CBSE Test Paper 02

CH-02 Sports and Nutrition

1. Why does the weightlifters' diet include lots of protein?
2. What do you mean by Protein?
3. What is roughage? Explain in brief.
4. Enlist two non-nutritive components of diet.
5. What are the Nutritive and Non-nutritive components of diet? Explain.
6. Discuss the functions and sources of fats.
7. Briefly explain any two food myths.
8. What type of nutrition does a sportsperson take before, during, and after competition? Explain in brief.
9. Briefly explain the functions and resources of three fat soluble vitamins.
10. What is protein? What are its types and sources?

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Answer

1. **PROTEIN**:- For essential growth and repair of muscles and other body tissues. The basic structure of protein is a chain of amino-acid that contains carbon, oxygen, hydrogen and nitrogen.

   Types: - Essential protein and non-essential protein

   Sources: - animal Protein:- egg, milk, milk products , meat and fish. Vegetables protein: - Pulses, soya beans, mustard, dry fruits and food grains groundnuts etc.

2. Proteins are the main components of muscles, organs, and glands. Weightlifting demands a high degree of strength abilities due to which we need to include a lot of proteins in our diet. Proteins make our body muscles strong. They are also essential for the growth and repair of bones and muscles.

3. Proteins are the basic structures of all living cells. They are complex organic compound which form chain of Amino-acids that contains carbon, hydrogen and nitrogen. It helps to repair or replace the worn out tissues. Protein is complex organic nitrogenous compounds.
4. Fibre or roughage has no nutritive value. It is undigested part of the food or it can be said that it cannot be digested by human intestinal tract. It consists of water and improves intestinal function by adding bulk to the food. It helps the individual to satisfy the appetite. It prevents constipation.

5. Non-nutritive components of the diet are:

   1. Water
   2. Plant compounds

6. **Nutritive Components Of Diet**: There is a large number of nutrients required in our balanced diet. Some of them are “Nutritive components” like Carbohydrates, Fats, and Proteins.

Non-Nutritive Components Of Diet: Whereas some of the other components of the diet are also required which are “Non-Nutritive Components” such as Vitamins, Minerals, Water and Roughage (Fibers).

7. Fats are an essential ingredient of food. Fat is also a compound of carbon, hydrogen, and oxygen.
   Functions of Fats:

   1. They provide heat to the body.
   2. They provide energy to the body.
   3. They help in the regulation of body temperature.
   4. They are considered better than carbohydrates as a source of energy.
   5. They are helpful in making the body soft and oily and protect it from external effects of hot and cold climates.

   Sources of Fats:

   1. Animal Sources: We get various products from animals such as ghee, butter, curd, fish oil, milk, meat, and eggs.
   2. Vegetable Sources: We also get fats from various vegetables such as dry fruits, coconut, soybeans, food grains, mustard oil, and cotton seeds.

8. The two food myths are as follows:

   a. Eggs increases cholesterol level so avoid them: There is no doubt that eggs are good source of health. An egg provides you various nutrients. It is as per daily requirements of cholesterol by our bodies. So, if you take one egg daily there is no problem of cholesterol level.
   b. Drinking while eating makes you fat: The actual fact behind this misconception is that enzymes and their digestive juices will be diluted by drinking water while eating which slows down your digestion which may lead to excess body fat.

9. Nutrition before competition: At least a week before the competition sportsperson should take complex carbohydrate food which usually helps in increasing glycogen store. The fuel for the muscle is usually provided in meals 3-4 days prior to the competition. The diet should depend on the intensity of the activity. The diet should

be rich carbohydrate, low in fat and protein. Two hours before the competition a high carbohydrate energy drink can be considered sufficient.Nutrition during competition: It is important to stay hydrated and maintain sugar level so that sportsperson may not undergo fatigue. If the duration of the competition is more than 60 mins than ½ to 1 cup carbohydrate drink after 10-20 mins and if the duration is less than 60 mins than carbohydrate drink after every 20-30 mins.

Nutrition after competition: After competition it is important to recover properly , so the first preference should be given to replacement of fluid loss and this can be easily done by the intake of water or replacement drink. Meals after competition should be taken within 2 hours. For best glycogen restoration 100-200 grams of carbohydrate along with lean protein like meat or chicken should be taken. It will help in building, maintaining, and repairing of muscles. Atleat 20 gms of protein is required after completion for complete recovery.

10. **Vitamins:** Vitamins are required by the body for its various metabolic processes and for the normal working of the body.They are required by the body in very small amount.Vitamins do not yield energy but enable the body to use other nutrients. For a healthy person these requirements are met by a normal well balanced diet. However, if our diet is lacking in any vitamin, we suffer from deficiency diseases.

    Vitamins are divided into two groups:

    I. Fat-soluble vitamins (vit. A, D, E and K)
    II. Water-soluble vitamins (vit. of B, C group) Each Vitamin has specific function to perform.

    I.Fat- soluble vitamins Vitamin A:

    Vitamin A is essential for the construction of many different body tissues. It covers both retinol and beta carotene.

    Functions:

    i. It is indispensable for normal vision. It contributes to the production of retinal pigments which are needed for vision in dim light.
    ii. It is necessary for normal functioning of glandular and epithelial tissue.
    iii. It supports growth especially skeletal growth.
    iv. It is anti-infective.

v. For keeping eyes and skin healthy.

Sources: Food rich in retinol are liver, eggs, butter, cheese, whole milk, fish and meat. Vegetable sources are green leafy vegetable (spinach), yellow fruits, carrot and tomatoes (Red Pigment).

Deficiency of vitamin A is associated with skin damage and impaired resistance to infection, night blindness, Bitot's spots.

Vitamin D: The nutritionally important form of vitamin D in men are calciferol. This conversion takes place partly in the liver and kidneys and partly in the skin under the influence of sunlight. Its function is to promote intestinal absorption of calcium. It is important for strong bone of teeth.

Sources: It is found in cheese, butter, milk, green vegetables, fish liver oil and sunlight. Infants and small children have relatively high vitamin D requirement. Deficiency of Vitamin D in children causes Rickets/abnormal growth and development of bones and over dosage of it may cause kidney or even brain damage.

Vitamin E: It is found in vegetable oils, butter, milk, whole grain, corn nuts. Seeds and spinach. It is important to protect the cell membranes and also important in formation of Red Blood Cells (RBC).

Vitamin K: It is found in cabbage, cauliflower, cereals, soyabean, spinach and other green leafy vegetables. Vitamin K help in clotting of blood. Deficiency of vitamin K causes excessive bleeding from wounds.

Water-soluble Vitamins: These include vitamin B_1, B_2, B_3, B_{12} and vitamin C, which are not stored by the body.

Vitamin B: They are found in peanuts, fish, eggs, milk, cheese, peas, cereals and meat. Some of the complex vitamin are B_1, B_2, B_3, B_6 and B_{12}. They are all water-soluble.These are necessary for growth and development. Deficiency of vitamin B results in disease called Beri-Beri, Pellagra, Malformation of Red Blood Cells (RBC).

Vitamin C: It is needed for the maintenance of the ligaments, tendons, and other supportive tissue and strong blood vessels. Vitamin C is found in Amla, citrus fruits, tomatoes, green leafy vegetables and potatoes.