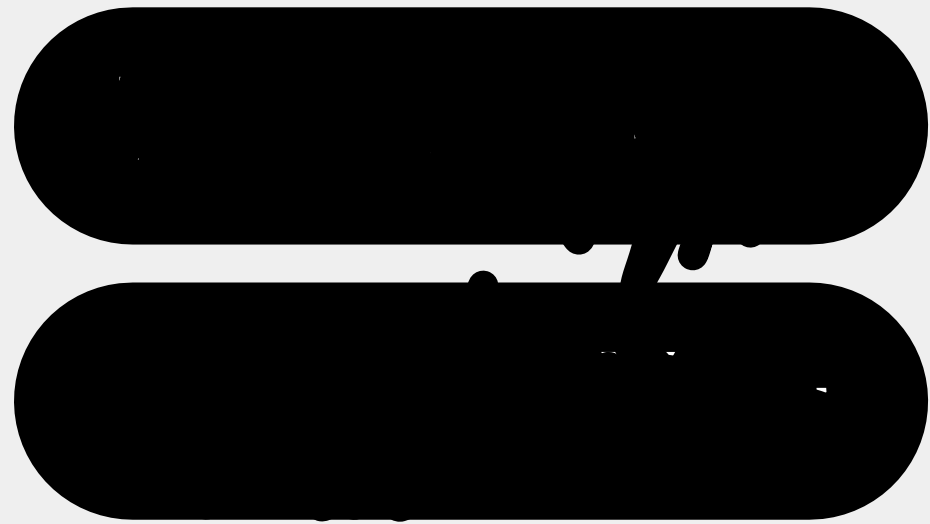


# Anthropometric Measurement



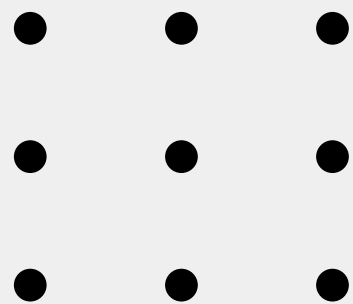
# Content

- Definition of Anthropometry
  - Measurement Standards
  - Importance of Anthropometric Data
  - Role of Anthropometric
  - Examiner and Recorder
  - Measuring Instruments
  - Weight
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  - Head Circumference
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-

# Definition of Anthropometry

Anthropometry is the study of the measurement of the human body in terms of the dimensions of bone, muscle, and adipose (fat) tissue.

The word “anthropometry” is derived from the Greek word “anthropo” meaning “human” and the Greek word “metron” meaning “measure”.



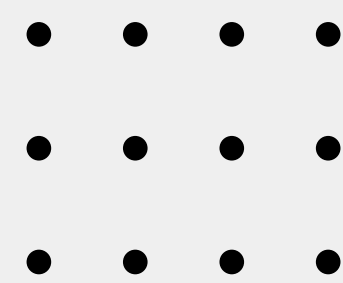
The field of anthropometry encompasses a variety of human body measurements.

Weight, stature (standing height), recumbent length, skin fold thicknesses, circumferences (head, waist, limb, etc.), limb lengths, and breadths (shoulder, wrist, etc.) are examples of anthropometric measures.

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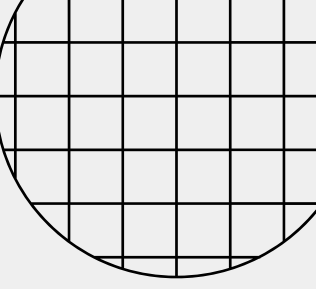


# Measurement Standards



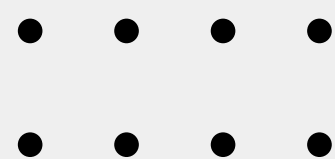
Measurements are used to monitor growth, assess nutrition status, and determine the weight and height gain.





A small measurement error can result in a large error on the growth chart.

For example, an error of  $\frac{3}{4}$  of an inch can result in a 25%ile deviation on the chart.

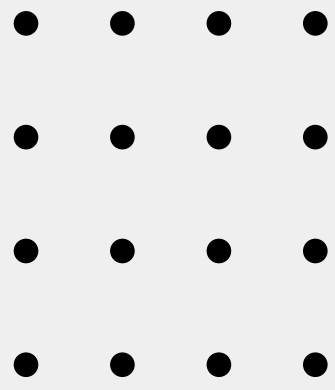




# Importance of Anthropometry

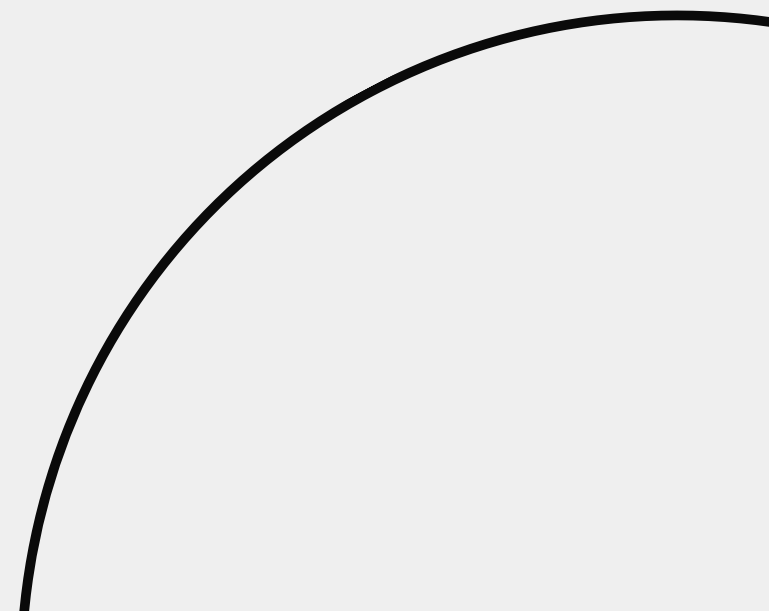
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Anthropometric data are used to evaluate health and dietary status, disease risk, and body composition changes that occur over the adult lifespan.



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Researchers in diverse health disciplines including cardiovascular health, nutrition, and occupational health use anthropometric data to examine health status.

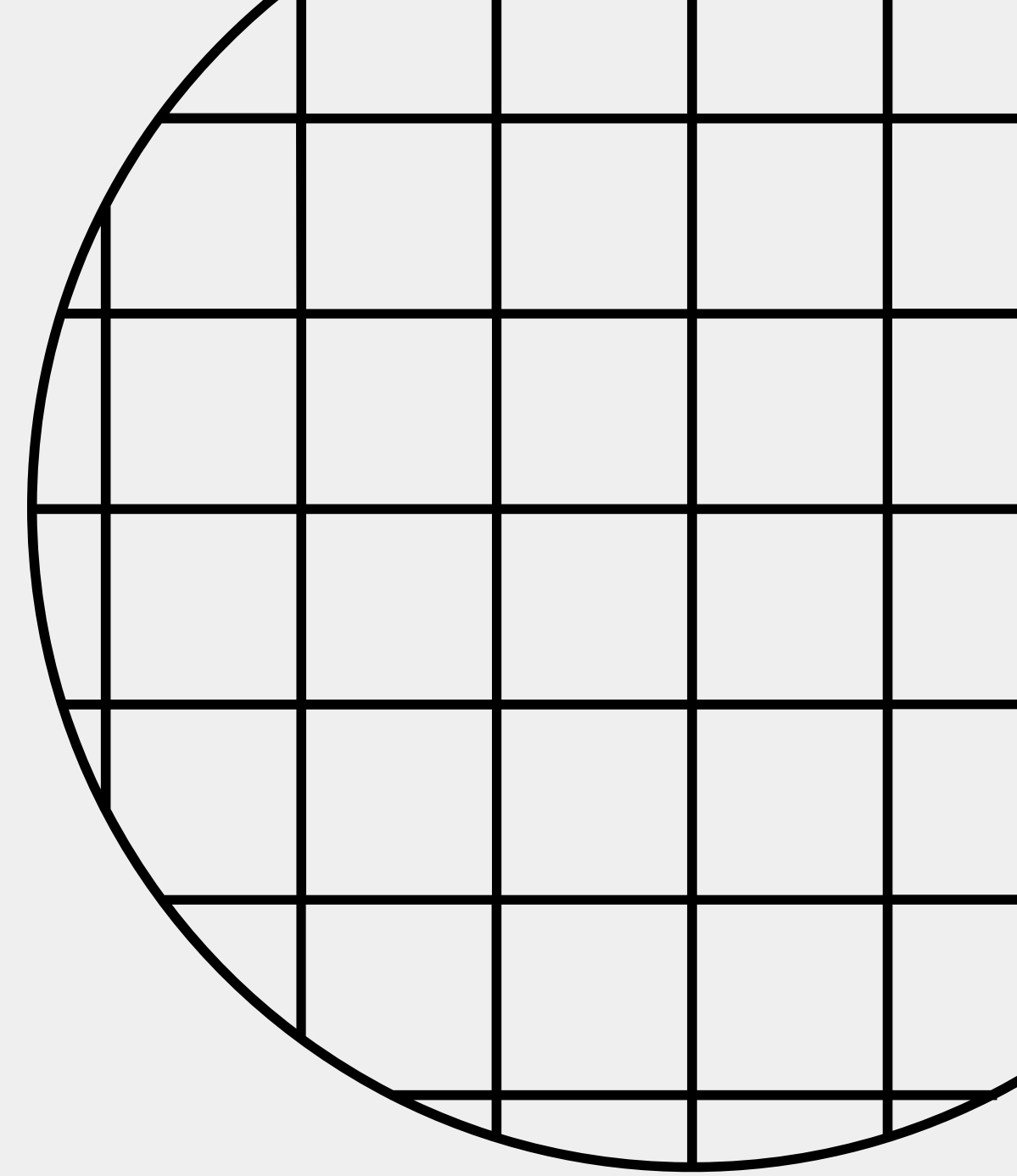







The weight measurement is the most common measurement in all clinical settings.

Weight for height measurement is a good determinant of a child's nutritional status e.g. obesity, under-nutrition etc.



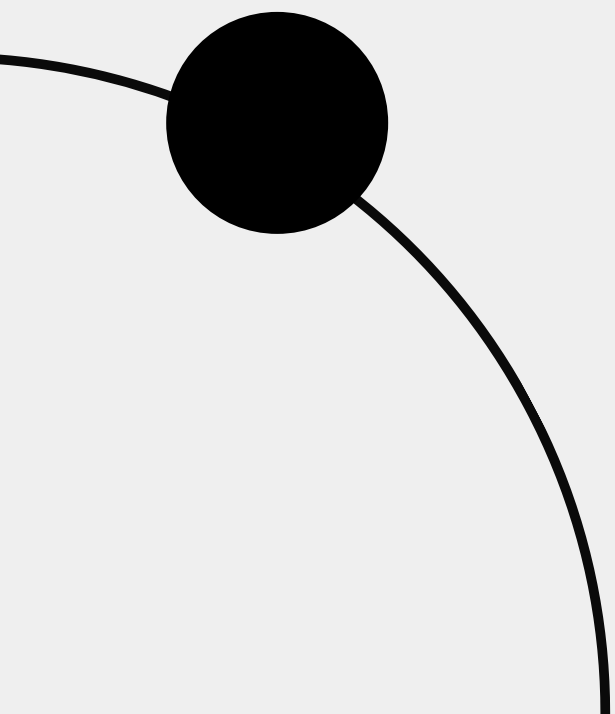


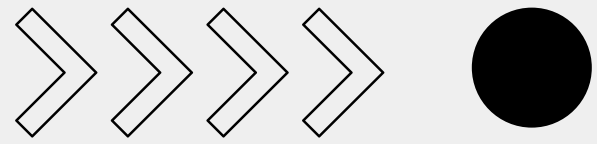
The height measurement on the other hand helps to detect the growth of the child at an early stage e.g stunted growth .

Measurement of the head circumference is an important part of routine well baby care.

For example, a head that is larger than normal or that is increasing in size faster than normal may be a sign of several problems, including water in the brain (hydrocephalus).

A very small head size (called microcephaly) or very slow growth rate may be a sign that the brain is not developing properly.





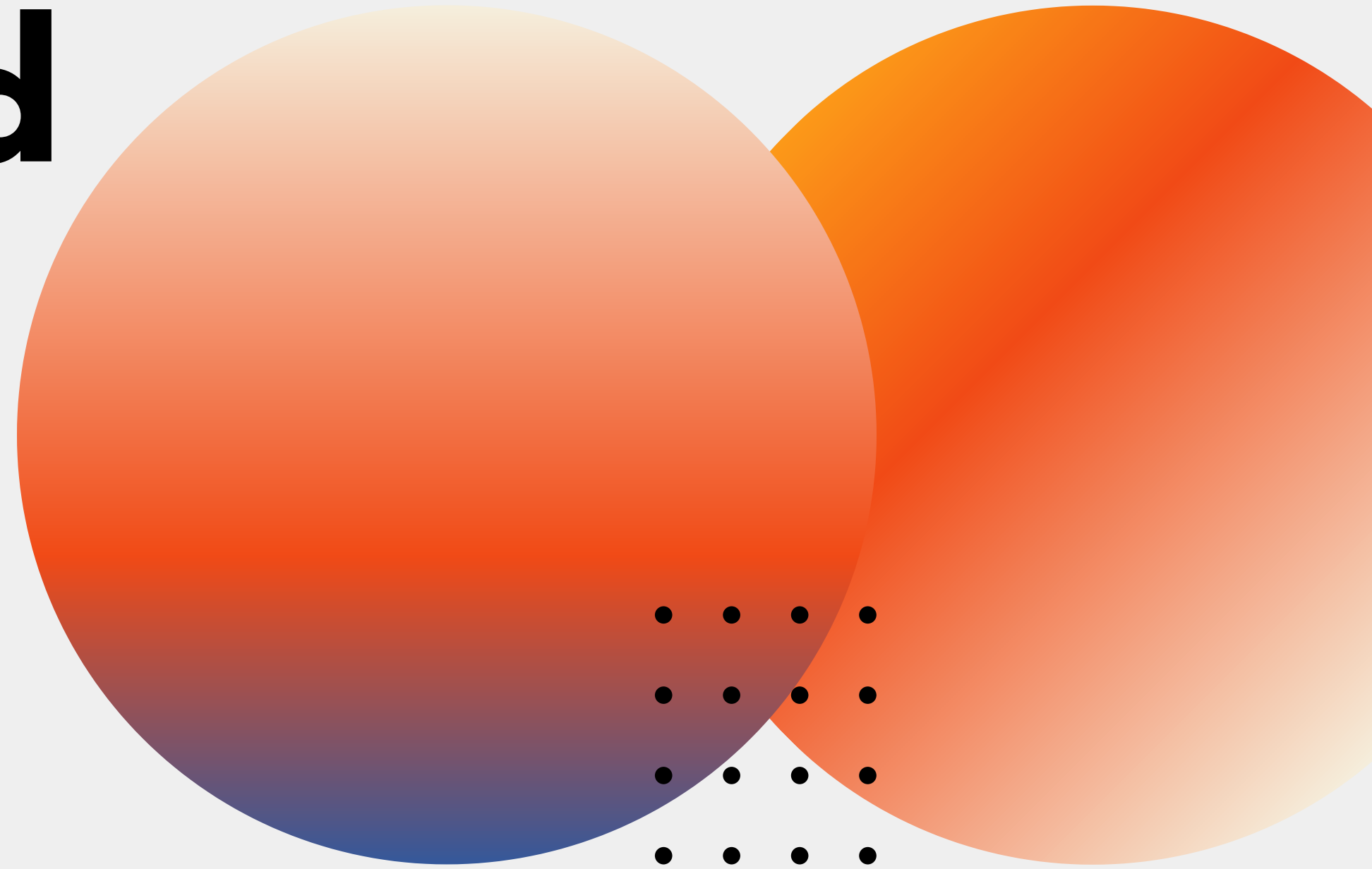
The MUAC helps the medical personnel to easily recognize wasted children

Children whose MUAC is below 11.5 is considered severely malnourished .



The skin fold measurement test is one common method of determining a person's percentage of body fat or body composition.

# Role of the Recorder and Examiner

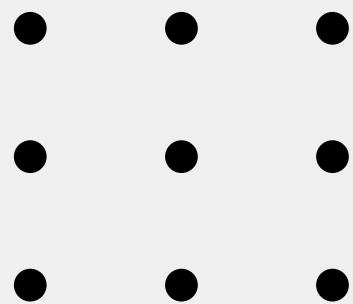




The examiner and the recorder work together to enhance accurate measurement.

The examiner positions the patient with the help of the child's parent or the recorder if the child misbehaves.

Take all measurements and tell the recorder the measurement values to record into the database.





If the height or the weight is less or higher than the range, the software will automatically flag and the recorder will ask for a second measurement in order to confirm or update.

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# MEASURING INSTRUMENTS NEEDED IN ANTHROPOMETRY

- MUAC TAPE

MUAC is for children under six months



- BABY WEIGHING SCALE

Baby scale is used for measuring children's weight who cant stand properly



## ADULT SCALE

This is used for measuring the weight of adults.



## BABY SCALE

This is used for measuring the weight of children who can stand by themselves properly.



- • • •
- • • •

## SKIN FOLD CALLIPER

This is used to measure the skin fold thickness for all patients





# Stadiometer

This is used for measuring the heights of people who can't stand properly..

# Weight

- First of all calibrate the scale before starting work.
- The scale should be placed on a levelled hard-floor surface.
- Start the scale at zero and let the patient stand in the Centre of the scale.
- Weight should be measured in all patients, except wheelchair bound individuals, or persons who have difficulty standing steady.
- Patients are asked to remove their heavy outer garments (jacket, coat, skirts, and shoes etc.) and make them empty their pockets and read their weight to the recorder.

# Height


- With the person looking straight ahead, slide the headboard gently down to the head, compressing the hair.
- Be sure that the headboard is level and at right angles.
- Height should be measured for those 25 years and below except for new visitors less than three visits.

# Height


- Have the child or adult stand with back against the stadiometer with feet together flat on the floor, arms at the side, and knees and back straight.
- When possible, the head, heels, buttocks, and shoulder blades should touch the measuring surface.
- With the person looking straight ahead, slide the headboard gently down to the head, compressing the hair. Be sure that the headboard is level and at right angles to the patient's head.



# Head Circumference

- Head circumference is measured on infants and children until the age of three years.
  - Head circumference is measured over the most prominent part on the back of the head (occiput) and just above the eyebrows (supraorbital ridges i.e. the largest circumference of the head).
  - Pull the tape fairly to compress the hair.
  - Read the measurement in cm for the recorder.
- 

# Mid-Upper Circumference

- It is recommended to use a tape to measure the midpoint of the arm between the shoulder and the tip of the elbow.
  - MUAC should be measured on only those who are 6 years and below.
  - To measure MUAC, a flexible measuring tape is wrapped around the mid-upper arm of the child.
  - MUAC should then be measured on the left upper arm while the arm is hanging down the side of the body and relaxed.
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# Skin Fold Test

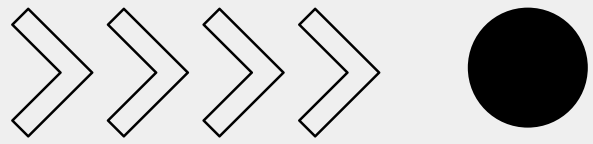
- It is recommended to use tape to measure the midpoint of the arm between the shoulder and the tip of the elbow.
- Fix the caliper at zero before every patient.
- Skinfold (i.e. triceps) should be measured at the upper part of the arm.

# Skin Fold Test

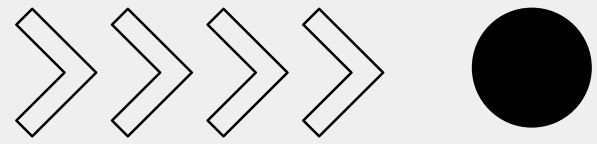
- Hold the body tissue and leave the muscle.
- If necessary use two hands to find a proper grip.
- Release the calliper lever so its spring tension is exerted on the skinfold and maintain pinch while reading the calliper.



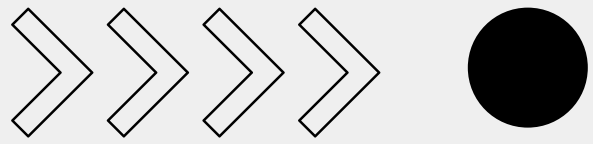
# Frequent Causes of Errors



- Failure to use a right-angle headboard when measuring height.
- Failure to balance scales at zero before each use.
- Measuring height with feet away from stadiometer or with heavy turbans or rastas etc on hair.

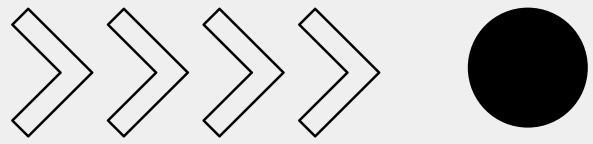


- Weighing in excess clothing and shoes.
- Measuring an infant unassisted.
- Uncooperative children. (Have distracting toys available. )
- Not properly extending young children for length measurement. (Child's head may be turned away.)
- Not positioning the child correctly for length or height measurement.



- Misreading the scale or tape measure. (Most equipment also has metric values.) It is easy to mistakenly read metric values.
- Inadvertently transposing digits when entering into the database.
- Inadvertently entering the weight and height in the wrong fields in the database.





- Getting interrupted before writing down the result.
- Failure to repeat the measuring procedure a second time. (Repeating the procedure is essential to obtain accurate measurements.)



# Thank You

Uday Sharma

BHN 3rd Year

