MEAL PLANNING for the family has been discussed earlier. It was mentioned that the needs of individual family members must be considered in estimating the food needs of the family. As the family consists of various age groups in various physiological states, let us consider the needs of each stage of life, starting with adulthood.

Adulthood

Adulthood represents the steady state in life, when a person would have completed his/her growth in terms of body size. The nutritional needs are for maintenance of body functions. The energy needs in adulthood are mainly to sustain body functions and activity. The protein requirement is to make good the wear and tear and the losses, which occur as a result of normal life processes. Thus adult stage is taken as a norm and requirements in other stages are discussed in relation to it.

Adulthood also represents the productive stage of life. Therefore, it is important that the nutritional needs of an adult be met adequately, so as to keep up vitality and a positive attitude in life, which are essential for optimum productivity.

Changing Food Habits: Each of us have foods, which are our favourites. These are served on special occasions such as birthday, parties or other celebrations. Though one should take the likes and dislikes of family members into account in meal planning, we should not allow our preferences to rule our diets. Allowing people to develop a restricted food pattern may lead to a poorly balanced diet and could be a social disadvantage. Trying to like new foods enlarges one's food enjoyment, social experience as well as diet.

Food Selection: The selection of foods is made according to the daily food guide. The amounts of foods included from the various groups will depend on the body size and activity of the individual. Thus a labourer, who is very active may need more cereals and oils and fat to meet his/her energy needs as compared to a sedentary person, who is involved in desk work. The foods selected need to be used in the day's meals, which fit into the daily schedule of the person.

Breakfast an Important Meal: The first meal in the day is important as about 12 hours elapse between dinner and breakfast. About one fourth to one third of the day's food should be taken for breakfast. Rural agricultural families normally have a hearty breakfast. But in the cities the pattern varies from region to region. Some regions have a certain definite pattern of breakfast and some preparations are clearly associated with breakfast, e.g., *idli-chatni*, *upma* are considered as breakfast foods in Tamil Nadu and Kerala, roasted *ragi* flour and milk, in Mysore, *dahi-pohe*, *doodh-pohe* in western Maharashtra, *paranthe* and *lassi* in Punjab, etc.

In many urban families, it is customary to eat the fluid and soft dishes (such as rice, *dal*, *dahi*, salads, etc.) in the meal at about 8.30 to 9 a.m. and pack and carry other items of the meal (such as *chapati*, bread and butter, sandwiches, vegetables, *chole*, *usal*, pickle, etc.) in a lunch pack to work. Thus in the cities, whatever food is eaten before leaving home for work constitutes a breakfast. It usually consists of a cereal preparation, *dal*/fish/meat preparation, and butter milk/milk, vegetables, etc.

Many persons, especially housewives and girls omit breakfast to reduce their food intake. But it is known that a person, who eats a good breakfast, performs better at work and is likely to eat less during the day. A person who skips breakfast has a tendency to take snacks or eat more at lunch and dinner, thus increasing the total food intake. Protein content of snacks is usually low and the satiety value is also low. Further comparative studies have shown that those who have good breakfasts have a greater work output and are more alert.

As many people in the cities and villages have to carry packed lunch, or select one from a limited menu in snack counters, it is very important to plan breakfast to supply foods, which are sufficient both in quality and quantity.

Lunch Often a Poor Meal: About one-third of day's food intake should be contributed by lunch or the noon meal. Lunch should be counted as a part of food plan for the day, and not just a snack to stave off hunger till dinner time.

A good lunch should provide protein and protective foods, not just starchy foods. A common eating pattern of many office workers is to have any available snack such as *samosa*, *batata-vada*, *pakodas*, etc., or bread and butter and tea at the office canteen or at a cafe nearby. This is sometimes improved when milk or a milk product like *lassi*, cold milk drink is taken instead of tea. Too often the lunch pack from home may consist of *chapati*, bread and butter or *puri*-jam, *chapati*-pickle or *chutney*, or potato *bhaji*, which are accompanied by a cup of tea/coffee. While these foods may be more filling than the snack bought at work, they meet energy needs, without supplying much protein and protective foods. It is important to include a serving of protein foods at lunch. Selection of vegetables or fruit may help meet part of the need for protective foods.

Lunch, whether served at home or packed and carried to work, or purchased at the place of work, should be planned or chosen with care. A missed meal is not easily made up. Consistent neglect of this important meal may affect the individual's performance at work, behaviour with colleagues and attitude to life adversely.

The lunch should be planned in relation to the other needs, so that it supplies a fair share of the day's nutrients through the foods selected. A suggested daily food plan for the three meals is given in Table 16.1. The lunch can be sent with a dabawala or carried personally.

Dinner: This is the main meal of the day, which may be served at noon or night, depending on the family's schedule or custom. It is good to plan a menu for dinner which helps to balance the total intake in terms of energy, protein as well as other nutrients for the day. One may prepare an additional vegetable and salad, one may also add a dessert or sweet, to add to the variety. The active members may eat more heartily of the cereal dishes, while the person who has to watch his weight may eat more of salads and vegetables. As this is a leisurely meal, which is eaten by the family together, it contributes much to the feeling of belonging, enjoyment of the company and relaxation.

Snacks: It has become an accepted practice in most offices and factories for workers to have a tea break. Most of the canteens and cafes, which serve tea and coffee, also serve snacks, most of which are shallow or deep fat fried preparations. Thus the tea break provides an opportunity to eat as well as drink. The choice of the snack may decide if it will provide only energy or energy plus other

nutrients. Dishes such as *batata-vada*, vegetable patties, *pakodas* may contribute little but calories, and may dull the appetite, while *dahi-vada*, *idli-sambhar*, *misal*, sweetened milk, *lassi*, icecream, *chana-dana*, fruits, may provide some nutrients in addition to energy.

It is not possible and desirable to make rigid rules about between meals eating. It may be wise to choose such snacks as add to the nutrient intake, especially when these are intended to meet wholly or partly the need for a meal. Some suggestions for these snacks are milk or milk beverages, cereal-*dal* or *dal*-milk or cereal-milk mixed dishes, salads and fruits.

Table 16.1: Food Plan for a Day.

The daily food plan	*Sample menu*
Milk (2 servings) *Dal* (2 servings) Vegetables (3 servings) Fruit (1 serving) Cereals (10 servings) Sugar Oil, fat **Breakfast** Cereal and milk, fruit **Lunch** Cereals, *dal*, two vegetables, dahi **Dinner** Cereals, *dal*, leafy vegetables, *dahi*.	**Breakfast** *Shira/upma*, milk, banana, tea **Lunch** Rice, *chapati*, *dal*, vegetable beans, carrot and cabbage mixed salad, *dahi/lassi* **Tea** Tea, bread and butter **Dinner** Rice, *roti*, *dal*, leafy vegetables, dahi

Nutrition During Pregnancy and Lactation

Pregnancy and lactation are two stages of life when an adult women's needs are increased. She has the responsibility of supporting the growth of the foetus internally during the nine months of pregnancy and later externally by nursing the infant. Since the growth needs at the commencement of life are crucial, good nutrition is a must for the expectant as well as nursing mother. A number of tissues are formed to protect and sustain the foetus. During pregnancy the mother has to meet her own needs and the needs of the growing foetus. There is additional need for the growth of other related tissues and to build-up fat stores to cushion the foetus, prior to birth, and to supply part of the energy needed for milk formation during lactation. Thus the need for all nutrients involved in tissue synthesis is increased during pregnancy (Figure 16.1).

Adolescent mothers, who have not completed their own growth, may need additional foods to meet their own growth requirements. If these are not met, their health may be affected, which may indirectly affect the welfare of the foetus. If the mother's diet has been adequate before pregnancy, she may be in a better position to meet the demands of pregnancy.

No mother would like to injure the health of her baby through poor food habits. However, nutritional studies have shown that many women attend to the needs of other family members at the expense of

their own needs. The situation does not change during pregnancy. Thus pregnant women are often the most poorly fed members of the family. In her effort to take care of others, she does not take time to sit down and eat. When she is very tired she is unable to eat. If the food supply is limited, she is the worst affected, as she feeds all other members and eats what is left. It is important that the family should plan the arrival of the baby so that the pregnant mother does not suffer from lack of food both in terms of amount and kind. The expectant father must try to ensure that the expectant mother gets the right amounts and kinds of foods, so that the health of the foetus does not suffer.

Energy Needs

The Advisory Committee of the Indian Council for Medical Research recommends an increase of 300 calories per day in the latter half of pregnancy. As growth of the foetus is very rapid in the second half of pregnancy, it is important that the increased need for energy is met.

Enough energy food should be supplied to ensure that the dietary protein is used for building new tissues, and not to meet need for energy. During first part of pregnancy the demand for extra energy is small and is taken care of by the reduced activity.

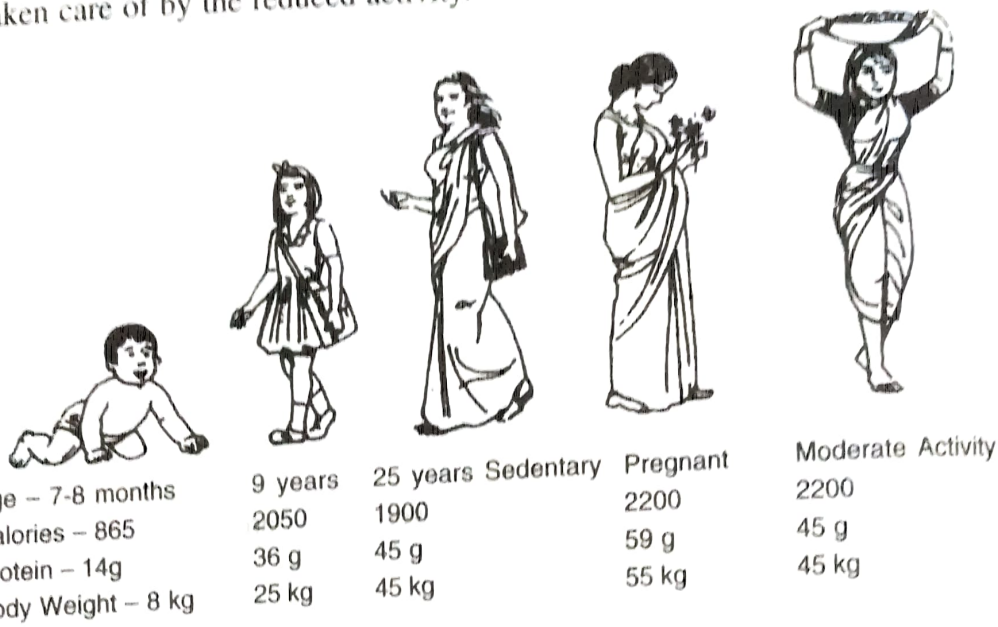

Figure 16.1: Energy and protein needs vary with age, occupation and physiological stage.

If the mother is within a few kilogrammes of the ideal weight for her body build, a gradual weight gain of up to 9-10 kg appears to be desirable. Under weight mothers may be encouraged to gain more weight, while those gaining too much weight may be advised to restrict their weight gain during pregnancy. Exact factual data about the most desirable weight gain and the significance of different rates of gain is not available.

The additional energy is used for building of new tissues, which is evident from the higher basal metabolic rate accompanying it, and also for the movement and activities of the larger body in the later part of pregnancy.

Protein Needs

Additional protein is necessary for growth of the foetus, new maternal tissues and to prepare the mother for lactation. The ICMR recommends addition of 14 g of protein daily during the second half of pregnancy.

The protein should be of good quality, e.g., milk, eggs, fish, meat, etc. Good quality may be achieved by combining sources of protein in the diet. Some of it could be supplied by milk and milk products.

Mineral Needs

The need for minerals, which form a part of body structure is increased with pregnancy. Calcium and phosphorus are needed for formation of bones and teeth. The teeth formation starts early in prenatal life, so it is important that the mother gets sufficient calcium from the beginning of pregnancy.

Iron is needed for the synthesis of additional volume of blood and other tissues formed during development of the foetus. The store of iron is built in prenatal period, because milk, the infant's main food during first three to four months after birth, is deficient in iron. It is now a common practice for the doctor to give expectant mothers a prescription for an iron salt. Though this is true, foods rich in iron should be emphasised in the diet. The mother will need to continue to eat a diet high in iron after delivery also, to make up for some of the losses at the time of childbirth. A number of foods traditionally prepared for feeding a nursing mother in the early part of lactation are rich in iron.

Iodine: There is an additional need for iodine at this stage in life. If mother's iodine intake is low, the infant may suffer from cretenism, a disease which is characterised by retarded physical and mental development. The iodine deficiency disease in adults is simple goitre.

In areas where the soil and water are deficient in iodine, the use of iodised salt is recommended.

Craving for Certain Foods: This may be due to psychological need for attention. It may be satisfied, if these do not conflict with the meeting of nutritional needs.

Nausea and vomiting may be common in early part of the pregnancy. A high carbohydrate diet, consisting of bland preparations, given as small frequent feedings, is likely to be beneficial. It is advisable to avoid strong flavours, e.g., strong coffee or tea, spicy and oily foods.

Constipation: Constipation is one of the complaints in pregnancy, because the enlarged uterus may press against the intestines and prevent normal movement. There is a tendency to decrease or minimise physical activity. This is not advisable, as exercise not only helps elimination but also keeps the body fit. Generally, some of the aids to regular elimination, which help in all stages of life, may be practised everyday to maintain good health in pregnancy. These are:

1. Drink more water. A glass or two taken before breakfast are often helpful. Some people find warm water more helpful than cold.
2. Eat the right foods. Include plenty of vegetables and fruits, especially green leafy vegetables, fresh fruits, raw salads, whole-grain preparations.
3. Eat at regular hours. Eat slowly.
4. Take some exercise daily to help movement, improve breathing and help the body to relax. A number of exercises can be performed regularly. Walking is a good and easy exercise.
5. Develop regular toilet habit. Early in the morning or, after the first cup of tea is a good time for a bowel movement.

Meeting the Dietary Needs of the Nursing Mother

It is recommended that the diet of a nursing mother should supply 700 calories in addition to her normal needs. This helps her to meet the demands of extra energy for lactation. Additional protein and other nutrients are also needed. The additional amounts recommended are indicated in the list. The increase in requirements is related to the amount of milk produced (Table 16.2).