

ANTHROPOMETRIC MEASUREMENTS IN PEDIATRICS



DR.Firas Turkey ALI
B.S.N.M.S.N.PH.D
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♥ Introduction



Anthropometry comes from the term “anthro” which means human and “metric” which means size.

In general, anthropometry is a study that studies the measurement of the dimensions of the human body ranging from size, shape, weight, and others.

it is a simple reliable method for quantifying body size & proportions by measuring body weight, length, width, circumference, & skinfold thickness’



1. Help providers determine if a child is growing properly and can indicate when the child's health and well-being a real risk.

2. Assist providers in selecting appropriate treatment options for children and adolescents



Elements of Anthropometric Measurement





1. Measurement of weight



1. Measurement of Weight

Weight is measured with an appropriately sized electronic or balance beam scale, which measures weight to the nearest 10 g for infants and 100 g for children.

Weight is measured with an appropriately sized electronic or balance beam scale, Scales vary in their accuracy; infant scales tend to be more accurate than adult platform scales, and newer scales tend to be more accurate than older ones,



Tools & Equipment

- Scales for Weighing

Only use scales that have been accurately calibrated.
electronic or balance beam scale

Note

- Check with your supervisor to make sure scales are ready to use (Before weighing the child, balance the scale by setting it at 0 and noting if the balance registers at exactly 0 or in the middle of the mark).
- Take measurements in a comfortably warm room.



Procedure - Infant and Toddler

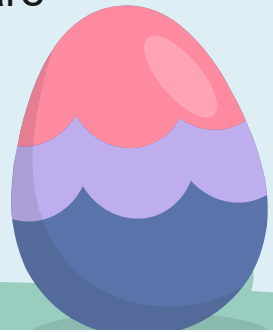
1. Remove excess clothing and be sure the diaper is clean and dry
2. Place infant on scale and remain close at hand. Place your hand lightly above their body.
3. Distract the infant and note reading when the infant stops moving.
4. Center the infant on the scale tray
5. Record the weight
6. If repeated measurements are required, it is important to weigh at the same time.
7. Clean scale in accordance with hospital policy and manufacturer's instructions.
8. Replace paper sheet.





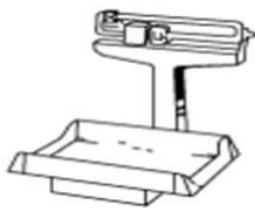
Procedure - Children and Adolescents

1. Have child remove shoes, jackets, or any extra clothing, and empty pockets
2. Ask the child to stand still on weighing scale. It may be necessary to provide a distraction technique.
3. Child may be weighed standing
4. Document the weight on the percentile chart and in the care records.





Infant Scale



Child and Adolescent Scale

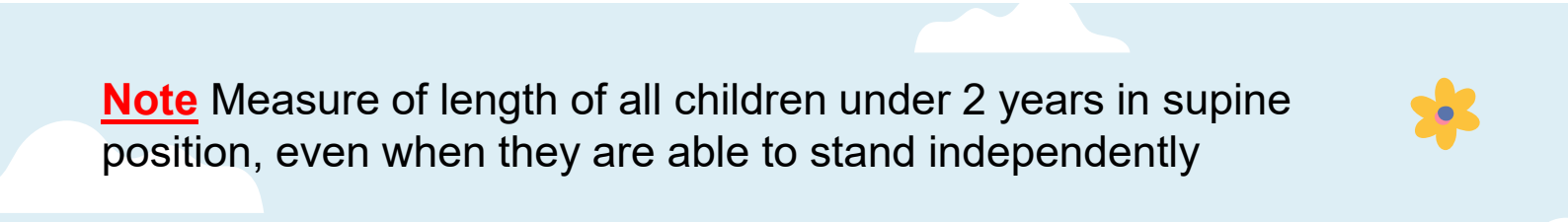


Illustration © Nardella, M, Campo, L, Ogata, B, eds. Nutrition Interventions for Children with Special Health Care

Tip: For the best results, two people should work together to weigh the infant. One person weighs, protects the infant from harm; falling, etc., and reads the weight. The other immediately writes down the measurement



2. Measurement of length and height



Note Measure of length of all children under 2 years in supine position, even when they are able to stand independently

Tools & Equipment

- Length boarder (infantometer)
- Stadiometer
- Tap Measurement

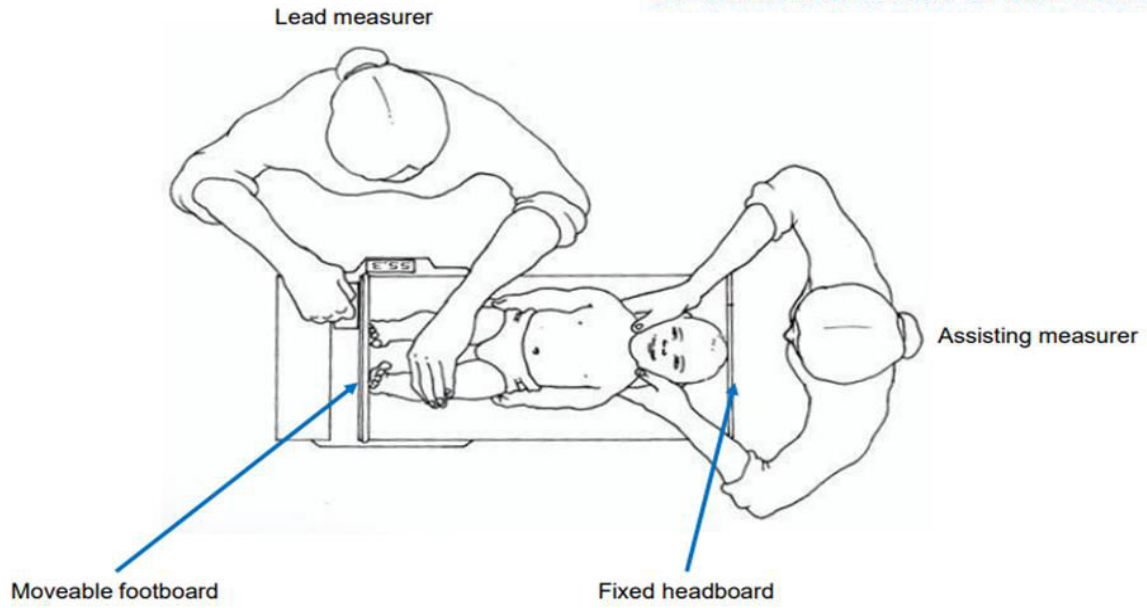


Procedure

- *Infants <24 months old or 24 to 36 months unable to stand on own*
1. Remove any hair ornaments or hats and shoes.
 2. Lay child on their back in the center of the infant length board, shoulders and buttocks flat against the measuring surface, both legs fully extended, and feet flat against the footpiece.
 3. Gently cup the infant's ears with the infant looking straight ahead in the **Frankfort Horizontal Plane** and the top of their head touching the headpiece. Make sure the infant's chin is not tucked in against his chest or stretched too far back.
 4. Align the infant's body and place one hand on the infant's knees to fully extend both legs and bring the footpiece firmly against the heels.
 5. Gently slide the foot board flat against the infant's feet.
 6. Read and record the measurement as soon as possible after the footboard has been positioned



NOTE: the lead measurer SHOULD be on the same side as the counter on the infantometer



Precautions

1. Any hair ornaments that interfere with positioning the head and should be removed.
2. Diapers/nappies
3. Take care that the knees are straightened only as far as they can go without causing harm to the infant.
4. As a general principle, length should be measured by extending both legs.
5. The soles of the feet should be flat on the board, toes pointing upwards



NO X



On this picture, one can see that both shoulders and hips are not perpendicular to the board but are skewed.

YES ✓



On this picture, one can see that both shoulders and hips are perpendicular to the board.





Height : The term height (or stature) refers to the measurement taken when a child is standing upright.

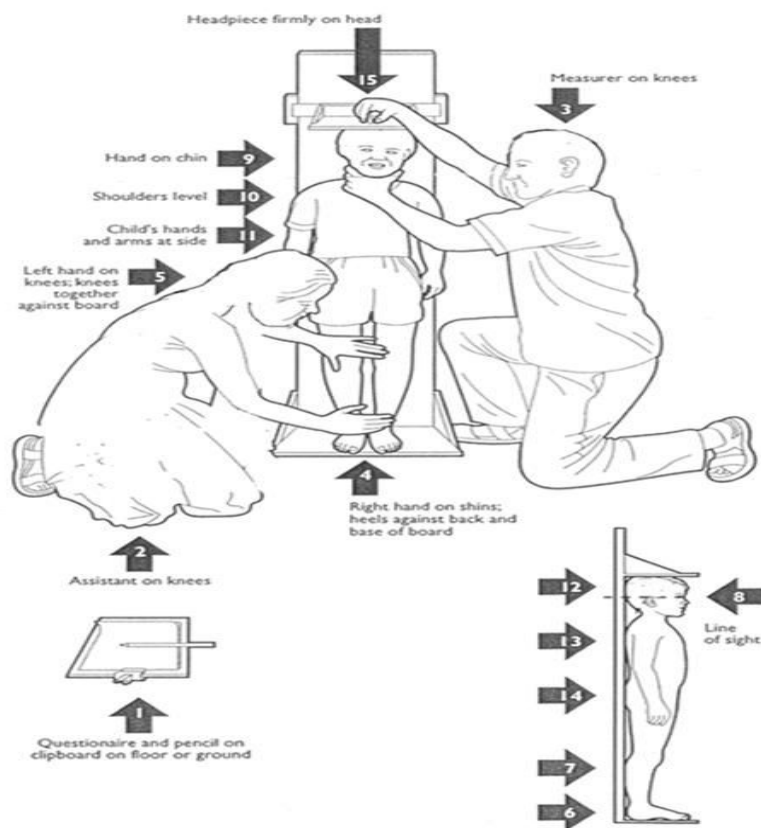
1-Measure height by having the child, with shoes removed.

2-stand as tall and straight as possible with the head in midline and the line of vision parallel to the ceiling and floor.



3-Be certain the child's back is to the wall or other vertical flat surface, with the head, shoulder blades, buttocks, and heels touching the wall and the medial malleoli touching if possible

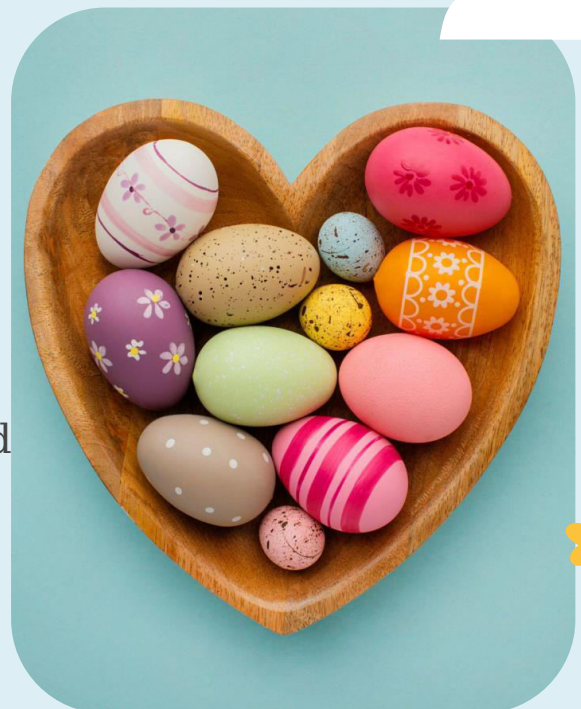
4-For the most accurate measurement, use a wall-mounted unit .To improvise a flat, vertical surface for measuring height, attach a paper or metal tape to the wall, position the child adjacent to the tape, such as a thick book or box, on top of the head. Rest the side of the object firmly against the wall to form a right angle.





3. Measurement of Head circumference

This measurement is important because the size of the skull is closely related to the size of the brain. It is usually recorded in children who are under 3 years of age or in cases where the growth of the brain/skull is under observation



Procedure



Head circumference is a reflection of brain growth. Measure head circumference in children up to 36 months of age and in any child whose head size is questionable.

1-Measure the head at its greatest front occipital circumference, usually slightly above the eyebrows and pinna of the ears and around the occipital prominence at the back of the skull .

2-Use a paper or non-stretchable tape, or insert-a-tape, marked in centimetres or inch

Note Remove any braids, barrettes, or other hair decorations that will interfere with the measurement



Note: The measuring tape should leave a light pressure mark on the child's forehead that should disappear almost instantly.

Zero end of the tape in the inferior position

The tape just above the eyebrows, with the zero point on the side closest to the measurer



The tape should be level around the child's head

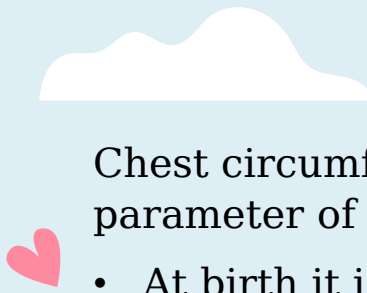
NO **X**

YES **✓**






4. Chest Circumference

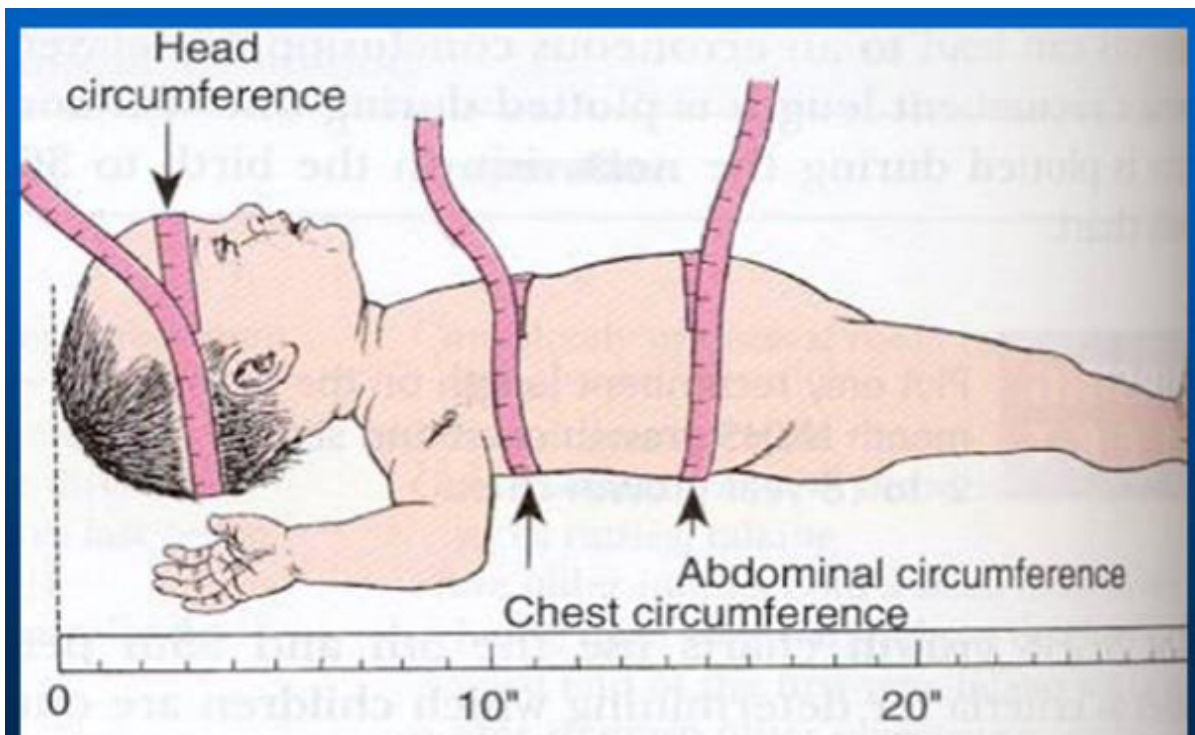


Chest circumference or Thoracic diameter is an important parameter of assessment of growth and nutritional status.

- At birth it is 2-3 cm less than head circumferences.
 - At 6-month 6-12 month of age both become equal.
 - After 1 year of age chest circumferences is greater than head circumferences by 2.5 cm
 - By the age 5 years, it is about 5 cm larger than head circumferences.
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PROCEDURE

1. Chest circumference is measured using the nipple line as a reference point.
- 2- crossing the lower border of the scapulae.

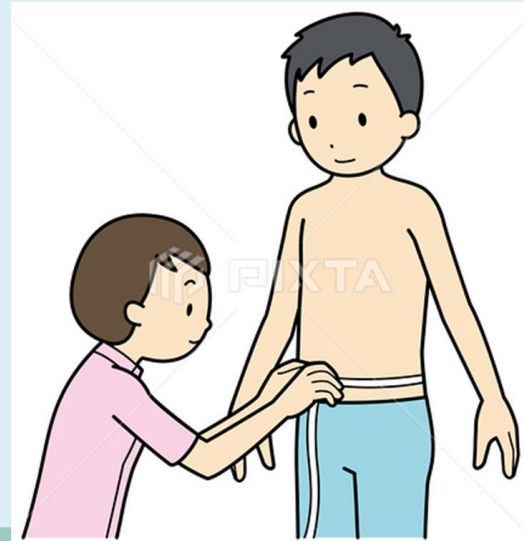


5. Abdominal Girth



Abdominal Girth Abdominal girth should be measured over the umbilicus Whenever possible.

Abdominal Girth



6.Body Mass Index



Thank You For Listen