

CHAPTER FOUR

- **CLINICAL NUTRITIONAL ASSESSMENT**

CHAPTER FIVE

CLINICAL ASSESSMENT

- **Development of a Type I deficiency**

Inadequate dietary intake

Gradual tissue desaturation of nutrient



Biochemical lesion arising from
major defect in a metabolic pathway



Functional changes
Clinical signs and symptoms

CLINICAL ASSESSMENT

- ✍ It is the simplest & most practical method of ascertaining the nutritional status of a group of individuals
- ✍ Utilizes a number of physical signs (specific & non specific), that are known to be associated with malnutrition and deficiency of vitamins & micronutrients.
- ✍ Used to detect & record symptoms and physical signs associated with malnutrition.
 - Symptoms are manifestation reported by patient.
 - Physical signs are observations by qualified examiners.

→ Clinical assessment consisted of :-

1. Medical history

2. Physical examination

- These assessment procedures are most useful during advanced nutrition depletion, when overt disease present

Major components of clinical assessment

MEDICAL HISTORY

- In clinical medicine, the nutritional & medical history can be obtained by:-
 - interview with the patient
 - medical history or Both
- Obtaining the medical history is central to the nutritional assessment.
- Past and present medical information, including the duration of the current illness, relevant symptoms, diagnostic tests and therapies (eg, chemotherapy, radiation), and medications, is documented.
- Drug-nutrient interactions may occur between drugs (prescription and nonprescription) and foods, beverages, and dietary and vitamin/mineral supplements.

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- Past medical history should also include information regarding previous acute and chronic illness, hospitalizations, and operations.
- The history of past growth patterns (with previous growth charts), onset of puberty, and a developmental history (including feeding abilities) may also be included.
- Family history should include a medical history as well as the family's social and cultural background, especially as related to diet therapy and the use of alternative and complementary medicine.
- The review of systems includes oral motor function, dental development, and gastrointestinal symptoms such as vomiting, gastro-esophageal reflux, diarrhea, and constipation.

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Source oriented medical records (SOMRs)

- Have an organizational structure that is based on the source of the health care
- It can consists of: Patient identification data, admission notes, physician's orders, laboratory reports, medication records, consents, consultations, operating room records, progress notes & flow sheet.

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Problem oriented medical records (POMRs)

- Unlike SOMR; POMRS is organized around a series of problem identified during data collection
- Consists of a defined database, a complete problem list, the initial care plan, & a progress note, flow sheets & discharge summary .
- Medical history generally includes description of patient & relevant environmental, social, & family factors
- Data on medical history of the patients and his/her family must be obtained by using variety of questions related to weight loss or gain, edema, anorexia, vomiting, diarrhea, decreased or unusual food intake, exercise habit, diet

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Other information:

- Previous history of anemia or major surgery, presence of chronic illness, pica, presence of congenital conditions & inborn errors of metabolism, use of dietary supplements & medications both prior to & during hospitalization.
- Details of both prescription & over-the-counter medications should be obtained as they may have interference with nutritional status e.g. change in appetite, taste, thirst, bowel function
- Details of food allergies and food intolerance should also be obtained.

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Medical history in community survey

- Obtained by administering questionnaire in a household survey or site interview
 - Dietary practices
 - Sliming diets; smoking behavior, use of alcohol, tea or coffee; use of medication; food supplements
 - Survey on oral or dental health: elderly
 - Parents asked about their children: infant feeding history, contagious disease, immunization, parasites, weight, length, gestational age,
 - Females: history of pregnancies & miscarriage, oral contraceptive use, & use of non contraceptive estrogens
 - Type & level of habitual physical activity or exercise

PHYSICAL EXAMINATION

- Support & adds to the findings obtained by the medical history
- Serial signs & symptoms are useful for assessing
 - ✱ rate of decline in nutritional status
 - ✱ speed of improvement after nutrition intervention
- May reveal information on factors that contribute to the cause of malnutrition
- The general physical examination includes an assessment of the patient's general condition and close examination of skin, hair, and teeth.
- Physical examination includes anthropometrics, including weight, stature, head circumference, and arm measures.
- This includes an assessment for pallor, clinical assessment of body fat stores, wasting of muscle mass, edema, skin rash, thinning of hair, and evidence of specific nutritional deficiencies.

PHYSICAL EXAMINATION cont...

Definition:

- Physical examination examines those changes, believed to be related to inadequate nutrition, that can be seen or felt in *superficial epithelial tissue*, especially the *skin, eye, hair, & buccal mucosa*, or in organs near the surface of the body (e.g. Thyroid gland).

4.2.1 Limitation of physical examination

- **Non specificity of the clinical signs**
 - Especially in mild & moderate deficiency
 - Some clinical signs produced by more than one nutrient deficiency
 - e.g. cheilosis & angular stomatitis from deficiencies of riboflavin, niacin, biotin, vit. B6
 - Other may be caused by non nutritional factors
 - E.g. Bitot's spot in weather

Limitation of physical examination cont...

- **Multiple physical signs:** exhibited by subjects with coexisting nutrient deficiencies confusing the diagnosis
 - May be dietary induced
 - Deficiency of several nutrients effect on metabolism
 - e.g. folate deficiency induced by a deficiency of vitamin B12

- **Limitation of physical examination cont...**
- **Signs may be two-directional:** occurring during the development of a deficiency or the recovery
 - E.g. enlarged liver in PEM & during its treatment
- **Examiner inconsistency:** e.g. during the recording of lesions

- **Limitation of physical examination cont...**
- **Variation in the pattern of physical signs:**
 - May arise because of genetic factors, activity level, environment, dietary pattern, age & the degree, duration, & speed of onset of malnutrition
 - E.g. age: rickets in children due to under mineralization of growing skeleton whereas osteomalacia in adults due to demineralization of the skeleton

4.2.1 classification & interpretation of physical signs

- **WHO classified the most common physical signs into three groups**
 1. Signs indicating a probable deficiency of one or more nutrients
 2. Signs indicating probable long term malnutrition with in combination with other factors
 3. Signs not related to nutritional status
- In community surveys, only those signs under group I should be sought in physical examination

❑ Examples of the use of combinations of clinical signs in the identification of nutrient deficiencies

- Protein calorie malnutrition

1. Bilateral edema

2. Major weight deficit (<0.6 of median for age)

3. Minor weight deficit ($0.8-0.6$ of median for age)

4. Painless pluckability of hair

Risk categories (0-5yrs male +female)

- High: 1 or 2

- Moderate: signs 3 or 3+4

- Low: sign 4 or no signs

4.2.3 Functional assessment

- PEM & other forms of malnutrition are known to be associated with loss in immune function, muscle weakness, fatigue, impaired mobility, & cognitive dysfunction
- Functional status is special concern among frail elderly, because of its strong correlation with nutritional status

Functional assessment cont...

- In institutionalized elderly, self care skills are often appraised by a questionnaire on activities of daily living
 - Dressing, eating, walking, toileting, & bathing
- For independently living elderly, functional status can be assessed by a questionnaire regarding instrumental activities of daily living
- Shopping, housekeeping range, food preparation, finance range, medication range, transportation range, use of telephone

- Write the **two limitations** of physical examinations
- What does it mean physical signs are **non specific**
- what is the difference between **sign and symptom**