



5

MEAL PLANNING

In the previous lesson you have learnt about the meaning of nutrition and health and the inter-relationship between them. You are also familiar with the various nutrients present in food, their functions, requirement in the body and the factors influencing these requirements.

In this lesson, you will learn about grouping the foods into different groups according to their nutrient content. Inclusion of these food groups in our daily meals is important to provide an adequate diet.

This knowledge is essential to make sure that you are eating the right food in the right quantities. In this lesson, you will learn how to ensure nutritional adequacy of the food that you eat every day and how you can plan the same.



OBJECTIVES

After reading this lesson, you will be able to:

- categorise foods into food groups on the basis of nutrients;
- explain the term 'balanced diet';
- state the meaning of 'meal planning' and its importance;
- enumerate the factors influencing meal planning;
- analyse the nutritional needs of members of the family and modify the meals accordingly;
- define 'therapeutic diet' and its need;
- enumerate the types of modification of normal diet,
- suggest modifications of a normal diet for people suffering from common diseases.



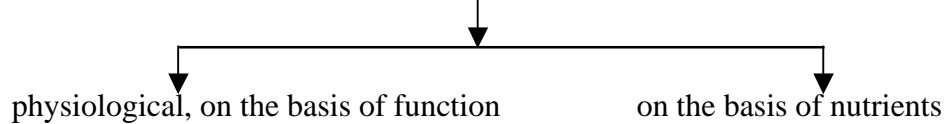
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5.1 FOOD GROUPS

The knowledge of recommended dietary allowances and composition of food is necessary for the selection of an adequate diet. But if we start doing this, it will be a tedious process. Therefore, it is necessary to translate the nutritional needs into kinds and amounts of food that we should eat. Such an information can then be used in everyday meal planning exercise. This is achieved by dividing/categorizing all food items into various groups called *food groups*. Now let us see what is a food group.

A food group, quite simply, *consists of a number of food items sharing some common characteristics.*

Let us see the two ways of classifying food into groups





A. Classification Based on Physiological Functions

In the previous lesson you have studied that food has three basic physiological functions. Can you remember these? Yes, energy giving, repair and growth, protection and regulation.

B. Classification Based on Nutrients

Now we will study the classification based on the nutrients which they supply.

Table 5.1: Five Food Group System

Food Group	Main Nutrients
<p>1. Cereals, Grains and Products Rice, wheat, ragi bajra, maize, jowar barley, riceflakes, wheat flour etc.</p>	<p>Energy, protein, fat, vitamin B₁, vitamin B₂, folic acid, iron, fibre</p>  <p>Fig. 5.1</p>
<p>2. Pulses and Legumes Bengal gram, blackgram greengram, redgram, lentil (whole as well as dhals), cowpea, peas rajmah, soybeans, beans etc.</p>	<p>Energy, protein, fat, vitamin B₁, vitamin B₂, folic acid, calcium, iron, fibre</p>  <p>Fig. 5.2</p>



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3. Milk and Meat Products

Milk:

Milk, curd, skimmed milk, cheese

Protein, fat, vitamin B₂, calcium, vitamin A

Meat:

Chicken, liver, fish, egg, meat

Protein, fat, vitamin B₂, vitamin A, vitamin B₁₂



Fig. 5.3

4. Fruits and Vegetables

Fruits:

Mango, guava, tomato ripe, papaya, orange, sweet lime, water melon

Carotenoids, vitamin C, fibre, carbohydrates



Fig. 5.4

Vegetables (Green Leafy)

Amaranth, spinach, gogu, drumstick leaves, coriander leaves, mustard leaves, fenugreek leaves

Fats, carotenoids, vitamin B, folic acid calcium, iron, fibre



Fig. 5.5

Other Vegetables:

Carrots, brinjal, ladies finger, capsicum, beans, onion, drumstick, cauliflower

Carotenoids, folic acid, calcium, fibre



Fig. 5.6

5. Fats and Sugars

Fats:

Butter, ghee hydrogenated oils, cooking oils like ground nut, mustard, coconut oil

Energy, fat



Fig. 5.7

Sugars:

Sugar, jaggery

Energy

Note: Carotenoids are a form of vitamin A available from plant sources.

A ready reckoner is provided to give you a comprehensive information on the nutrients, their food sources and groups to which they belong.

In this system of food grouping, similar food items are placed together. For example, all cereals are similar in their nutrient content and all pulses are also similar in nutrient content. Similarly, milk, egg and flesh foods are comparable, all oils, butter, ghee have similar nutrients. Therefore, if we substitute one food for the other in the same group we will, to a large extent, get the same nutrients. For example, whether we select wheat flour, rice or bajra we would get approximately the same nutrients.



Substitution of one food item with the other in such a way that the nutrients provided by them are the same is called Food Exchange.

Food Exchanges make Diet Planning Easy

5.2 BALANCED DIET

You have already learnt about the nutrients, their sources and importance and also about nutritional requirements. Sometime back we raised a question- what should we eat so that our nutritional requirements are met? Do you think you can answer this question now? Yes, you are right - you should eat food items which provide all these nutrients to your body. Such a meal is called a balanced diet. By meeting our nutritional requirements such a diet helps us in staying healthy. It also provides some amount of nutrient for storage in the body. This helps the body to withstand short periods of dietary inadequacy.

A balanced diet is one which contains different types of foods in such quantities that the individual's need for the various nutrients is adequately met, and some amounts of nutrients are stored in the body to withstand short periods of low dietary intake.

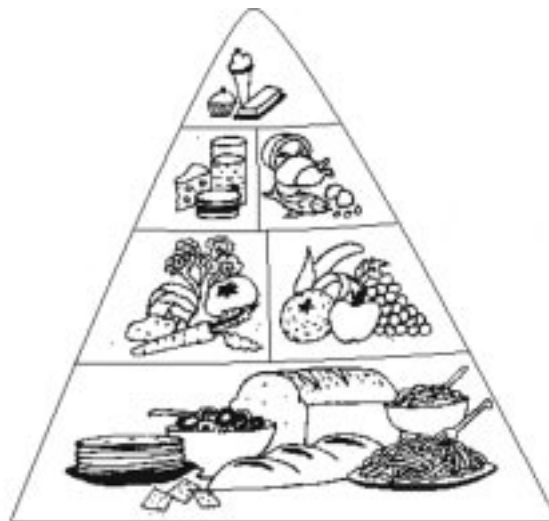


Fig. 5.8: Food pyramid

Characteristics of a Balanced Diet

A balanced diet contains both plant and animal foods and fulfills following requirements:

- meets the nutritional requirements of an individual
- includes foods from all the food groups
- contains a variety of foods

Meal Planning

- consists of seasonal foods
- is economical
- suits the taste and meets the desires of the individual eating it



INTEXT QUESTIONS 5.1

1. In how many ways can foods be classified?
2. List the five food groups.
3. What is food exchange ? Give one example.
4. Tick mark (✓) the most appropriate answer:
 - (i) A balanced diet should consist of
 - a) both plant and animal foods
 - b) only plant foods
 - c) only animal foods
 - d) only cereals and pulses
 - (ii) A balanced diet is one which has
 - a) some nutrient in referred amount
 - b) food from one food group in correct amounts
 - c) all the nutrients in correct amounts
 - d) all those foods that a person likes to eat in correct amounts

5.3 WHAT IS MEAL PLANNING?

Meal planning is making a plan of meals with adequate nutrition for every member of the family within the available resources. The term 'available resources' means whatever the family has in terms of time, energy and money.

IMPORTANCE OF MEAL PLANNING

Meal planning is important for meeting the nutritional requirements of the family members. It helps us to decide what to eat each day and in each meal. We can call it our 'daily food guide'.

Meal planning helps us to:

- (a) fulfill the nutritional requirements of the family members
- (b) make the food economical
- (c) cater to the food preferences of individual members
- (d) save energy, time and money
- (e) use left over food

The following section, will help you to understand these points clearly.

MODULE - 2

Foods and Nutrition



Notes



Notes

FACTORS AFFECTING MEAL PLANNING

What guidelines do you keep in mind while planning meals? What all do you consider to make your meal planning effective? Yes, there are many factors such as-

1. Nutritional Adequacy

This is the most important factor, which means that the nutritional requirements of all the family members are fulfilled. For example, you know a growing child needs more protein, a pregnant or lactating woman needs calcium, etc.

While planning meals you will include food items from various food groups, that is, energy giving foods, body building foods and protective and regulating foods.

2. Age

People normally eat according to their age. You must have observed in your family that the diet of various members of different age groups differs in quantity. A new born baby drinks only milk, a small child's meal is also of very small quantity, an adolescent eats still more in amount and variety of foods. Similarly, you must have seen your grandfather eating less food and also that they prefer soft and easy to digest foods.

3. Sex

Sex is another factor which determines the dietary intake. Dietary requirement of adolescent and adult males are more than their female counterparts.

4. Physical Activity

The kind of work a person does affects the kind and amount of food they need to take. Do you remember that RDA is different for people engaged in different activities? A labourer not only eats more quantity but needs more energy because he is engaged in hard work. His body uses up more energy while performing hard work. So, if you have to plan for such a person you will include more energy giving foods in the diet.

5. Economic Considerations

Money available to the family to be spent on food is another major factor. Foods like milk, cheese, meat, fruits, nuts etc. are expensive. However, alternative sources like toned milk, seasonal fruits and vegetables are less costly and at the same time nutritious. You can therefore plan a balanced diet to suit every budget.

Tips for economy

- Buy food in bulk, if you have enough place to store.
- Buy from fair price shops like ration-shops, superbazars, cooperative stores, etc.
- Compare prices and quality while buying.
- Make use of left-over food.



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6. Time, energy and skill considerations

While planning the meals, you should consider the resources like time, energy and skill available to the family. Meals can be elaborate with different dishes but you can simplify them by cooking a simple but nutritious dish. For example, a working mother could prepare a paushtik pulao, instead of preparing three or four items for dinner.

7. Seasonal availability

Some foods are available in summers while some in winters. The off season foods are expensive and less nutritious, while those in season are fresh, nutritious, tasty and cheap. Hence, while planning seasonal foods should be used.



8. Religion, region, cultural patterns, traditions and customs

Regional factors influence meal planning. For example, if you are a North Indian, you will consume more of wheat, while those near the coastal region, will consume more of coconut, fish, etc. Similarly your staple food would be rice if you are a South Indian.

Religious beliefs prevalent in the family also have an influence. For example, if you are a vegetarian, your diet will not have any meat or meat product, Hindus do not eat beef and Muslims do not eat pork etc.

9. Variety in colour and texture

Examine the following two menus - which one is better?

Menu - I	Menu - II
 <p>Chapati Rice Arhar dal Pumpkin Vegetable Curd Salad (Radish and onion)</p> <p>Fig. 5.8</p>	 <p>Chapati Rice Rajmah Fried ladyfinger Carrot raita Salad (Cabbage, cucumber, beetroot) Papad</p> <p>Fig. 5.8</p>

The second one, as it has variety in terms of colour, texture, flavour and method of preparation. These factors help you to make meals more appealing, attractive and hence more acceptable.

10. Likes and dislikes of individuals

The food you serve should cater to the likes and dislikes of the individual family members. It is often better to change the form of some particularly nutritious food item, rather than omitting it completely. For example, if someone in your family does not like milk, you can

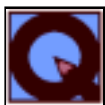


give it in the form of curd, paneer, etc. Similarly, if one does not want to take green leafy vegetables in cooked form, what alternative would you suggest, so that it can be taken in adequate amount? Yes, it can be used in a variety of ways - mixed with flour and made into paranthas or poories; or as culets or pakodas. It can also be given in the form of koftas, idlis, vadas, etc.

11. Satiety Value

While planning meals, take care that you select foods which provide satiety value. Meals which produce inadequate satiety, will lead to onset of hunger pangs, which in turn will affect the working capacity and efficiency of a person.

Satiety : Feeling of fullness after eating



INTEXT QUESTIONS 5.2

1. Answers the following questions.
 - (a) What are the qualities of a well planned meal?
 - (b) Differentiate between seasonal foods and out of season foods.
 - (c) List at least two points you will keep in mind in order to prepare an attractive and appealing meal.
 - (d) List the different types of work. Which kind of work requires maximum energy?
 - (e) Your brother does not like lauki but your sister is very fond of it. How will you solve this problem?
2. Select nutritious snacks from following food items. (i) Poha (ii) French Fries (iii) Dokla (iv) Vegetable cutlets (v) Pizza (vi) Upma

5.4 MODIFICATION OF FAMILY MEALS FOR VARIOUS AGE GROUPS

Meal planning is an art and science in itself. What is to be cooked is decided by the homemaker from the available food items. But the meal planning is affected by various factors like nutritional requirements, budget, season etc. all of which you have studied earlier.

These factors various from family to family. Do you remember what you had for lunch? Usually it would have been chapati, dal, rice, cooked vegetables, salad, curd, sometimes, fruits or sweets. This is generally a **balanced meal**. Can you tell why? Yes, because it has food items from all the

food groups. This meal provides all the essential nutrients such as - energy, protein, fats, vitamins and minerals.

The nutritional requirements of all the family members can be met by varying the quantity of food items and by combination of foods. Include food items from different food groups to get variety and maximum nutrients.

Consider a family having members in various age groups, that is, parents, grandparents, a school going child and an adolescent girl. Now, you know all of them have different requirements. If you have to cook for them how will you go about it? Will you cook specially for each member according to individual nutritional needs or cook a common meal and serve according to the various nutritional needs?

Definitely, the second alternative is a better choice. What are you doing here? You are modifying the **same** meal according to the needs of each member. This is what is known as diet modification. This can be achieved through two methods.

A. Through Modification in the Diet

Diet modification means serving the meal cooked for the family to any member after varying it in quantity, quality and frequency of eating.

1. *Quantitative modification of diet*

This refers to the increase or decrease in the number of times a meal is taken and/or the portion size (Portion size the amount of a particular dish eaten at a meal).

For example, pregnant women, sick people or older persons need to eat smaller meals but at shorter intervals, that is, they may need 6-8 meals instead of four meals a day. Similarly, adolescent boys needs larger portions at each meal (may be more rice/chapattis, more dal/curd) and also more frequent meals to meet their nutritional needs. Persons who are dieting are advised to reduce the amount of food eaten at each meal. This will force the body to use stored reserves which will help in reducing boy weight.

2. *Qualitative modification of diet*

It refers to the change in nutrients, consistency, flavour, amount of spices and fibre content of the diet. For example, the increased protein requirement of a pregnant woman can be met by increasing the quantity of protein rich foods in her diet. You must have seen mothers taking out some boiled dal in a separate bowl, mashing it and feeding it to babies between the age of 6 months to 1 year. Dal does not contain any spices, except salt and turmeric. Slightly older children are fed well cooked and mashed 'Khichri'. Older people need a diet soft in consistency and less spicy. This is a qualitative modification of diet.





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3. Modification in terms of frequency

What would you suggest to a person whose requirements are increased but they are not able to increase the quantity of food in the original meals? Yes, you will suggest an increase in the number of meals instead. This means the should take something in between the main meals. This is diet modification in terms of frequency.

B. Through Food Exchange Method

If you are modifying the same meal for different family members, then how will you decide on how much of one item is equivalent to another one? If you are not sure about how to go about exchanging one food item with another in the correct proportion, then you may not be able to fulfill everyone’s requirements correctly. For example, if you are exchanging milk with egg then you should know how much of milk is equivalent to one egg or if one does not want to eat egg, in that case, how much of pulses should be given instead?

Food exchanges help you to modify the diet for an individual according to needs, likes, dislikes and food habits and help you to make the diet more flexible and interesting. The following food exchange table gives you a fair idea about the exchanges that can be done among various foods, so that the nutrients derived by these foods remain the same.

Protein rich foods



Fig. 5.9

1 glass of milk = 1 egg = 1 medium size katori meat = 1 big katori pulses = 1 big katori curd = 1/4 cup of paneer = 3 cups of butter milk

Cereals

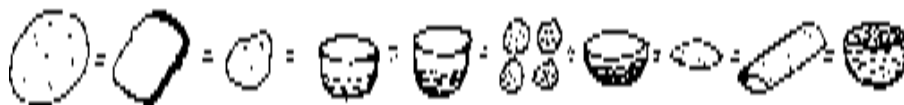


Fig. 5.10

1 Chapati = 1 bread slice = 1 potato = 1/2 cup rice = 1/2 cup dalia = 4 salted biscuits = 1/2 cup noodles = 1 idli = 1 plain dosa = 1/2 cup upma/poha

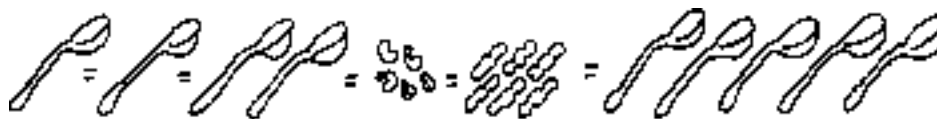
Fats

Fig. 5.11

1 tsp of butter = 1 tsp of oil = 2 tsp mayonnaise = 4-5 pieces of nuts = 10-12 pieces of peanuts = 5 tsp cream.

A Sample Menu of a Common Meal

While planning meals for different family members, keep in mind the nutrient content of food. You want that the common menu should be served to everyone. But this does not work out, as the needs of different individuals vary.

One easy way is to start with a sample menu for a healthy adult man engaged in normal activity. Plan for one person, decide how much to provide at different meals, according to the requirements. This becomes the *reference menu* for different family members according to their specific requirements.

1. Menu for an Adult Man/Woman

Here we are presenting sample menus for an adult man and a woman, who are engaged in moderate work. We will use these reference menus and you can modify them to suit the needs of other members.

Table 5.2
Sample menu for a person for engaged in moderate work

Meal	Menu	For man Amount	For woman Amount
Early morning	Tea	1 cup	1 cup
Breakfast	Aloo parantha	2	1
	Sprouted pulse raita	1 medium katori	1 big katori
	Boiled egg	1	1
Lunch	Chapatis	4	2
	Methi aloo vegetable	1 small katori	1 medium katori
	Urad dal	1 big katori	1 medium katori
	Salad	half plate	half plate
	Fruit	1 orange	1 orange
Evening	Suji upma	1 big katori	1 big katori
	Tea	1 cup	1 cup



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Dinner	Chapati	2	2
	Rice	half plate	quarter plate
	Rajmah curry	1 big katori	1 big katori
	Cauliflower vegetable	1 small katori	1 small katori
	Fruit custard	1 medium katori	1 medium katori

The energy content of the diet for an adult woman is nearly 2/3 of that for an adult man, and protein requirement is a little less. But her diet should be slightly richer in iron and vitamin C. We have provided her with less of cereals as compared to an adult man so as to decrease the energy content and she is also given less quantity of pulses in order to reduce the protein content of the diet.

But to compensate for her vitamin C and iron requirements, she is given more of sprouted pulse raita and methi-aloo vegetable, as compared to the sample menu for a man.

2. Modification for Pregnant Woman

You have already learnt in the previous lesson that during pregnancy, the need of calories, proteins, calcium, iron, vitamin A and vitamin C are increased for the healthy growth and development of foetus. Also, you should give her more of water and fibre, as she may suffer from the problem of constipation. But since she is not able to eat much at a time, you should give her small frequent meals. Keeping all these points in mind the menu has to be modified.

The calorie requirement of pregnant lady is 13% less than that of an adult man and can be done by reducing the quantity of cereals in her menu as compared to the reference menu. Her protein requirement is slightly higher, which can be compensated by giving her more of protein rich foods. The frequency of meals should be also increased, as compared to the sample menu.



Activity : Visit a pregnant woman. Record the following—

Name -

Age-

No. of children -

Any specific information related to pregnancy

Food eaten	Nutrients present	Suggestions for improvement



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3. Modification for Lactating Mother

You are already aware of the fact that the nutrition of lactating mother is very important as the newborn baby relies completely on the mother for nutritional requirements. Inadequate food intake reduces the milk secretion. Her requirement is even greater than that of a pregnant woman. So while modifying her diet, you will take care that her meals are rich in energy, protein, calcium, vitamin A and C.

She should be given more of foods like milk, curd, pulse, which are rich in protein, calcium, and vitamin A. Further, to compensate for her requirements, an additional serving of egg and vitamin A rich food like mangoes are given to her as compared to the sample menu. The frequency of meals too should be increased to fulfill her extra needs.

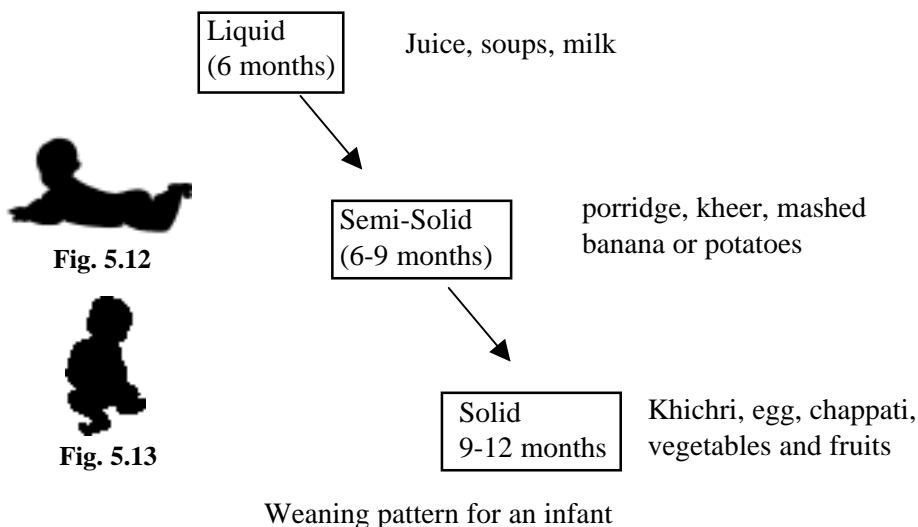


Activity : Note down one day diet of a lactating woman in your area. From the diet note:-

Food eaten	Nutrients present	Suggestions for improvement

4. Modification for an Infant

Mothers milk is sufficient to meet the nutritional requirements of the baby upto 6 months.





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You know that by 6 months, infants are put on weaning foods to take care of their rapid growth and development. Weaning is a gradual process of shifting the child from breast milk to a normal household diet. A good diet during infancy is very important, since the foundation of future health is laid during this stage. They now need weaning foods rich in proteins, Vitamin A and specially calcium. The calorie requirements of infants is nearly $\frac{1}{4}$ and protein is $\frac{1}{3}$ of that of adults. But they need more calcium than adults. So they should be given more of foods like milk, egg, green leafy vegetables etc. Keeping in mind all these factors, the sample menu can be modified in terms of quantity, quality and frequency.

5. Modifications for Children and Adolescents

A well balanced healthy diet is a must for all age groups. The modifications for various age groups are as follows:

Table 5.3 : Modifications for children

Pre-schoolers	School going Children	Adolescents
<ul style="list-style-type: none"> - A high calorie high protein diet, rich in calcium and vitamin A. - Mildly flavoured and less spicy foods to be given - Handy Finger Foods are preferred. <p>Example - French fries, Sandwiches, vegetable rolls, Stuffed pranthas etc.</p> <ul style="list-style-type: none"> - Foods should neither be too hot or too cold for the child to handle 	<ul style="list-style-type: none"> - A high calorie, high protein diet with plenty of vitamins and minerals. - Need energy rich foods for their hectic activities both at school and home. - Packed ‘tiffin’ assumes a lot of importance as breakfast is usually skipped. ‘Tiffin’ should be tasty besides being nutritious. 	<ul style="list-style-type: none"> - A high calorie, high protein diet, rich in calcium and iron. - Quantity of food intake must be increased to meet their rapidly changing body needs. - Nutritious fast foods and snacks should be planned. - Peer group influence affects food intake, it must be kept in mind while planning. - Starving crash dieting/erratic eating habits must be discouraged.



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6. Modifications for old People

Many physiological changes occurring during old age affects nutritional requirements. They need less energy and fats as compared to an adult man but the proteins and other nutrient requirements remain the same. They need lots of water and fibre to check the problem of constipation. Also, you know that they may suffer from chewing problems, so give them soft and well cooked foods.

Now you have learnt how to adapt the same menu for various family members according to their requirements. It also saves time and effort and makes planning simple.



INTEXT QUESTIONS 5.3

1. Write short notes on
 - (1) Qualitative modification
 - (2) Food exchange
 - (3) Quantitative modification
2. List the factors you will keep in mind while making a tiffin for school going children.

5.5 NEED FOR SPECIAL DIET

You are all aware that a normal diet satisfies the nutritional needs of a healthy individual. But when a person falls sick there is a malfunctioning of parts of the body, therefore, the nutritional needs of a sick person changes. For example, in diabetes, the pancreas do not produce insulin which is needed to digest sugars. In such a case, presence of the normal amount of sugar in the food will be harmful to the system. In jaundice there is malfunctioning of the liver, hence digestion of fats is affected and presence of normal amounts of fats in the diet will be harmful to health. In case of diarrhea, there is loss of body fluids and salts with every passage of stool. Also, the digestive system is unable to cope with the solid food eaten.

Under these circumstances, if one goes on eating normal food the system will be burdened and damaged. Hence, there is a need to modify the food eaten. Can you suggest some more reasons for modifying diet during diseases? Here are some reasons:

- to maintain good nutritional status



- to correct nutritional deficiencies
- to provide a change in the consistency of diet: liquid or semi-solid
- to bring about change in the body weight, if required.

THERAPEUTIC DIET

What is meant by 'Therapeutic Diet'?

Therapeutic diet is the special diet given to a person suffering from a disease, to facilitate recovery. It is a modification of the normal diet.

Does the change in diet help the person to recover from disease? Yes, certainly. When sugars are withdrawn from food, insulin is not required to digest them. When fats are taken off the diet, the liver can relax and take time to recover. Drinking fluids certainly helps to overcome losses of water and minerals.

Some points to remember

While modifying the diet of a patient, keep the following points in mind:

1. Do not plan a completely different diet because:
 - (i) Diets based on a person's daily diet have better acceptance.
 - (ii) Such diet do not make a patient feel that he/she is eating something completely different from the family members.
 - (iii) It is difficult to prepare.
2. Try to include only those foods which are liked by the patient, otherwise food may not be eaten at all.
3. Serve the meal in an attractive way to make them feel like eating.

TYPES OF MODIFICATION OF A NORMAL DIET

The types of modifications that may have to be made are as follows:

1. In diet consistency
2. In nutrient content
3. In interval and frequency of feeding

1. Modifications in diet consistency

In some diseases the thickness of the food has to be changed. The food can then be served in two consistencies:

1. Liquid
2. Semi solid

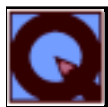
Sometimes, it becomes difficult to eat normal food. For example, in diarrhoea and fever you serve a liquid diet. This liquid diet includes milk, fruit juices, coconut water, nimbu-pani, tea, lassi, soups, cold drinks, etc. When one is little better you can serve khichdi, curd, custard, fruits, bread, cooked vegetables, etc.

2. Modifications in nutrient content

Depending on the nature of the diseases, modifications may need to be made in one or more nutrients in the diet. The modifications can be in terms of an increase or decrease in amount of the nutrient. For example, salt has to be reduced in high blood pressure, intake of carbohydrates has to be restricted in case of diabetes and fluid intake has to be increased in the case of diarrhoea.

3. Modifications in interval and frequency of feeding

Normally you eat 3-4 meals a day, that is, breakfast, lunch, tea and dinner. In sickness, you find it difficult to eat the amount you usually eat at one time. However, your body must get all the nutrients in correct amounts. Small amounts of food at intervals of 2-3 hours and as many as 8-10 small meals in a day instead of 3-4 meals facilitates speedy recovery.



INTEXT QUESTIONS 5.4

1. Differentiate between the following:
 - (i) Normal diet and therapeutic diet.
 - (ii) Modification in diet consistency and modification in frequency of feeding.
2. Write 'T' against true and 'F' against false statements. Justify your answer.
 - (i) Sick people need only medicines for improving health.
 - (ii) Diet plays no role in helping the patient to get well.
 - (iii) Liquid diet consists of foods like nimbu-pani, fruit juices, coconut water, etc.
 - (iv) The normal diet meets nutritional needs of all sick individuals.
 - (v) The modified diet should be as similar to the normal diet as possible.



Notes



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3. In diet therapy modifications of a normal diet are in terms of:
- (i)
 -
 -
 - (ii)
 -
 -
 - (iii)
 -
 -
4. Categories the following food stuffs into liquid and semi-solid foods:
Sago kheer, soup, custard, khichdi, lassi, fruit juice
- Liquids:.....
-
- Semi-solid foods:.....
-



Activity

Visit a patient suffering from high fever. Do the following:

- i) Record temperature with the help of thermometer.
- ii) Enquire what the patient has eaten during the day.
- iii) Ask if the patient has modified his normal diet during fever.
- iv) Give suggestions for inclusion of appropriate food items during fever.

DIET IN SPECIFIC DISEASES

Now let us see what kind of food should be given to persons suffering from different diseases. These diseases may be due to infection - fever, hepatitis, diarrhoea or malfunctioning of some part of the body - hypertension, diabetes or constipation.



Activity

Using combinations of the following items, suggest four recipes each appropriate for diarrhoea and constipation.

Lemon, carrot, spinach, wheat flou, moong dal sprouts, banana, suji, juice, curd, milk, butter, potato, salt and sugar.

Diarrhoea

Constipation

- | | |
|----|----|
| 1. | 1. |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |



Notes

Table 5.4

DISEASES	MODIFICATIONS IN			FOOD TO BE	
	Diet consistency	Nutrient content	Interval and frequency of feeding	Taken	Avoided
Diarrhoea	Liquid/semi solid	Low fibre	Frequent meals, intervals of 1-2 hrs	Soups, banana, biscuits, sago khichdi, potato, boiled egg, curd, dals, refined cereals	Whole cereals, chillies, whole pulses, fried food, guava, fruit with skin, leafy vegetables, pastries, milk
Fever	Semi solid diet	High calorie, high protein	Frequent meals at 2-3 hrs interval	Milk, egg, chicken, fish, juices, fruits, soups, lassi, dalia, kheer	Whole cereals, chillies, whole pulses, fried food, guava, fruit with skin, leafy vegetables, pastries, milk
Diabetes	No change	Normal diet with no sugar	Meals taken at fixed time, take six small meals/day	Vegetables, roti, dal, milk, curd, fruit, egg.	Sugar, sweet, honey, jam, jellies, cakes, pastries, sweetened fruits, cold drinks, tinned fruit
Hypertension	No change	Low calorie, low cholesterol, low salt	No change	Roti, dal, vegetables, milk, fruits	Food rich in cholesterol and salt like cheese, butter egg yolk, pickles, chutneys, papads, sauces
Jaundice	Start with liquids slowly go to a normal diet	Low fat	Small frequent meals at 1-2 hrs intervals	Roti, vegetable, dal, skimmed milk, fruit, sugar	Fried food-puri, pakoda, samosa
Constipation	No change	High fibre, drink lots of water	No change	Atta with husk, whole pulses, green leafy vegetables, guava	Refined foods like suji, rice, candies, bread, maida



Notes



INTEXT QUESTIONS 5.5

- Match the diseases given in column A with the therapeutic diets given in column B

Column A	Column B
(i) Diarrhoea	(a) Low sugar diet
(ii) Fever	(b) Low fibre diet
(iii) Diabetes	(c) Low salt diet
(iv) Hypertension	(d) High protein, high energy diet
(v) Jaundice	(e) High fibre diet
(vi) Constipation	(f) High carbohydrate low fat diet

- List five foods rich in each of the following nutrients

- (a) Carbohydrates _____, _____, _____
 _____, _____, _____
- (b) Proteins _____, _____, _____
 _____, _____, _____
- (c) Fibre _____, _____, _____
 _____, _____, _____

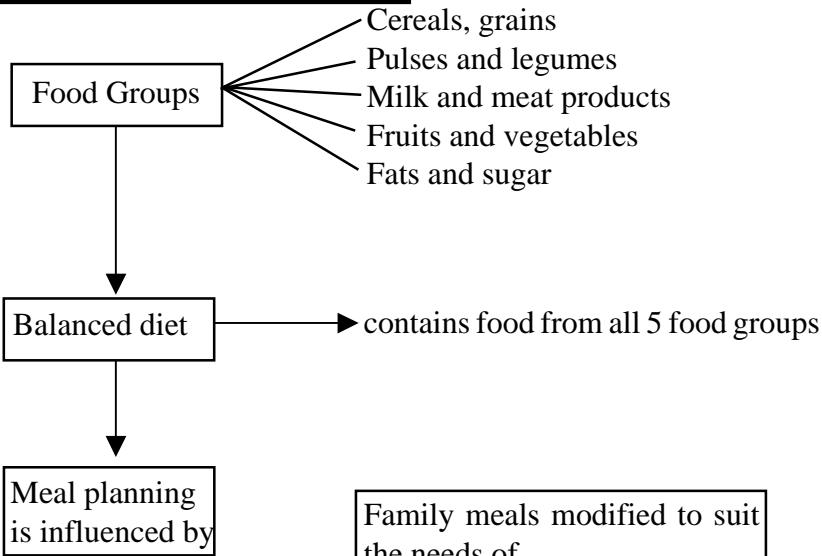
5.6 WRONG BELIEFS (MYTHS) REGARDING DIET

There are many wrong beliefs prevalent among people regarding diet. We present here only a few myths and the facts.

- Myth:** Diabetics can not eat rice or potatoes.
Fact: A little amount can be taken daily.
- Myth:** Jaundice patients should not take fats or turmeric in their diet.
Fact: Fats must be excluded for a while but turmeric is not harmful during jaundice.
- Myth:** Crash dieting or eating very little is good for losing weight fast.
Fact: Starvation diet is harmful to the body. A controlled, high fibre, low calorie diet is recommended.
- Myth:** In diarrhoea, stop eating
Fact: The body needs food to help recover. Stopping food only aggravates the problem.
- Myth:** In fever do not give hot foods.
Fact: There is nothing like hot and cold food.



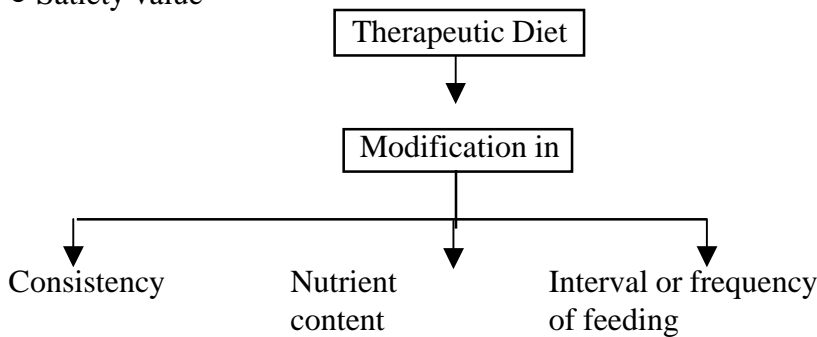
WHAT HAVE YOU LEARNT



- Nutritional adequacy
- Age
- Sex
- Activity
- Economic consideration
- Time, energy, skill consideration
- Seasonal availability
- Religion, region and culture
- Variety in colour and texture
- Likes and dislikes
- Satiety value

Family meals modified to suit the needs of

- adult woman
- pregnant woman
- lactating mother
- infant
- preschooler
- school going child
- adolescent
- elderly



Diet in different diseases

Diarrhoea	—	Low fibre, semi-solid
Fever	—	High energy, high protein
Diabetes	—	Normal diet with no sugar
Hypertension	—	Low energy, low cholesterol, low salt
Jaundice	—	Low fat
Constipation	—	High fibre



Notes



Notes



TERMINAL EXERCISE

1. Rama likes to eat three full meals a day. She is suffering from fever. Suggest modification in her diet.
2. Ashok is a factory worker. Every evening he plays foot ball with his friends. He has fractured his leg. Suggest modification in his diet so that he does not gain weight.
3. What do you understand by the term 'Balanced Diet'?
4. What is reference menu and how do you plan it?



ANSWERS TO INTEXT QUESTIONS

1. Two - (a) on the basis of physiological function
(b) on the basis of nutrients
2. (a) Cereals and grains
(b) Pulses and legumes
(c) Milk and meat products
(d) Fruits and vegetables
(e) Fats and sugars
3. Substitution of one food item with the other in such a way that the nutrients provided by them are the same is called food exchange. Example wheat and rice
4. (i) a (ii) c
5. Paushtik roti/parantha, paushtik poha, vegetable pulao upma, vegetable sandwich.

- 5.2**
1. (a) Nutritious, and include all food groups
(b) Seasonal foods are cheap, nutritious and abundant. Out of seasonal foods are less nutritious & expensive.
(c) Colour, texture
(d) Heavy, sedentary and light. Heavy work requires maximum energy.

(e) By making lauki kofta instead of lauki curry. This is planning meal according to likes and dislikes of family members.

2. Nutritious snacks – (i), (iv), (v), (vi)

5.3 (i) Refer to text.

(ii) Refer to text.

5.4 1. i) Refer to text.

ii) Refer to text.

2. (i) False, nutritive diet builds the body's ability to fight sickness.

(ii) False, diet facilitates recovery.

(iii) True, as these are high in water content.

(iv) False, diet have to be adjusted according to the sickness.

(v) True, as they have better acceptance.

3. (i) Consistency

(ii) Nutrient content

(iii) Interval and frequency of feeding.

4. Liquids - soup, lassi, fruit juice

Semisolid foods - sago kheer, custard, khichdi

5.5 1. (i) Diarrohea - (a) low fiber diet

(ii) Fever - (d) high protein, high energy diet

(iii) Diabetes - (a) low sugar diet

(iv) Hypertension (c) low salt diet

(v) Jaundice - (f) high carbohydrate low fat diet

(vi) Constipation - (e) High fibre diet

2. (a) Carbohydrates - Chapati, rice, bread, dalia, suji.

(b) Proteins, milk, paneer, curd, egg, dals.

(c) Fibre - salads, guava, wheat (choker) whole grains, whole dals





- 6.1**
1. The condition of health of a person that is influenced by the intake and utilisation of nutrients is called nutritional status.
 2.
 - (i) Overnutrition, Undernutrition
 - (ii) lack
 - (iii) obese
 - (iv) normal

AUDIO – Bhojan aur uske Poshak Tatva (Meal Planning)

VIDEO – Our food.

*For more information log on to
<http://www.llu/nutrition/vegguide.html#food>*