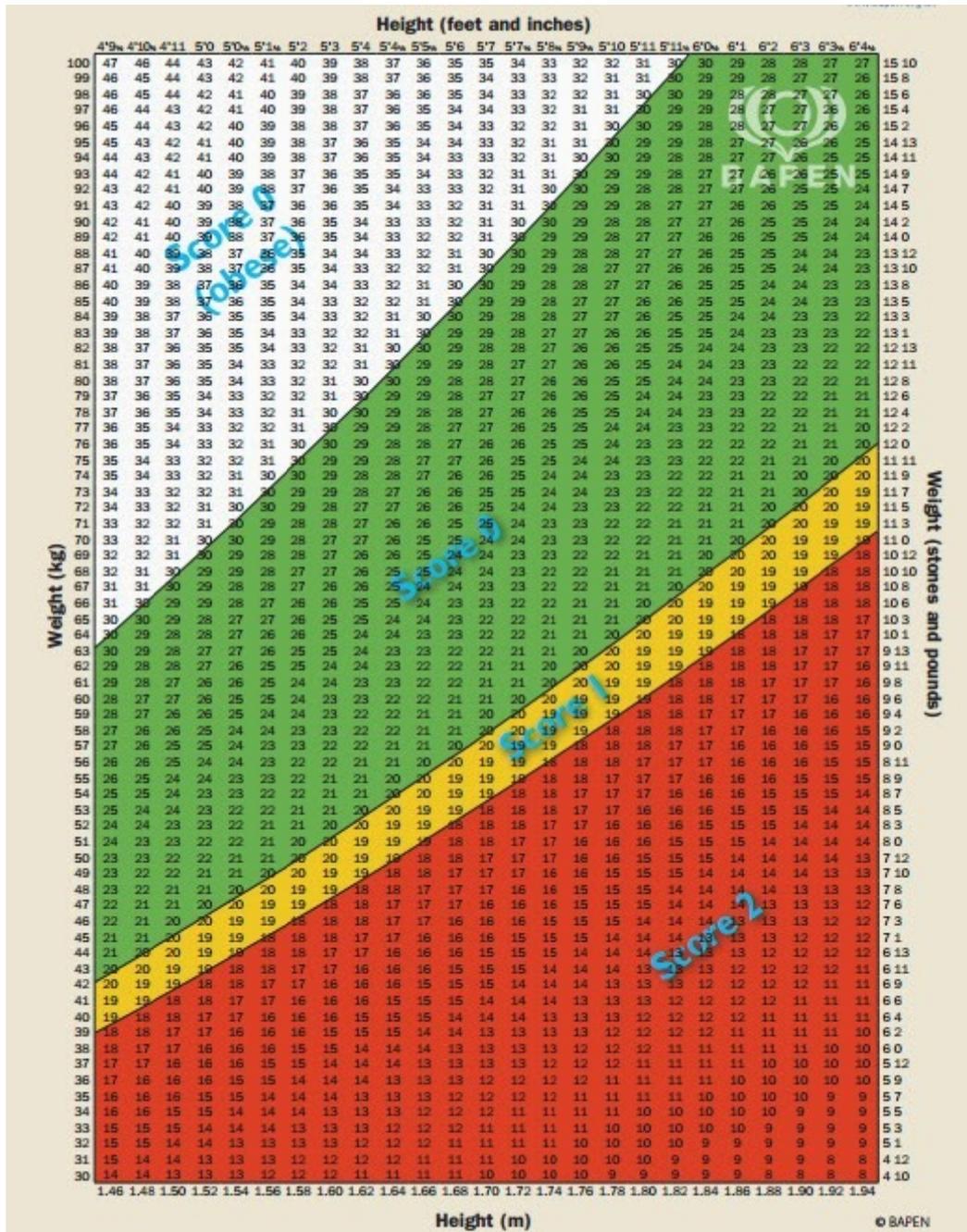


STEP 1 - BMI SCORE

Measure HEIGHT and WEIGHT to obtain a BODY MASS INDEX (BMI) SCORE, using the **BMI SCORE CHART**.
Can use self-reported or recently documented height and weight, if realistic and reliable.



An exact BMI can also be calculated using the equation:

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m)}^2}$$

BMI kg/m^2	Score
>20 (>30 Obese)	= 0
18.5 – 20	= 1
<18.5	= 2

ALTERNATIVE MEASUREMENTS

If unable to measure or obtain a height, **estimate** height using length of forearm - **ULNA LENGTH**.

Estimating height from ulna length



Measuring Ulna Length

- Ask the person to bend an arm (left side if possible), palm across chest and fingers pointing to opposite shoulder.
- Using a tape measure, measure the length in centimetres (cm) to the nearest 0.5 cm between the point of the elbow (olecranon process) and the mid-point of the prominent bone of the wrist (styloid process).

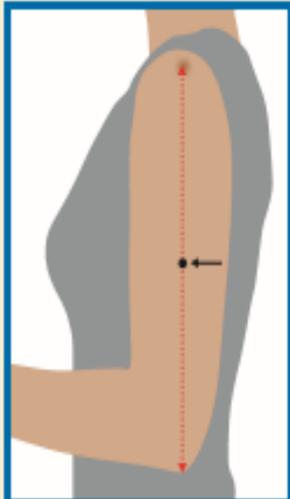
Use the table below to convert Ulna Length (cm) to height (m)

Height (m)	men (<65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
	men (≥65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
	Ulna length (cm)	32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
Height (m)	Women (<65 years)	1.84	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.73	1.72	1.70	1.69	1.68	1.66
	Women (≥65 years)	1.84	1.83	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.66	1.65	1.63
	Ulna length (cm)	32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
Height (m)	men (<65 years)	1.69	1.67	1.66	1.64	1.62	1.60	1.58	1.57	1.55	1.53	1.51	1.49	1.48	1.46
	men (≥65 years)	1.65	1.63	1.62	1.60	1.59	1.57	1.56	1.54	1.52	1.51	1.49	1.48	1.46	1.45
	Ulna length (cm)	25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5
Height (m)	Women (<65 years)	1.65	1.63	1.62	1.61	1.59	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.48	1.47
	Women (≥65 years)	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.50	1.48	1.47	1.45	1.44	1.42	1.40
	Ulna length (cm)	25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5

ALTERNATIVE MEASUREMENTS

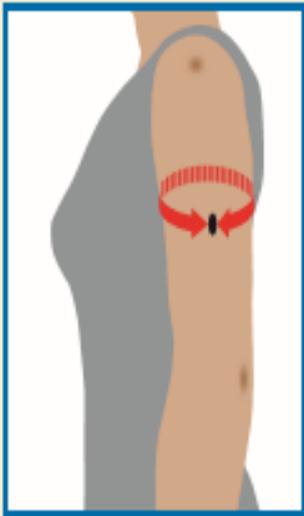
If unable to measure or obtain a height and weight, a **likely BMI range** can be established using the **MID UPPER ARM CIRCUMFERENCE (MUAC)**.

Estimating BMI category from mid upper arm circumference (MUAC)



Measuring Mid Upper Arm Circumference (MUAC)

- The person should be standing or sitting.
- Use left arm if possible and ask person to remove clothing so arm is bare.
- The person's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body.
- Locate the top of the shoulder (acromion) and the point of the elbow (olecranon process).
- Measure the distance between the 2 points.
- Identify the mid-point and mark on the arm.



- Ask the subject to let their arm hang loose and with the tape measure, measure circumference of arm at the mid-point.
- Do not pull the tape measure tight. It should just fit comfortably around the arm.

If MUAC is <23.5 cm, BMI is likely to be less than 20kg/m^2 (i.e person is likely to be underweight).

If MUAC is >32.0 cm, BMI is likely to be more than >math>30\text{kg/m}^2</math> (i.e person is likely to obese).

Weight change over time

- MUAC can also be used to estimate weight change over a period of time and can be useful in people in long term care.
- MUAC needs to be measured repeatedly over a period of time, preferably taking 2 measurements on each occasion and using the average of the two figures.

If MUAC changes by at least 10 %, then it is likely that weight and BMI have changed by approximately 10 % or more.