Block4: The Objective

- Goals of Nutritional Assessment
- The purpose of nutritional screening
- Types of nutrition assessment
- What is Anthropometry?
- Common anthropometric measurements
- What are growth charts?
- What are the types of malnutrition?

Goals of Nutritional Assessment

in clinical medicine **Nutritional assessment** has three primary goals:

- to identify the presence and type of malnutrition,
- to define health-threatening obesity,
- and to plan for suitable diets as prophylaxis against disease later in life

The **purpose of nutritional screening** is to rapidly identify patients at high **nutritional** risk.

The **purpose of nutritional assessment**, however, is to define a patient's **nutritional** status, to identify clinical signs of malnutrition, and monitor changes in **nutritional** status

How to assess nutritional status?

An easy way to remember types of nutrition assessment is

ABCD

- **A**nthropometric measures: Plot on Growth charts
- **B**iochemical (laboratory) assessment
- **C**linical assessment
- **D**iet assessment (feeding History, 24 hr recall)

- What is Anthropometry?

- Anthropometry is the measurement of the size, weight, and proportions of the body.

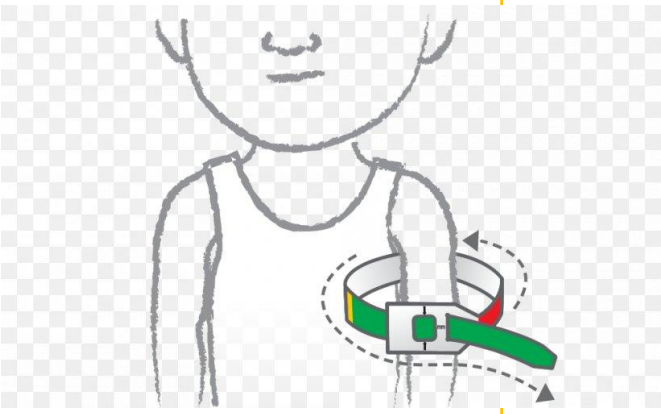
Common anthropometric measurements include:

- Weight
- Height
- Head circumference,
- MUAC,
- Skinfold thickness
- Body mass index (BMI),

What is MUAC?

- **Mid Upper arm circumference (MUAC)** is measured on the **left upper arm**, at the mid-point between the tips of the shoulder and elbow.
- To measure: - Bend the left arm,
  - mark with a pen the olecranon process and acromion.
  - Mark the mid-point between these two marks.

Aim of MUAC: measures the **muscle mass**



- The earliest indicator of malnutrition
- Best indicator: not affected by SC fat or edema
- Normal values:10cm at birth,16 cm at 1year,
  - increase 0.25 cm /year for 4 years
  - and it will be 17 cm at 5 years till adolescence.
- Measured by using **Shakir tape**

HOW TO MEASURE MID-UPPER ARM CIRCUMFERENCE (MUAC) *(CONTINUED)*

1. Bend the left arm at a 90° angle.

2. Find the top of the shoulder and the tip of the elbow.

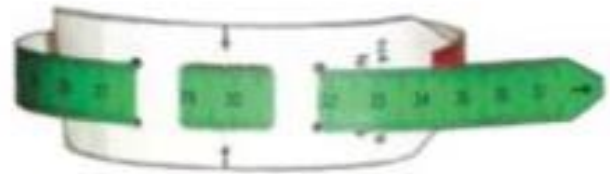
3. Keep the tape at eye level and place it at the top of the shoulder. Put your right thumb on the tape where it meets the tip of the elbow (endpoint).

4. Find the middle of the upper arm by carefully folding the endpoint to the top edge of the tape. Place your left thumb on the point where the tape folds (midpoint). Mark the midpoint with a finger or pen.

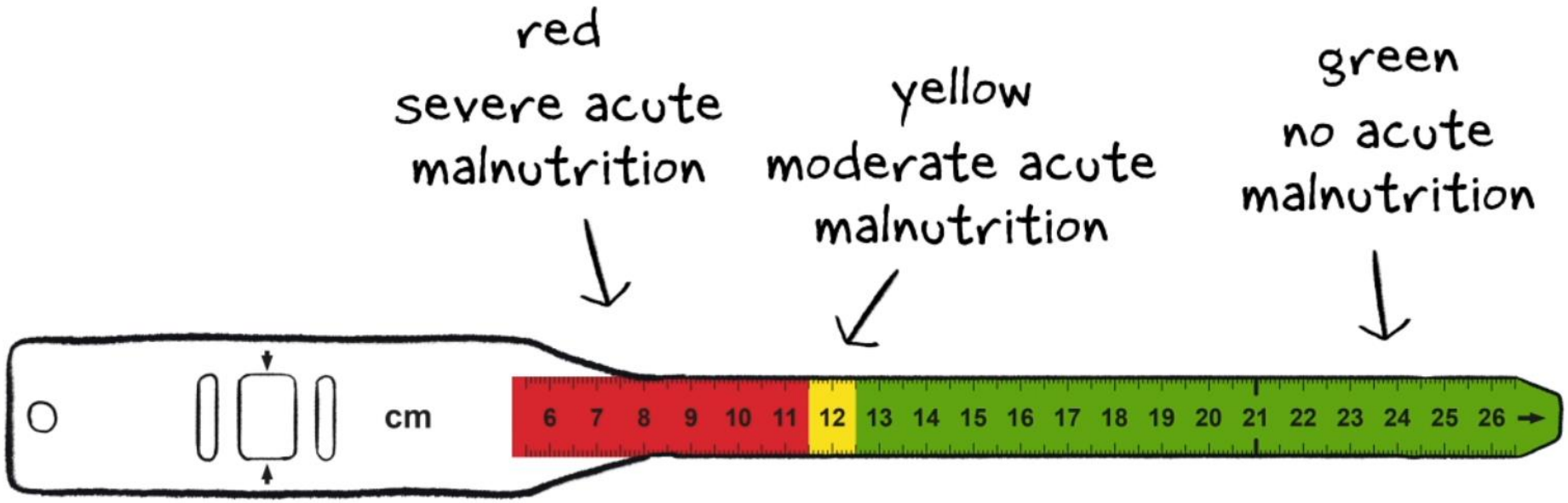
5. Straighten the arm and wrap the tape around the arm at the midpoint.
6. Place the tape through the window and correct the tape tension.

Too loose

Too tight



7. Read the measurement in cm in the window where the arrows point inward.
8. Record the measurement to the nearest 0.1 cm and note the color.



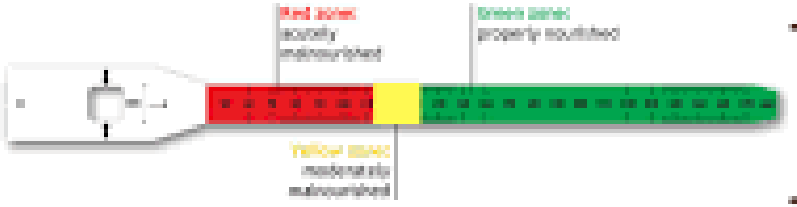
Shakir tape is colored tape

- **GREEN COLOUR** over 135mm (**13.5cm)**:
  indicates that the child is well nourished
- **YELLOW COLOUR:** between 115mm (11.5cm) and 125mm (12.5cm)>> indicates that the child is at risk for acute malnutrition
- **RED COLOUR:** less than 110mm (11.0cm), indicates Severe Acute Malnutrition (SAM).

>>The child should be immediately referred for treatment.

SHAKIR TAPE METHOD

- measures Mid Upper Arm Circumference (MUAC)
- used to diagnose undernutrition



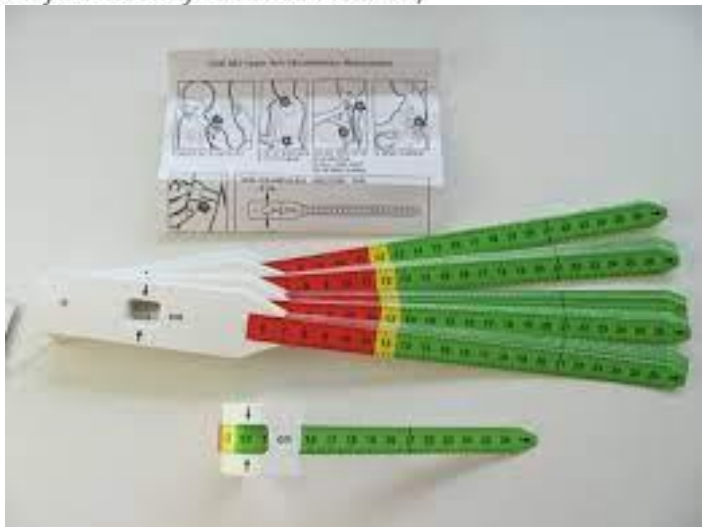
Red : <12.5cm (Wasted)

Yellow : 12.5 - 13.5cm (Boderline)

Green : >13.5cm (Normal)

www.medrewind.com

Figure 46-3 Measuring mid-upper arm circumference. *(Image courtesy of Nyani Quarmyne/Panos Pictures.)*



What is skin fold test ?

- This test estimates the **percentage of body fat** by measuring **skinfold thickness** at specific locations on the body.
- This method is based on the hypothesis that the **body fat is equally distributed over the body**
- and that thickness of the **skinfold is a measure for subcutaneous fat.**
- Skinfold thickness results rely on formulas that convert these numbers into an estimate of a person's percentage of body fat according to a person's age and gender.

- It involves using a device called a caliper to lightly pinch the skin and underlying fat in several places.
- This quick and simple method requires a high level of skill to get accurate results
- It is decreased in marasmus and increased in adiposity.

How to Take Skinfold Measurements

- Grasp the **skinfold** firmly between the thumb and index finger of your left hand.
- **Skinfold** is lifted 1 cm away from the underlying muscle and recorded with the calipers held in the right hand.
- Keep the **fold** elevated while the measurement is recorded.
- **Take the skinfold** measurement 4 seconds after the caliper pressure is released

Site of Skinfold measurements :

- **Triceps**
- **Chest /pectoral**
- **Midaxillary**.
- **Subscapular**.
- **Suprailiac**.
- **Abdominal**
- **Thigh**

Body Mass index (BMI)

How to calculate BMI?

- **BMI** = weight (kg) / [height (m)]^2

What are the categories of body mass index (BMI)?

- Underweight = <18.5
- Normal weight = 18.5–24.9
- Overweight = 25–29.9
- Obesity = BMI of 30 or greater

What is the importance of using BMI for age and sex?

- **Tracking tool for body size starting at age 2 years through adulthood**
- **Only indicator that examines weight and stature and age for a child on a single growth chart**