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:

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

<table>
<thead>
<tr>
<th>BMI kg/m²</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;20 (&gt;30 Obese)</td>
<td>0</td>
</tr>
<tr>
<td>18.5 – 20</td>
<td>1</td>
</tr>
<tr>
<td>&lt;18.5</td>
<td>2</td>
</tr>
</tbody>
</table>

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ALTERNATIVE MEASUREMENTS

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

**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 <20 kg/m² (i.e. person is likely to be underweight).

If MUAC is >32.0 cm, BMI is likely to be more than >30 kg/m² (i.e. person is likely to be 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.

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