

## 1. Standard Operating Procedure for height measurement

1. Ask the participant to remove their shoes, socks and any hair ornaments, jewellery, buns, or braids from the top of the head.
2. Ask the participant to stand upright with their heels touching the back of the platform. Ensure they are positioned facing forwards with their heels and buttocks in contact with the vertical pole.
3. Move indicator so that it is touching top of head, but not pressing down.
4. If the respondent is wearing a jooora, or other religious headwear, explain to them what you want to do first and be guided by the participant. **Never touch religious headwear without obtaining consent from the participant first.**
5. If the participant has a hairstyle that stands well above the top of their head, (or is wearing a jooora or turban), record this in the recording booklet to the nearest mm. This amount will need to be subtracted from the height before entering into the Tanita scale.
6. Make sure the participant's head is facing forward (not tilted up or down) with eyes looking straight ahead. As a rule of thumb, the eyes should be roughly level with the top of the ears.
7. Explain to the participant what you are going to do in Step 8.
8. Cup the participant's head in your hands, placing the heels of your palms either side of the chin, with your thumbs just in front of the ears, and your fingers going round towards the back of the neck.
9. Ask participant to breathe in.
10. Firmly but gently, lift the participant's head upwards towards the head plate, ensuring their heels are kept on the floor and taking care not to alter the position of the head (i.e. Step 6).
11. Release the pressure and allow the participant to stand relaxed. If the measurement has been done correctly, the participant should be able to step off the measure without ducking their head or moving the indicator. Record the reading to the nearest mm (subtracting the height of headwear if required).
12. Take a repeat measurement (the participant must step off the measure between readings), go from step 6.
13. If the two measurements disagree **by more than 4mm**, take a third measurement.

### Notes:

- a) Record in the recording booklet, anything that may affect or interfere with the measurement (for example, refusal to remove shoes, hairstyles and accessories, or posture problems, e.g. bow legs, arthritis)
- b) If you were unable to obtain the height for whatever reason, write the reason in the comments of the recording booklet.

**ENSURE THAT YOU USE THE ANTIBACTERIAL HAND GEL PROVIDED IN BETWEEN EACH PARTICIPANT MEASURED AND THAT THE PLATFORM OF THE HEIGHT MEASURE IS CLEANED USING AN ANTIBACTERIAL WIPE**

## 2. Standard Operating Procedure for weight and bioimpedance measurement

1. The Tanita scales should be set up on a flat surface ensuring that the spirit level indicator is level.
2. Ask the participant to remove their shoes, socks and any heavy items of clothing e.g. jumper or cardigan. Also, ask them to remove any heavy items of jewellery and check that their pockets are empty. (NB. If they do not want to remove socks/tights, note this on the back of the recording sheet).
3. Record if the participant has been to the toilet prior to coming into the measurement room. (Participants should be asked to go to the toilet before measurement).
4. Enter 0.0 for clothes weight. Press enter.
5. Ask participant to step on scales. The participant's weight should be evenly distributed on both feet. Ask the participant to stand upright, hands by their sides and head level with eyes looking straight ahead. Check that their heels and feet cover both metal pads. If feet are unable to cover electrodes, change to weight only mode.
6. Press male or female.
7. Press standard.
8. Enter the age in years.
9. Enter height in whole centimetres, rounding up or down, as appropriate. If rounding would result in 2 different whole centimetre values (e.g. if one measurement was 66.4 and the other was 66.5), use the higher of the two values.
10. Ask the participant to stand perfectly still - "Be a statue."
11. Once the green light stops flashing, the Tanita will print the results. From this printout, record the weight, to the nearest gram, in the measurement booklet.
12. Check the Impedance – if it is less than 350.0  $\Omega$ , take the weight again.
13. On the top of the printout, write the child's ID number and date of birth. Staple the printout to the recording sheet.
14. If an error message occurs, check the table overleaf and adjust if required. If error messages occur repeatedly press "weight only" button, to obtain weight.

Note the following in the comments sections of the measurement recording sheet:

- If you successfully obtained the weight but the participant had a cast, amputation or medical prostheses.
- If you successfully obtained the weight but the participant retained heavy clothing or items on his/her person for cultural reasons.
- If the participant refuses to remove their shoes in order to step on the scale.
- If you were unable to obtain the weight for whatever reason state why.

Error Messages:

| <b>Error</b>             | <b>Meaning</b>  | <b>Action</b>  |
|--------------------------|---|--|
| E- 01                    | Abnormal impedance compared to height and weight. E.g. problem with electrode contact, feet dirty, calluses, poor contact                       | Improve conductivity by cleaning feet or placing water on electrodes   |
|                          | If the above does not solve the problem, it means the body fat ratio exceeds the measuring capacity   | Unable to proceed  |
| E-11                     | Measurement impossible because of excessive vibration or electrical noise   | Use in another place   |
| E-12, 13, or 14          | Machine requires adjustment   |  |
| E-16                     | Impedance measurement unstable  | Improve conductivity by cleaning feet or placing water on electrodes   |
| No printout              | No. of print outs selected is <0, an incorrect brand of paper has been used, the paper roll is in an incorrect position or there is a paper jam | Ensure the machine has been instructed to printout and the correct paper is being used. Open the paper hold and check the position of the paper and clear any jams |
| P-End                    | Paper has ran out or is jammed  | Ensure there is paper on the roll and that the Paper Release Lever is not in "Up" position   |
| Uuuu                     | Power has been turned off during measurement  | Do not place anything or stand on scales before starting measurement   |
| ----                     | Maximum weight capacity has been exceeded   | Record this on the recording sheet   |
| Feed key not functioning | No of print outs selected is 0<br>Weight scale mode is selected   | Use Body Fat Measurement Mode and select >0 for number of printout   |

**USE AN ANTIBACTERIAL SPRAY TO CLEAN THE SCALES IN BETWEEN EACH CHILD**

### **3. Standard Operating Procedure for waist circumference measurement**

1. Ask the child to stand feet shoulder width apart with their arms crossed over the chest. It may help to tell the children to think of giving themselves a hug.
2. Explain to the child what you are going to do, and that you are going to have to lift their t-shirt.
3. Measure 4 cm above from the umbilicus (belly button).
4. Extend the tape around the waist at the 4 cm mark. Check that the tape sits parallel to the floor, rests firmly but does not compress the skin, is not twisted and no clothes are caught under the tape. Always position the zero end of the tape below the section containing the measurement value and check that the child is not breathing in.
5. Record the measurement to the nearest mm.
6. Remove the tape measure and repeat from Step 3.
7. If the first two measurements disagree by more than 4mm, take a third measurement.

**ENSURE THAT YOU USE THE ANTIBACTERIAL HAND GEL PROVIDED IN BETWEEN EACH CHILD MEASURED**