

DIETARY GUIDELINES FOR INDIANS -2010

Ques.1- Who has the responsibility in India to develop the dietary guidelines for Indians?

Ans- National Institute of Nutrition (NIN), Hyderabad from time to time release the updated version of dietary guidelines specifically designed and suited as per the needs of Indian. It is India's premier nutrition research institute working under the aegis of Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare, Government of India.

The mission of this institute is to enable food and nutrition security conducive to good health, growth & development and increase productivity through dedicated research, so as to achieve the national nutrition goals set by the government of India in the national nutrition policy.

Ques.2- What are the dietary goals as given by NIN?

- Maintenance of a state of positive health and optimal performance in populations at large by maintaining ideal body weight.
- Ensurement of adequate nutritional status for pregnant women and lactating mothers.
- Improvement of birth weights and promotion of growth of infants, children and adolescents to achieve their full genetic potential.
- Achievement of adequacy in all nutrients and prevention of deficiency diseases.
- Prevention of chronic diet-related disorders.
- Maintenance of the health of the elderly and increase the life expectancy.

Ques.3- What are the dietary guidelines as given by NIN?

- Eat variety of foods to ensure a balanced diet
- Ensure provision of extra food and healthcare to pregnant and lactating women.
- Promote exclusive breastfeeding for six months and encourage breastfeeding till two years.
- Feed home based semi solid foods to the infant after six months.
- Ensure adequate and appropriate diets for children and adolescents both in health and sickness.
- Ensure moderate use of edible oils and animal foods and very less use of ghee/ butter/ vanaspati.
- Overeating should be avoided to prevent overweight and obesity.
- Use salt in moderation/ Restrict salt intake to minimum.
- Ensure the use of safe and clean foods.
- Practice right cooking methods and healthy eating habits.
- Drink plenty of water and take beverages in moderation.
- Minimize the use of processed foods rich in salt, sugar and fats.

- Include micronutrient rich foods in the diets of elderly people to enable them to be fit and active.
- Eat plenty of vegetables and fruits.
- Exercise regularly and be physically active to maintain ideal body weight.

Ques.4 - What are Macronutrients and Micronutrients?

Ans- Carbohydrates, fats and proteins are **macronutrients**, which are needed in large amounts. Vitamins and minerals constitute the **micronutrients** and are required in small amounts. These nutrients are necessary for physiological and biochemical processes by which the human body acquires, assimilates and utilizes food to maintain health and activity.

Ques.5 - Why do we need nutritionally adequate food?

Ans- Nutrients that we obtain through food have vital effects on physical growth and development, maintenance of normal body function, physical activity and health. Nutritious food is, thus needed to sustain life and activity. Our diet must provide all essential nutrients in the required amounts. Requirements of essential nutrients vary with age, gender, physiological status and physical activity.

Ques.6 - What are Carbohydrates?

Ans - Carbohydrates are either simple or complex, and are major sources of energy in all human diets. They provide energy of 4 Kcal/g. In India, 70-80% of total dietary calories are derived from carbohydrates present in plant foods such as cereals, millets and pulses.

Simple Carbohydrates	Complex Carbohydrates
glucose and fructose, are found in fruits, vegetables and honey, sucrose in sugar and lactose in milk	starches in cereals, millets, pulses and root vegetables and glycogen in animal foods
	<p>Other Complex Carbohydrates (resistant to digestion in the human digestive tract)</p> cellulose in vegetables and whole grains, and gums and pectins in vegetables, fruits and cereals, which constitute the dietary fibre component

Role of Dietary Fibre in Human Body:

Dietary fibre delays and retards absorption of carbohydrates and fats and increases the satiety value. Diets rich in fibre reduce glucose and lipids in blood and increase the bulk of the stools. Diets rich in complex carbohydrates are healthier than low-fibre diets based on refined and processed foods.

Ques. 7 - What are Dietary Proteins?

Ans- Proteins are complex molecules composed of different amino acids. Proteins perform a wide range of functions and also provide energy (4 Kcal/g). Proteins are primary structural and functional components of every living cell. Almost half the protein in our body is in the form of muscle and the rest of it is in bone, cartilage and skin.

Essential Amino Acid	Non-Essential Amino Acid
<ul style="list-style-type: none"> Have to be obtained from proteins in the diet since they are not synthesized in the human body 	<ul style="list-style-type: none"> Can be synthesized in the body to build proteins.

Protein requirements vary with age, physiological status and stress. More proteins are required by growing infants and children, pregnant women and individuals during infections and illness or stress.

Animal Protein	Plant Protein
<ul style="list-style-type: none"> Rich Sources : milk, meat, fish and eggs high quality as they provide all the essential amino acids in right proportions, 	<ul style="list-style-type: none"> Rich Sources : pulses and legumes vegetable proteins are not of the same quality because of their low content of some of the essential amino acids

However, a combination of cereals, millets and pulses provides most of the amino acids, which complement each other to provide better quality proteins.

Ques.8 - What are Dietary Fats?

Ans - Fats are a concentrated source of energy providing 9 Kcal/g, and are made up of fatty acids in different proportions. Fats/oils have high energy value and induce satiety.

Visible or added fats and oils (cooking oil)	Invisible fat	Hidden fats
Oils and fats such as butter, ghee and vanaspathi constitute dietary visible fats	Fats that are present as integral components of various foods are referred to as "invisible" fat.	Fats, in processed and ready to eat foods

Fats serve as a vehicle for fat-soluble vitamins like vitamins A, D, E and K and carotenes and promote their absorption. They are also sources of essential polyunsaturated fatty acids (PUFA). It is necessary to have adequate and good quality fat in the diet with sufficient polyunsaturated fatty acids in proper proportions for meeting the requirements of essential fatty acids. The type and quantity of fat in the daily diet influence the level of cholesterol and triglycerides in the blood.

- Diets should include adequate amounts of fat particularly in the case of **infants** and **children**, to provide concentrated energy since their energy needs per kg body weight are nearly twice those of adults.
- **Adults** need to be cautioned to restrict intake of saturated fat (butter, ghee and hydrogenated fats) and cholesterol (red meat, eggs, organ meat). Excess of these substances could lead to obesity, diabetes, cardiovascular disease and cancer

Ques.9 - What are vitamins and minerals?

Ans- Vitamins are chemical compounds required by the body in small amounts. They must be present in the diet as they cannot be synthesized in the body. Vitamins are essential for numerous body processes and for maintenance of the structure of skin, bone, nerves, eye, brain, blood and mucous membrane.

Water-Soluble Vitamins	Fat-Soluble Vitamins
<ul style="list-style-type: none"> • Vitamin C, and the B-complex vitamins such as thiamin (B), riboflavin (B), niacin, pyridoxine (B), folic acid and cyanocobalamin (B) • Water-soluble vitamins are not and get easily excreted in urine. • Vitamins B-complex and C are heat labile vitamins and are easily destroyed by heat, air or during drying, cooking and food processing 	<ul style="list-style-type: none"> • Vitamins A, D, E and K are fat-soluble <p>Fat soluble vitamins can be stored in the body</p>

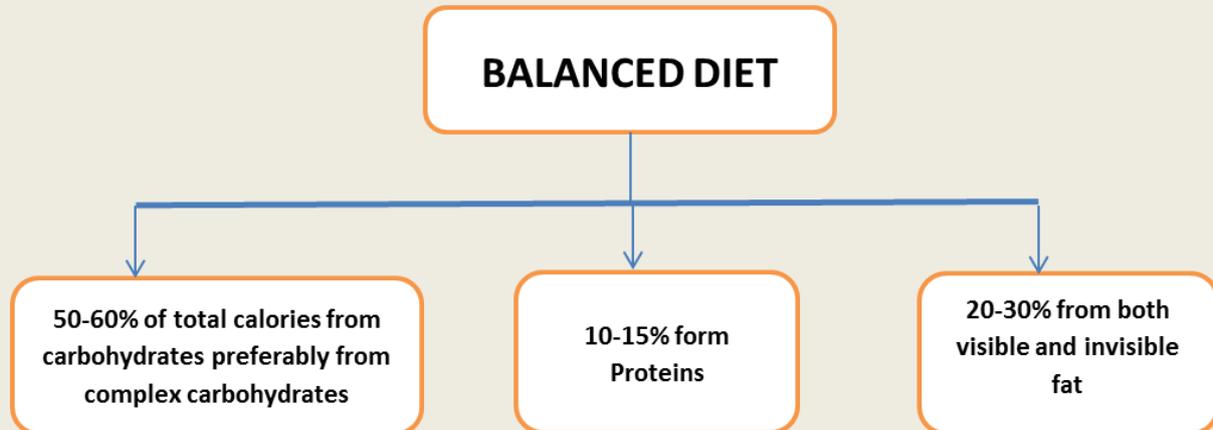
Pro-vitamin like beta-carotene is converted to vitamin A in the body. Micro-minerals are required for maintenance and integrity of skin, hair, nails, blood and soft tissues. They also govern nerve cell transmission, acid/base and fluid balance, enzyme and hormone activity as well as the blood- clotting processes.

Minerals are inorganic elements found in body fluids and tissues.

Macro-minerals	Micro-minerals
sodium, potassium, calcium, phosphorus, magnesium and sulphur,	zinc, copper, selenium, molybdenum, fluorine, cobalt, chromium and iodine

Ques. 10 - What is a Balanced diet?

Ans- A balanced diet is one which provides all the nutrients in required amounts and proper proportions. It can easily be achieved through a blend of the four basic food groups. The quantities of foods needed to meet the nutrient requirements vary with age, gender, physiological status and physical activity.



In addition, a balanced diet should provide other non-nutrients such as dietary fibre, antioxidants and phytochemicals which bestow positive health benefits.

Ques. 11 - What are food groups?

Ans - Foods are conventionally grouped as:

1. Cereals, millets and pulses
2. Vegetables and fruits Approximate
3. Milk and milk products, egg, meat and fish
4. Oils & fats and nuts & oilseeds

Ques. 12 - What are nutrient requirements and Recommended Dietary Allowances (RDA)?

Ans - **Requirements** are the quantities of nutrients that healthy individuals must obtain from food to meet their physiological needs. The **recommended dietary allowances (RDAs)** are estimates of nutrients to be consumed daily to ensure the requirements of all individuals in a given population. The recommended level depends upon the bioavailability of nutrients from a given diet. The term bioavailability indicates what is absorbed and utilized by the body. In addition, RDA includes a margin of safety, to cover variation between individuals, dietary traditions and practices.

The RDAs are suggested for physiological groups such as infants, pre-schoolers, children, adolescents, pregnant women, lactating mothers, and adult men and women, taking into account their physical activity. In fact, RDAs are suggested averages/day.

However, in practice, fluctuations in intake may occur depending on the food availability and demands of the body.

BALANCED DIET FOR ADULT MAN (SEDENTARY)

Food Group	Portion size (g)	No. of Portions
Fats/Oils	5	5
Sugar	5	5
Milk and Milk Products	100	3
Pulse (vegetarian)	30	2
Pulses (Non-vegetarian)	30	1
Vegetables	100	3
Fruits	100	1
Cereals and Millets	30	12

Elderly man: Reduce 3 portions of cereals and millets and add an extra serving of fruit

BALANCED DIET FOR ADULT WOMAN (SEDENTARY)

Food Group	Portion size (g)	No. of Portions
Fats/Oils	5	4
Sugar	5	4
Milk and Milk Products	100	3
Pulse (vegetarian)	30	2
Pulses (Non-vegetarian)	30	1
Vegetables	100	3
Fruits	100	1
Cereals and Millets	30	9