

# 21

## ADEQUATE MEALS

### 21.1 Introduction

In the previous lessons you have learnt about the meaning of nutrition and health and the interrelationship between the two. You are also familiar with the various nutrients present in the food, their individual functions and requirement (RDI) in the body and the factors influencing these requirements. You were told about food groups and about balanced/adequate diet. Do you realise that all this knowledge is essential to make sure that you are eating the right food in the right quantities. In this lesson we will tell you how you can ensure the nutritional adequacy of the food that you eat every day and how you can plan the same.

### 21.2 Objectives

After reading this lesson you will be able to:

- state the meaning of meal planning and elaborate its importance;
- enumerate the factors influencing meal planning;
- analyse the nutritional needs of members of the family and modify the meals accordingly;
- explain the importance of hygiene in food service and follow the rules of hygiene while preparing and serving the food;

### 21.3 What is Meal Planning?

**Meal planning** means making a plan of meals for adequate nutrition for every member of the family within the available resources. You already understand the meaning of adequate nutrition. This you have studied in the previous lesson under the topic 'balanced diet'. The term 'available resources' means whatever the family has in terms of time, energy and money. Meal planning also takes into consideration the likes and dislikes, age and activity of various individuals.

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## 21.4 Importance of Meal Planning

Meal planning is very important for meeting the nutritional requirement of the family members. You know that meeting nutritional needs is very important for their health and well-being. It helps us to decide what to eat each day 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 fuel.
- (e) Use left over foods.

The following section, which deals with the factors influencing meal planning, will help you to understand these points clearly.

## 21.5 Factors Affecting Meal Planning

While planning the meals, what guidelines do you keep in mind? What all do you consider to make your meal planning effective? Yes, there are many factors. Some important ones that we consider, when deciding upon the kind and amount of foods to include in the meals are as follows:

### 1. Nutritional Adequacy

This is the most important factor, that we keep in mind while planning meals. This means that the nutritional requirements of all the family members is fulfilled. Example, you know a growing child needs more protein, a pregnant or lactating woman needs to eat more as she eats not only for herself but also for the growing baby who gets food from her. So while planning meals for them you provide them with extra servings of the nutrients they require.

Thus different members of the family have different needs and you keep these in mind while you are planning the meals.

Also, when you are planning meals for them, you will include food 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 is quantitatively different. A new born baby drinks only milk, a small child's meal is also very small quantitatively, 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, etc.

So, you keep in consideration the age of family members while planning the meals.

### 3. Sex

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

#### 4. Activity

The kind of work a person does affects the kind and amount of food he/she needs to take. Do you remember that RDI 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

Another important factor to be considered in meal planning is money available to the family to be spent on food. Foods like milk, cheese, meat, fruits, nuts etc. help us to make our diet balanced but they are expensive. However, alternative sources like toned milk, seasonal fruits and vegetable are less costly and serve the same function of making the diet balanced. You can therefore plan a balanced diet to suit every budget.

Can you think of certain other ways of lowering the budget on food? Here are some tips to be even more economical:

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

#### 6. Time, energy and skill considerations

In order to make the meals acceptable to the family, it is important that the meal patterns fit into its working schedule. This demands that while planning the meals, you 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 others are only available in winters. The offseason foods are expensive and less nutritious, while those in season are fresh, nutritious, tasty and cheap. Hence while planning the meals, use seasonal products as far as possible.

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

You will be influenced by cultural factors while planning the meals. For example, if you are a North Indian, you will consume more of wheat, if you are staying near the coastal region, you will consume more of foods like coconut, fish, etc. Similarly your staple food would be rice if you are a South Indian.

You will also be influenced by the religious beliefs prevalent in the family. If certain food is prohibited in your community, you will not include them in your meals. 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

Chapati

Rice

Arhar dal

Pumpkin vegetable

Curd

Salad (Radish and onion)

### Menu - II

Chapati

Rice

Rajmah

Fried ladyfinger

Carrot raita

Salad (Cabbage, cucumber, beetroot)

Papad

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 cutlets or pakodas. It can also be given in the form of koftas, idlis, vadas, etc.

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.

## 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.

### Some important factors affecting meal planning are :

- Nutritional adequacy
- Sex
- Economic considerations
- Seasonal availability
- Variety in colour and texture
- Satiety value
- Age
- Activity
- Time, energy and skill considerations
- Religion, region, cultural patterns, traditions and customs
- Likes and dislikes of individuals

Satiety : Feeling of fullness after eating

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**Intext Questions 21.1**


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1. Fill in the blanks :

- (a) The meal planned should be \_\_\_\_\_ and should include foods from all the \_\_\_\_\_.
  - (b) Seasonal foods are \_\_\_\_\_ and \_\_\_\_\_.
  - (c) A meal should have variety in \_\_\_\_\_ and \_\_\_\_\_ in order to be attractive and appealing.
  - (d) Moderate workers require less energy giving foods than \_\_\_\_\_ workers but more of such foods compared to \_\_\_\_\_ workers.
  - (e) Giving ghia koftas instead of ghia curry is an example of planning the menu according to the \_\_\_\_\_ of an individual.
  - (f) Comparing prices before buying is an example of making meals more \_\_\_\_\_.
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## 21.6 Modification of Family Meals For Various Age Groups

Consider a family having six members in various age groups, i.e. 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? 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**.

### A. Diet Modification

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

It refers to the increase, or decrease of certain nutrients or calories.

For example, the increased protein requirement of a pregnant woman can be met by increasing the quantity of protein rich foods in her diet. Similarly, a growing child needs to take more of proteins, an athlete needs to take foods which provide more energy.

#### 2. Qualitative modification of diet

It refers to the change in consistency, flavour, amount of spices and roughage content of the 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 yr. Dal does not contain any spices, except salt and turmeric. Slightly older children are fed well cooked and mashed 'Khichri'. Older people tend to avoid foods such as raw salads, whole pulses like rajmah etc., What is special about this diet? It is soft in consistency and not 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 he/she is not able to increase the quantity of food in his/her original meals? Yes, you will suggest an increase in the number of meals instead, that is, to take something in between the main meals. This is diet modification in terms of frequency.

## B. Food Exchanges

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.

TABLE 21.1

### FOOD EXCHANGE TABLE

#### *Protein rich foods*

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

#### *Cereals*

1 Chapati  $\Rightarrow$  1 bread slice  $\Rightarrow$  1 Potato  $\Rightarrow$  1/2 cup Rice  $\Rightarrow$  1/2 cup dalia  $\Rightarrow$  4 salted biscuits  $\Rightarrow$  1/2 cup noodles  $\Rightarrow$  1 idli  $\Rightarrow$  1 plain dosa  $\Rightarrow$  1/2 cup upma/poha

#### *Fats*

1 tsp of butter  $\Rightarrow$  1 tsp of oil, 2 tsp mayonnaise  $\Rightarrow$  4-5 pieces of nuts  $\Rightarrow$  10-12 pieces of peanuts  $\Rightarrow$  5 tsp cream.

## C. 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. Had the needs been the same for all family members, you would have planned for one person and simply multiplied by the number of family members. But this does not work out, as the needs of different individuals are different.

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.

You have already learnt in the previous lesson that the diet of an adult man should have a certain recommended amount of calories, protein, iron, vitamin C and other nutrients which vary according to the level of activity. Here we are presenting a sample menu for an adult man, who is engaged in moderate work. We will use this reference menu and tell you how this will be adapted to suit the needs of other members.

TABLE 21.2

## Sample menu for an adult man engaged in moderate work

Meal	Menu	Amount
Early morning	Tea	1 cup
Breakfast	Aloo parantha	2
	Sprouted pulse raita	1 medium katori
	Boiled egg	1
Lunch	Chapatis	4
	Methi aloo vegetable	1 medium katori
	Urad dal	1 big katori
	Salad	half plate
	Fruit	1 orange
	Evening	Suji upma
Dinner	Tea	1 cup
	Chapati	2
	Rice	half plate
	Rajmah curry	1 big katori
	Cauliflower vegetable	1 small katori
	Fruit custard	1 medium katori

This menu is based on the balanced diet for an adult man. Considering this as a reference menu we would be modifying this diet for other family members of different age groups according to their requirements.

### 21.7 Modification for an adult woman

The energy content of the diet for an adult woman is nearly  $\frac{2}{3}$  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. Keeping all these points in mind the reference menu (Table 21.2) is modified as follows.

TABLE 21.3

## Diet for an adult woman

Meal	Menu	Amount
Early morning	Tea	1 cup
Breakfast	Aloo parantha	1
	Sprouted pulse raita	1 big katori
	Boiled egg	1

Lunch	Chapati	2
	Methi aloo vegetable	1 big katori
	Urad dal	1 medium katori
	Salad	half plate
	Fruit	1 orange
Evening tea	Suji upma	1 big katori
	Tea	1 cup
Dinner	Chapati	1
	Rice	Quarter plate
	Rajmah curry	1 medium katori
	Cauliflower vegetable	1 small katori
	Fruit custard	1 medium katori

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.

### 21.8 Modifications for pregnant Woman

You have already learnt in the previous lesson that during pregnancy, the need of calories, protein, 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 roughage, 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 sample menu is modified and given as under.

TABLE 21.4

#### Modified menu for a pregnant woman

Meal	Menu	Amount
Early morning	Tea	1 cup
Breakfast	Aloo parantha	1
	Sprouted pulse raita	2 medium katori
	Boiled egg	2
Mid day meal	Fruit chaat (papaya, orange, guava)	1/2 plate
Lunch	Chapati	3
	Methi aloo vegetable	2 medium katori
	Urad dal	1 big katori
	Salad	half plate
	Fruit	1 orange

Evening	Suji upma	1 big katori
	Milk	1 glass
Dinner	Chapati	2
	Rajmah curry	1 big katori
	Cauliflower vegetable	1 small katori
	Fruit custard	1 medium katori
Late night	Milk	1 cup

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

### 21.9 Modifications 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. As you have already learnt in the previous lesson, the RDI's of energy, protein, calcium, vitamin A and vitamin C are increased during lactation, so while modifying her diet, you will take care that her meals are rich in these nutrients.

**TABLE 21.5**  
**Modified menu for a lactating mother**

Meal	Menu	Amount
Early morning	Tea	1 cup
Breakfast	Plain parantha	1
	Sprouted pulse raita	1 medium katori
	Boiled egg	2
Mid day meal	Mango shake	1 glass
Lunch	Chapati	2
	Methi aloo vegetable	1 big katori
	Urad dal	1 big katori
	Salad	half plate
	Fruit	1 orange
Evening tea	Suji upma	1 big katori
	Milk	1 cup
Dinner	Chapati	1
	Rice	Half plate
	Rajmah curry	1 big katori
	Cauliflower vegetable	1 small katori
	Fruit custard	1 medium katori
Late night	Milk	1 cup

We have either added or increased the quantity of such foods which are rich in protein, calcium, vitamin C and vitamin A as compared to reference menu. She is 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 is increased to fulfill her extra needs.

### 21.10 Modifications for an infant

You know that by 6 months, infants are put on weaning foods to take care of their rapid growth and development. 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 protein, Vitamin A and specially calcium. The calorie requirements of infants is nearly 1/4 and protein is 1/3 that of adults but the calcium requirements of infants are higher than that of 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 is modified as follows.

**TABLE 21.6**  
**Modified menu for infants**

Meal	Menu	Amount
Early morning	Milk	1 cup
Breakfast	Mashed aloo with curd	1 medium katori
	Mashed egg	1
	Mango shake	1 cup
Mid day meal		
Lunch	Chapati mashed in Urad dal	1/2 small katori
	Mashed methi aloo	
	Vegetable in curd	1/2 small katori
Evening time	Suji upma with mashed paneer	1 cup
Dinner	Mashed rice and rajmah	1/2 small katori
	Mashed vegetable with curd	1/2 small katori
Late night	Milk	1 cup

### 21.11 Modifications for preschoolers

You know a good intake of nutrients is very important for preschoolers for their normal growth and development and also to protect them from infectious diseases.

They need more of vitamin A, calcium and vitamin C and also a high calorie, high protein diet. But while planning their meals, keep in mind that their diet is less spicy and mildly flavored.

Also, whenever possible, serve them handy finger foods as they dislike slippery foods. For example they would prefer to have vegetable stuffed parantha instead of chapati and vegetable.

TABLE 21.7

## Modified diet for Preschoolers

Meal	Menu	Amount
Breakfast	Egg	1
	Milk	1 glass
Tiffin	Sprouted pulse and aloo parantha	1
	Fruit	1 orange
Lunch	Methi stuffed chapati	1
	Urad dal	1 small katori
	Curd	1 small katori
	Salad	1 quarter plate
Evening time	Suji upma	1 cup
Dinner	Vegetable stuffed parantha with butter	1
	Rice	1 small katori
	Rajmah curry	1 small katori
	Fruit custard	1 medium katori
Bed time	Milk	1 cup

The preschoolers need more of vitamin A, calcium and vitamin C, the requirements of which are more or less same as that of adult man. The requirements of energy is little more than half and protein is half of an adult man. Keeping these points in mind, the above menu is modified, where calories and proteins are reduced by lowering the amount of cereals, pulses and other protein rich foods as compared to the sample menu. But the milk products are given to them in sufficient amount so as to provide them with sufficient amount of calcium.

### 21.12 Modifications for school going children

While modifying the diet for school going children, you will keep in mind that they take high calorie, high protein diet and also at the same time it should be rich in calcium and vitamin A. You have already learnt in the previous lesson that their diet is high calorie diet as they are involved in many energy consuming activities like running, playing, etc., and high protein, since it is a growing stage. Their energy requirement is  $\frac{2}{3}$  that of an adult man and protein is nearly the same.

TABLE 21.8

## Modified diet for school going children

Meal	Menu	Amount
Breakfast	Egg sandwich	1
	Milk	1 glass
Tiffin	Sprouted pulse	
	parantha	1
	Fruit	1 orange
Lunch	Chapati	2
	Methi aloo Vegetable	1 small katori
	Urad dal	1 medium katori
	Salad	1 quarter plate
Evening time	Suji upma	1 cup
	Milk	1 cup
Dinner	Chapati	1
	Rice	1 quarter plate
	Rajmah curry	1 medium katori
	Cauliflower Vegetable	1 small katori
	Fruit custard	1 medium katori
Bed time	Milk	1 cup

## 21.13 Modifications for adolescents

Since adolescent period is characterised by a rapid increase in height and weight and also because adolescents are very energetic and physically more active than adults, you will be providing them diet rich in calories, proteins and other nutrients. The requirements of an adolescent boy is much more than that of an adult man. They need more of protein, iron and vitamin A as compared to adult man, but the calorie requirements remain the same. So while modifying their diet, you will take care that these needs are fulfilled. In the given modified menu, you will find that the quantity of foods rich in these nutrients are increased in their diet, by giving them extra serving of such foods. Similarly, the requirements of an adolescent girl are more than that of an adult woman.

TABLE 21.9

## Modified menu for an adolescent boy

Meal	Menu	Amount
Breakfast	Aloo parantha	2
	Sprouted pulse raita	1 big katori
	Boiled eggs	2
Lunch	Chapati	4
	Methi aloo Vegetable	1 medium katori

	Urad dal	1 big katori
	Salad	half plate
	Fruit	2 oranges
Evening time	Suji upma	1 big katori
	Milk	1 cup
Dinner	Chapati	2
	Rice	half plate
	Rajmah curry	2 medium katori
	Cauliflower Vegetable	1 small katori
	Fruit custard	1 big katori
Bed time	Milk	1 cup

### 21.14 Modifications for old people

You know that due to many physiological changes occurring during old age their nutritional requirements are decreased. They need less of energy and fats as compared to that of an adult man but the proteins and other nutrients remains the same. But yes, you should provide them with unsaturated fats and also lots of water and fiber to check the problem of constipation. Also, you know that they may suffer from chewing problems, so give them soft and well cooked foods.

Keeping these points in mind, we have modified the reference menu for old age.

**TABLE 21.10**  
**Modified menu for old people**

Meal	Menu	Amount
Early morning	Tea	1 cup
Breakfast	Aloo parantha	1
	Sprouted pulse raita	1 medium katori
	Boiled egg	1
Lunch	Chapati	2
	Methi aloo vegetable	1 medium katori
	Urad dal	1 big katori
	Stewed salad	half plate
	Fruit	1 orange
Evening time	Suji upma	1 medium katori
	Tea	1 cup
Dinner	Chapati	1
	Rice	quarter plate
	Rajmah curry	1 big katori
	Cauliflower Vegetable	1 small katori
	Fruit custard	1 medium katori

Now you have learnt how to adapt the same menu for various family members according to their requirements. This saves time and energy and if you are aware of individual needs you will not find it difficult to modify the diet for different family members. Within the available resources you would be able to satisfy everyone's requirements in the family. The modification of diet thus makes planning of diets very simple.

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### Intext Questions 21.2

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Fill in the blanks:

1. Giving two eggs to an adolescent instead of one, is an example of \_\_\_\_\_ modification of diet.
  2. Increasing the numbers of meals, is diet modification in terms of \_\_\_\_\_.
  3. If one does not like milk he/she can be given \_\_\_\_\_ cup of paneer instead of a glass of milk.
  4. The first important step while modifying the diet of an infant, is modification in terms of \_\_\_\_\_.
  5. More of \_\_\_\_\_ rich foods should be given to a pregnant woman in order to relieve her of constipation.
  6. The requirement of \_\_\_\_\_ in infants is even higher than that of an adult man.
  7. The protein requirement of an adolescent boy is \_\_\_\_\_ than that of an adult man.
  8. The energy requirements of a school going child is \_\_\_\_\_ of an adult man.
  9. Increasing the quantity of eggs and pulses in the diet of a lactating mother is taking care of her \_\_\_\_\_ needs.
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### 21.15 Hygienic Food Service

No matter, how much you plan the food keeping in mind all the factors, if you have not prepared it under clean and safe environment, it is of no use. You know micro-organisms are present everywhere in our environment. They can enter into your food, if you are not very careful. For example, if you have touched the food with dirty hands while serving, imagine what will happen? The micro-organisms will gain entry into your body through food, so instead of having any positive effect on your health, the food will only make you ill. So it is very important that you are very careful about food hygiene while cooking, serving and storing it.

#### What is food hygiene?

Food hygiene can be defined as the 'safe handling of food, in a way that it is safe and free from micro-organisms'.

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Now, the question arises how to ensure that the food you are serving is hygienic? It depends on how well you maintain the sanitary conditions and personal cleanliness while cooking and serving the food.

In order to ensure the hygiene of food you should follow simple rules of hygiene.

1. Cleanliness in the kitchen
2. Hygienic handling of food
3. Personal hygiene

## 1. Cleanliness in the Kitchen

This refers to the cleanliness of the area where food is prepared and served. This objective can be achieved if you take care of the following points:

- (i) Keep the kitchen clean and free from household pests like rats, flies, fleas, cockroaches, mosquitoes, etc.
- (ii) Light the kitchen well, so that you can see if there is any dirt or insect.
- (iii) As far as possible, have a kitchen facing the sun as sunlight helps in removing dampness, besides killing germs.
- (iv) Ensure proper drainage. Keep the drains free and see that the water does not stagnate.
- (v) Keep a covered dustbin in the kitchen. Ensure that it is emptied daily.
- (vi) Clean the kitchen cloths/dusters regularly. Wash them with hot water and suitable detergent.

## 2. Hygienic Handling of Food

This demands that while preparing food, cleanliness should be maintained, so that no germs and dirt enter our food. And this starts right from the stage when you purchase food from the market. Try and follow the tips given below.

- (i) Select food properly by checking it thoroughly. Discard rotten and spoilt food.
- (ii) Store the food properly. You must be storing food in the fridge. Why? Because it brings down the temperature of the food due to which the growth of micro-organisms slows down, increasing the shelf life of the foods.
- (iii) Wash your hands thoroughly before starting work in the kitchen.
- (iv) Never leave the cooked food uncovered as dust, dirt and flies can spoil the food.
- (v) If you are ill or suffering from cold, cough, etc., do not cough/sneeze in front of the food, otherwise it can lead to contamination of food which in turn can cause sickness.
- (vi) Wash fresh fruits and vegetables thoroughly, especially roots and tubers, which grow near the soil, to remove dust and dirt.

- (vii) Serve the cooked food in thoroughly cleaned and washed utensils. The left over food should be stored in a clean container in a cool place/fridge.
- (viii) Throw all the peels, etc., in a dustbin.
- (ix) If you have spilled something on the floor, wipe and clean immediately, otherwise it will attract flies, cockroaches, etc.
- (x) Clean all the utensils after use.

### 3. Personal Hygiene

This refers to the general health and working habits in the kitchen.

- (i) Wash your hands thoroughly before starting cooking. Keep your nails trimmed and clean.
- (ii) Tie your hair to avoid their falling into the food. A scarf can be used while working in the kitchen.
- (iii) Avoid tasting the food while cooking. It is a very bad habit to lick the fingers while tasting and then using the same fingers for cooking.
- (iv) Avoid walking into the kitchen with dirty feet/slippers/clothing. These can carry millions of bacteria that can infect and spoil your food.
- (v) Avoid cooking food when you are sick. An unhealthy food handler can spread sickness in the entire family.

*Hygienic food service* is serving safe food which can be achieved only by maintaining personal cleanliness and hygiene of the area where food is prepared and served.

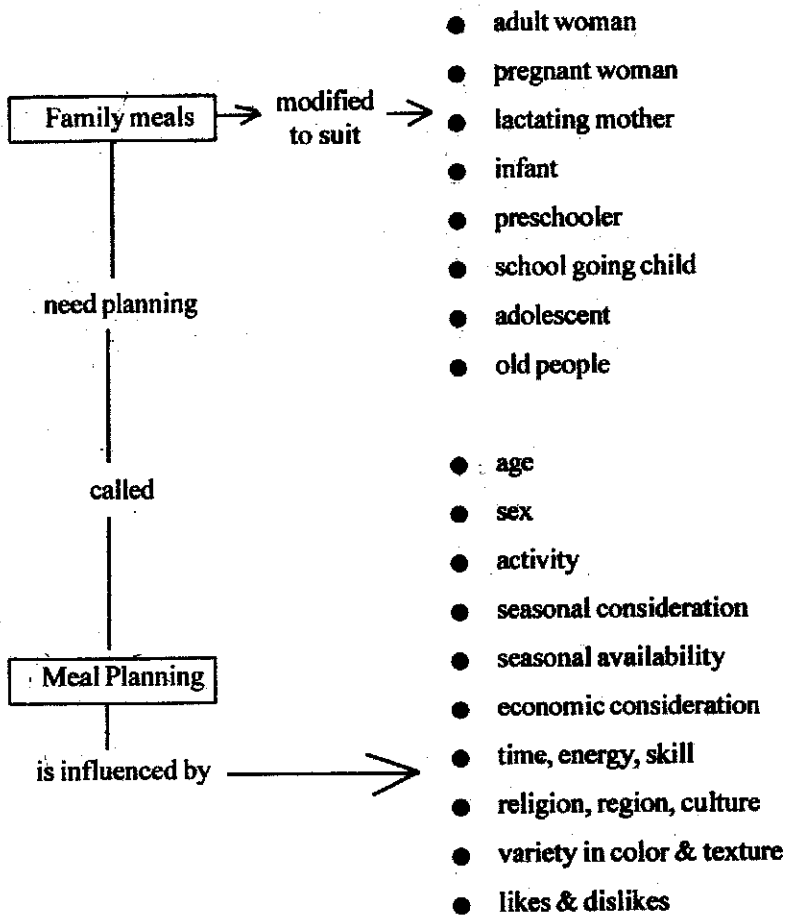
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#### Intext Questions 21.3

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1. What are the main steps to ensure the hygienic food service?
  2. Fill in the blanks :
    - (a) The safe handling of food, so that it is free from micro-organisms is known as \_\_\_\_\_.
    - (b) Kitchen should be well \_\_\_\_\_ to detect any dirt and insect in the kitchen.
    - (c) The stagnant water helps in the growth of \_\_\_\_\_.
    - (d) Coughing and sneezing in front of food during illness, leads to the spread of \_\_\_\_\_.
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## 21.16 What You Have Learnt



## 21.17 Terminal Exercise

1. List the advantages of meal planning.
2. Why should the fruits and vegetables be stored in the refrigerator?
3. Modify the reference diet of an adult man given in Table 21.2 for an adolescent girl.
4. How will you check, whether you have maintained personal hygiene before entering the kitchen.

## 21.18 Answers to Intext Questions

- 21.1 1. (i) balanced, food groups  
 (ii) cheap, nutritious  
 (iii) colour, texture  
 (iv) heavy, light/sedentary  
 (v) likes and dislikes

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2. (i) true (ii) false (iii) false  
(iv) false
- 21.2 1. (i) quantitative (ii) frequency (iii) one-fourth  
(iv) consistency (v) fiber (vi) calcium  
(vii) more (viii) two-third (ix) protein
- 21.3 1. (i) cleanliness in the kitchen  
(ii) hygienic handling of the food  
(iii) personal hygiene
2. (i) food hygiene (ii) lighted (iii) micro-organisms  
(iv) infection
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