

International Standard **Colored Edition**

**2nd**  
Edition

# Textbook of **Nutrition**

for GNM Nursing Students

*(As per the INC Syllabus for GNM)*

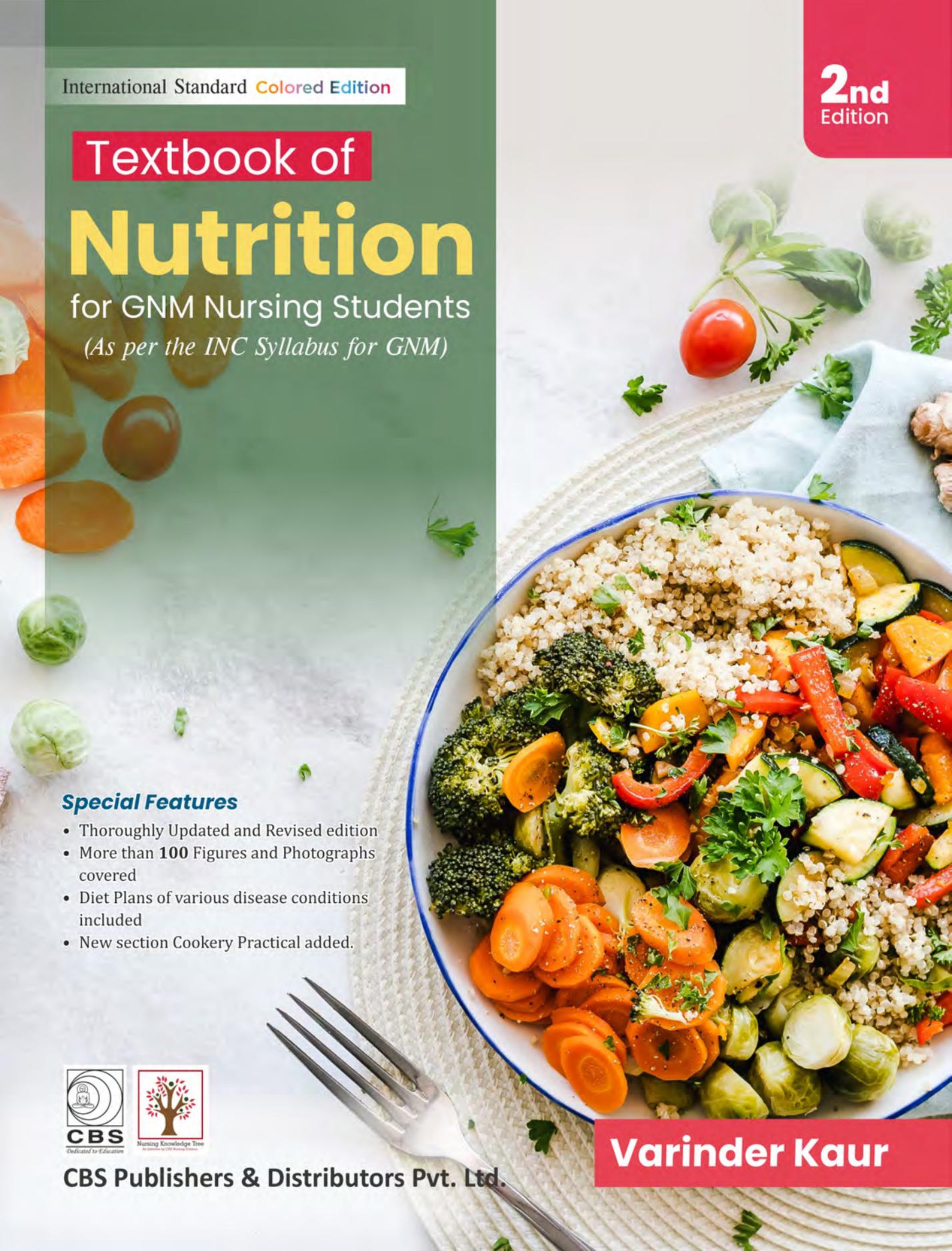
## **Special Features**

- Thoroughly Updated and Revised edition
- More than **100** Figures and Photographs covered
- Diet Plans of various disease conditions included
- New section Cookery Practical added.



**CBS Publishers & Distributors Pvt. Ltd.**

**Varinder Kaur**



Textbook of  
**Nutrition**  
for GNM Nursing Students

*(As per the Syllabus of INC)*

Second Edition

**Varinder Kaur** PhD, MSc (CHN)

Principal

Nursing Knowledge Tree  
An Institute  
HIMCAPES' College of Nursing  
Badhera, Una, Himachal Pradesh



**CBS**  
Dedicated to Education

**CBS Publishers & Distributors Pvt Ltd**

- New Delhi • Bengaluru • Chennai • Kochi • Kolkata • Mumbai
- Hyderabad • Nagpur • Patna • Pune • Vijayawada

# Preface to the Second Edition

Nutrition is a vital component for a healthy life. Nurses play a crucial role in maintaining and restoring nutrition in the individuals. The role of a nurse in nutrition is not only confined to promote healthy dietary habits but also to take care of the nutritional requirements of the people sick or healthy. Therefore, the nurses must be well-versed with all the aspects of nutrition to educate the patients as well as their family members about the importance of a healthy and nutritious diet.

Keeping in view the importance of nutrition in Nursing, this *Textbook of Nutrition for GNM Nursing Students*, 2nd edition has been designed in a very simple and lucid language and as per modified syllabus prescribed by the Indian Nursing Council (INC). Special care has been taken to include each and every topic prescribed in INC curriculum. The whole content of the book is updated keeping in mind the recent advancements in the field of health and nutrition as well as the necessity of immunity-boosting methods. Detailed diet plans related to various conditions and diseases have been included to help the nurses to apply them as and when needed in their profession. The cookery section added in this edition will surely help the students in practicals. Subjective and objective questions under the heading “Assess Yourself” have been included at the end of every chapter to assess students’ learning skills.

I hope this book will help the students in memorizing and understanding the basic concepts of nutrition. As nutrition is a vast subject to explore, any suggestions for further improvement of the book will be highly appreciated.

# Syllabus for GNM Nursing

## NUTRITION

### Course Description

This course is designed to help students understand that nutrition is an integral component of health as nutrients play a vital role in the growth, development and maintenance of the body.

### General Objectives

Upon completion of this course, the students will be able to:

- Describe the principles of nutrition and dietetics and its relationship to the human body in health and disease.
- Describe the balanced diet in promotion of health.
- Apply this knowledge in providing therapeutic diet and take care of the sick.
- Demonstrate skills in selection, preparation and preservation of food.

**Total Hours: 30**

Unit	Learning objectives	Content	Hours	Teaching learning activities	Methods of assessment
I	Describe the relationship between nutrition and health	<b>Introduction</b> <ul style="list-style-type: none"> <li>• Meaning of food, nutrition, nutrients, etc.</li> <li>• Food habits and customs</li> <li>• Factors affecting nutrition</li> <li>• Changing concepts in food and nutrition</li> <li>• Relationship of nutrition and health</li> </ul>	2	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Explain using charts</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Objective type</li> </ul>
II	Describe the classification of food	<b>Classification of food</b> <ul style="list-style-type: none"> <li>• Classification by origin               <ul style="list-style-type: none"> <li>▪ Food of animal origin</li> <li>▪ Food of plant origin</li> </ul> </li> <li>• Classification by chemical composition and sources               <ul style="list-style-type: none"> <li>▪ Carbohydrates</li> <li>▪ Proteins</li> <li>▪ Fats</li> <li>▪ Minerals</li> <li>▪ Vitamins</li> <li>▪ Water</li> </ul> </li> <li>• Classification by predominant functions               <ul style="list-style-type: none"> <li>▪ Body building food</li> <li>▪ Energy giving food</li> <li>▪ Protective food</li> </ul> </li> </ul>	2	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Real food items</li> <li>• Exhibits charts</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Objective type</li> <li>• Essay type</li> </ul>



Unit	Learning objectives	Content	Hours	Teaching learning activities	Methods of assessment
		<ul style="list-style-type: none"> <li>• Classification by nutritive value               <ul style="list-style-type: none"> <li>▪ Cereals and millets</li> <li>▪ Pulses and legumes</li> <li>▪ Vegetables</li> <li>▪ Nuts and oilseeds</li> <li>▪ Fruits</li> <li>▪ Animal food</li> <li>▪ Fats and oils</li> <li>▪ Sugar and jaggery</li> <li>▪ Condiments and spices</li> <li>▪ Miscellaneous food</li> </ul> </li> </ul>			
III	<ul style="list-style-type: none"> <li>• Explain normal dietary requirements</li> <li>• Demonstrate skill in calculating normal food requirements</li> </ul>	<p><b>Normal dietary requirements</b></p> <ul style="list-style-type: none"> <li>• <b>Energy:</b> Calorie, measurement, body mass index, basal metabolic rate—determination and factors affecting</li> <li>• <b>Balanced diet:</b> Nutritive value of foods, calculation for different categories of people, normal food requirement calculation. Menu plan. Combination of food affecting and enhancing the nutritive value of the diet.</li> <li>• Budgeting for food, low cost meals, food substitutes.</li> <li>• Diseases and disorders caused by the imbalance of nutrients.</li> <li>• Food allergy—causes, types, diet modifications in gluten, lactose and protein intolerance, etc.</li> <li>• Food intolerance—inborn errors of metabolism.</li> </ul>	4	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Charts exhibits</li> <li>• Real food</li> <li>• Practical exercise</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Essay type</li> <li>• Objective type</li> </ul>
IV	Describe the principles and various methods of preparation, preservation and storage of food	<p><b>Food preparation, preservation and storage</b></p> <ul style="list-style-type: none"> <li>• Principles of cooking, methods of cooking and the effect of cooking on food and various nutrients. Safe food handling, health of food handlers.</li> <li>• Methods of food preservation—household and commercial, precautions.</li> <li>• Food storage—cooked and raw, household and commercial, ill effects of poorly stored food.</li> <li>• Food adulteration and acts related to it.</li> </ul>	2	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Field visit to food processing unit</li> <li>• Demonstration exhibits</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Objective type</li> <li>• Evaluation of exhibit preparation</li> </ul>



Unit	Learning objectives	Content	Hours	Teaching learning activities	Methods of assessment
V	Describe about therapeutic diet	<p><b>Therapeutic diet</b></p> <ul style="list-style-type: none"> <li>• Diet modification in relation to medical and surgical condition of the individual such as Protein Energy Malnutrition (PEM), diabetes, cardiovascular disease, hepatitis, renal, gout, Irritable Bowel Syndrome (IBS), obesity, cholecystectomy, partial gastrectomy, gastrostomy, bariatric surgery and colostomy, etc.</li> <li>• Special diets—low sodium diet, fat free diet, diabetic diet, bland diet, high protein diet, low protein diet, low calorie diet, geriatric diet, iron rich diet, liquid diet, semisolid diet, soft diet and high fiber diet, etc.</li> <li>• Factors affecting diet acceptance, feeding the helpless patient.</li> <li>• Health education on nutrition needs and methods in diet modification.</li> </ul>	8	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Practical of planning therapeutic diet</li> <li>• Demonstration charts</li> </ul> <p>Exhibits</p>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Essay type</li> <li>• Objective type</li> </ul>
VI	Describe the concept of community nutrition	<p><b>Community nutrition</b></p> <ul style="list-style-type: none"> <li>• Nutritional problems and programs in India</li> <li>• Community food supply, food hygiene and commercially prepared and grown food available locally.</li> <li>• National and international food agencies—Central Food Training Research Institute (CFTRI), Food and Agriculture Organization (FAO), National Institute of Nutrition (NIN), Food Safety and Standards Authority of India (FSSAI), Cooperative for Assistance and Relief Everywhere (CARE), National Institute of Public Cooperation and Child Development (NIPCCD), etc.</li> </ul>	4	<ul style="list-style-type: none"> <li>• Lecture cum discussions</li> <li>• Videos</li> <li>• Government of India nutrition manuals</li> <li>• Visit to the local food preparation/processing agency.</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer types</li> <li>• Objective type</li> </ul>

# Special Features of the Book



## Learning Objectives

Upon completion of this chapter, students will be able to:

- ❑ Define health, nutrition, nutrients and various other terms.
- ❑ Describe factors affecting nutrition.
- ❑ Discuss changing concepts of food and nutrition.
- ❑ Describe relationship between health and nutrition.

Enlists the topics that the students will learn after studying the complete chapter.

Important terms used in the chapter are defined in the beginning of every chapter.

## Key Terms

- ❑ **Health:** According to WHO "health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."
- ❑ **Nutritional status:** It is the state of our body as a result of the food we consume.
- ❑ **Nutritional requirements:** Refer to amount of various nutrients needed by an individual to sustain a healthy life.
- ❑ **Nutrition:** Nutrition is defined as the scientific study of food and its relation to health.

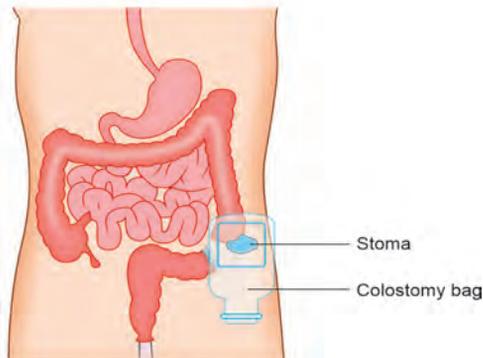


Fig. 2: Colostomy

Numerous figures and photographs are used to make learning easy.



Numerous tables are used to help students grasp the concepts quickly.

**Table 7:** Requirement of chloride as per age

Age	Chloride (g/day)
1–3 years	1.5
4–8 years	1.9
9–50 years	2.3
51–70 years	2.0
Above 71 years	1.8

**Table 11:** Sample menu plan for patients with cardiac diseases

Meals	Menu
Early morning	Green tea
Breakfast	Sāmbhar idli or poha
Midmorning	Soup (vegetable)
Lunch	Rice/chapati + green leafy vegetable + dal + salad
Evening time	Fruit chat
Dinner	Khichdi + curd or porridge
Bedtime	Skim milk

Sample menu plans for different categories are included in tabular format for quick glance.

Nursing Knowledge Tree  
An Initiative by CBS Nursing Division

Important subjective and objective questions are included at the end of each chapter to help students assess their learning.

### ASSESS YOURSELF

1. Explain various food habits and customs that can affect the nutritional status of an individual.
2. Define nutrition and enlist the factors affecting nutrition.
3. Explain the relationship of health and nutrition.
4. How has the concept of nutrition changed from past to the present era?
5. Define the following terms:
  - Food
  - Calorie
  - Balanced diet
  - Nutrients
  - Metabolism

### Multiple Choice Questions

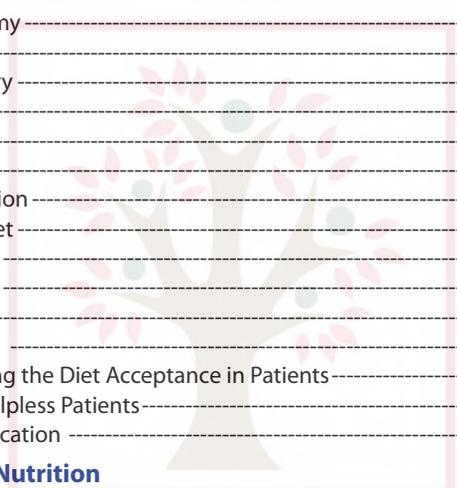
1. A substance needed by the body for growth, energy, repair and maintenance is called:
  - a. Nutrient
  - b. Calorie
  - c. Vitamins
  - d. Folic acid

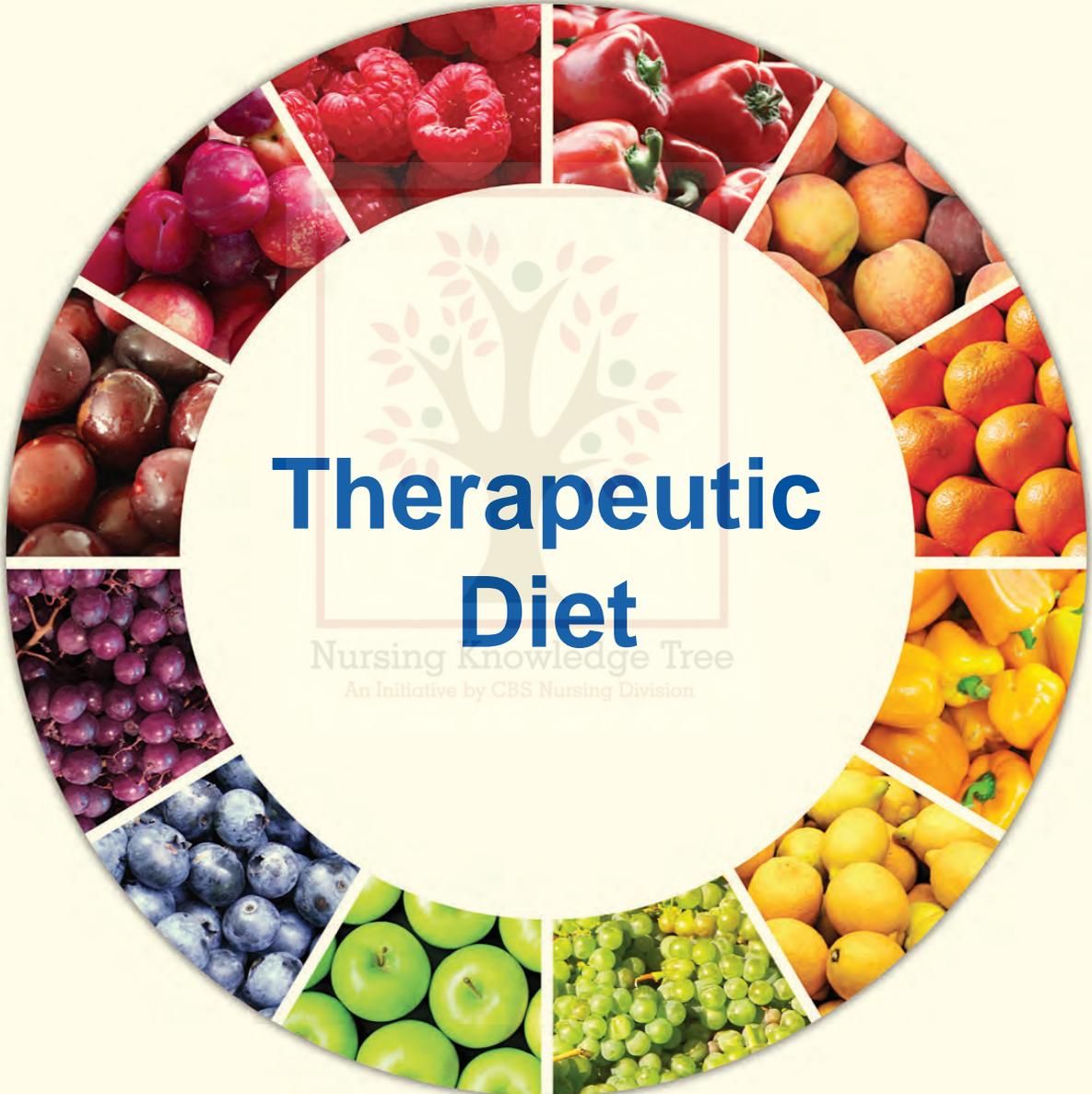
# Contents

<b>Chapter 1</b>	<b>Introduction</b>	<b>1</b>
	Introduction	2
	History and Changing Concepts of Nutrition	2
	Nutrition	4
	Nutrients	4
	Definitions	4
	Food Habits and Customs	5
	Factors Affecting Nutrition	6
	Relation between Nutrition and Health	8
<b>Chapter 2</b>	<b>Classification of Foods</b>	<b>11</b>
	Classification of Foods	12
	Classification of Food by Predominant Functions	26
	Classification of Food by Nutritive Value	27
	Fats and Oils	37
	Sugar and Jaggery	37
	Spices and Condiments	37
	Miscellaneous Foods	38
<b>Chapter 3</b>	<b>Normal Dietary Requirements</b>	<b>41</b>
	Energy	42
	Basal Metabolism	44
	Body Mass Index	46
	Balanced Diet	47
	Food Groups	47
	Menu Planning/Meal Planning	50
	Balanced Diet for Adults	54
	Diet in Pregnancy	58
	Diet for Lactating Woman	58
	Diet for Elderly or Old Age People	59
	Combination of Food Enhancing the Nutritive Value of Food	60
	Budgeting for Food	60
	Food Substitutes	61
	Food Exchange	62
	Low Cost Meals	68
	Diseases and Disorders Caused by Imbalance of Nutrients	68
	Food Allergies	73
	Food Intolerance	74
	Inborn Errors of Metabolism	77
<b>Chapter 4</b>	<b>Food Preparation, Preservation and Storage</b>	<b>83</b>
	Cooking	84
	Safe Food Handling	89
	Preservation of Food	91
	Storage of Food	94
	Food Adulteration and Related Acts	96



<b>Chapter 5</b>	<b>Therapeutic Diet</b>	<b>103</b>
	Definition	104
	Purposes	104
	Dietary Modifications	105
	Protein Energy Malnutrition	107
	Diabetes Mellitus	109
	Cardiovascular Diseases	111
	Hepatitis	114
	Renal Diseases	116
	Gout Disease	117
	Irritable Bowel Syndrome	119
	Obesity	120
	Cholecystectomy	121
	Gastrectomy	122
	Bariatric Surgery	124
	Peptic Ulcer	125
	Colostomy	127
	Special Diets	128
	Geriatric Nutrition	135
	Clear Liquid Diet	137
	Full Liquid Diet	138
	Semisolid Diet	139
	Soft Diet	140
	High Fiber Diet	142
	Factors Affecting the Diet Acceptance in Patients	143
	Feeding the Helpless Patients	144
	Nutritional Education	145
<b>Chapter 6</b>	<b>Community Nutrition</b>	<b>149</b>
	Common Definitions	150
	Nutritional Problems in India	150
	Community Nutrition Programs	155
	National Nutrition Policy	157
	Community Food Supply	159
	Public Distribution System	159
	Food Hygiene	159
	Foodborne Diseases	161
	Commercially Prepared Food	162
	Locally Grown Food	162
	National and International Food Agencies	163
<b>Chapter 7</b>	<b>Cookery Practical</b>	<b>169</b>
	Household Measurement	170
	Hot Beverages	171
	Cold Beverages	173
	Soups	178
	Egg Preparations	180
	Light Diet	182
	Salads	185
	Low Cost High Nutrition Diet	187
	World Health Organization (WHO) Nutrition Advice for Adults during the COVID-19 Outbreak	188
	<b>Annexures</b>	<b>191</b>
	<b>Index</b>	<b>201</b>





# Therapeutic Diet

Nursing Knowledge Tree  
An Initiative by CBS Nursing Division



## Learning Objectives

Upon completion of this chapter, students will be able to:

- ❑ Discuss diet modifications in relation to medical and surgical conditions.
- ❑ Explain about special diet.
- ❑ Discuss factors affecting diet acceptance.
- ❑ Discuss health education on nutritional needs.

## Key Terms

- ❑ **Protein energy malnutrition:** The term used to describe clinical disorder, resulting from deficiency of protein and energy.
- ❑ **Diabetes mellitus:** This is a group of metabolic disorder characterized by elevated blood glucose level.
- ❑ **Obesity:** It is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health.
- ❑ **Gout:** It is a form of inflammatory arthritis characterized by recurrent attacks of pain, red, tender, hot, and swollen joints.
- ❑ **Therapeutic diet:** It is a planned meal that controls or maintains the intake of certain foods or nutrients.
- ❑ **Bland diet:** The diet free from spices, condiments, and low in fiber.
- ❑ **Liquid diets:** Liquids are used in that condition where the patients are not able to take solid diet. These diets are free from the chemical and mechanical irritants.
- ❑ **Gastrostomy feeding:** It is a method through which a tube is placed in opening of the stomach. This method is rarely used. This method of feeding is used in the clients with esophageal surgery.
- ❑ **Gastrostomy:** An opening into the stomach from the abdominal wall, made surgically (stoma) for the introduction of food. A feeding device or a tube is inserted into the stomach when there is problem in taking nutrition by mouth, for example, deformity of mouth or esophagus. A bland diet and medications are given through the tube. A bland diet is designed primarily to help patients recover from gastrointestinal conditions or other medical circumstances in which improved digestion would be essential. It is generally soft, low in dietary fiber, properly cooked rather than raw, and not spicy.

## DEFINITION

A therapeutic diet is defined as a planned meal that controls or maintains the intake of certain food or nutrients. It is the part of treatment of disease conditions and are normally prescribed by the doctor and planned by the dietitian.

## PURPOSES

- To maintain and restore the nutritional status of an individual.
- To modify the nutritional needs, for example, decrease or increase calories for adequate weight maintenance.
- To provide texture modification for the patients who have chewing and swallowing problem.



- To change the consistency of food, for example, liquid, semiliquid, solid as per health status of the individuals.
- To include or exclude specific nutrient in the diet, for example, in case of certain food allergies, high protein for PEM, salt restricted diet for hypertensive patient.

## DIETARY MODIFICATIONS

In certain conditions, individuals cannot tolerate the regular diet so modification in normal diet is required. These modifications are based on texture or consistency of food items such as liquid diet, soft diet, solid diet, semisolid diet. Modification is also based on the disease condition of the patients, age, income, socio-economic status and various methods of introduction of the food.

- **Dietary modification in medical condition:** Medical conditions such as heart disease, gastrointestinal disease or endocrinal disorder need some modifications in the normal diet. In medical condition, the body metabolic rate changes hence, the diet of a normal person cannot fulfill the basic need for providing enough calories and nutrients. Thus modification in the diet is necessary as per the metabolic rate of the person.
- **Diet modification in surgical condition:** Surgery brings about greatly increased need for nutrients as a result of loss of blood, plasma or pus from the wound surface, hemorrhage from the gastrointestinal or pulmonary tract, etc. Some nutrients may be supplied immediately after surgery by parenteral feeding but the complete need of the body usually cannot be met by that means alone. So the main purpose of dietary management after surgical condition is to maintain correct nutrition and to assure better wound healing and fewer postoperative complications, shorter and mortality.

### Types of Modifications (Fig. 1)

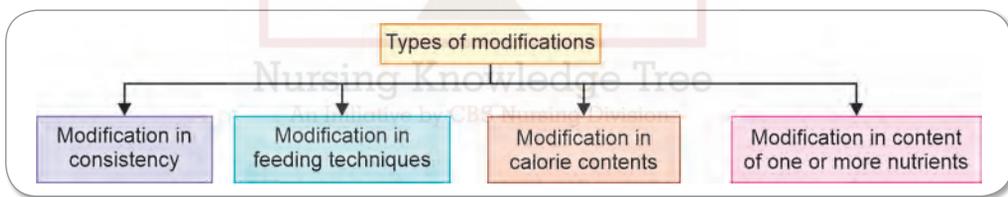


Fig. 1: Types of modifications

### Modification in Consistency

This modification includes liquid diet, solid diet, and semisolid. The consistency of this diet is soft and they are easy to digest and nonirritating.

#### Liquid diets

Liquids are used in that condition where the patients are not able to take solid diet. These diets are free from the chemical and mechanical irritants. Liquid diet is mainly used in fever, vomiting, diarrhea, postoperative patients. Liquid diet includes fruit juice, coconut water, barley water, rice kanji, clear vegetable soup, dal soup, tea, coffee. It is of two types:

#### Clear liquid diet

- It includes minimum residue fluids that can be seen through. Examples are juices without pulp, broth, etc.
- It is often used as the first step for restarting oral feeding after surgery or an abdominal procedure.



- It can also be used for fluid and electrolyte replacement in people with severe diarrhea.
- It should not be used for an extended period as it does not provide enough calories and nutrients.

### Full liquid diet

- It includes fluids that are creamy.
- Some examples of food allowed are ice cream, pudding, thinned hot cereal, custard, strained cream soups, and juices with pulp.
- It is used as the second step for restarting oral feeding once clear liquids are tolerated.
- It is used for people who cannot tolerate a mechanical soft diet.

### Soft diet

Soft diet is soft in texture and consistency, easy to chew and digest with no fiber. Soft diet used in gastrointestinal problem such as peptic ulcer, ulcerative colitis, acute infection.

### Semisolid diet

It is soft than normal diet. Semi solid diet is given to the patients who have no problem in digestion but difficulty in chewing. It includes khichdi, dalia, upma, soft rice, curd, pudding and cornflakes.

### Bland diet

The diet, which is mechanically, thermally, chemically, nonirritating is called bland diet. Food items are free from spices, condiments, and are low in fiber. Foods include milk and milk-based preparations, refined cereals, butter, dehusked pulses.

## Modifications in Feeding Techniques

If the person is unable to take food by mouth, there are some other modified methods of feeding used to feed the patients.

- **Tube feeding:** It is a method of feeding through which a tube is inserted from nose to stomach called nasogastric tube. There are different sizes of the tube used according to age. An expert practitioner should insert the tube as there is risk of choking. Clear liquids such as milk, fruit juice, dal soup, etc. are given through this method. This method is used when patients are unable to feed by mouth, for example, in mouth surgery or altered conscious level.
- **Gastrostomy feeding:** It is a method through which a tube is placed in the opening of the stomach. This method is rarely used. This method of feeding is used in the clients with esophageal surgery.
- **Jejunostomy feeding:** In this method, tube is inserted directly into jejunum. A special type of diet is given through this method in small and frequent amounts.
- **Intravenous feeding/Parenteral feeding:** It is defined as the provision of nutrients directly into the blood stream through peripheral or central access.
  - ◆ **Peripheral access:** The feed can be infused through a peripheral intravenous catheter placed in a vein. It provides support for mildly malnourished and can be used as a supplement along with the enteral feeding.
  - ◆ **Central access:** Catheter is inserted into the subclavian vein and continues until the catheter tip reaches the superior vena cava. After inserting the tube successfully in the right place, total parenteral nutrition (TPN) can be started.



## Modification in Calorie Contents

- It includes high calorie and low calorie diet.
- High calorie diet gives 3,000–4,000 kcal. It is mainly used in malnourished patients or in recovery phase after the disease.
- Low calorie diet gives 1,100–1,300 kcal energy and it is used in obesity, hepatic diseases and in patients in coma stage.

## Modification on the Basis of Nutrients

It is based on both macronutrients (carbohydrate, protein, fat) and micronutrients (protein and vitamin) Table 1.

**Table 1:** Diet modification in particular disease conditions

Nutrients	Disease conditions
High-carbohydrate diet	Liver disease
Low-carbohydrate diet	Obesity, diabetes mellitus
High-protein diet	Burn, Protein Energy Malnutrition (PEM), tuberculosis, liver cirrhosis
Low-protein diet	Acute renal diseases, hepatitis, jaundice
High-fat diet	Marasmus, underweight
Low-fat diet	Obesity, cardiac disease
High-calorie diet	Fever, acute infection, after surgery
Low-calorie diet	Hepatic coma
Low-sodium diet	Hypertension
Fiber-rich diet	Constipation, to prevent colon cancer
Low-fiber diet	Diarrhea, gastrointestinal disease
Low-vitamin diet	Hypervitaminosis

## PROTEIN ENERGY MALNUTRITION

Protein energy malnutrition is a term used to describe clinical disorder, resulting from deficiency of protein and energy. It primarily occurs in young children living in poverty. It mainly occurs in preschool children.

### Risk Factors

- Poor socioeconomic condition
- Inadequate intake of protein and energy in diet
- Unhygienic living conditions
- Maternal malnutrition
- Infection



## Types

### It includes:

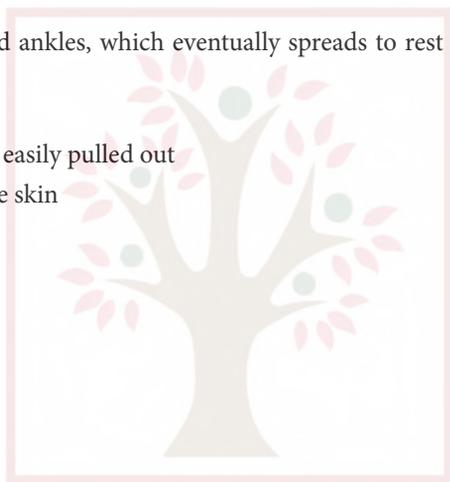
- Kwashiorkor
- Marasmus

### **Kwashiorkor**

Deficiency of proteins in diet leads to kwashiorkor.

#### **Clinical features**

- Muscle wasting
- Pitting edema of feet, and ankles, which eventually spreads to rest of the body due to reduced plasma proteins
- Moon-shaped face
- Hair are sparse, silky and easily pulled out
- Hyperpigmentation of the skin
- Dermatitis
- Stunt growth
- Weight loss
- Delayed puberty
- Poor appetite
- Impaired immunity



Nursing Knowledge Tree

### **Marasmus**

It is a severe form of protein energy malnutrition. It is caused by deficiency of both protein and calories.

#### **Clinical features**

- Skin is thin, flaccid, dry and wrinkled
- Face looks like little old man or monkey
- Bitot's spots (spots on the conjunctiva)
- Weight loss
- Dizziness
- Fatigue
- Chronic diarrhea
- Distended abdomen
- Growth retardation
- Lethargy
- Hypotonia (decreased muscle tone)

The differences between kwashiorkor and marasmus is given in Table 2.

**Table 2:** Differences between kwashiorkor and marasmus

Kwashiorkor	Marasmus
It is caused due to deficiency of proteins only	It is caused due to deficiency of both proteins and calories
Pitting edema is present	Edema is absent
Face is moon-like	Face is monkey-like
Distended abdomen is present	Distended abdomen is not present
Skin is hyperpigmented	Skin is thin, flaccid, dry and wrinkled
Child with kwashiorkor has poor appetite	Child with marasmus has good appetite
Child is irritable and apathetic	Child is alert

## Dietary Management

**Energy:** 3,000 kcal–3,300 kcal/day (twice the normal requirement)

**Protein:** 80–100 calories/day (twice the normal requirement)

### Food High in Protein

Beef, chicken, lamb leg, kidney beans, soy product, cottage cheese, yogurt, roasted soynuts, tofu, peanut and egg. Protein rich food items and menu planning have been listed in Tables 3 and 4.

**Table 3:** The National Institute of Nutrition, Hyderabad formulated a mixed diet high in energy and protein (nutritious laddu)

Food items	Quantity (g)
Whole wheat roasted	40 g
Bengal gram	16 g
Groundnut	10 g
Jaggery	20 g
<b>Total</b>	<b>86 g (total energy 330 kcal, 11.4 g protein)</b>

**Table 4:** Menu planning and selection of food items according to time

Meal	Menu
Early morning	Full fat milk one glass
Breakfast	Stuffed parantha + butter + curd
Midmorning	Soup (vegetable)
Lunch	Cheese/tofu vegetable + dal (Bengal gram) + roti + brown rice and salad
Evening time	Fruit chat or nutritious laddu with milk
Dinner	Mix vegetable + dal (or soybeans), salad + chapati/rice
Bedtime	Milk shake

## DIABETES MELLITUS

Diabetes mellitus is a group of metabolic disorder characterized by elevated blood glucose level resulting from defect in insulin production, insulin action. Insulin is necessary for metabolism of the carbohydrate. Deficiency of insulin leads to hyperglycemia.



## Clinical Manifestations

- Mainly characterized by 3Ps:
  - (i) Polyuria (excessive urine output)
  - (ii) Polydipsia (excessive thirst)
  - (iii) Polyphagia (excessive appetite)
- Fatigue, drowsiness
- Tingling sensation and numbness in hands and feet
- Weight loss
- Itching
- Blurred vision

## Dietary Management

- **Calories:** Requirement of the calories depends on the weight of the diabetic patients. Depending on the body weight, the requirement of calories is calculated as given in Table 5.

**Table 5:** Requirement of calories as per the body weight

Categories	Calories requirement
Overweight	20 kcal/kg body wt/day
Normal weight	30 kcal/kg body wt/day
Under weight	40 kcal/kg body wt/day

- **Carbohydrates:** Simple carbohydrates as glucose, sucrose, fructose and lactose, etc. are not usually advised as they are very quickly absorbed and raise the blood sugar level so complex carbohydrates should be consumed.
- **Fats:** Food rich in saturated fats and cholesterol intake must be limited.
- **Proteins:** The protein amount should be normal, i.e., 1 g/kg of body weight
- **Fibers:** Diet should be rich in fibers as they delay the passage of food through stomach and small intestine thus delaying these in reabsorption of carbohydrate.
- **Vitamins:** Diet should be rich in vitamin B complex as it avoids the development of diabetic neuritis.
- **Minerals:** Food rich in potassium such as tomato, etc. should be taken as it helps in releasing insulin from the pancreas.
- Sweetening agents such as saccharine must be avoided as it is 300–350 times sweeter than sugar. It is used as artificial sweetener in the form of tablet.
- Daily calorie requirement in case of diabetes mellitus is given in Table 6.

**Table 6:** Recommended daily allowance (RDA) for diabetes mellitus

RDA	Sedentary worker	Moderate worker	Heavy worker
Energy	1300 kcal	1600 kcal	1900 kcal
Protein	60 g	60 g	70 g
Carbohydrate	170 g	223 g	232 g
Fat	33 g	39 g	39 g



## Recommended Dietary Products for Diabetic Patients

- Whole wheat, its product, beans, barley, lentils and other whole grain.
- Vegetables such as carrot, broccoli, peanuts, pumpkin, onion, garlic, cantaloupe, cucumber, mushroom, radish.
- Fruits such as apple, almonds, avocados, walnuts, plums, kiwi, orange and other citrus fruits.
- Skim milk.
- All soy products such as soy nuts, soybeans, soy beverages, soy cheese.
- Fish with omega 3 fatty acids.

A sample menu plan for diabetes mellitus is given in Table 7.

### Diabetic patients should avoid following foods:

Simple sugar products, white bread, whole milk, refined flours, red meat, vegetable such as potato, chukander and, fruits such as mango, papaya, melon, bananas and packed fruit juices must be avoided.

**Table 7:** Sample menu plan for diabetic mellitus

Meal	Menu
Early morning	Methi pani/lemon water
Breakfast	Vegetable upma
Midmorning	Salted lassi/citrus fruit juice without sugar
Lunch	Brown rice + missi roti + vegetable (carrot, broccoli, peanuts, pumpkin) + besan kadhi + salad
Evening time	Tea + salted biscuit 2
Dinner	Chapati + salad + dal + curd
Bedtime	Skim milk

## CARDIOVASCULAR DISEASES

**Cardiovascular disease (CVD)** is a class of diseases that involve the heart or blood vessels. Cardiovascular disease includes coronary artery diseases such as angina and myocardial infarction (commonly known as a heart attack). Other CVDs are stroke, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, heart arrhythmia, congenital heart disease, valvular heart disease, carditis, aortic aneurysms, peripheral artery disease, and venous thrombosis atherosclerosis.

This may be caused by high blood pressure, smoking, diabetes, lack of exercise, obesity, high blood cholesterol, poor diet, and excessive alcohol consumption. It is estimated that 90% of CVD is preventable. It involves improving the risk factors through: healthy eating, exercise, avoidance of tobacco smoke and limiting alcohol intake.

### Common Signs and Symptoms

A crushing, squeezing or burning pain, pressure or fullness in the center of the chest. The pain may radiate to the neck, one of the arms and shoulder and the jaw.

- Shortness of breath
- Loss of consciousness
- Sweating
- Fatigue
- Fainting
- Rapid and irregular heart beat
- Nausea
- Dizziness



## Dietary Management

Low calorie, low fat diet particularly low in saturated fats, low in cholesterol, high in polyunsaturated fatty acids, low in carbohydrate, with normal protein and vitamin, mineral diet is suggested for the cardiac patients. High fiber diet is also recommended. Desirable range of lipoproteins and daily dietary allowances and food item to be included and avoided and sample menu are given in Tables 8 to 11.

**Recommendations for nutrients are as follows:**

- **Carbohydrate:** Simple carbohydrate is replaced by complex carbohydrate. The sources of simple carbohydrates are sweets, biscuit, white refined flour, candies, and chocolate and sweet cookies. They are harmful for heart disease. So, complex carbohydrates such as whole wheat flour, oats, ragi and green leafy vegetables must be consumed.
- **Proteins:** Replacing animal protein with plant protein to decrease low density lipoproteins, cholesterol levels in the body.
- **Fat:** Food generally contains two types of fat—visible and invisible fat. Visible fat sources from plant origin such as vegetable oil (mustard oil, olive oil and sunflower oil) are used in the place of animal sources such as butter and ghee.
- **Vitamins:** Vitamins are rich sources of antioxidants. Antioxidants thus can prevent accumulation of fat and cholesterol in the arteries.
- **Minerals:** Potassium is essential mineral that regulates muscle contraction and electrical impulses between the cells. It also lowers the blood pressure, which in turn helps to lower the risk of heart disease. Magnesium is important for proper heart rhythm.

**Table 8:** Desirable range of lipoproteins (National Cholesterol Education Program, 2001)

Lipoprotein	Range(mg/dL)	Risk
Total cholesterol	<200	Normal
	200–239	Borderline high
	>240	High
Triglyceride	<150	Normal
	150–199	Borderline high
	200–499	High
	>500	Very high
Low-density lipoprotein	<100	Normal
	100–129	Optimal
	130–159	Borderline high
	160–189	High
	>190	Very high
High-density lipoprotein		
Men	>40	<40
Women	>50	<50
Lipoprotein	<20	Normal
	20–30	Borderline high
	>30	High
Very low-density lipoprotein	<30	Normal



**Table 9:** Recommended dietary allowance for cardiac patients

Calories	1800–1900 kcal
Carbohydrates	280–290 g
Fats	40–50 g
Protein	70–80 g
Cholesterol	60–65 mg
Sodium	250–270 mg
Dietary fiber	40–50 g

**Table 10:** Food items included and avoided in cardiac diseases

Food Items	Food to be included	Food to be avoided
Breads and cereals	<ul style="list-style-type: none"> <li>• Bread—whole grains</li> <li>• Breads and cereals</li> <li>• Oats, corn</li> <li>• Multigrain bread</li> <li>• Rava</li> <li>• Ragi</li> </ul>	<ul style="list-style-type: none"> <li>• High fat crackers</li> <li>• Egg noodles</li> <li>• Pasta with egg yolk</li> <li>• Refined flour</li> </ul>
Egg	<ul style="list-style-type: none"> <li>• Egg white</li> </ul>	<ul style="list-style-type: none"> <li>• Egg yolk</li> </ul>
Dairy products	<ul style="list-style-type: none"> <li>• Butter milk</li> <li>• Low fat cheese</li> <li>• Skim milk</li> </ul>	<ul style="list-style-type: none"> <li>• Whole milk</li> <li>• Cream</li> <li>• Cheese</li> </ul>
Meat and meat products	<ul style="list-style-type: none"> <li>• Chicken without skin</li> <li>• Fatty fish such as tuna and sardine</li> </ul>	<ul style="list-style-type: none"> <li>• Beef</li> <li>• Lamb</li> <li>• Pork</li> <li>• Mutton</li> <li>• Chicken with skin</li> </ul>
Fats and oil	<ul style="list-style-type: none"> <li>• Sunflower oil</li> <li>• Safflower oil</li> <li>• Olive oil</li> <li>• Rice bran oil</li> <li>• Soy bean oil</li> <li>• Peanut oil</li> </ul>	<ul style="list-style-type: none"> <li>• Butter</li> <li>• Dalda ghee</li> <li>• Ghee</li> <li>• Whole milk coconut</li> <li>• Margarine</li> </ul>

**Table 11:** Sample menu plan for patients with cardiac diseases

Meals	Menu
Early morning	Green tea
Breakfast	Sāmbhar idli or poha
Midmorning	Soup (vegetable)
Lunch	Rice/chapati + green leafy vegetable + dal + salad
Evening time	Fruit chat
Dinner	Khichdi + curd or porridge
Bedtime	Skim milk



## HEPATITIS

**Hepatitis** is a group of diseases characterized by inflammation of the liver. Some people have no symptoms whereas others develop yellow discoloration of the skin and whites of the eyes, poor appetite, vomiting, feeling tired, abdominal pain, or diarrhea.

There are five main types of viral hepatitis: type A, B, C, D, and E. Hepatitis A and E are mainly spread by contaminated food and water. Hepatitis B is mainly spread by blood, during childbirth, or infected blood that may occur during needle sharing or during intravenous drug use. Hepatitis C and D are most commonly spread by blood.

Hepatitis A, B, and D are preventable with immunization. Medications may be used to treat chronic cases of viral hepatitis. Autoimmune hepatitis may be treated with medications to suppress the immune system. A liver transplant may also be an option in certain cases.

### Signs and Symptoms

- Poor appetite
- Vomiting
- Tiredness
- Abdominal pain
- Diarrhea
- Fever
- Rapid weight loss



### Causes

Causes of hepatitis can be divided into the following major categories: infectious, metabolic, ischemic, autoimmune, genetic, and other. Infectious agents include viruses, bacteria, and parasites. Toxins, drugs, alcohol, autoimmune and genetic factor may also be the cause of hepatitis. Ischemic hepatitis results from reduced blood flow to the liver as in shock, heart failure, or vascular insufficiency. Viral hepatitis is the most common cause.

### Dietary Management

A balanced diet can lead to better liver functioning and lowered risk of cirrhosis (scarring) of the liver. For a patient with hepatitis, food choices are not limited to a few bland dishes. There are plenty of healthy, tasty food options, which are both beneficial for the liver and for the recovery process.

### General Dietary Advice

#### Eat regular cereals

Whole grains are very beneficial to consume as part of a healthy hepatitis diet. These can be in the form of bran, whole wheat bread or cereal, brown rice, whole grain pasta or porridge. Brown rice, gram flour, oatmeal, whole oats, whole rye, whole wheat and whole-grain corn.



### Eat lots of fruits and vegetables

Fruits and vegetables are important sources of many nutrients, including potassium, fiber, vitamin C, beta-carotene (a form of vitamin A), and folic acid. Some of these substances are antioxidants that can fight cell damage. As a bonus, most fruits and vegetables are naturally low in fat, sodium, and calories. Eat at least 5 servings of fruits and vegetables a day.

### Get enough protein

Protein is needed to fight infection and to heal damaged liver cells. Protein helps rebuild and maintain muscle mass and it aids in healing and repair of body tissues. Good protein sources are dairy products that include milk, cheese, yogurt, ice cream, and puddings made with milk and meats, fish, dried beans, soy, nuts, and eggs.

### Have plenty of fluids

Drink at least 6–8 glasses of fluid a day. Milk, juice, herbal teas, soup, pudding and frozen fruit bars all are counted as fluids.

### Healthy fats

Olive oil, canola oil and flaxseed oil are all healthy fats that are recommended as part of a diet for patients with hepatitis.

### Foods to Avoid

It is equally important to avoid certain foods during hepatitis as they can be harmful to the liver. Excessive consumption of these can aggravate the disease and even lead to permanent liver damage. It includes pulses, beans, fish, chicken and egg, bakery products, dried nuts, whole milk and pickle. Processed food items are best avoided when recovering from hepatitis. Processed food items include processed ingredients that are harder on the liver and relatively devoid of nutrients.

- Hepatitis patients should also severely limit their salt intake. Also refrain from eating high-sodium foods. This means no canned soups or store-bought sauces.
- When on a hepatitis diet, avoid eating meat especially red meats due to their high sodium content.
- Alcohol is a strong toxin to the liver, even in people without hepatitis C. Drinking too much can lead to cirrhosis of the liver, advanced liver disease, or even liver cancer.
- Be careful with dietary supplements.

### Recommendations for the Patient with Hepatitis

- **Energy:** A diet that supplies 1,600–2,000 kcal is recommended.
- **Protein:** 1 g/kg/day protein is recommended. In case of severe jaundice 40 g, and in mild case 60 g protein recommended.
- **Fats:** In a severe case 20 g, in mild case 20–30 g fat is given. All fats such as ghee, butter and cream should be avoided.
- **Vitamins:** Vitamins are essential to regenerate the liver. 500 mg of vitamin C, 10 mg of vitamin K and B complex essential.
- A sample of menu plan for patients with hepatitis is given in Table 12.



**Table 12:** Sample menu plan for patients with hepatitis

Meals	Menu
Early morning	Orange fruit juice
Breakfast	Cornflakes with skimmed milk
Midmorning	Fruit custard
Lunch	Khichdi + curd
Evening time	Tea with biscuits
Dinner	Rice + mashed potatoes + dal (whole pulses)
Bedtime	Skim milk

## RENAL DISEASES

The diseases, which affect the functions of kidney or insufficiency of kidney are called renal diseases. Main renal diseases are nephritis, acute and chronic renal failure, acute glomerulonephritis, Nephrotic syndrome and renal calculi. Diet needs to be changed in renal diseases. These changes include limiting fluids, eating a low-protein diet, limiting salt, potassium, phosphorous, and other electrolytes, and getting enough calories.

### Dietary Management

#### Aims

- To maintain normal nitrogen balance so that there is no wasting of body tissue.
- To supply necessary vitamins and other nutrients to maintain general condition of the patients.
- To restrict protein intake since the end products of the protein metabolism cannot be excreted in renal failure.
- To regulate fluid and electrolyte intake.

#### Food Tips

- Diet has to be low in protein depending upon the urea content in the blood. A moderate-protein diet (1 gram of protein per kilogram of body weight per day) is usually recommended.
- Spices and condiments are used in very small quantity.
- To fulfill the need of vitamins and minerals, fruits and vegetables such as lime, mango, plum, sapodilla, tomato and pomegranate are included but it must be ensured that potassium is restricted.
- Amount of dairy products should be limited, because they contain large amounts of phosphorous. This includes milk, yogurt and cheese.
- Carbohydrate can compensate the low protein diet to meet the calorie requirement such as sugar, honey, and jelly.
- Fats can be a good source of calories. But only monounsaturated and polyunsaturated fats (olive oil, canola oil, safflower oil) to protect heart health.
- The minerals calcium and phosphorous must be checked often. Even in the early stages of chronic kidney disease, phosphorus levels in the blood can get too high. This can cause low calcium. This causes the body to pull calcium from bones, which can make bones weaker. Calcium supplements can be used to prevent bone disease.



- In the early stages of kidney failure, there is no need to limit the amount of fluid but, as condition gets worse, or when on dialysis, watch the amount of liquid intake.
- Check all labels to see how much salt or sodium foods contain per serving. Look for products with less than 100 mg of salt per serving.

### Healthy Foods for People with Kidney Disease

- Cabbage is high in vitamin K, vitamin C and fiber, and is also a good source of vitamin B6 and folic acid. Low in potassium and low in cost, it is an affordable addition to the kidney diet.
- Cranberries are known to protect against bladder infections by preventing bacteria from sticking to the bladder wall.
- Cherries have been shown to reduce inflammation when eaten daily. They are also packed with antioxidants and phytochemicals that protect the heart.
- For the kidney diet, egg whites provide protein with less phosphorus than other protein sources such as egg yolk or meats.
- Other foods that can be eaten by the kidney disease patients are red grapes, red bell peppers, strawberry, garlic, cauliflower, cabbage, onion, olive oils, wild salmon, raspberries.

### Foods that Need to be Avoided

Avocados, bananas, dry fruits, legumes, milk and yogurt, nuts and seeds, citrus fruit juices, potatoes and tomatoes.

### Menu Plan

The diet of patient with kidney diseases depends upon the age, type of kidney disease, severity of the disease and general condition of the patient. Generally patient with chronic kidney disease need average amount of calories, limited amount of fluids, proteins, potassium, phosphorus and sodium. A sample menu plan is given in Table 13.

**Table 13:** Sample menu plan for kidney diseases

Meal	Menu
Early morning	½ cup strawberry or raspberry juice
Breakfast	2 slices of toast or 1 bowl oatmeal, 1 poached egg, ½ cup rice milk
Midmorning	1 bowl fruit cocktail
Lunch	Rice with vegetable curry
Evening time	2 rice cakes with 1 tsp jam or 2 renal friendly wheat bran biscuits
Dinner	1 bowl vegetable cabbage/cauliflower with 2 chapatis

## GOUT DISEASE

Gout is a form of inflammatory arthritis characterized by recurrent attacks of a pain, red, tender, hot, and swollen joint. It is a disorder of purine metabolism in which level of uric acid in the blood increases. Normally uric acid level in blood is 2–4 mg/100 mL. But when this level increases, uric acid crystallizes and gets deposited in the joint such as knee joint, at ankle region, at toe, and small joint of the body. This occurs due to a combination of diet and genetic factors. A person who is nonvegetarian, alcoholic and overweight is more prone to develop gout.



- **Economical factors:** The adequacy of a person's food budget affects dietary choices and patterns. The increasing cost of food coupled with limited purchasing power may result in a decrease in the nutritional quality of the diet. So while planning diet economic status of the client must be kept in mind, for example, groundnut can be a substitute for the almonds.
- **Lifestyle factors:** Also has a great impact on eating habits as people who spend enough time at home can prepare healthy meals and take it on proper time. On the other side, people who are always busy and in hurry prefer to buy convenience grocery (fast food) or eat outside that affects their health. Due to busy schedule fast food has become the first choice of many youngsters.
- **Basal metabolic rate:** BMR is the factor that influences the nutritional requirement of the client. During disease condition, Basal Metabolic Rate increases thus high calorie diet is necessary and in other disease condition low calorie diet is needed.
- **Age:** Age also influences nutritional status of the patient. Young children need more energy and protein than adult. In a diseased condition, client needs the food item that are easily digestible and high in nutritive value.
- **Sex:** Sex also makes variation in energy requirements. Women need low calorie as compared to men. Women are more taste sensitive.
- **Cultural factors:** Cultural factor in health and nutrition has also gained the attention of the dietician. Every culture has its own customs and beliefs regarding nutritional practices, for example, papaya is avoided in some societies because it is believed to cause abortion.
- **Satiety value:** Food must also be satisfying. Physical and mental fatigue should be avoided. Physical exhaustion can be relieved by resting before a meal. Mental fatigue can be overcome by arousing a pleasant thought or idea.
- **Availability of food:** Preferred therapeutic diet availability at some seasons may affect the acceptance of the diet.
- **Texture of diet:** Some foods contexts also affect the patient's nutritional status. If a person had lost his denture, he would not be able to take solid food.

## FEEDING THE HELPLESS PATIENTS

When a client comes in hospital, the nurse must take care of all the basic needs of the client. The most common need is nutritional need that must be planned according to his/her physical condition, metabolic changes, food habits/preferences and socioeconomic status. Below given are the points to remember while feeding a helpless client:

- Check doctor's order for any specific precaution regarding the diet, moment or positioning of the client.
- Plan the diet according to the need, likes or dislikes and socioeconomic status of the client.
- Check the general condition of the client and ability to accept feeding.
- Unpleasant odor or articles like sputum mug, bed pan must be removed from the client unit before serving the meal.
- A helpless client should be fed carefully by placing client into semi-Fowler position to prevent aspiration.
- After feeding, all the dishes should be removed immediately and the client should be helped to wash his hand and rinse mouth or brush the teeth to provide comfort if the client is in his conscious state.
- Diet should not be served immediately after painful procedure.



- Client must be comfortable before feeding. Different comfort devices like cardiac table; side table must be used as an aid to comfort the client.
- Client should be given sufficient time to chew and taste the food. Never feed the client hurriedly.
- Psychological condition of the patient must be kept in mind before feeding as the client is in different environment and he/she may feel insecure, fear, worry, anger, depression, homesickness, pain, etc. that can interfere the process of feeding.
- Sometime a sick person denies to accept the food. Nurse must encourage the client by providing proper knowledge and benefits of taking nutritious food but the client should never be forced to eat.
- In some disease conditions (cardiovascular accident), suction apparatus must be kept aside the client bed to prevent any complication of feeding.
- Fluid requirement should be met to prevent dehydration. Fluids are given at the end of meal or can be given in between the meal in small amounts.
- Meal should be served in clean and covered containers. Care must be taken to prevent transmission of diseases through the food and drinks.
- Create a pleasant environment for the clients.

## NUTRITIONAL EDUCATION

Nutritional education is important in improving the health status of the family and community. In community, there are the people that belong to different socioeconomic status. People with low economic status hesitate to purchase qualitative things and high status people eat the things which are not useful for them. Education level, religion, custom, culture also influence the nutritional status of the person. Thus it is the responsibility of the nurse to provide teaching and awareness regarding the balanced diet.

### Purposes

- To impart good dietary habits amongst the population.
- To select good and nutritious foods.
- To teach hygienic practices in handling and preservation of the food.
- To budget their menu by using exchange list system.
- To use various methods in cooking.

### Principles

- First find out client's culture, food habit, likes and dislikes, religion and socioeconomic status of the client.
- New ideas should be introduced gradually and only one thing is taught at a time.
- Find out the educational status of the clients.
- Find out the local words for food so that there will be better communication.
- Nutrition education is an important part of the school health program. So health education is more effective in the schools.
- During the pregnancy, diet is an important factor so find out the opportunity for educating the antenatal mother that will not only improve the health status of the mother but also ensures the birth of a healthy baby.



- In teaching, use actual foods whenever possible, especially home produced foods, also use nutritional posters, flip charts, puppets, role play.
- Do not teach the things that are not possible for the patient to do or buy foods they cannot afford.
- When visiting families for any reason, help them in learns better techniques of selection, storage and preparation of various food items.

## Methods

- This education must be based on actual needs of the community people and a nurse or health personnel should prepare a proper audio-visual aids for effective health education.
- Practical methods may include short menu plans, budgeting of food and calculating the calorie of the food items, etc.
- Give cooking demonstration of various food dishes, which are useful but not known by the people such as preparing weaning diet for the infant.
- Personal talks means give the information to the person through one to one communication on specific topics regarding the food and nutrition such as menu planning, various food exchange list, balanced diet, high calorie diet, low calorie diet. Personal talks do not need any specific preparation of the person.
  - ◆ **Exhibition:** In exhibition, various shows are performed such as practical menus of using fresh vegetables and fruits, how to grow variety of seasonal vegetables. For example, in exhibition of spices various condiments are displayed and their usage, benefits for the health are taught.
  - ◆ **Posters:** Through posters calorie value of any food items, any specific diet such as diabetic diet, menu for renal diseases, infant diets can be taught to the community.
  - ◆ **Group discussion:** It is a method through which 6–12 members can participate and discuss various nutritional issues and nutritional problems. Here, the participants can clear their doubts regarding any particular topic.



## ASSESS YOURSELF

1. Discuss the common problems in old age people and the points to be kept in mind while meeting the nutritional requirements of the elderly people.
2. What is bland diet and why it is recommended?
3. Define Therapeutic diet and enlist the types of modification in the diet.
4. What type of modification in diet is required for the diabetic patient?
5. What are the factors affecting the acceptance of diet?
6. Define PEM and write the difference between marasmus and kwashiorkor.
7. Plan a one-day diet plan for an anemic patient.
8. Discuss modification of diet for the following conditions:
  - Obesity
  - Hepatitis
  - Irritable bowel syndrome
9. Explain the points to be kept in mind while feeding a helpless patient.
10. Define nutrition education and enlist the principles of nutrition education.

### Multiple Choice Questions

1. Which of the following does not contain fat?
  - a. Meat
  - b. Butter
  - c. Cheese
  - d. Sugar
2. Excessive energy is stored in the body in the form of:
  - a. Fat
  - b. Fiber
  - c. Water
  - d. Salt
3. Following food content must be added in the diet:
  - a. Salt
  - b. Sugar
  - c. Fiber
  - d. Fat
4. Goiter of neck is caused by the deficiency of the following:
  - a. Iodine
  - b. Calcium
  - c. Proteins
  - d. Chlorine
5. Therapeutic diet is used:
  - a. To provide change in consistency of food.
  - b. To include greater or lesser amount of one or more nutrients.
  - c. To modify the method of feeding.
  - d. All of the above.
6. Which of the following does not come under liquid diet?
  - a. Fruit juices
  - b. Clear vegetable/dal soup
  - c. Beverages
  - d. Khichdi
7. In the disease diabetes mellitus, following diet is recommended:
  - a. Low carbohydrate diet
  - b. High carbohydrate diet
  - c. High fat diet
  - d. Low protein diet
8. Low calorie diet is recommended for the following disease condition:
  - a. Osteoarthritis
  - b. Obesity
  - c. Malnourished
  - d. Gout



**9. Following nutrient requirement is more in females than males:**

- a. Phosphorus
- b. Sulfur
- c. Floride
- d. Iron

**10. Person suffering from cardiovascular diseases must avoid the following:**

- a. Whole grains, cereals and pulses
- b. Green leafy vegetables, high-fiber fruits
- c. Whole milk, cheese, butter, cream
- d. Egg white, lean meat

**11. Normal value of glucose in blood is:**

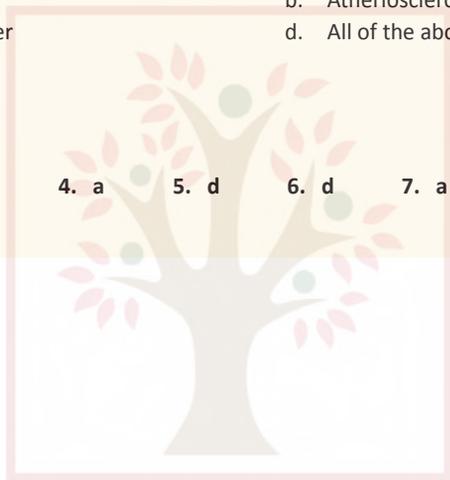
- a. 80–120 mg/dL
- b. 60–80 mg/dL
- c. 120–140 mg/dL
- d. 150–170 mg/dL

**12. Harmful effects of excessive fat is/are:**

- a. Obesity
- b. Atherosclerosis and coronary artery disease
- c. Increase risk of cancer
- d. All of the above

**Answer Key**

1. d    2. a    3. c    4. a    5. d    6. d    7. a    8. b    9. d    10. c  
11. a    12. d



Nursing Knowledge Tree  
An Initiative by CBS Nursing Division

# Textbook of Nutrition

for GNM Nursing Students

(As per the INC Syllabus for GNM)

## Salient Features

- A Comprehensive Compendium on Nutrition has been developed as per the INC syllabus for GNM.
- Simple and easy-to-understand language has been used to make it a delight to read.
- Latest nutritional recommendations according to RDA have been added.
- ICMR guidelines for *menu planning* have been incorporated.
- New amendments in *food laws* have been added to keep students abreast of latest advancements.
- *Sample menu plans* for all the categories have been covered in tabular format for easy and quick implementation.
- *Assess yourself* at the end of each chapter has been given to analyze the reader's progress.
- *Important Annexures* with useful information from student point of view have been included.

## About the Author

**Varinder Kaur** MSc (CHN), MA (Pub. Ad.) is presently working as Principal, HIMCAPES' College of Nursing, Badhera, Dist. Una, Himachal Pradesh, India. She did her MSc in Community Health Nursing from National Institute of Nursing Education (NINE, PGIMER), Chandigarh and MA in Public Administration. She has 15 years' teaching experience in the field of Nursing. In the recent past, she had organized various workshops/seminars, and attended various National/International conferences and seminars. She has also published many research articles related to current issues in the nursing profession in many National/International journals.



## CBS Publishers & Distributors Pvt. Ltd.

4819/XI, Prahlad Street, 24 Ansari Road, Daryaganj, New Delhi 110 002, India  
E-mail: [feedback@cbspd.com](mailto:feedback@cbspd.com) Website: [www.cbspd.com](http://www.cbspd.com)  
New Delhi | Bengaluru | Chennai | Kochi | Kolkata | Lucknow | Mumbai | Pune  
Hyderabad | Nagpur | Patna | Vijaywada

ISBN: 978-93-90619-02-3



9 789390 619023