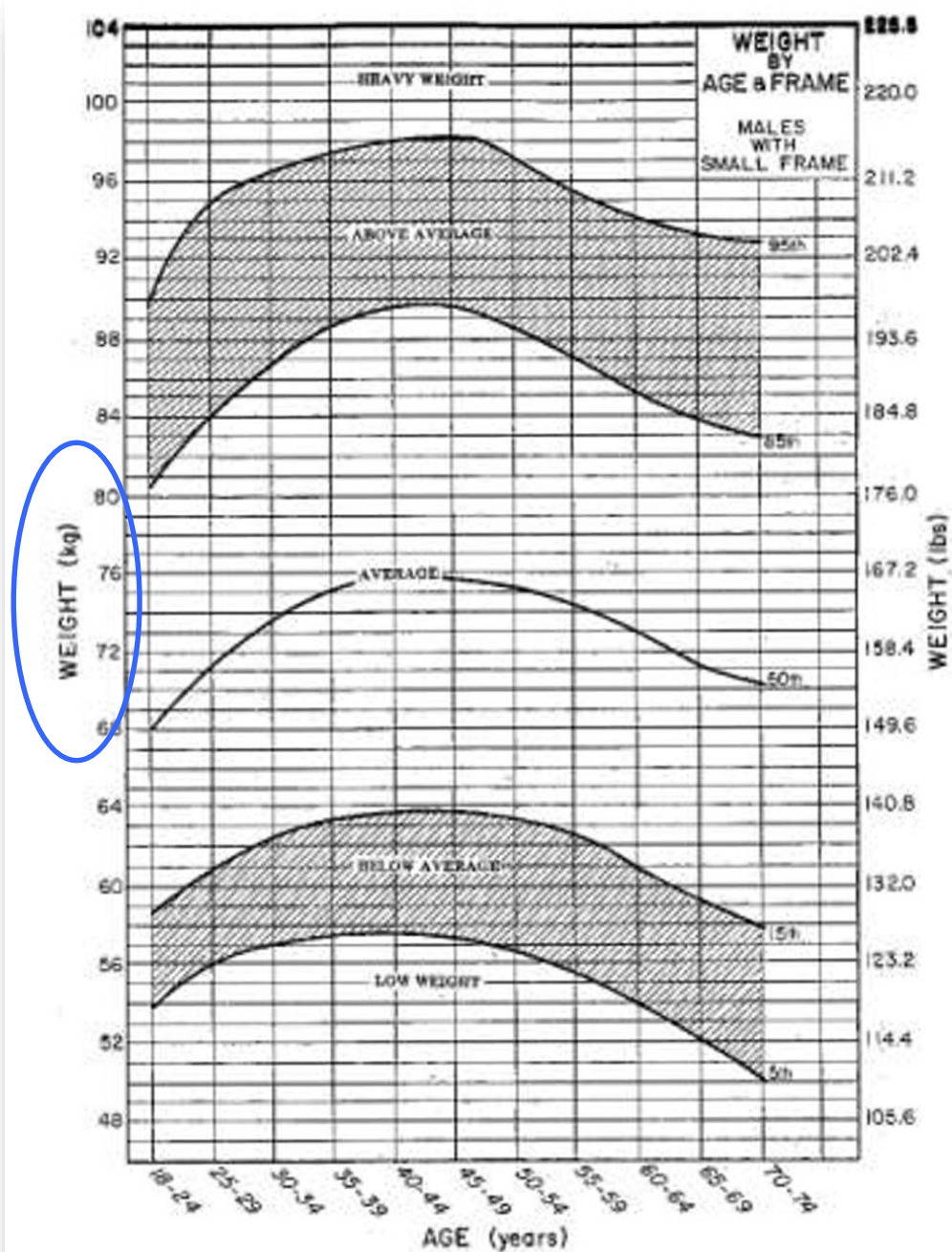


Fig. IV.43. Percentiles of weight by age for adult males with small frame.

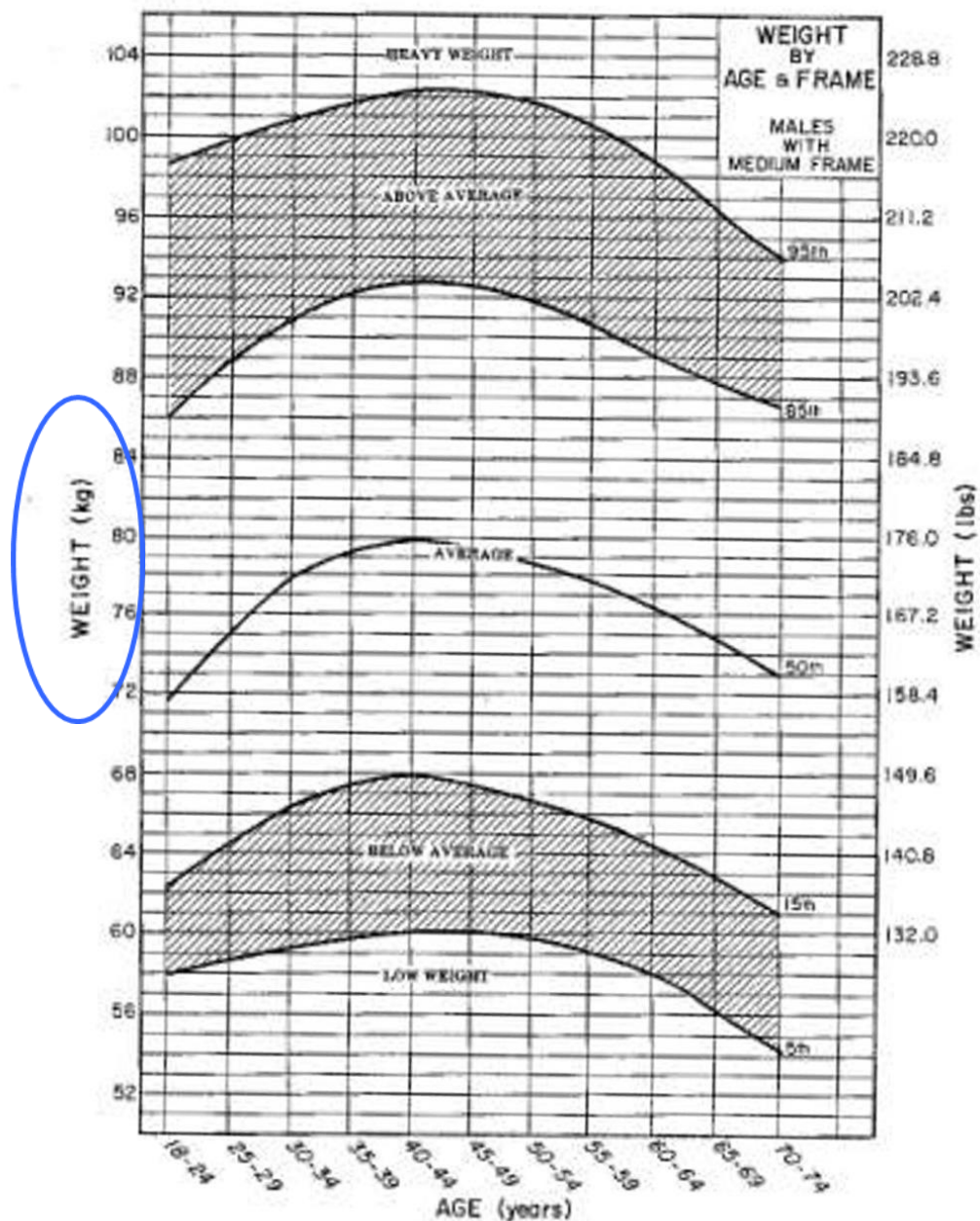


Fig. IV.44. Percentiles of weight by age for adult males with medium frame.

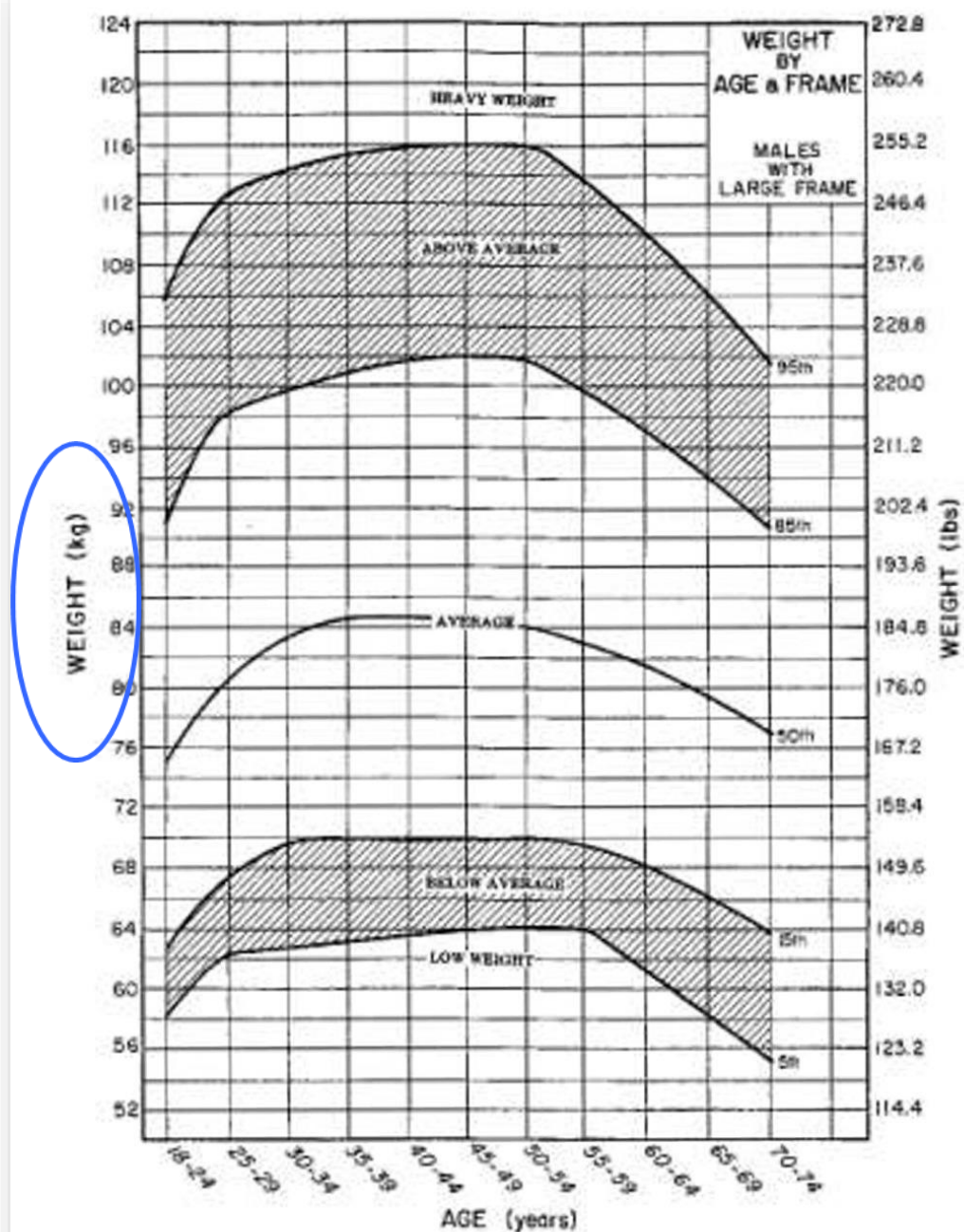
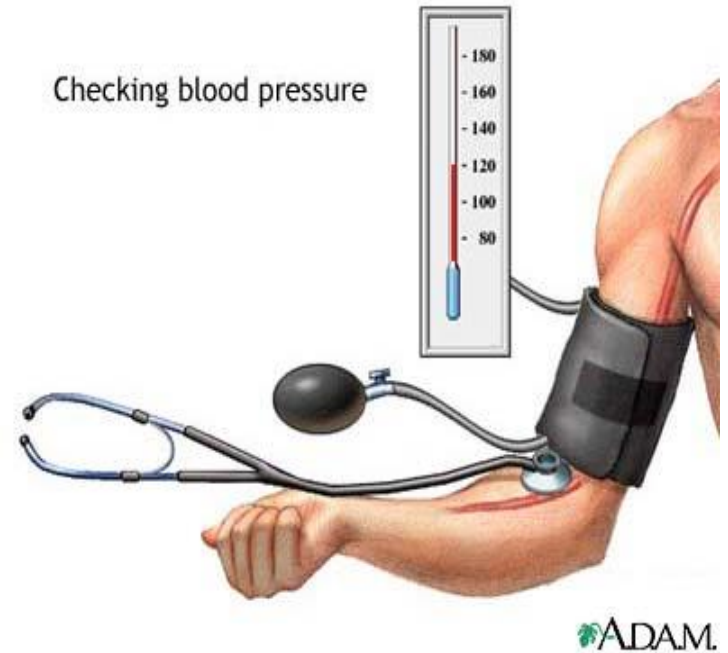
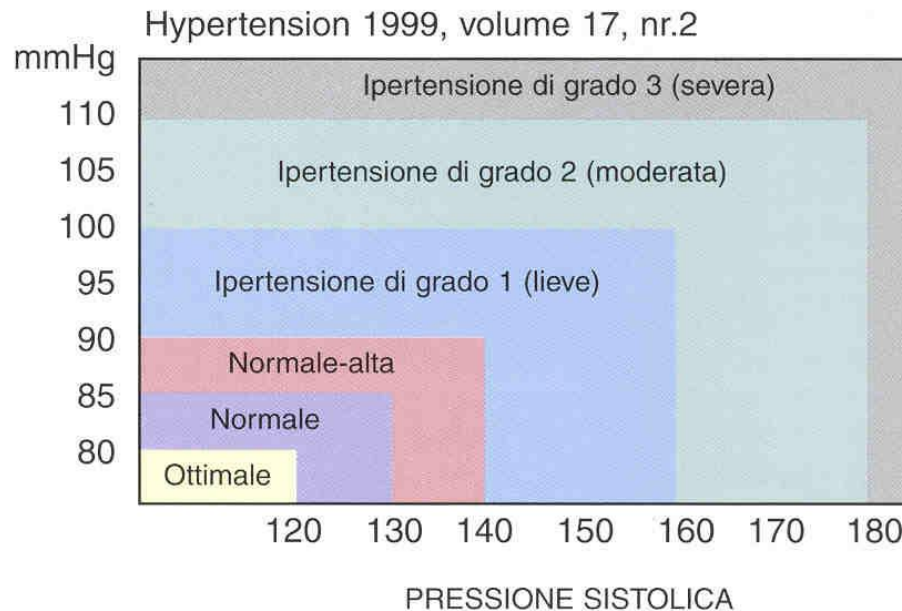


Fig. IV.45. Percentiles of weight by age for adult males with large frame.

Apparato cardio-circolatorio

- Pressione sanguigna

Linee guida dell'Organizzazione Mondiale della Sanità



BODY MASS INDEX (Kg/m²)

Underweight	<18.5
Normal weight	18.5–24.9
Overweight	25–29.9
Obesity (Class 1)	30–34.9
Obesity (Class 2)	35–39.9
Extreme ob. (Class 3)	≥40

Circonferenza vita ad alto rischio

Uomini: > 102 cm

Donne: > 88 cm

Patologie connesse

Una misura elevata di circonferenza vita è connessa con:

- Diabete di tipo 2
- Dislipidemia
- Ipertensione
- Disordini cardiocircolatori in pazienti con un BMI tra 25 and 34.9 kg/m²

Table 2

Classification of Overweight and Obesity by BMI, Waist Circumference, and Associated Disease Risk*

	BMI (kg/m ²)	Obesity Class	Disease Risk* (Relative to Normal Weight and Waist Circumference)	
			Men ≤40 in (≤ 102 cm) Women ≤ 35 in (≤ 88 cm)	> 40 in (> 102 cm) > 35 in (> 88 cm)
Underweight	< 18.5		-	-
Normal†	18.5–24.9		-	-
Overweight	25.0–29.9		Increased	High
Obesity	30.0–34.9	I	High	Very High
	35.0–39.9	II	Very High	Very High
Extreme Obesity	≥ 40	III	Extremely High	Extremely High

* Disease risk for type 2 diabetes, hypertension, and CVD.

† Increased waist circumference can also be a marker for increased risk even in persons of normal weight.

Adapted from "Preventing and Managing the Global Epidemic of Obesity. Report of the World Health Organization Consultation of Obesity." WHO, Geneva, June 1997.²⁸