

MONICA;
Anthropometry

1. Height is measured in conjunction with the weight measurement. It may precede or follow this procedure.
2. The height rule must be taped vertically to a hard flat surface, with no moulding (skirting board), with the base at floor level. A carpenter's level should be used to ensure vertical placement of the rule.

NOTE: The correct position of the height rule should be checked daily and corrected as necessary. If the position of the height rule is found to be inaccurate by more than 1 cm, the measurements taken since the rule was last checked should not be used or reported to the MDC.

3. The floor surface must be hard (tile, cement, etc.) and must not be carpeted or be covered with other soft materials. If only a carpeted surface is available, a wooden platform should be laid down to serve as a floor.
4. The participant is asked to remove his/her shoes and heavy outer garments.
5. To measure height, the participant should stand with his/her back to the height rule. The back of the head, back, buttocks, calves and heels should be touching the upright, feet together. The top of the external auditory meatus (ear canal) should be level with the inferior margin of the bony orbit (cheek bone). The position is aided by asking participant to hold the head in a position where he/she can look straight at a spot, head high, on the opposite wall.
6. Place the triangle on the height rule and slide down to the head so that the hair (if present) is pressed flat.
7. Record information on survey form to the nearest centimetre. For example, if 187.4, record as 187; if 187.5, record as 188; if 187.6, record as 188.
8. Self-reported heights are not acceptable in mobile participants and should not be reported (mark as refusal). Only persons who are immobile (e.g. amputees) may self-report their heights. Be sure to note this on the form.
9. To measure extreme heights, a short rule is used in addition. It is placed at the top of the long rule and the extra height is added.

WEIGHT - Procedure

The use of balance scales is recommended. If the MCC uses digital scales, testing with standard weights is of particular importance.

1. The floor surface on which the scale rests must be hard and should not be carpeted or covered with other soft material.
2. The scale should be balanced with both weights at zero and the balance bar aligned.

NOTE: Check the scales using standard weights at least monthly and whenever the scales are installed at a new location. If the error is more than 1 kg the measurements taken since the scales were last checked should not be used or reported to the MDC. Check for the zero level every day before starting measurement and immediately afterwards. If there is an error of more than 1 kg the measurements taken since the scales were last checked should not be used or reported to the MDC.

3. The participant should have removed his/her shoes and heavy outer garments (jacket, coat, etc.).
4. The participant should stand in the centre of the platform as standing off-centre may affect measurement.
5. The weights are moved until the beam balances (the arrows are aligned).
6. The weight is read and recorded on the form. Record weights to the nearest 200 g.

7. Self-reported weights are not acceptable in mobile persons. Refusals to be weighed should be recorded as refusals. Only participants who are immobile (e.g. amputees) may self-report their weights. Be sure to note this on the form. Participants must not read the scales themselves.

WAIST CIRCUMFERENCE - Procedures

1. Record the measurement of the circumference at a level midway between the lower rib margin and iliac crest in cms to the nearest 0.0 or 0.5 cm. Example: If the exact measurement is 87.7 cm, code the item 0875.
2. The circumference should preferably be measured on subjects while they are semi-clothed, i.e. waist uncovered with the subjects wearing underclothes only. If it is not possible to follow this procedure in the MCC, the alternative is to measure the circumference on subjects without heavy outer garments with all tight clothing, including the belt, loosened and with the pockets emptied.
3. Participants should stand with their feet fairly close together (about 12- 15 cm) with their weight equally distributed on each leg. Participants should be asked to breathe normally and at the time of the reading of the measurement asked to breath out gently. This will prevent subjects from contracting their muscles or from holding their breath.
4. A plastic metric tape should be used. The tape should be held firmly and its horizontal position should be ensured. It is recommended that the observer sits beside the participant while the readings are taken. The tape should be loose enough to allow the recorder to place one finger between the tape and the subject's body. The importance of the tightness of the tape should be emphasized in training.
5. The length of tape should be checked before starting the survey and the length should be rechecked against a standard measure at least once a month and replaced as appropriate.
6. The two sides of the tape should be differently coloured or have a scale only on one side. If the tape is uniformly coloured, with readings on both sides, one side should be blanked out.
7. MCCs which have collected these data in the past, but using a different technique, should not change their technique but should contact the MDC.

HIP CIRCUMFERENCE - Procedures

1. Record measurement of maximum circumference over the buttocks in cms to the nearest 0.0 or 0.5 cm. Example: if the exact measurement is 93.2 cm, code the item 0930.
2. The same general comments made for waist circumference measurement apply to the measurement of hip circumference.
3. MCCs which have collected hip circumferences in the past, but using a different technique, should not change their technique but should contact the MDC.

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