

The NIHR Southampton Biomedical Research Centre (BRC) has a tight quality assurance system for the writing, reviewing and updating of Standard Operating Procedures. As such, version-controlled and QA authorised Standard Operating Procedures are internal to the BRC.

The Standard Operating Procedure from which information in this document has been extracted, is a version controlled document, managed within a Quality Management System. However, extracts that document the technical aspects can be made more widely available. Standard Operating Procedures are more than a set of detailed instructions; they also provide a necessary record of their origination, amendment and usage within the setting in which they are used. They are an important component of any Quality Assurance Framework, but in themselves are insufficient and need to be used and interpreted with care.

Alongside the extracts from our Standard Operating Procedures, we have also made available here an example Standard Operating Procedure and a word version of a Standard Operating Procedure template. Using the example and the Standard Operating Procedure template, institutions can generate their own Standard Operating Procedures and customise them, in line with their own institutions.

Simply offering a list of instructions to follow does not assure that the user is able to generate a value that is either accurate or precise so here in the BRC we require that Standard Operating Procedures are accompanied by face-to-face training. This is provided by someone with a qualification in the area or by someone with extensive experience in making the measurements. Training is followed by a short competency assessment and performance is monitored and maintained using annual refresher sessions. If you require any extra information, clarification or are interested in attending a training session, please contact Dr Kesta Durkin (k.i.durkin@soton.ac.uk).

This document has been prepared from Version 5 of the BRC Standard Operating Procedure for measuring length of children under 2. It was last reviewed in June 2015 and the next review date is set for June 2017. The version number only changes if any amendments are made when the document is reviewed.

NIHR Southampton Biomedical Research Centre

Procedure for Measuring LENGTH OF CHILDREN UNDER 2

BACKGROUND

Accurate length measurements of children are essential as an indicator for physical growth. Length measurements can be plotted on percentile charts and compared to the general population. These measurements can be affected by placement on the measuring board, footwear and feet and head positioning. It is necessary therefore to have a technique to measure length that can be replicated by other measurers; over time; and in the same subject. For the purposes of both longitudinal follow-up studies of individuals or populations, and cross-sectional group studies, accurate and reproducible measurements of length are essential.

PURPOSE

To ensure the safe and accurate measurement of child length.

SCOPE

This procedure applies to any study that requires measuring length of children under 2 years of age, supine on a measuring board (i.e. Kiddimeter), within the BRC.

RESPONSIBILITIES

It is the responsibility of the measurer to use this procedure when making length measurements of children placed supine on a measuring board. It is the responsibility of the Principal Investigator to ensure that staff members who are working on specific studies have adequate experience and training to do so.

PROCEDURE

Two practitioners are required in order to obtain accurate measurements of child length; one holding the child's head in the Frankfort Plane; the other maintaining the child in the correct supine position on the measuring board, bringing the movable foot plate up to the heels, and reading the value from the scale.

Children under two years of age and those who are unable to stand stably enough to be measured in the standing position should be measured in the supine position on a measuring board. If the child is >2 years old and able to stand, standing height should be measured instead, using a stadiometer.

1. Ensure the measuring board has been checked and validated using metal rods of known length.
2. Ensure that the equipment is wiped clean before use.
3. Wash your hands and explain the procedure to the child and their parent or guardian. Explain that you will be making **3 measurements** of their length.
4. Undo or adjust hairstyles and remove hair accessories that interfere with measurement.
5. Ensure that infant measuring board is placed on a hard, flat surface.
6. Make sure the child's nappy is removed.
7. The child must either be naked or in a vest or thin T-shirt.
8. The child must lie flat in the centre of the measuring table.
9. The head must be resting against the base of the measuring table.
10. Measurer 1 must position the head in "Frankfort plane", an imaginary line from the centre of the ear hole to the lower boarder of the eye socket. This is a midline position.
11. The head must not be tucked in against the child's chest or stretched too far back.
12. Measurer 2 must be told when the child's head is in the correct position.
13. Measurer 2 must position the child such that their shoulders, back and buttocks are flat along the centre of the board.
14. Measurer 2 must then place one hand on the child's shins or on their knees and press carefully but firmly against the board. With the other hand, they must move the foot piece until it is firmly against the child's heels and the toes are pointing directly to the ceiling.
15. Once the child's position has been checked the length must be recorded. Three measurements should be recorded and the average taken as the correct measurement. The precision between measurements must be within 1 mm between readings. Record the measurement, plot on growth chart and sign. If it is available this must also be entered into the parent child health record, plotting in pencil and recording measurement and date in ink.