

# 7 Standard Operating Procedures for outcome measures

---

## 7.1 Height and weight

Height will be measured using a portable stadiometer and weight will be measured using portable scales. The protocols for measuring height and weight are standardised procedures from the World Health Organization.

### 7.1.1 Equipment

- Portable stadiometer (SECA 254)
- Portable scales (SECA 254)
- Feet picture
- Carry case
- Spare batteries



Figure 6: SECA portable stadiometer and scales

**\*\*Please ensure that all equipment is calibrated before use\*\***

### 7.1.2 Setting up the measuring space

Measurements need to be taken in a quiet private space away from other children.

It is important to discuss with the director/staff where there is an appropriate space in the centre for the measurements to occur.

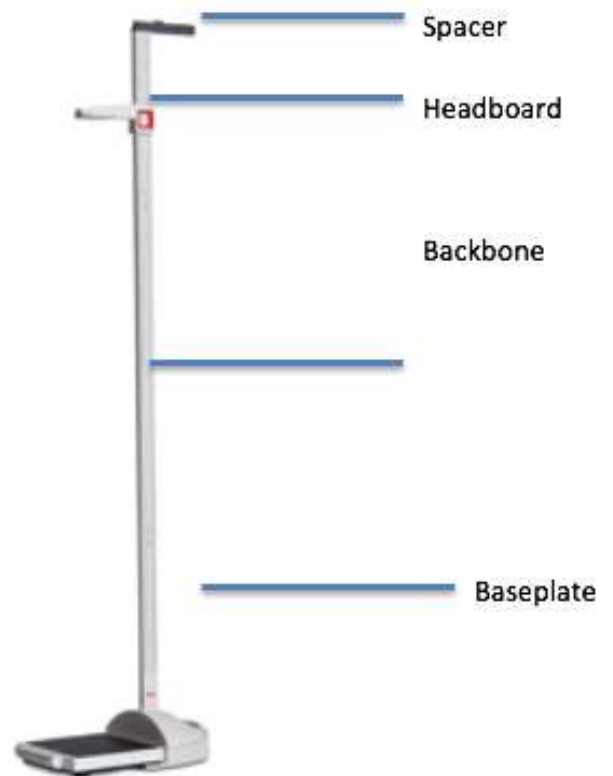
Ensure that the equipment is not set up in walkways or in areas that may obstruct activity.

Make sure all equipment, paperwork or iPad screens are ready before measuring the child.

#### Setting up the stadiometer

The stadiometer is made up of various parts. The parts include:

- Headboard
- Spacer
- Backbone (4 pieces)
- Baseplate
- Remove all the pieces from the carry case
- Place the baseplate on a flat surface
- Connect the 4 pieces of the backbone together in ascending order (e.g. 0cm – 205cm)
- Ensure there are no gaps between the backbone parts
- Place the headboard over the backbone
- Attach the spacer to the top of the backbone
- Set the stadiometer up against a vertical wall and adjust the spacer so that it is touching the wall
- Place the footprint picture on the baseplate



#### Setting up the scales

- Ensure the scales are working correctly by turning them on. This is done by pressing the “on/off” button
- Set up the scales on a hard surface – tiled or wooden floors are ideal. If these are not available, short carpet could be used.
- Ensure the scales are stable on the floor surface.

### 7.1.3 Protocol for measuring height

Before measuring the child’s height:

- Introduce yourself to the child.
- Allow the child to become familiar with the equipment or show them how height is measured (e.g. show them how the headboard goes up and down). You may consider measuring the height of a staff member or the other data collector. This can help with children who are reluctant to be measured.
- You may need the assistance of a staff member to help with any children who are reluctant to be measured. Record as much information about why the child refused to be measured.  
**Under no circumstances should the child be forced to be measured.**

To measure height, the following steps need to be followed:

1. Discuss with the child what you are going to do in simple language that they can understand.
2. Ask the child to remove his/her footwear and any hair adornments (pony-tail holders or clips). Children should have nothing on their heads except religious wear (hijab/shroud or Kippah [skull-cap]) where necessary. If the child does not want to remove his/her hair adornments (including religious headwear), leave them in and write this in the comments section of the recording screen in REDCap. When taking the measurement make sure the ponytail/clip/etc. gets in the way as little as possible.

3. Make note on the recording sheet if there are any physical problems, which might impact on getting an accurate reading on your record sheet (e.g., broken arm or leg).
4. Ask the child to step onto stadiometer and place their heels together and shoulders back, standing with heels towards the rear of the baseplate.
5. Ask the child to stand upright, arms hanging at the sides with his/her heels together (toes may be apart).
6. Ask the child to look forward to a point on the wall at eye-height to them.
7. The child's back of their buttocks, shoulders and head should be touching the backbone of the stadiometer.
8. The child should look straight ahead with the lower border of the bony orbit (eye socket) and the upper margin of the external opening of the auditory canal (ear hole) in the same horizontal line. This is called the Frankfort plane (see Figure 6), and should be parallel to the ground.
9. Ask the child to take a deep breath in and stretch up tall while keeping their heels on the floor.
10. The recorder places the headboard firmly down on the child's head, pressing down as much hair as possible.
11. The height measurement is taken from the highest part of the head and recorded in centimeters. Record the measure to the nearest 0.1 cm on your data collection form (page 7).
12. Lift the headboard and ask the child to step away from the stadiometer.
13. Repeat this procedure for the second measure.
14. If the two measures differ by more than 0.5 cm, record a third measure using the same method.



Figure 6: The Frankfort Plane

**\*\*NOTE:** It is helpful to have one data collector conducting the stretch stature and one data collector lowering the headboard and recording the measure.

Points to watch:

- Make sure the child's feet and heels are flat on the floor when you read the measurement.
- Make sure the headboard sits against the child's head.
- Don't press the headboard down too hard on the child's head, as you may force them to "shrink down" against its force.
- Do make sure the headboard is actually in contact with the child's head and not just their hair (some children have "big" hair which can inflate their height by several millimeters).

Please ensure that no other children can see or hear the height result: confidentiality must be assured. If the child wishes to know their height please quietly tell them.

**\*These instructions are to be used with the understanding of Working with Children\***

### 7.1.4 Protocol for measuring weight

Before measuring the child's weight:

- Allow the children to become familiar with the equipment or show them how weight is measured (e.g. show them what happens when you stand on the scales). This can help with children who are reluctant to be measured
- You may need the assistance of a staff member to help with any children who are reluctant to be measured. Record as much information about why the child refused to be measured.  
**Under no circumstances should the child be forced to be measured.**

To measure weight, the following steps need to be followed:

1. Ask the child to remove anything they have in their pockets and any heavy clothing (coats, jumpers, belts etc.). If the participant needs to wear any heavy clothing (e.g. kaftans or coats) because of cultural practices, or if they are uncomfortable in removing heavy clothing, note this on your record sheet.
2. Ask the child to remove their shoes.
3. If the child has one or more limbs missing, record this on the data collection sheet discretely – you may do this when you leave the premises.
4. If the child is wearing an artificial limb, plaster cast, or leg braces, record this on the data collection sheet (discretely) and weigh them as they are.
5. Ask the child to stand on the scales and look straight ahead (i.e. not down at the reading). You might like to place a sticker or picture on the wall at the height of the child's eyes to help them look straight ahead.
6. The child should have their hands by their sides (not behind backs or crossed in front of chest.)
7. Wait for the weight to appear and stabilise, and record on your data collection form to the nearest 0.1 kg.
8. If the number does not stabilise and continues to oscillate between two readings (e.g. 42.3 and 42.4) then record the average of the two numbers (i.e. 42.35 kg) on your record sheet.
9. Ask the child to step off the scales. Allow the weight reading to return to zero and then repeat the procedure for a second weight reading.
10. If the two readings are more than 0.25 kg different, repeat the procedure for a third reading. Record each reading on the data collection form.

**\*\*NOTE:** It is helpful to have one data collector measuring the weight and one data collector recording the measure.

Points to watch:

- If the child takes too long to step onto the scales they will automatically shut off (indicated by a blank display panel) and you will have to ask the child to step off the scales. Press the "on" button, wait for the black "0.0", then ask the child to step back on.
- Children should stand squarely on the scales. If they stand too far back on the scales, the reading will underestimate their true weight.
- Children should stand still while you read the measurement, or the display panel will flash from one weight to another as the child moves their distribution of weight over the surface of the scales. Make sure you wait until the display panel has settled on a weight before you record the display.

Please ensure that no other children can see or hear the weight result; confidentiality must be assured. If the child wishes to know their weight please quietly tell them. It is important to record it without saying it, without any other child seeing the scales or the result. Also ensure that the child you are measuring does not see any other children's results.

\*These instructions are to be used with the understanding of Working with Children\*

### 7.1.5 Documenting Height and Weight

The Monitor Details and Anthropometrics Form screen in REDCap is to be used to record the height and weight measurements. It is important this is filled in correctly as the data will be entered/ transferred into a database at a later date. This form can also be a paper version if something happens to the iPads.

1. Record the participant's ID number in the space provided
2. Record the height measures in the space provided
3. Record the weight measures in the space provided
4. Use the comment section of the form to note any observations that may have affected the actual measurement, or to explain a missing measurement. This could include the child refusing to remove shoes for the weight measurement, the child having a cap/hat, hair clip or high ponytail which they did not want to remove, the child having a lower limb deformity, the child was wearing a cast on a limb, the child refusing to have his/her measurement taken.
5. Place the initials of the data collector who took the height and weight measurements and who recorded the height and weight measurements in the space provided.
6. Record the date and time that the measures were taken in the space provided.

#### Quality Check and Data Entry section

Once the form has been completed, it is important to check that all the necessary information has been recorded.

- If data are missing due to the participant refusing to be measured, leave the height or weight value blank and place a note in the comments sections explaining a brief reason why (e.g. refused)

The data collector who checks the paper form for completeness will need to place his/her initials and record the date the form was checked at the bottom of the page in the space provided.

The data collector will enter the data from the paper form into the database.