

Best Practices for Anthropometric Assessment in Infants at Risk for Faltering Weight

Background

The first-line treatment for infants with faltering weight is to increase caloric intake. Accurate anthropometric measurements are essential for monitoring those with a diagnosis of faltering weight who are receiving increased calories.¹ The most useful measures are obtained using optimal equipment and proper procedure, then compared against established growth reference standards for assessment.

This practice tool is intended to educate clinicians on proper procedures to obtain anthropometrics in the infant population at risk for faltering weight.

Managing Infants with Faltering Weight

- Complete a thorough assessment to determine the underlying cause
- Preserve breastfeeding and utilize a lactation consultant
- Initiate therapy in those with feeding disorders
- Prescribe higher-calorie formulas/human milk supplementation for infants
- Conduct routine anthropometric measurements

Anthropometric Measurements

Weight

Equipment	Procedure
Flatbed digital scale with large tray that: • Allows the infant to fully sit or recline • Is easily calibrated and zeroed • Measures to the nearest 1 gram to 10 grams^{2,3} 	1. Prepare the scale: Use a calibrated scale that is placed on a hard, even surface. Zero the scale with anything on the tray that will remain on the scale (i.e., disposable liner). 2. Undress the infant: Remove all clothing, including diapers if possible. If a diaper cannot be removed, weigh the infant with a clean diaper on and subtract the weight of a similar dry diaper from the total. 3. Weigh the infant: Place the infant on their back in a lying position on the scale tray. Wait for the infant to settle and ensure nothing is in contact with the scale when obtaining the measurement (i.e., blankets, clinician's hands, etc.). 4. Record the result: Record the child's weight to the nearest 1 gram to 10 grams. Document whether the weight was taken nude or with a diaper and note if any deduction was applied.

Recumbent Length^{2,4-5}

Use of recumbent length boards has improved accuracy over the use of tape measures, with differences of > 2 cm reported.⁶ This can significantly impact the weight-for-length percentile.

Equipment	Procedure
• Infantometer with fixed headboard and sliding foot board placed on a flat, stable surface • Two people for positioning  	1. Align the infant's head, body, and legs: a. Head: Using two people, have one person support the infant's head with the crown of the head touching the headboard perpendicular to the length board and gently cup palms over the ears to secure alignment. The infant's head should remain fixed to the headboard and held in this position during the entire measurement. b. Body: Infant's body should be straight. Shoulders and back should be touching the board. c. Legs: Legs should be straight and flat against the board. The second person places one hand over the knees, applying minimum pressure to avoid injury. Then slide the foot piece firmly to the infant's heels. Toes must point directly upward with both soles flexed perpendicular to the foot piece. 2. Capture the result: When the child is correctly positioned, record the measurement to the nearest 0.1 cm. Repeat the measurement twice to confirm accuracy.

Head Circumference^{2,4}

Equipment	Procedure
Non-elastic, flexible tape measure 	Position the patient: Instruct the parent/guardian to stand holding the child over their shoulder or sit with the child in the parent's lap. Take the measurement: Place the head circumference tape across the frontal bones of the skull — slightly above the eyebrows, above the ears, and over the occipital prominence at the back. Move the tape up and down to locate the maximal circumference. Tighten so it compresses hair and the underlying soft tissues. Record the result: Measure to the nearest 0.1 cm. Repeat the measurement twice to confirm accuracy. Document the highest measurement obtained.

Mid-Upper Arm Circumference (MUAC)^{2,4,7}

MUAC is a simple screening indicator for pediatric malnutrition. The measurements are correlated to weight-for-length, can detect body composition changes with serial measurements, and are a more sensitive prognostic indicator for mortality than weight-for-length.

Equipment	Procedure
- Non-elastic, flexible measuring tape - May require 2 people to position the arm 	Position the patient: Direct the parent/caregiver to turn patient away from you. Bend left, or whichever arm is available, to 90° at the elbow.^{2,7} Locate the acromion process: Start along the spine of the scapula on the upper back blade and follow it outward towards the back of the arm until you reach the flat, prominent, bony point that rests on the top backside of the shoulder (acromion). Measure acromion to olecranon process: Extend tape down the center of the back of the arm from acromion process to the tip of olecranon process (tip of elbow). Mark the midpoint: Place a horizontal line, mark, or sticker at the midpoint of this measurement. Measure arm circumference: Rest arm straight at side. Wrap tape around arm at the midpoint mark — tape should be snug but not compressing skin. Measure to nearest 0.1 cm. Repeat twice to confirm accuracy.

References

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