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NURSING

Foundation-II

As per the Revised Nursing Syllabus





I Clement

2nd Edition

JAYPEE

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CHAPTER

Nutritional Needs

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- Assessment of Nutritional Status
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- Review on Therapeutic Diets
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- Meeting Nutritional Needs: Principles, Equipment, Procedure, Indications
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  - Enteral: Nasogastric/Orogastric, Introduction to Other Enteral Feeds Types, Indications, Gastrostomy, Jejunostomy
  - Parenteral—TPN

TERMINOLOGY

- **Anorexia:** Loss of appetite.
- **Dyspepsia:** Indigestion, a feeling of fullness, discomfort, nausea and anorexia
- **Dysphasia:** Difficulty in swallowing
- **Nausea:** A sensation of sickness with inclination to vomit.
- **Nutrients:** Constituents of food, e.g., carbohydrate, protein, fat minerals, vitamins and water.
- **Regurgitation:** Back flow, e.g., back flow of partly digested food into the mouth from the stomach.
- **Vomiting:** Expulsion of stomach contents via the esophagus and the mouth.
- **Soft diet:** A diet that is soft in texture, low in residue, easily digested, and well tolerated. It provides the essential nutrients in the form of semisolid foods, such as eggs, cheese, custards and puddings, pureed vegetables, ground beef and lamb, fowl, fish; mashed, boiled or baked potatoes; soft-cooked cereals, and breads.
- **Therapeutic diet:** Normal diet which is modified to meet the altered requirements resulting from disease or injury; diet used in the treatment of a disease.
- **Low-oxalate diet:** A diet which excludes consumption of foods that are rich in oxalates, such as beans, chocolate, cocoa, potatoes, spinach, tea and tomatoes (chemicals found in plant foods). This diet is prescribed for patients with urinary calculi composed of oxalate.
- **Obesity:** The generalized accumulation of excess adipose tissue in the body resulting in an increase of more than 20% of the desirable weight (ideal body weight). Obesity results when there is positive energy balance where the intake of calories (from food) is more than the expenditure of calories (physical activity).
- **Oliguric phase:** The early phase of acute renal failure when urine volume is reduced.
- **Parenteral nutrition:** The administration of nutrients by a route other than the alimentary canal, such as subcutaneously, intravenously, intramuscularly or intradermally. The parenteral fluids usually consist of physiologic saline solution with glucose, amino acids, electrolytes, vitamins, and medications.
- **Polydipsia:** Excessive thirst due to loss of body fluids, especially from the urine, as seen in diabetes mellitus.
- **Polyphagia:** Swallowing abnormally large amounts of food at a meal. Excessive appetite as in diabetes mellitus.
- **Polyuria:** Excessive secretion and discharge of urine as seen in diabetes mellitus.
- **Self-monitoring:** An important component of behavior modification in weight management. It includes maintaining a daily record of the place and time of food intake, as well as accompanying thoughts and feelings which stimulate food intake, It helps to identify physical and emotional settings in which eating occurs.
- **Food allergy:** Also referred to as food sensitivity. Any immunologically mediated adverse reaction related to the chemical composition of foods and their additives resulting from antigen-antibody combination.
- **Food exchanges:** Food exchanges are used to bring variety to the diet and to suit the family's economic capacity. Foods approximately containing the same calorie and protein

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values are grouped together, so that any item in that group can be chosen while formulating the daily menu. Food exchanges are specifically useful for patients with diabetes.

- **Food poisoning:** Any of a large group of toxic processes that result from the ingestion of a food contaminated by toxic substances or by bacteria that contain toxins. Kinds of food poisoning include salmonella food poisoning, mushroom poisoning and shellfish poisoning.
- **Nutrition status:** It is defined as the extent to which a customary diet meets the body's requirement. In other words, it signifies the condition of body after the consumption of food.
- **Amino acids:** Amino acids are the building blocks of proteins. The body produces many amino acids and others come from food. The body absorbs amino acids through the small intestine into the blood. Then the blood carries them throughout the body.
- **Calories:** A unit of energy in food. Carbohydrates, fats, protein, and alcohol in the foods and drinks we eat provide food energy or "calories."
- **Carbohydrates:** Carbohydrates are one of the main types of nutrients. Your digestive system changes carbohydrates into glucose (blood sugar). Your body uses this sugar for energy for your cells, tissues and organs.
- **Bioavailability:** Bioavailability is the ease at which a substance can be absorbed from the digestive tract and into the bloodstream.
- **Body mass index (BMI):** BMI is a measure of a person's body size by calculating their weight in relation to their height. BMI = kg/m^2
- **Dehydration:** Dehydration occurs when body water loss exceeds intake. This generally occurs due to insufficient water consumption or increased water loss due to vomiting, diarrhea or excessive sweating. Symptoms include thirst, headaches, dry lips, lack of concentration. Mild dehydration can occur before you notice any symptoms.
- **Diabetes:** Diabetes mellitus is a disease caused by the inability of the body to control the amount of sugar (glucose) in the blood. Type 1 diabetes results from the body inability to produce insulin in the pancreas and Type 2 diabetes is due to the body cells developing resistance to insulin.
- **Allergic reaction:** Immunologically-induced tissue response to a foreign substance (allergen).
- **Alpha-linolenic acid:** 18 carbon fatty acid with three double bonds; the first double bond is on the third carbon atom from the methyl end, and therefore, it is called n-3 fatty acid. It is abbreviated as 18:3 n-3.
- **Amino acid:** The fundamental building block of proteins.
- **Anabolism:** Process by which complex materials in tissues and organs are built up from simple substances.
- **Antioxidants:** A group of substances that prevent the damage caused by the oxidation of fatty acids and proteins by oxygen free radicals.
- **Balanced diet:** A diet containing all essential (macro and micro) nutrients in optimum quantities and in appropriate proportions that meet the requirements.
- **Beta-carotene:** A yellow-orange plant pigment which yields vitamin A by oxidation in the body.
- **Bifidus factor:** A substance in human milk which stimulates the growth of a microorganism (*Lactobacillus bifidus*) in the infants' intestine.
- **Body mass index:** Body weight in relation to height. Body weight in kilograms divided by 2 heights in meters.
- **Calorie:** Unit used to indicate the energy value of foods. Quantitative requirements are expressed in terms of energy, i.e., kilocalories (Kcals). Newer unit for energy is Kjoules.
- **Catabolism:** Process of breakdown of complex organic constituents in the body.
- **Cholesterol:** A lipid constituent of blood and tissues derived from diet as well as from synthesis within the body.
- **Colostrums:** The milk produced by mammals during the first few days after delivery.
- **Empty calories:** Term used for foods that provide only energy without any other nutrient, e.g., white sugar and alcohol.
- **Enzymes:** Biological catalysts which enhance the rate of chemical reactions in the body.
- **Essential fatty acids (EFA):** Fatty acids, such as linoleic acid and alpha linolenic acid which are not made in the human body and must be supplied through the diet.
- **Fatty acids:** Fundamental constituents of many lipids.
- **Fiber:** Collective term for the structural parts of plant tissues which are resistant to the human digestive enzymes.
- **Flavonoids:** Pigments widely distributed in nature in flowers, fruits and vegetables.
- **Food exchange:** Foods are classified into different groups for exchange. Each "exchange list" includes a number of measured foods of similar nutritive value that can be substituted inter-changeably in meal plans.
- **Free radicals:** Highly reactive oxygen-derived species formed in the body during normal metabolic processes. They have the capacity to damage cellular components by oxidation.
- **High-density lipoproteins (HDL):** These transport cholesterol from the extrahepatic tissues to the liver. They are anti-atherogenic.
- **Hormones:** Substances produced by a gland (endocrine) which are secreted directly into the blood stream to produce a specific effect on another organ.
- **Hyperlipidemia:** An increase in the concentration of blood lipids (triglycerides and cholesterol).
- **Invisible fats:** Fat present as an integral component of plant and animal foods, such as in cereals, legumes and spices.
- **Lactoferrin:** Minor protein of milk containing iron.
- **Lactose intolerance:** Disorder resulting from improper digestion of milk sugar called lactose, due to lack of an enzyme, lactase, in the intestinal mucosa.

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- **Linoleic acid:** Fatty acid containing 18 carbon atoms and two double bonds. The first double bond is on the sixth carbon atom from the methyl end. Therefore it is called n-6 fatty acid and is abbreviated as 18:2 n-6.
- **Lipids:** A technical term for fats. They are important dietary constituents. The group includes triglycerides, steroids, cholesterol and other complex lipids.
- **Lipoproteins:** Lipids are not soluble in blood; they are therefore transported as lipid and protein complexes.
- **Low-density lipoproteins (LDL):** These transport cholesterol from the liver to tissues. High blood levels indicate that more cholesterol is being transported to tissues.
- **Macrocytic anemia:** Anemia characterized by red blood cells which are larger than normal.
- **Macronutrients:** Nutrients, such as carbohydrates, proteins and fats which are required in large quantities.
- **Metabolism:** Includes catabolism and anabolism.
- **Microcytic anemia:** Anemia characterized by red blood cells which are smaller than normal.
- **Micronutrients:** Nutrients which are required in small quantities, such as vitamins and trace elements.
- **Monounsaturated fatty acids:** Unsaturated fatty acids with one double bond. n-6 PUFA—Linoleic acid and its longer chain polyunsaturated fatty acids are collectively called n-6 PUFA. n-3 PUFA—alpha-linolenic acid and its longer-chain polyunsaturated fatty acids are collectively called n-3 PUFA.
- **Phytochemicals:** General name for chemicals present in plants.
- **Polyunsaturated fatty acids (PUFA):** Unsaturated fatty acids with two or more double bonds.
- **Processed foods:** Foods that are produced by converting raw food materials into a form suitable for eating.
- **Protein energy malnutrition (PEM):** A marked dietary deficiency of both energy and protein resulting in undernutrition.
- **Recommended dietary allowances (RDA):** The amounts of dietary energy and nutrients considered sufficient for maintaining good health by the people of a country.
- **Refined foods:** Foods which have been processed to improve their appearance, color, taste, odor or keeping quality.
- **Saturated fatty acids:** Fatty acids containing maximum number of hydrogen atoms that each carbon atom can carry. They do not have double bonds.
- **Satiety:** Feeling of satisfaction after food intake.
- **Trans-fatty acids:** Are mainly produced during hydrogenation of oils; a few also occur naturally in very small quantities.
- **Triglycerides (neutral fat):** The major type of dietary fat and the principal form in which energy is stored in the body. A complex of fatty acids and glycerol.
- **Unsaturated fatty acids:** Fatty acids in which there is a shortage of hydrogen atoms. The carbon atoms then become linked by double bonds. Unsaturated fatty acids are less stable than saturated fatty acids.
- **Visible fats:** Fats and oils that can be used directly or in cooking.
- **Weaning foods:** Foods which are used during gradual transition of the infant from breastfeeding to a normal diet.
- **Orogastric tube (OGT)**: Thin soft tube passed through a child's mouth, through the oropharynx, through the esophagus and into the stomach
- **Nasogastric tube (NGT):** Thin soft tube passed through a child's nose, down the back of the throat, through the esophagus and into the stomach.
- **Gastrostomy tube**: A feeding tube which is inserted endoscopically or surgically through the abdominal wall and directly into the stomach.
- **Temporary balloon device (G-Tube):** A gastrostomy tube
- **Percutaneous endoscopic gastrostomy tube (PEG):** A gastrostomy tube which is held in place with an internal fixator
- **Gastrostomy-button (mickey-button):** Skin level button gastrostomy tube inserted into a pre-formed stoma.
- **Gastric residual volume (GRV's):** The amount of fluid aspirated from the stomach via an enteral tube to monitor gastric emptying, tolerance to enteral feeding and abdominal decompression. Once removed it may be returned to the patient or discarded.
- **Transanastomotic tube (TAT tube):** Utilized after surgery to repair esophageal atresia inserted by surgeons in the neonatal patient population.

Figure 3.1 depicts the concepts of nutrition.

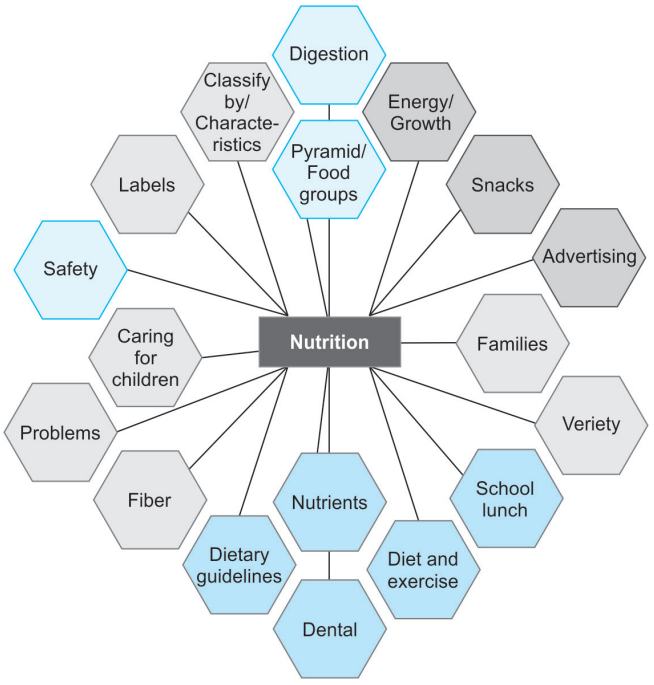

Fig. 3.1: Nutrition related concepts.

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INTRODUCTION

Nutrition is the science of food values. It is relatively a new science, which was evolved from chemistry and physiology. The effect of food in our body is explained in nutrition. In other words, nutrition is defined as food at work in the body. In a broader sense nutrition is defined as "the science of foods, the nutrients and other substances their action, interaction, and balance in relationship to health and diseases, the process by which the organism ingests, digests, absorbs, transport and utilizes nutrients and dispose off their end products, in addition nutrition must be concerned with the social, economic, cultural and psychological implication of food and eating."

NUTRITION AND HEALTH (FIG. 3.2)

Definitions

1. Nutrients are defined as the constituents of food, which perform important functions in our body. If these nutrients are not present in our food in sufficient amount, the result is ill health. Important nutrients include carbohydrates, proteins lipids, vitamins, minerals, and water.
2. Food also contains many substances, which are non–nutrients, e.g., coloring and flavoring substances in food.
3. **Dietetics:** It is the branch of science that deals with the practical application of the principles of nutrition in health which is required to the human body.

Functions of Food (Fig. 3.3)

1. **Physiological functions (Box 3.1)**
   - Supplies nutrients for energy. Energy nutrients include carbohydrates, fats and proteins.

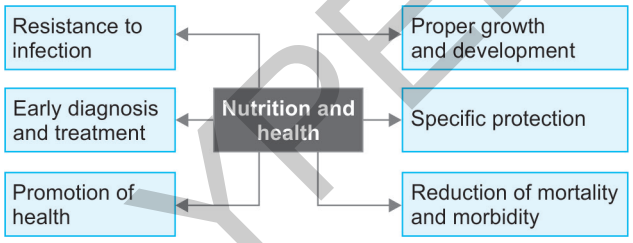

Fig. 3.2: Nutrition and health.

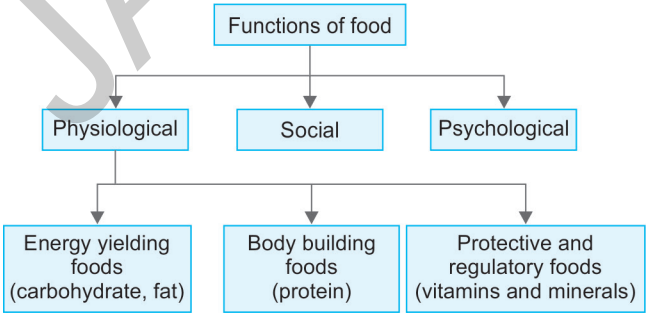

Fig. 3.3: Functions of food.

Box 3.1: Physiological functions.

- They give a sense of comfort, security, love and attention
- Sharing of food among friend is a token of friendship and acceptance
- Friendly get together help in introducing us to new foods
- Foods are associated with emotions, such as sweets and chocolates for celebration
- Food is used for reward and punishment
- Body building or growth
- Providing energy
- Regulation of body process (beating of the heart, etc.)
- Protective function (recovery from diseases)
- Maintenance and repairs

   - Supplies nutrients to build and maintain body tissues, nutrients needed in building and maintaining body are proteins, minerals and water.
   - Supplies nutrients needed for regulatory body processes. All the nutrients, except carbohydrates, play an important role in the regulation of body process, such as circulation of food, maintenance of body temperature and digestion, etc.
2. **Social function:** Food is served at many social events, such as teas, breakfasts, banquets, athletic award dinners, dances and meeting of all sorts. On all these occasions, food indirectly serves as an instrument to develop social support **(Box 3.2)**.
3. **Psychological function:** Besides other functions, food satisfies certain emotional needs also. People often find it difficult to get adjusted to unfamiliar food, although it may be nutritionally sound. Traditional habits are characterized by certain foods, which are pleasing to persons of one culture and distasteful those of another.
4. **Relationship of food to main functions:** Nutrition does the process or an activity by which the human body receives and uses all the food necessary for its growth, development and functions or activities.
   - Food supplies heat and energy for work and play.
   - Food supplies materials for growth and repair of the body.
   - Food supplies materials for regulation or control of body process and for protection of the body. All people are familiar with food but in order to understand now

Box 3.2: Social function.

- Food serves as a reason for get togethers.
- Temples, gurudwaras serve same food to all.
- Birthdays, marriage and others celebrations become reasons to serve food.
- Males are given more and better food due to their higher status in the society.
- Refreshments served at get togethers bring more people together rather then dividing them.
- Food planned must be wholesome and enjoyable.

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different foods are used in the body it is necessary to know what substances or materials are present in food. These substances are called nutrients. The nutrients present in food these substances proteins, fats, minerals elements and vitamins.

Physiological Functions of Food

1. **Energy yielding foods:** Foods rich in carbohydrates and fats are called energy yielding foods. They provide energy to sustain the involuntary processes essential for continuance of life, to carry out various professional, household and recreational activities and to convert food ingested into usable nutrients in the body. The energy needed is supplied by the oxidation of foods consumed. Cereals, roots and tubers, dried fruits, oils, butter and ghee are all good sources of energy.
2. **Body building foods:** Foods rich in protein are called body building foods. Milk, meat, eggs and fish are rich in proteins of high quality. Pulses and nuts are good sources of protein but the protein is not of high quality. These foods help to maintain life and promote growth. They also supply energy.
3. **Protective and regulatory foods:** Foods rich in protein, minerals and vitamins are known as protective and regulatory foods. They are essential for health and regulate activities, such as maintenance of body temperature, muscle contraction, control of water balance, clotting of blood, removal of waste products from the body and maintaining heartbeat. Milk, egg, liver, fruits and vegetables are protective foods.
4. **Social functions of food:** Food has always been the central part of our community, social, cultural and religious life. It has been an expression of love, friendship and happiness at religious, social and family get-togethers.
5. **Psychological functions of food:** In addition to satisfying physical and social needs, foods also satisfy certain emotional needs of human beings. These include a sense of security, love and acceptance. For example, preparation of delicious foods for family members is a token of love and affection.

IMPORTANCE OF NUTRITION

Nutrition plays a great role in our daily life. The food or liquids affect our body and health because each food or liquid contain particular nutrition which is very necessary for our physical and mental growth. A particular level of any particular nutrition is essential for our body. Good nutrition can help:

1. Reduce the risk of some diseases, including heart disease, diabetes, stroke, some cancers, and osteoporosis
2. Reduce high blood pressure
3. Lower high cholesterol
4. Improve the well-being
5. Improve the ability to fight off illness
6. Improve the ability to recover from illness or injury
7. Increase the energy level

FACTORS AFFECTING NUTRITIONAL NEEDS

1. Age
2. Gender
3. Health status
4. Lifestyle
5. Mood and interest
6. Nutritional type (veg and nonveg)
7. Efficiency and activity of metabolism
8. Economic status
9. Education
10. Genetic factors
11. Ill health
12. Body size and weight
13. Basal metabolic rate (BMR)
14. Cultural norms and beliefs
15. Medication
16. Environmental factor
17. Physical activity
18. Climate
19. Pregnant and lactating mother
20. Religion
21. Socioeconomic factors
22. Traditional factor and traditional believes and customs

Basic Food Groups

A well-balanced diet contains food from the basic food groups:

- Milk and milk products
- Meat, fish and poultry
- Bread and cereals
- Fruits and vegetables

Figure 3.4 illustrates the nutrients in the body.

Purpose

- Food gives nourishment to body.
- It gives a feeling of security.
- It is used to promote a feeling of social acceptance.
- It is vitally important for our physical well being.
- Food is the fuel with which we run our bodies.

Figure 3.5 shows the food guide pyramid.

Essential Nutrients

- **Carbohydrates**: These are used as a source of energy. All cereals and root vegetable contain carbohydrates.
- **Fats**: They also are a source of energy. They are found in animals and plant seeds also in egg and milk.
- **Proteins**: The function of proteins in human body is the release of energy and building and repair of body tissues.

Factors Affecting Appetite

The appetite is increased by:

- Sight and smell of food (attractive serving)
- Food preference (likes and dislikes of the individual)

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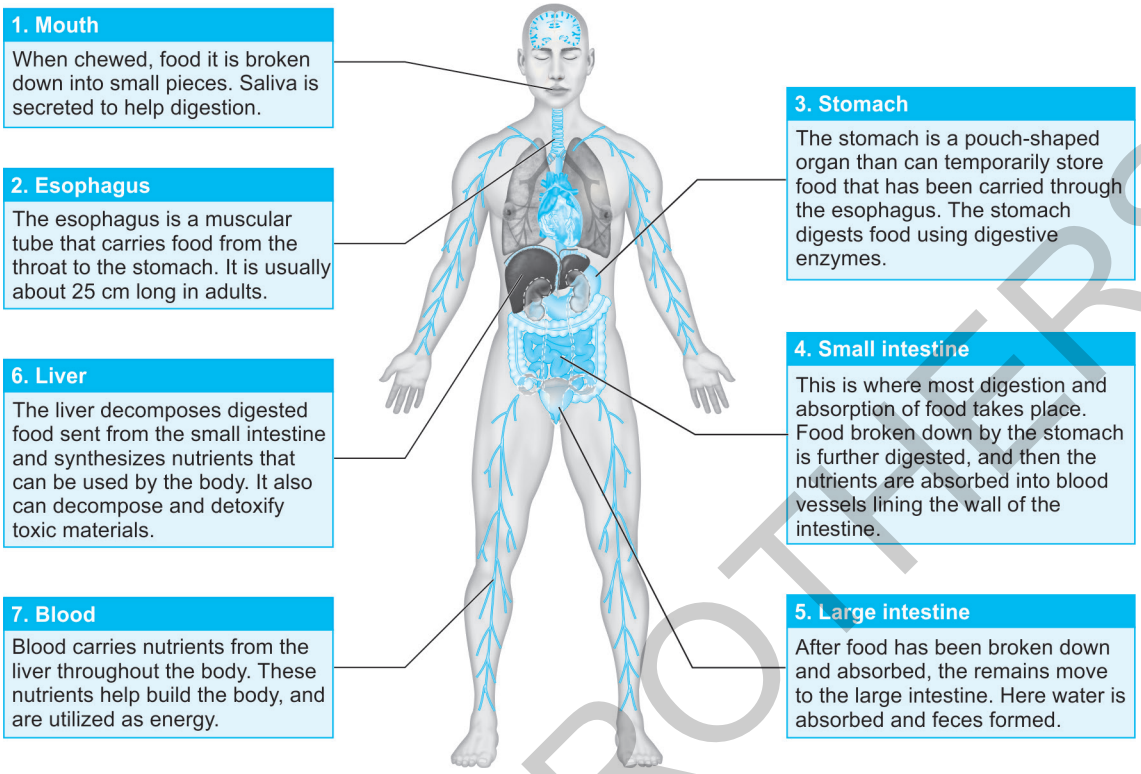

Fig. 3.4: Nutrients in the body.

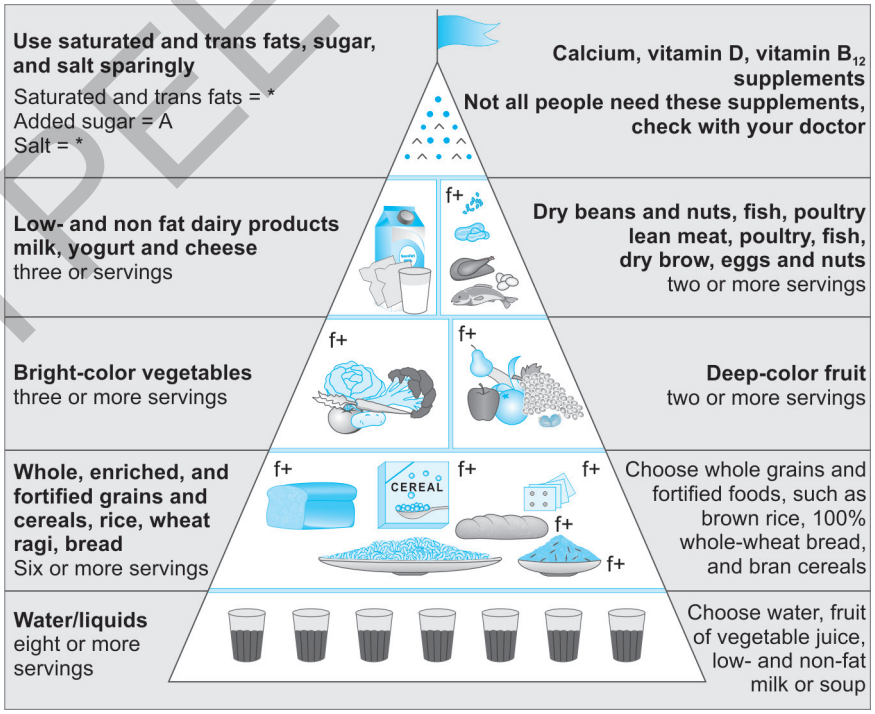

Fig. 3.5: Food guide pyramid.

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- Physical and mental relaxation (freedom from hurry, worry, pain, stress and fatigue)
- Regularity in eating (spacing of meals)
- Pleasant environment (attractive and cheerful atmosphere)
- Exercise

The appetite is decrease by:

- Physical and metal fatigue
- Hurry, worry and fear
- Unpleasant environment and experiences
- Lack of exercises
- Irregular meals
- Long spacing of meal timings
- Hospitalization

NUTRITIONAL ASSESSMENT

Nutritional anthropometry is concerned with the measurements of the variations of physical dimensions and body composition at stages of life cycle and different planes of nutrition. It is a field-oriented method, which can be easily adopted and interpreted. The basic measurements which should be made on all age groups are weight in kg, length/height and arm circumference in cm. In young children, it should be supplemented by measurements of head and chest circumference.

Figure 3.6 depicts the multidisciplinary nutritional assessment.

- **Weight:** Weight gain is an indicator of growth in children. It is measured with the help of the weighing scale. Body weight should be determined after the first void and before ingestion of food.
- **Anthropometric indices: Weight for age—**the nutritional status can be interpreted using Gomez classification as follows:
  - *Weight*
    - >90% weight for age. Normal.
    - 76–90% weight for age. Grade I malnutrition.
    - 61 <75% weight for age. Grade II malnutrition.
    - <60% weight for age. Grade III malnutrition.
  - *Linear measurements*: Two types of linear measurements are commonly used:
    1. Height or length of the whole body
    2. Circumference of the head and the chest
    - Height: The height of the individual is the sum of four components—leg, pelvis, spine and skull. For infants and children recumbent length (crown-heel length) is measured. The measurement is compared with the standards of the ICMR as to assess nutritional status.
    - The desirable birth weight and length of an infant is 3 kg and 50 cm respectively. By the time, the baby turns the first birth day, the birth weight is doubled and an increment of 25 cm in length is reached.
    - Head circumference: The measurement of head circumference is a standard procedure to detect pathological condition in children. Head circumference is related mainly to brain size. At birth, the circumference of head is greater than that of the chest.
    - Chest circumference: The circumference of the head and the chest are about the same at six months of age. After this, the skull grows slowly and the chest more rapidly. Therefore, between the ages of six months and five years the chest/head circumference ratio of less than one may be due to failure to develop or due to wasting of muscle and fat of chest. In nutritional anthropometry, the chest/head circumference ratio is of value in detecting under nutrition in early childhood.

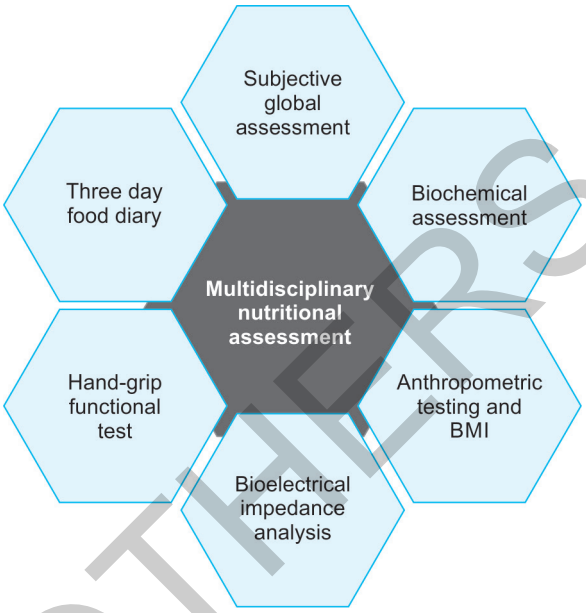

Fig. 3.6: Multidisciplinary nutritional assessment.

Measurements	*Age groups*	*Advantage*	*Disadvantage*
Weight	All	Common in use	Difficult in field; Cannot tell body composition; need accurate age; need proper scale
Height	All	Common in use Simple to do in field	Differs by day time: Others factors play a role
Head circum-ference	0–4 years	Simple	Other factors play a role
MUAC	All	Simple; age dependent; child need not to be denuded; suitable for rapid survey	No limits for over nutrition and no standard for adult

Contd…

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Measurements	*Age groups*	*Advantage*	*Disadvantage*
Skin-fold thickness	All	Measure body composition; detect obesity in adults	Need expensive callipers; difficult with the child and in the field
Chest-head ratio	1–2 years	Simple; age independent	For limited age; no classification method

- **Mid upper arm circumference (MUAC):** Mid upper arm circumference at birth in a healthy child is between 10–11 cm. Over the first year, the increment in MUAC is 3 to 4 cm as the muscles of the arms start to develop. In the preschool age, the increase in MUAC is only one cm. Hence, there is not much difference between the MUAC of a 3 year old from that of a 5 year old. So MUAC is an age independent index. The field workers in nutrition in our country have fixed the desirable value for MUAC as 12 cm for Indian preschool children.

The WHO has recommended 14 centimeter as a desirable value for MUAC for preschool children. Hence in screening malnourished children in a community, this method is used with ease. When the value of MUAC is less than 12 cm among 1–5 year old children, they are designated as malnourished. In the field condition, a bangle with a diameter of 4 centimeter can be used as a tool to detect malnutrition. When the bangle moves smoothly over the mid-upper arm of the child, it indicates malnutrition. The bangle test can be conducted with ease in field condition to screen malnourished children.

CARE OF PATIENT WITH DYSPHAGIA (FIG. 3.7)

Nutrition therapy is important for a patient who is having trouble swallowing, which affects the types and amounts of food he can eat. Because this patient is at risk for aspiration, a speech therapist should recommend the types and consistency of foods that would be safest for him.



Fig. 3.7: Care of patient with dysphagia.

Besides dietary recommendations, other interventions that can help ensure adequate nutrition include:

- Providing mouth care immediately before meals to help improve taste
- Encouraging the patient to rest before meals so he is not too tired to eat
- Offering him small, frequent meals
- Minimizing or eliminating distractions so he can focus his attention on eating and swallowing
- Placing him in high Fowler's position and having him tilt his head forward to help ease swallowing
- Using adaptive devices, such as mugs with spouts, as necessary. But avoid using straws, which can cause more liquid to flow into the mouth than the patient can handle, increasing the risk of aspiration.
- Encouraging him to take small bites and to chew thoroughly
- Offering praise and encouragement during mealtimes
- Providing foods that are cool or mildly warm to stimulate the swallowing reflex
- Adding flavor as necessary to stimulate salivation
- Helping the patient select nutritious foods.

Table 3.1 shows the physiological mechanisms involved in the stage of swallowing .

The primary goals of dysphagia intervention are to:

- Support adequate nutrition and hydration and return to oral intake (including incorporating the patient's dietary preferences and consulting with family members/ caregivers to ensure that the patient's daily living activities are being considered);

Table 3.1: Physiological mechanisms involved in the stages of swallowing.

Swallowing stage	*Physiological mechanism*
1. Oral	• Food enters oral cavity • Mastication and bolus (ball-like pellet of food) formation
2. Oropharyngeal	• Soft palate elevates to seal nasopharynx • Larynx and hyoid bones move anterior and upward • Epiglottis moves posteriorly and downwards to close • Upper esophageal sphincter relaxes and opens • Tongue propels bolus into esophagus • Pharynx contracts clearing pharynx and closing upper sphincter • Larynx reopens
3. Esophageal	• Esophagus contracts sequentially • Lower esophageal sphincter relaxes • Bolus reaches stomach

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- Determine the optimum supports (e.g., posture, or assistance) to reduce patient and caregiver burden while maximizing the patient's quality of life; and
- Develop a treatment plan to improve the safety and efficiency of the swallow.

Do's

- Review the patient's medical record for risk factors for dysphagia and aspiration.
- If he is tired, your patient may have more difficulty swallowing. Wait 30 minutes, and then reassess his alertness before performing the test.
- Have suction equipment immediately available.
- Minimize environmental distractions and position him upright in a chair or elevate the head of the bed 60 to 90°.
- Assess his mental status and make sure he can voluntarily cough, clear his throat, and swallow saliva before proceeding with the test. If he is managing his oral secretions, offer him small bites of ice chips or sips of water from a cup or a teaspoon. Observe him carefully before, during, and after each offering for cough, drooling, voice change (especially a wet or gurgling quality), and swallowing difficulty. Stop the test immediately, if any of these occur and notify his healthcare provider.
- If he can swallow without his voice or breathing sounding wet, and without choking or coughing, proceed with a soft diet, then if tolerated to a regular diet as ordered.
- If he has difficulty tolerating water, try giving him thickened liquid (the consistency of honey) by spoon and try pureed semisolids. Observe him for choking or coughing. If tolerated, proceed with a pureed or thickened liquid diet as ordered until he is formally evaluated by a speech-language pathologist or place him on NPO status based on your observations.
- Provide diligent oral care to all patients with dysphagia, including those who are NPO.
- Notify the patient's healthcare provider of the results of the swallow screen so she can order an appropriate diet and additional testing, as indicated. Document the test results and subsequent actions in the patient's medical record.

Don'ts

- Don't offer semisolids, liquids, or solids (including oral medications) to a patient who can not swallow saliva or voluntarily cough and clear his throat.
- Don't leave the patient unattended during the test.
- Don't administer sedatives and hypnotics, if possible, because they can impair the cough reflex and swallowing.

CARE OF PATIENT WITH ANOREXIA

Anorexia nervosa is a chronic and severe disorder with a high incidence of morbidity and mortality.

Figure 3.8 depicts the anorexia affects.

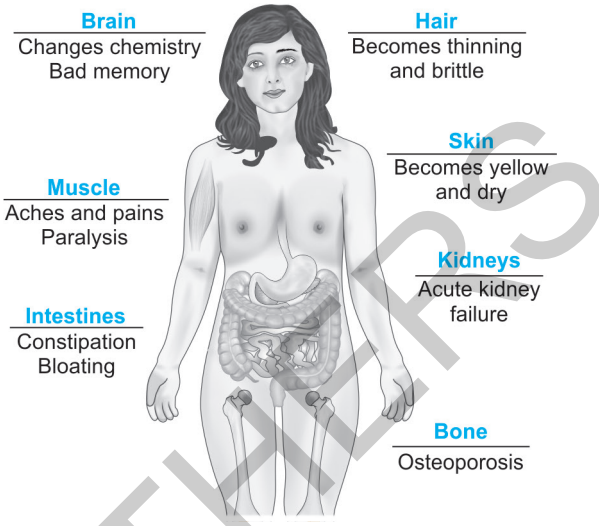

Fig. 3.8: Anorexia affects.

Individuals Who have Anorexia Nervosa

- Fear obesity;
- Have a disturbed perception of their own body image;
- Suffer significant weight loss;
- Refuse to maintain normal body weight.

The age of onset is usually adolescence but anorexia can affect individuals from pre-puberty to middle age. The condition primarily affects young women but there is an increase in the disorder among younger males and nurses need to be aware of this.

In some people, anorexia may occur as an acute episode but it can become a chronic condition suffered over many years.

Signs and symptoms to look out for include

- Weight loss;
- Refusal to eat;
- Appetite loss;
- Fear of becoming obese;
- Self-induced vomiting;
- Difficulty in swallowing;
- Use or abuse of laxatives;
- Constipation;
- Preoccupation with food, weight loss and/or body image.

Physical problems that stem from the condition—some of which can become life-threatening—include electrolyte imbalance, bradycardia, hypotension, hypothermia, fatigue, edema and amenorrhea.

Figure 3.9 shows the principles of various treatment modalities of eating disorders.

Role of the Nurse

- Having knowledge and understanding will enable nurses to monitor food intake and observe for potential eating

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Fig. 3.9: Eating disorder treatment principles.

disorders. Treatment will depend on an individual's symptoms and relate specifically to the individual problem.

- It is essential to observe patients' nutritional status as eating disorders can be life threatening. It is also important to ensure they maintain adequate nutrition and electrolyte balance. If an eating disorder has been identified, the nurse must monitor weight on a regular basis.
- This can be achieved by encouraging the supervision of patients during and after mealtimes in order to prevent vomiting after eating. Setting time limits for each meal will help to set realistic expectations and encourage a relaxed atmosphere at mealtimes that will, in turn, help to reduce stress and anxiety.
- It is essential to monitor patients' elimination pattern as excessive use of diuretics and laxatives is common among patients with eating disorders. As a consequence, patients may require intervention to treat constipation.
- Monitoring skin condition for breakdown and poor healing is an important part of the nurse's role. A lack of protein, needed to aid tissue repair, makes the skin more likely to break down. In addition, it is vital that good oral hygiene is achieved as recurrent vomiting may cause dental problems.
- Finally, it is important to monitor patients' activity levels. With anorexia they may undertake excessive exercise that can be detrimental to their physiological state. Additionally, if they also have a physical illness, excessive exercise could slow their recovery.

CARE OF PATIENT WITH NAUSEA

Nausea defined as an unpleasant, wavelike sensation in the back of the throat, epigastrium, or throughout the abdomen that may or may not lead to vomiting.

Defining Characteristics

The nursing diagnosis is characterized by the following signs and symptoms:

- Allergy to food
- Excessive salivation
- Gagging sensation
- Increased swallowing
- Reports of nausea
- Sour taste in the mouth

Assess Characteristics of Nausea

- History
- Duration
- Frequency
- Severity
- Precipitating factors
- Medications
- Measures used to alleviate the problem

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Interventions

- Eat small, frequent meals. This may mean eating small amounts of food every 2–3 hours.
- Choose bland, non-spicy, non-fatty foods.
- Avoid foods that have caused nausea in the past.
- Remain sitting up or standing within one hour of eating. Do not lay down right after eating.
- Avoid foods with strong odors. Eat foods that are cool or can be eaten at room temperature as this will decrease the smell of these foods.
- Try dry foods, such as crackers or toast. If you have nausea before getting out of bed, try having a cracker or two before getting up from bed.
- Avoid cooking methods that cause strong odors. Avoid using a crock-pot for cooking or cooking soups/stews as these will fill the house with cooking odors for a long period of time.
- Make sure to drink liquids to prevent dehydration. If possible, choose fluids with additional calories and protein.
- Avoid eating your favorite foods when you are extremely nauseated. This will allow you to still enjoy this food after your nausea has subsided.
- Try using ginger or ginger products, such as ginger tea or ginger ale. You can also try ginger aromatherapy.
- Drink liquids in between meals/snacks.

Table 3.2 depicts the nursing care plan on nutritional deficiencies.

CARE OF PATIENT WITH VOMITING

Vomiting is a complex reflex that is mediated by the vomiting center in the medulla oblongata of the brain.

Vomiting is spending gastric contents exclusively through the mouth with the help of contraction of the abdominal muscles **(Fig. 3.10)**. Necessary to distinguish between regurgitation, rumination, or gastresophageal reflux.

Nursing Diagnoses that may arise

- Fluid volume deficit related to loss of active liquid.



Fig. 3.10: Patient complains of vomiting.

Table 3.2: Nursing care plan on nutritional deficiencies.

Assessment	*Diagnosis*	*Inference*	*Planning*	*Intervention*	*Rationale*	*Evaluation*
Subjective: "Nagsusuka ako" as verbalized by patient. Objective: • Hyperactive bowel sounds • Pale conjunctiva and mucus membrane • V/S taken as follows: T: 36.6 P: 98 R: 18 BP: 110/90	Nutrition imbalanced less than body requirements related to nausea and vomiting	Nausea and vomiting are not diseases, but rather are symptoms of many different conditions, such as infection (stomach flu) food poisoning, motion sickness, overeating, blocked intestine, illness, concussion or brain injury, appendicitis, and migraines. Nausea and vomiting can sometimes be symptoms of more serious diseases, such as heart attacks, kidney or liver disorders, central nervous system disorders, central nervous system disorders, brain tumors, and some forms of cancer	After 3 days of nursing interventions, the client will be able to maintain usual weight	**Independent:** • Auscultate bowel sounds, nothing absence or hyperactive sounds • Eliminate smells from the environment • Avoid foods that might cause or exacerbate abdominal cramping like caffeinated beverages, chocolate, orange juice • Measure abdominal girth • Observe skin or mucous membrane dryness, and turgor. Note peripheral edema	• Inflammation or irritation of the intestine may be accompanied by intestinal hyperactivity diminished water absorption and diarrhea • Reduces gastric stimulation and vomiting response • Might increase abdominal cramping • Provides quantitative evidence of changes in gastric or intestinal distention • Hypovolemia, fluid shifts and nutritional deficits contribute to poor skin	After 3 days of nursing interventions, the client will be able to maintain usual weight

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- **Imbalanced nutrition**: less than body requirements related to absorption disorders.
- Nausea related to gastric irritation.
- Ineffective tissue perfusion related to hypovolemia.
- Risk for Impaired skin integrity related to disruption of metabolic status.
- Anxiety related to changes in health status.

Nursing Care Plan for Vomiting

Nursing Diagnosis-1

Fluid volume deficit related to loss of active liquid.

- **Goal**: Fluid and electrolyte deficit is resolved.
- **Expected outcomes**: Signs of dehydration—none, mucosa of the mouth and lips moist, fluid balance.
- **Intervention:**
  - Observation of vital signs.
  - Observation for signs of dehydration.
  - Measure the input and output of fluid (fluid balance).
  - Provide and encourage the family to drink a lot more than 2000–2500 cc per day.
  - Collaboration with physicians in fluid therapy, laboratory tests electrolyte.
  - Collaboration with a team of nutrition in low-sodium fluid administration.

Nursing Diagnosis-2

Imbalanced nutrition—less than body requirements related to absorption disorders.

- **Goal**: Nutrients are met.
- **Intervention:**
  - Assess the extent to which the inadequate nutrition clients.
  - Rational: Analyze the causes implement interventions.
  - Estimate/calculate the calorie intake, keep the comments about the appetite to a minimum.
  - Rational: Identifying deficiencies/nutritional needs to focus on the problem and create a negative atmosphere affects the input.
  - Measure the weight as indicated.
  - Rational: Overseeing the effectiveness in diet.
  - Give eats little but often.

  Rational: Do not let boredom and nutrient intake can be increased.
- Encourage oral hygiene before eating.
  Rational: The mouth of the net increase appetite.
- Offer a drink.
  Rational: It can reduce nausea and relieve gas.
  Rational: Involve patients in planning, enables patients to have a sense of control and the drive to eat.
- Provide a varied diet.
  Rational: The food was varied client can increase appetite.

DIET IN SICKNESS

Diet is as important as medicine in the treatment of diseases. A modification in the diet or in the nutrients can cure certain diseases.

Nutrition during illness should be adequate to prevent weight loss and weakness. An acutely ill or injured patient is in danger of malnutrition.

Purpose

- To meet the metabolic needs of human body.
- To prevent dehydration.
- To improve the appetite.
- To provide adequate nutrition.
- It is necessary for the growth and maintenance of bones and other tissues.

Figure 3.11 depicts the inadequate dietary intake/disease cycle.

General Rules of Treatment

- The diet must be planned in relation to changes in metabolism occurring as a result of the disease.
- The diet must be planned to agree as nearly as possible with the patients food habits, his likes and dislikes and the amount of exercise he takes.
- Changes should be made gradually adequate explanation must be when given, it is necessary to make dietary changes gradually.
- There should be plenty or variety in the diet, hot food should be served hot and cold foods cold.

Problems during Sickness

- There will be disturbance of gastrointestinal function
- Anorexia (loss of appetite)
- Defective digestion and absorption
- Lack of exercise decreases need for energy
- The process of anabolism and catabolism are not normal in sickness.

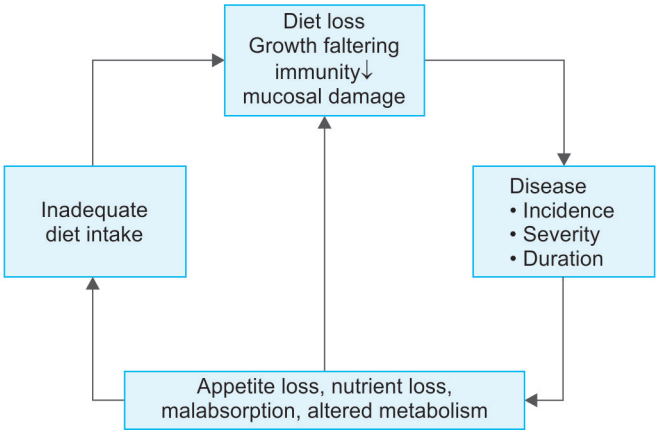

Fig. 3.11: Inadequate dietary intake/disease cycle.

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Salient Features

- Covers the entire new syllabus to meet the requirements for basic nursing, provides the strong base for nursing foundation.
- Content is presented in simple and clear English, allowing students to gain a better understanding the subject and help to excel in acquiring knowledge about the foundation of nursing.
- Helps the students to gain theoretical knowledge about the nursing foundation and serves as a guide for practicing psychomotor skills in nursing as well as developing a positive attitude towards the nursing profession.
- Curriculum based on the latest information, research findings, and evidence-based practice.
- Each of the 18 chapters includes review questions with multiple choice questions (MCQs).
- The presentation is student-teacher friendly and includes scenario-based case presentations for practical application learning.
- Content is presented in a simple, concise, and well-organized manner.
- Comprehensive approach integrates theory into practice and serves as a ready reference tool for examination point of view.
- Includes adequate diagrams, tables, images, flowcharts, mnemonics, and research highlights that are well presented for the best learning experiences.
- Provides all basic information based on established knowledge and practices, supported by sound scientific principles.
- Basic nursing serves as the base and pillar for many skilled nurse, also helps to acquire the background knowledge for a neophyte nurse.

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