



**EMPOWAR Measurement of Skinfold Thickness of Babies and Young Children
(WPD)**

EMPOWAR WPD number: 4

Version: 1.0

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1. PURPOSE

The purpose of this WPD is to describe the procedure for the correct technique to perform skinfold thickness measurements with babies / young children thus ensuring that results are accurate and repeatable. It should be retained in section 7 of the ISF.

2. DEFINITIONS

ISF Investigator Site File

PI Principle investigator at the site

RM Research Midwife

RN Research Nurse

WPD Working Practice Document

3. WHY

The WPD supports EMPOWAR research site staff delegated by the PI to perform skinfold thickness measurements with babies / young children. Standardisation of the measurement is essential for collection of accurate readings.

4. WHO

This WPD applies to all site staff delegated to undertaking skinfold thickness measurements with babies / young children for the EMPOWAR Study.

All staff undertaking this measurement should have received relevant training prior to commencing the study. The Harpenden skinfold calliper will be used to undertake this measurement. It is the responsibility of the site staff allocated to the study to ensure the Callipers are working correctly.

5. PROCEDURE

- 5.1 Ensure that the skinfold calliper dial is set at zero each time before use.
- 5.2 Explain the procedure to the parent / carer. Demonstrate the procedure on the back of the parent's / carer's hand.
- 5.3 Ask parent / carer to remove the baby's / young child's upper clothing.
- 5.4 **Subscapular Skinfold**
 - 5.4.1 Lay the baby prone on the parent's / carer's lap or on a changing mat on the bed. If the child is old enough the measurement should be taken in the sitting position.

- 5.4.2 The measurement point for the subscapular skinfold located immediately below the inferior angle of the scapula is identified by palpating and marking the inferior angle of the scapula.
- 5.4.3 The skinfold is picked up between their finger and thumb of the researcher 1 cm above and medial to the subscapular mark, the callipers are then applied to the 'neck' of the fold over the mark so that the fold runs diagonally down toward the left elbow.
- 5.4.4 While maintaining a grip on the skinfold, the calliper handles should be released gently allowing the jaws of the calliper to close on the fat fold for 2 seconds before taking the reading to the last completed 0.2 mm.

5.5 Triceps Skinfold

- 5.5.1 Babies / young children should be held by a parent / carer.
- 5.5.2 The mid-upper-arm is the point used to measure triceps skinfold. It is half the distance between the acromion process and the olecranon. To find the mid point, the shoulder should be palpated to find the acromion, the baby's / young person's arm should then be bent at 90 degree at the elbow to identify the olecranon. The distance between the two should be measured and a small horizontal mark made at the midpoint on the posterior aspect of the arm prior to removing the tape measure. Ideally two people are required to undertake this part of the procedure.
- 5.5.3 The left arm should hang relaxed at the side or be held down by parent / carer or assistant.
- 5.5.4 Standing behind the baby / young person the researcher should pick up the skinfold between their finger and thumb about 1 cm above the midpoint mark over the triceps muscle, with the fold running downward along the midline of the back upper arm. The callipers are then applied at right angles to the 'neck of the fold just below the finger and thumb over the mid point mark.
- 5.5.5 While maintaining a grip on the skinfold, the calliper handles should be released gently allowing the jaws of the calliper to close on the fat fold for 2 seconds before taking the reading to the last completed 0.2 mm.

6. RELATED DOCUMENTS AND REFERENCES

'Measurement and standardisation protocols for anthropometry used in the construction of a new international growth reference.' de Onis, M *et al* 2004. Food and Nutrition Bulletin, vol 25, no1

'Anthropometry training video' May 2004, WHO Multicentre Growth Reference Study (<http://www.who.int/childgrowth/training/en/>) CRFSOP 15.101 A v01 Clinical Research Facility, Edinburgh