D-DN01: Height, Weight & Body Mass Index

Objective of clinical task

This CTI will enable the Allied Health Assistant (AHA) to:

- obtain an accurate recording of a client’s 1) height, 2) weight and 3) body mass index (BMI)
- measure BMI (height and weight) and compare with a BMI range to support the health team’s determination of whether the client is within a healthy weight range.
Pre-requisite training, knowledge, skills and experience

Training

- Completion of CTI E02 When to Stop.
- Manual handling mandatory training

Clinical knowledge

The following content knowledge is required by an AHA delivering this task:

- understanding of how to perform the calculation for BMI, basic understanding of the purpose of BMI and how the output is used by health professionals to contribute to clinical decision-making.

The knowledge requirements will be met by:

- receiving instruction from allied health professional in training phase
- reviewing the Learning Resource in Attachment 1

Skills or experience

The following skills or experience are required by an AHA delivering this task:

- competence in manual handling and facilitating transfers and mobility to the extent required to complete the measurement of height and weight.

The following skills or experience are desirable for an AHA delivering this task:

- Nil

Safety & quality

Client

The Allied Health Assistant will apply CTI E02 When to Stop at all times.

In addition, the following potential risks and/or precautions have been identified for this clinical task and should be monitored by the Allied Health Assistant during the task:

- Identify if client needs assistance to mobilise, by asking the client and/or consulting with the nurse/OT/PT prior to commencing the task. Apply manual handling procedures to transfers, sit to stand and mobilisation (if relevant) aspects of the task.
- If client is very unsteady or unwell, consider postponing assessment. Use CTI E01 When to Stop as a guide to this decision.
- Be aware that BMI doesn’t take into account the build or body composition and therefore should be used as a guide.
- For clients with amputation, an adjusted weight will need to be calculated prior to calculating BMI. Discuss with the delegating health professional.
- Before commencing the task, check if the client wears a prosthesis e.g. breast, leg.
- Before commencing the task, check with the client if any significant swelling is present e.g. swelling in legs, arms or abdomen. 1 litre of fluids = 1 kg, so significant swelling will impact on the client’s weight and therefore the health professional’s interpretation of the measurements.
Equipment, aids and appliances

- Ensure scales are calibrated by checking the date of the last re-calibration before use.
- The maximum weight for some scales is 200kg. Safety and accuracy of the weight measurement may be compromised if client’s weigh more than 200kg. Consult the delegating health professional if this is relevant.
- Ensure chair scale wheels are locked prior to use.

Environment

- Ensure scales are on a flat hard surface, slightly away from the wall / sideboard / work surface / chair.

Performance of Clinical Task

1. Delegation instructions

- Receive delegated task from allied health professional.
- Clearly identify parameters for delivering the clinical task for the specific client including any variance from the usual task procedure e.g. type of scale required, presence of prosthesis.

2. Preparation

   Equipment required to perform the task:
   a) Height
      - Measuring device
      - Pen
      - Ruler
   b) Weight
      - Scales
        The choice of scales will depend on availability and also on appropriateness for the client considering their capacity to stand and mobilise.
        - Portable or standing scales – should be used for clients who have adequate mobility and standing balance to stand unassisted and step up on to the scale.
        - Chair Scales – can be used for all patients capable of transferring to a chair.
        - Wheelchair scales – clients who cannot transfer, or stand unassisted.
        - Hoist scales – generally inpatients who cannot transfer.
   c) BMI
      - Calculator
      - Pen

3. Introduce task and seek consent

- The AHA introduces him/herself to client.
- The AHA checks three forms of client identification: full name, date of birth plus one of the following; hospital UR number, Medicare number, or address.
- The AHA describes the task to the client. For example:
‘I am going to measure your height and weight today to allow me to calculate your Body Mass Index (or BMI). Weight and BMI are useful tools for health professionals to monitor your health.

- The AHA seeks informed consent according to the Queensland Health Guide to Informed Decision Making in Healthcare.

4. Positioning

The client’s position during the task should be supported and comfortable and consistent with mobility capacity.

The AHA’s position during the task should be near the patient to ensure safety.

5. Task procedure

- Explain and demonstrate (where applicable) the task to the client.
- Check client has understood the task and provide opportunity to ask questions.
- The task comprises the following steps:

(a) Height

- Ask the client to remove their shoes, hair ornaments and stand up straight beneath the height–measuring device and look straight ahead- provide assistance if required.
- Ask the client to stand with feet flat, together and against the wall. Make sure legs are straight, arms are at sides and shoulders are level.
- Lower the measuring marker until it rests gently on the clients head.
- Accurately record the height to the nearest 0.1 centimetre. Note the measurement in centimetres or meters.
- Consult the health professional if client’s mobility is inadequate for this task

(b) Weight

- Scales
  - Always use the same scales when weighing a client and weigh in the same position as far as possible to ensure consistent results.
  - Refer to instruction manual for specific scales if additional information is required.

Using portable or standing scales

- If portable: Place scales on uncarpeted floor.
- Switch on as per user instruction manual. Ensure the scales read zero and measuring in kilograms prior to the client standing onto them.
- Ask the client to remove their shoes, heavy clothing and any objects from their pockets before being weighed.
- Ask the client to mobilise to scales as necessary.
- If using walking aide ask client to let go once steady. After vibration has stabilised, the weight reading will flash on screen.
• Record weight and any weight change from previous weights if appropriate/ available using BMI range.

Using chair scales
• Ensure scale wheels are locked and press ON/Zero switch. Ensure the scales read zero prior to the client sitting onto them.
• Ask the client to remove their shoes, heavy clothing (jackets) and any objects from their pockets before being weighed.
• Ask client to mobilise to scales. Seek assistance with transfer if required as per manual handling requirements.
• Ask the client to sit onto scales with lower back touching the back of the seat and feet off the floor (placed onto foot rests if available). If using walking aide ask client to let go once seated. After vibration has stabilised, the “weight lock” arrow turns on.
• Record weight and any weight change from previous weights if appropriate/available.

Using wheelchair scales
Option 1 – able to weigh wheelchair separately
• Press ON/Zero switch. Propel the empty wheelchair to the centre of weighing platform and press “Tare”. The “Tare” arrow appears and weight reading returns to zero.
• Remove the wheelchair from weighing platform. The display will show the minus weight of wheelchair. Record weight of wheelchair so that option 2 can be used in the future.
• Propel the wheelchair with client to the centre of weighing platform. After vibration has stabilised, the weight reading will remain stable. The display will show the weight of the client.
• Record weight and any weight change from previous weights if appropriate/available using BMI range.

Option 2 - unable to weigh wheelchair separately/ weight of wheelchair is known
• Press On/Zero switch and ensure the scales read zero.
• Propel the wheelchair with client onto the centre of the weighing platform. After vibration has stabilised, the weight reading will remain stable.
• Record weight and subtract weight of wheelchair (if known). Record any weight change from previous weights if appropriate/ available. If weight of wheelchair is unknown, suggest client/carer obtain wheelchair weight from product manual.
• Report any variances in the BMI range to the delegating health professional.

Using Hoist Scales
• Hoist scales are often located with medical and rehabilitation wards. If required to weigh an inpatient please discuss with the delegating health professional who will assist you with the process.
(c) BMI

Using a calculator calculate:

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

Example: \( \text{BMI} = \frac{53\text{kg}}{1.75\text{m} \times 1.75\text{m}} = 17.3\text{kg/m}^2 \)

Example: \( \text{BMI} = \frac{53\text{kg}}{(1.75\text{m}/1.75\text{m})} = 17.3\text{kg/m}^2 \)

- During the task:
  - monitor for adverse reactions and implement appropriate mitigation strategies as outlined in “Safety” section above.
- At the conclusion of the task:
  - inform the client of their results including BMI
  - inform client that the results will be provided back to the health professional who will determine if a full assessment is required.
  - ensure client is comfortable and safe.

6. Document

- Clearly document the outcomes of the task in the client’s notes and the intention to inform the delegating health professional of results. Clients who continue to be reviewed over a prolonged period of time should be weighed at least fortnightly (or alternative frequency as determined by the local health service) during an inpatient admission and at each outpatient consult. BMI should be recorded after each weight measure.

7. Report to delegating health professional

- Provide comprehensive feedback to the health professional who delegated the task. Report any questions or other matters requiring follow up by the health professional.
- Report to the health professional if:
  - Client’s BMI is <18.5kg/m\(^2\) or if less than 22kg/m\(^2\) for clients 65 years or older AND if they have a Malnutrition Screening Tool (MST) score of 2 or more (if conducted).

Note: clients with a decreasing BMI range may also require screening using the Malnutrition Screening Tool (MST) – refer to local care protocols or delegating practitioner for direction regarding indications for conducting an MST.

References and supporting documents

- Child Development Connection, Measuring Height, viewed on http://www.cdc.gov/healthyweight/assessing/bmi/childrens_BMI/measuring_children.html#Height
- Isenring, EA, Bauer, JD, Banks, MD & Gaskill, D 2009, ‘The malnutrition screening tool is a useful tool for identifying malnutrition risk in residential aged care’, Journal of Human Nutrition and Dietetics, vol.22, no.6, pp.545-550
# D-DN01: Height, Weight & Body Mass Index

## Assessment: Performance Criteria Checklist (Delegated Task)

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Knowledge acquired</th>
<th>Supervised task practice</th>
<th>Competency assessment</th>
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<tbody>
<tr>
<td></td>
<td>Date and initials of supervising AHP</td>
<td>Date and initials of supervising AHP</td>
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<tr>
<td>1. Demonstrates knowledge of fundamental concepts required to undertake the task.</td>
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<td>2. Obtains all required information from delegating health professional, and seeks clarification if required.</td>
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<td>3. Completes preparation for task including collecting and preparing equipment.</td>
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<td>4. Introduces self to client and checks client identity.</td>
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<td>5. Describes purpose of delegated task and seeks informed consent.</td>
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<td>6. Positions self and client appropriately to complete task and ensure safety.</td>
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<td>7. Delivers task effectively and safely as per delegated instructions and CTI procedure.</td>
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<tr>
<td>a. Clearly explains and demonstrates task, checking client’s understanding.</td>
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<td>b. Checks for factors imp acting measurement accuracy/ interpretation e.g. prosthesis, swelling.</td>
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<td>c. Takes height and weight measurement ensuring accuracy and consistency of measurement with standard process.</td>
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<tr>
<td>d. Calculates BMI correctly</td>
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<tr>
<td>e. During task, maintains a safe clinical environment and manages risks appropriately</td>
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<tr>
<td>f. Provides feedback to client on outcome at completion of task.</td>
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<td>8. Documents accurately and comprehensively in clinical notes.</td>
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<tr>
<td>9. Provides accurate and comprehensive feedback to the delegating health professional, including requirements for repeat measurement.</td>
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## Record of assessment of competence

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<th>Assessor name:</th>
<th>Assessor position:</th>
<th>Competence achieved:</th>
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### Scheduled review

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**D-DN01: Learning Resource**

The BMI is a tool used by health professionals to help determine whether a person is a healthy weight.

BMI is calculated by taking the client’s weight and height measurements and using them in the following equation:

\[
\text{BMI} = \frac{\text{weight (kg)}}{\text{height}^2 (\text{m} \times \text{m})}
\]

Example: \(\text{BMI} = \frac{53\text{kg}}{1.75\text{m} \times 1.75\text{m}} = 17.3\text{kg/m}^2\)

What do the BMI ‘numbers’ mean?

BMI provides a guide to the client’s risk of having health complications. A BMI in the healthy weight range carries the lowest risk of disease. The following BMI ranges are generally accepted:

**Standard Classification (adults):**
- \(<18.5\text{kg/m}^2 = \text{underweight}\)
- \(18.5-24.9\text{ kg/m}^2 = \text{healthy weight}\)
- \(25.0-29.9\text{ kg/m}^2 = \text{overweight}\)
- \(>30.0\text{kg/m}^2 = \text{obese}\)

**65 years or older:**
- \(<22\text{kg/m}^2 = \text{underweight}\)
- \(22-30\text{ kg/m}^2 = \text{healthy weight}\)
- \(>30\text{kg/m}^2 = \text{overweight}\)

Do the BMI categories apply to everyone?

BMI should only be used as a guide to a client’s health. There are certain groups of the population in which BMI is not a good indicator of health:

1) Muscular people (such as athletes or people that do regular weight lifting)
2) Some ethnic/population groups (e.g. Chinese, Samoan, African American and Polynesian people). While there is some evidence that BMI differs according to ethnicity, World Health Organisation (WHO) maintains that these cut-offs are not significantly different and, therefore, the standard WHO BMI classifications should be used (WHO 2004)
3) Infants, children and adolescents (<18 years, BMI is contraindicated)

BMI does not distinguish between body fat and muscle mass. If the client has a higher muscle mass, they may have a higher BMI but this may not mean they are at a greater risk of disease.

Also, BMI does not indicate where fat is distributed around the body. Fat distribution has been shown to be a significant indicator of chronic disease risk (Dietitians Association of Australia).

Older Adults are at increased nutritional risk due to the aging process and a variety of factors including swallowing and chewing difficulties, co-morbidities and polypharmacy (multiple medications). Early identification of malnutrition and appropriate nutrition intervention may lead to
beneficial outcomes. Early recognition is considered to be one of the most important ways of preventing malnutrition but relies on the use of appropriate tools to determine malnutrition risk. Measurement of nutritional status in older people generally includes medical history, biochemical indices, anthropometrics, dietary intake or a combination of these (Isenring et al, 2009).