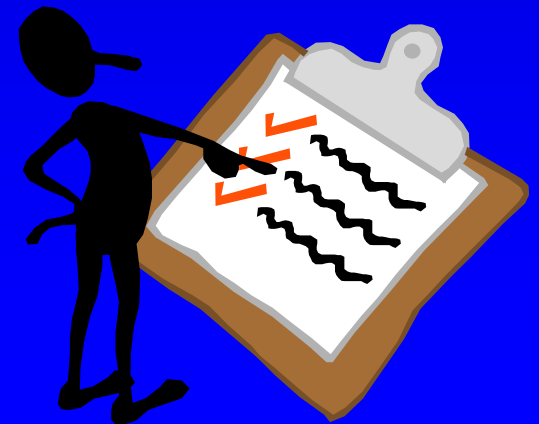


# TYPES OF MALNUTRITION



# What Will I Learn About...

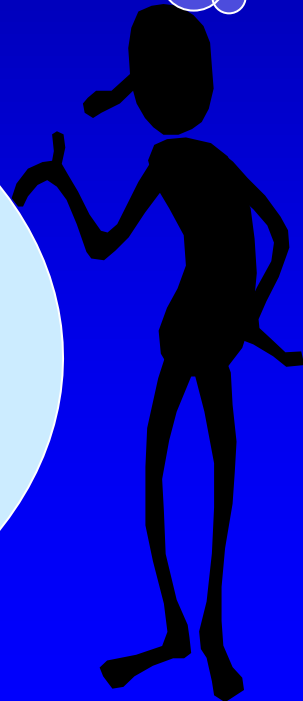
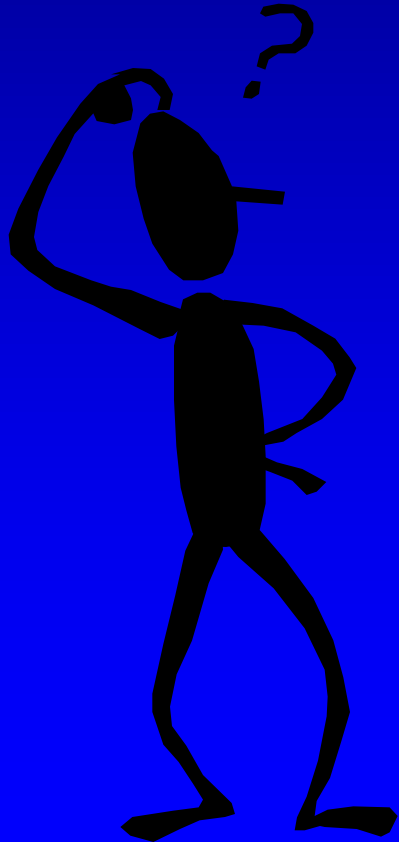
- Two broad categories of malnutrition:
  - *Protein energy malnutrition*
  - *Micronutrient deficiency diseases*
- Types of growth failure
- The risks of being malnourished



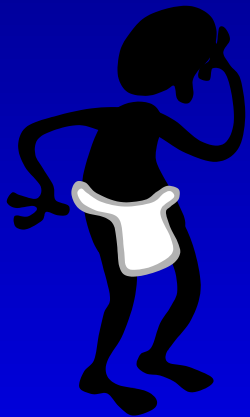
So what is malnutrition?



.. malnutrition is a term that covers a wide range of clinical conditions in children and adults.



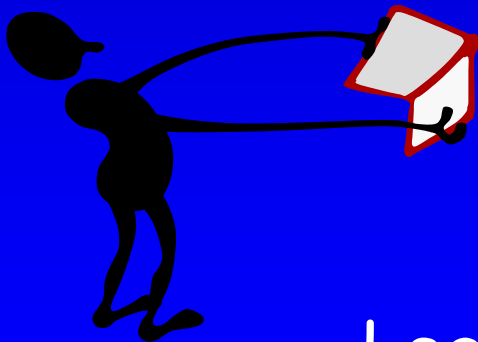
# RISKS of being malnourished...



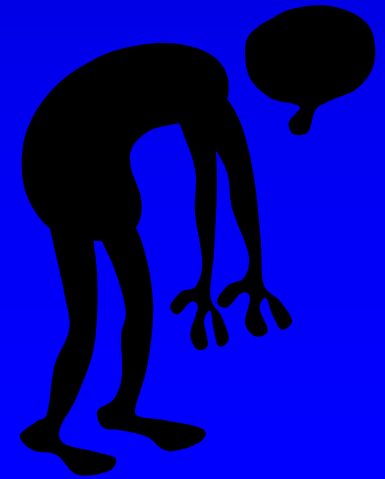
Lowered resistance to disease



Increased risk of mortality



Learning difficulties



# Anthropometric index

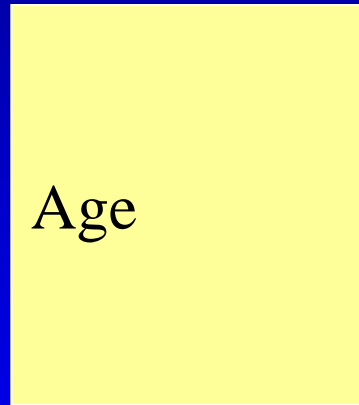
Combination of different measurements or combination of a measurement with other data

- **Weight-for-height**
- **Height-for-age**
- Weight-for-age
- MUAC-for-height
- MUAC-for-age
- BMT-for-age

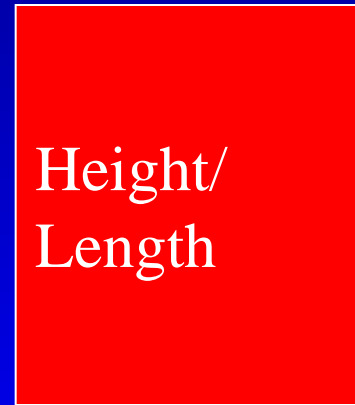
# Building blocks of anthropometric indices



1



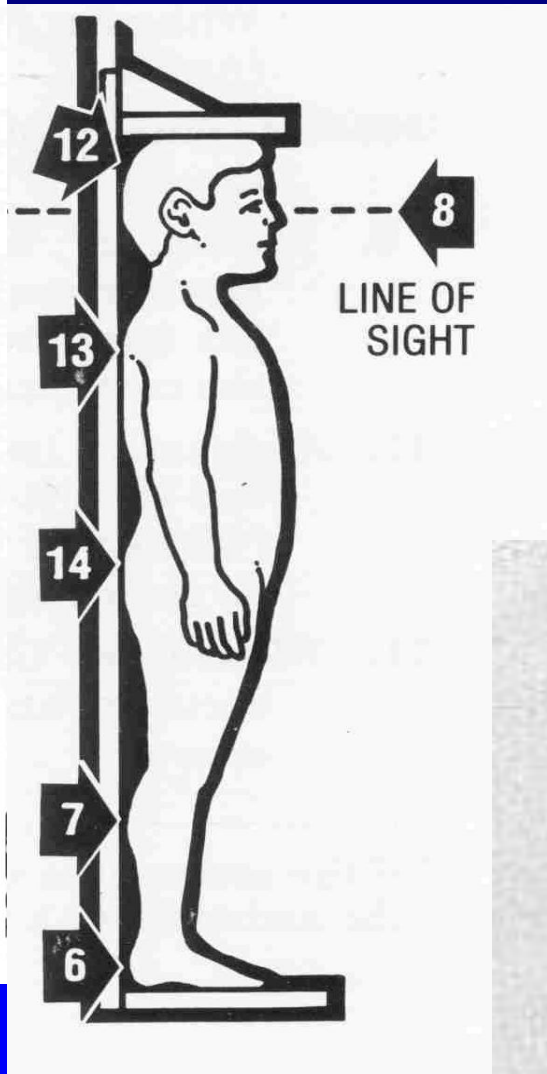
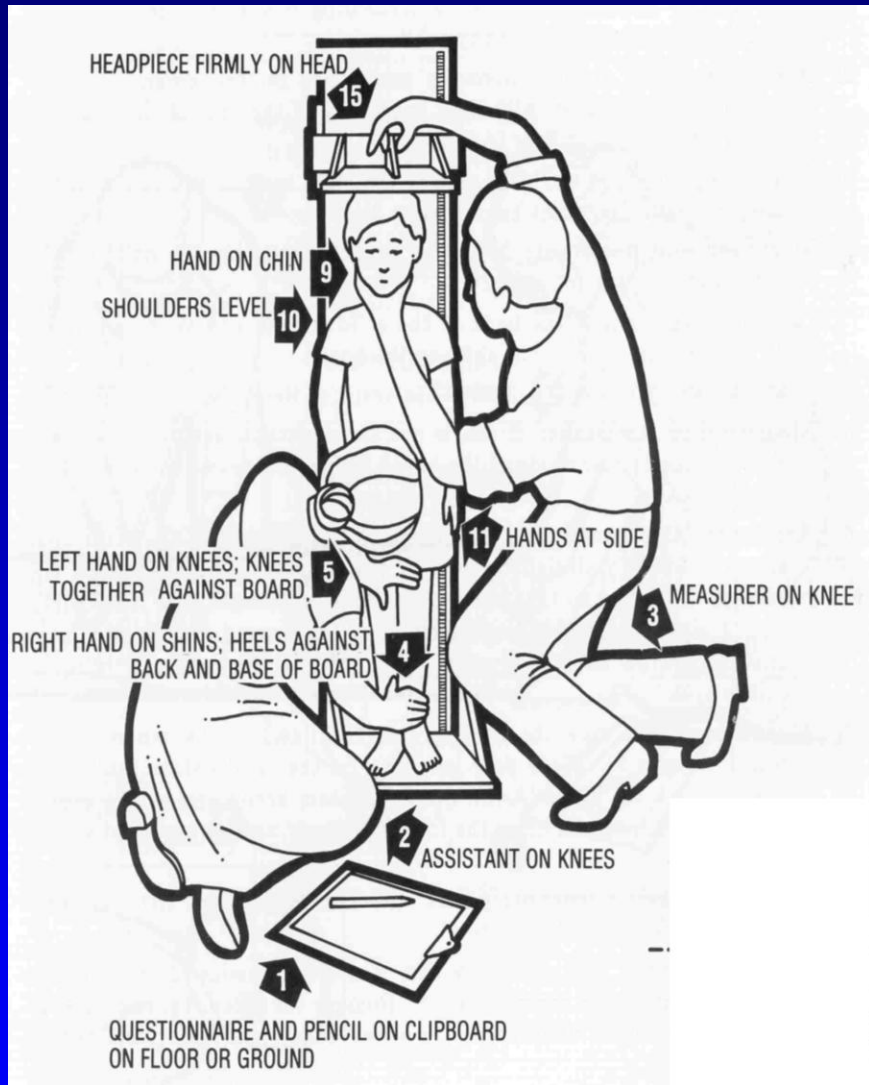
2



3



4



# Weight for Height



"Let me put it this way . . . for your weight you should be thirty-seven feet tall."



# Children with PEM all suffer *GROWTH FAILURE* either:

**WASTING**  
(thinness)

Occurs as a result of  
recent rapid weight loss  
or a failure to gain weight

ACUTE MALNUTRITION

**STUNTING**  
(shortness)

Occurs as a result of  
inadequate nutrition over a  
long period of time

CHRONIC MALNUTRITION

Weight-for-Height (WFH)  
reflects recent weight loss or gain  
WASTING  
ACUTE MALNUTRITION

Height-for-Age (HFA) reflects  
skeletal growth  
STUNTING  
CHRONIC MALNUTRITION

Weight-for-Age (WFA) is  
a composite index  
WASTING  
AND  
STUNTING  
UNDERWEIGHT

# At what age is wasting most prevalent?

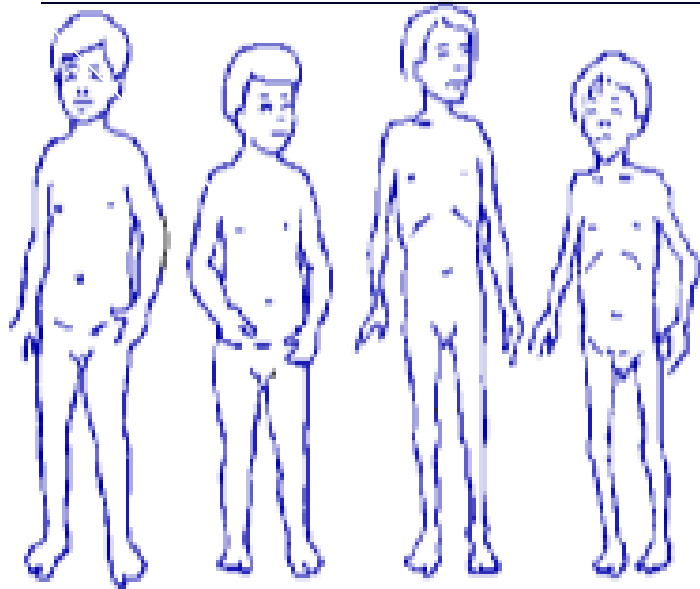
- Wasting occurs more commonly in infants and younger children often during the *weaning period*.
  - Complementary foods may be inadequate nutritionally.
  - Complementary foods and drinks are often not clean and can cause diarrhea.

# Who is at risk of stunting?

- Stunting occurs over a long period of time.
- Usually less apparent until *after 2 years of age*.
- Action is needed during the early years to prevent stunting.

# Who is stunted and who is wasted?

A B C D



A: Healthy

B: Stunted

C: Wasted

D: Stunted & Wasted

# The two clinical forms of PEM:

## Marasmus

severe loss of  
body weight or  
*wasting*

## Kwashiorkor

nutritional  
bilateral  
*oedema.*

## Marasmic kwashiorkor

combines symptoms of  
marasmus and kwashiorkor







# Clinical Signs of Marasmus

- A thin 'old man' face
- 'Baggy pants' loose skin around the buttocks
- No nutritional oedema
- Prominent ribs
- The children are usually active and may appear to be alert in their condition

# Clinical Signs of Kwashiorkor

- Nutritional oedema
- Loss of appetite
- Hair changes
- Skin lesions and de-pigmentation
- Children are usually apathetic, miserable and irritable.
- Moon Face





# Anthropometrics 2

<p>Adults</p> <ul style="list-style-type: none"><li>• Body Mass Index</li></ul>	<p>'Thinness' (low weight for height) as a result of acute malnutrition.</p>
<p>Infants:</p> <ul style="list-style-type: none"><li>• Low Birth Weight</li></ul>	<p>Associated with poor nutrition in mothers.</p>

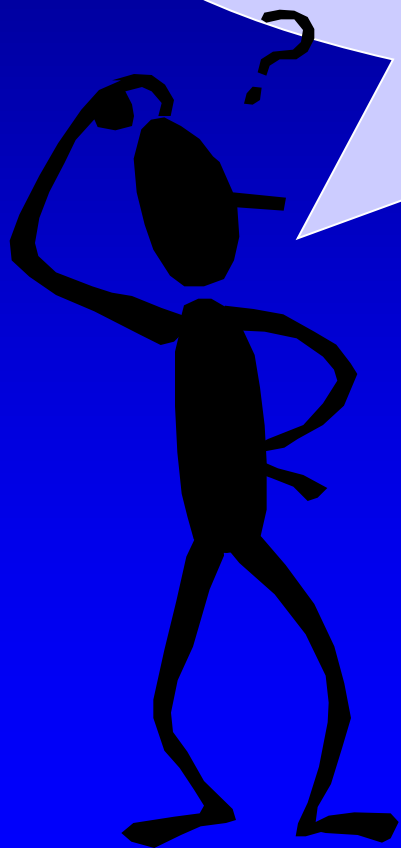
# Micro-Nutrient Deficiencies 1

<b>Micronutrient Deficiency</b>	<b>Indicators</b>
<b>Iron deficiency anaemia</b>	<ul style="list-style-type: none"><li>• Clinical signs (pallor, tiredness, breathlessness and headaches)</li></ul>
	<ul style="list-style-type: none"><li>• Haemoglobin</li></ul>
<b>Vitamin A deficiency (xerophthalmia)</b>	<ul style="list-style-type: none"><li>• Clinical signs (night blindness, bitot's spots, corneal xerosis, keratomalacia).</li><li>• Blood tests</li></ul>
<b>Iodine deficiency</b>	<ul style="list-style-type: none"><li>• Clinical signs (goitre and cretinism).</li><li>• Urinary tests</li></ul>

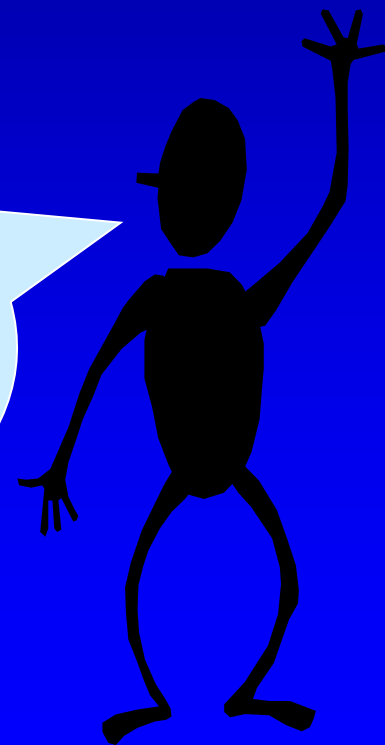
# Micro-Nutrient Deficiencies 2

<b>Vitamin C deficiency (scurvy)</b>	<ul style="list-style-type: none"><li>• Clinical signs (painful joints, minute haemorrhages around hair follicles, swollen and bleeding gums and slow healing)</li></ul>
<b>Thiamin (BeriBeri)</b>	<ul style="list-style-type: none"><li>• 8 Clinically recognisable signs of beriberi</li></ul>
<b>Niacin (Pelagra)</b>	<ul style="list-style-type: none"><li>• Dermatitis, dementia and diarrhoea</li><li>• Cassals necklace</li></ul>

How will I remember all  
the different types of  
malnutrition?



Remember  
there are  
*Two* main types  
of malnutrition





PROTEIN ENERGY  
MALNUTRITION (PEM)

...a result of  
deficiencies in any or  
all nutrients  
(includes *micronutrients*, as  
well as *macronutrients*).

MICRONUTRIENT  
DEFICIENCY DISEASES  
(MDD'S)

...occur as a result of  
deficiencies in specific  
micronutrients  
(*vitamins or minerals*).



THANK YOU!