




# Nutrition Assessment

Lecture.2

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**Nutrition Assessment:** is the systematic process of collecting and interpreting information in order to make decisions about the nature and cause of nutrition related health issues that affect an individual.

## **Comprehensive nutritional assessment includes :**

- 1- Dietary assessments**
- 2- Clinical examination (history and physical examination).**
- 3- Anthropometric measurements.**
- 4- Diagnostic tests.**


**1- Dietary assessment:** dietary assessment is necessary to ensure adequate nutrition and hydration intake.

**A- History about dietary habits:** frequency of meals, food preferences, restrictive diets, and allergies.

**B-** Recorded the current nutrient and fluid intake.

**C-** If patients are on parenteral or enteral diets, information on feeding regimens.

**D-** Factors affecting these feedings, such as displacement of feeding tubes, site irritation, or infections.

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- **2- Clinical examination (history and physical examination).**
  - **A- History:** aims to look for indications of malnutrition and identify underlying factors that may lead to malnutrition or increase the risk of malnutrition.

- **General malnutrition may result from:**
- **a-Primary factors** (deficient dietary intake) take dietary history.
- **b-Secondary factors** (defect in nutrients utilization), e.g. GI disorders, metabolic disorders take clinical history.



## **B- Physical examination:**


Aims to identify signs of malnutrition and factors affecting nutritional status.

**1- General condition:** note the patient is conscious, alert, and ambulatory. An initial observation of the patient's cognitive, mental, and emotional status.

## **2- Vital signs:** Vital signs should be checked.

- **Temperature > 38 degrees Celsius** can signify active inflammation/infection.
- **Temperature < 35 degrees Celsius (Hypothermia )** can be associated with impaired nutritional status, such as trauma, burns, alcohol intoxication, and metabolic disorders like hypothyroidism.

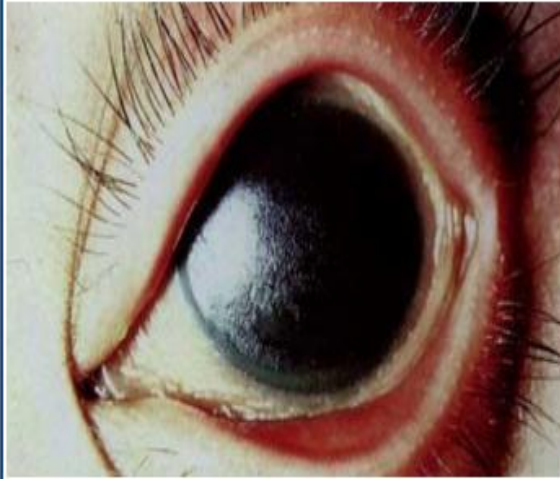


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- **High pulse rates** can indicate fever, anemia, pregnancy, hyperthyroidism, septic shock, Beriberi, and anxiety.
  - **High blood pressure or hypertension** is one of the risk criteria for metabolic syndrome.
  - Abnormal rate and patterns of respiration can be indicative of various pathologies.

- **3- Height and Weight:** Body mass index (BMI) calculated from these variables can help determine whether an individual is undernourished or over nourished.

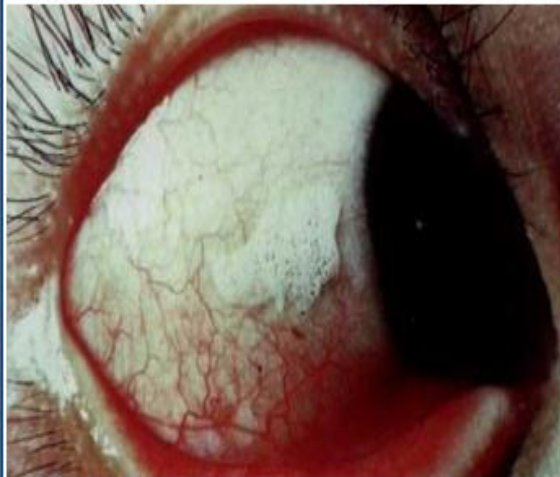
- **4- Eyes:**

**Xerosis of conjunctiva or Xerophthalmia**



**First clinical sign Vit A deficiency**

**Bitots spots**



**Moderate deficiency of Vit A deficiency**

**Corneal  
ulceration and  
keratomalacia**



**Severe Vit a  
deficiency –  
medical  
emergency**

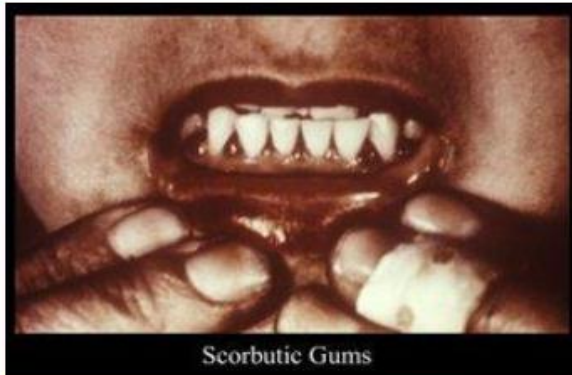
**Night blindness,  
photophobia,  
blurring of  
vision**

**Vit A and Vit B2  
deficiency**

## 5- Oral cavity:

**Taste abnormality:** Zinc deficiency (also it is decrease with the age, drugs, smoking).

**Bleeding and spongy gums**



**Deficiency of Vit C, A, K, Folic acid, Niacin**

**Glossitis ,  
Cheililitis**



**Deficiency of Riboflavin, Niacin, Folic acid, B12 and proteins.**



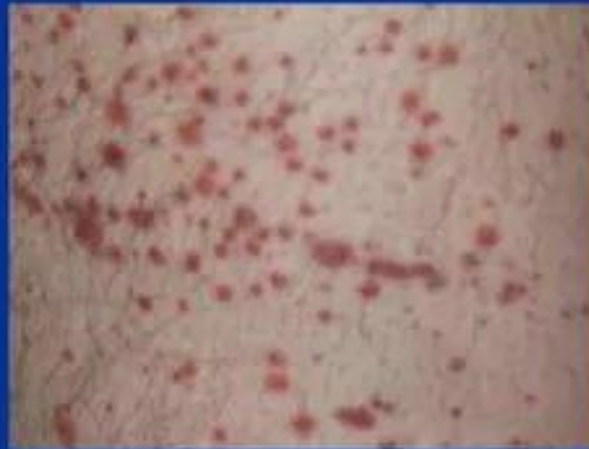
## 6- Skin:

- **Petechia, purpura, and ecchymosis** may be associated with vitamin C and vitamin K deficiencies. Poorly healed wounds indicate vitamin C, protein, and/or zinc deficiencies.
- **Dermatitis:** due to zinc deficiencies.

**Petechiae**  
( 1 – 2 mm )



**Purpura**  
(  $\geq 3$  mm )



**Ecchymosis**  
( > 1 – 2 cms )



- **7- Hair:**

Dry hair can be a sign of vitamin A or vitamin E deficiency.





- **8- Nails:** Dry and brittle nails can be associated with deficiencies in biotin(B7), zinc, and proteins.



**Spooning of  
nails**



**Iron deficiency**

**Transverse  
lines**



**Protein  
deficiency**

## 9- Gland

**Goiter**



**Iodine deficiency**

## 10- Skeletal system:

**Beading of ribs  
(rickety rosary),  
bow legs**



**Vit D deficiency**

**Epiphyseal  
enlargement,  
skeletal  
deformities, bone  
tenderness**



**Vit D deficiency**

- **11- Extremities:**

- Protein or thiamine deficiency can lead to edema. Vitamin B12, thiamine(B1), vitamin E, and vitamin B6 deficiencies can present with paresthesia and muscle weakness.







- **12- Odors:**

**Fruity acetone odor** in patients with ketoacidosis, or the smell of alcohol can also be helpful during the examination of patients.

### • 3- Anthropometric measurements

That includes the following:


- height,
- weight,
- BMI (body mass index),

**Body Mass Index (BMI):** calculated from height weight data, is an indicator of the body fat content.

$$\text{BMI} = \frac{\text{(Weight) in kg}}{\text{(high) in meters}^2}$$

<b>BODY WEIGHT STATUS</b>	<b>BMI (kg/m<sup>2</sup> )</b>
<b>Underweight</b>	<b>&lt;18.5</b>
<b>Normal</b>	<b>18.5-24.9</b>
<b>Overweight</b>	<b>25-29.9</b>
<b>Obese</b>	<b>30-34.9</b>
<b>Severely obese</b>	<b>≥35</b>



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- **4- laboratory assessment:**
  - It can identify specific nutritional related abnormalities, e.g. anemia, protein deficiency, biochemical tests.



***Thank You***