



SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF PHYSICIAN ASSISTANT

COURSE NAME: SURGERY

II YEAR

UNIT II

TOPIC : Protein Energy Malnutrition



Definition



- According to World Health Organization, protein energy malnutrition (PEM) refers to “an imbalance between the supply of protein and energy and the body's demand for them to ensure optimal growth and function



Classification



PEM can be classified into two types:

- Primary PEM
- Secondary PEM



Primary PEM



This type of protein-energy malnutrition is found in children. It is rarely found in the elders, the main cause being depression. It can also be caused due to child or elder abuse. In children, PEM is primarily of two types:

- Kwashiorkor
- Marasmus



Kwashiorkor



- This occurs due to the abandonment of breastfeeding before the actual age due to the birth of a younger sibling.
- Kwashiorkor may also be the outcome of acute illness such as gastroenteritis. It is confined only to a few parts of the world such as rural regions of Africa, Pacific Islands, Caribbean. In these places, the food is low in protein and high in carbohydrates.
- It causes leakage of the cell membrane, releasing the intravascular fluid and proteins. This results in oedema.
- It weakens the immunity of a person, making him susceptible to diseases.



Marasmus



- Weight Loss
- Fat and muscle depletion
- Most common in developing countries.
- More common than Kwashiorkor
- Prevalent in children younger than those affected by Kwashiorkor
- Cell-mediated immunity is impaired, making the children more susceptible to infections.



Secondary PEM



Secondary PEM

- It is caused due to disorders in the gastrointestinal tract.
- It can be caused due to infections, hyperthyroidism, trauma, burns, and other critical illnesses.
- It decreases appetite and impairs nutrient metabolism.



Clinical features



- Apathy and irritability
- Impaired cognition and consciousness.
- Temporary lactose deficiency
- Diarrhoea
- Gonadal tissues atrophy
- Shrinking of muscles
- Protrusion of bones
- The skin gets thin, pale, dry, inelastic and cold
- Hair fall
- Impaired wound healing
- Risk of hip fractures and ulcers increases in elderly patients



Treatment goals



- **acute phase-resuscitation**
- **initiation of cure**
- **rehabilitation phase**
- **catch-up growth**
- **transfer to 'family-type' diet.**



Prevention



ii NATIONAL LEVEL

- Nutrition supplementation
- Nutritional surveillance
- Nutritional planning

iii COMMUNITY LEVEL

- Health & nutrition education
- Promotion of education & literacy
- Growth monitoring
- Integrated health package
- Family planning programs