



# Balanced Diet

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### Rationale

Nutritionally adequate diet or a balanced diet should be consumed through a wise choice of food items from a variety (diverse) of food groups.

### What is a 'Healthy Meal' or 'Healthy Food'?

A healthy meal (food) includes generous amounts of vegetables, adequate whole grains and pulses or beans, along with modest portions of nuts or seeds, complemented by a selection of fruits and plain fermented yogurt or curd. It is free of added sugars or contains very minimal amounts, and is seasoned with minimal oil/fats and salt for taste.

### What can make a 'Healthy Snack'?

An ideal healthy snack consists of vegetable or fruit salads adorned with seeds or nuts, topped with yogurt. Additionally, roasted or boiled beans, lobia, chickpeas, and peanuts can serve as nutritious snack options.

### What is a balanced diet and why do we need it?

A balanced diet provides required calories, proteins, vitamins, minerals and adequate fibre.

- A balanced diet is a wholesome and nutritionally adequate diet. It provides a variety of nutrients that perform a wide range of functions in the body.
- A balanced diet can be achieved by eating diverse foods since there is no single food item with all the essential nutrients.
- A balanced diet is needed for growth and development to sustain life, maintain health, optimum brain function, immune function, etc.
- Nutrients must be obtained through a judicious choice and combination of a variety of foodstuffs from different food groups. Variety from wholesome foods is the key to achieve nutrient adequacy.
- Physical activity is also essential for appropriate utilization of all nutrients from a balanced diet.
- Exposure to sunlight for obtaining vitamin D is also recommended.

### **Food pyramid for balanced diet for 2000 Kcal**

- Vegetables (400g) & Fruits (100g)
- Cereals & Nutricereals (250g)
- Milk/curd (300ml), Pulses & legumes (85g) (30g of pulses can be substituted with fish/flesh foods)
- Nuts & seeds (35g), Fats & oils (27g)

### **My Plate for the Day for 2000 Kcal**

- Fruits - 100g
- Pulses, eggs and flesh foods - 85 g
- Nuts and seeds - 35 g
- Milk/curd - 300ml
- Fats & oils - 27 g
- Cereals & Nutricereals - 250g
- Vegetables - 400g

## **What is healthy eating habit?**

- Inclusion of non-starchy fresh vegetables and green leafy vegetables in every meal. Take atleast 30 grams of fruits in every meal.
- Consuming at least 50% of cereals and other grains as whole grains (minimally polished) for adequate nutrients and fibre.
- All cereal (or millet) based diets are accompanied with adequate pulses or beans for good quality protein and fibre.
- Consuming adequate quantities of nuts, oilseeds, fatty fish and restricting cooking oils to 25g to 30g per day.
- Restricting meal frequency to two to three times a day.
- Avoiding ultra-processed foods (UPFs) and foods high in fat, sugar and salt (HFSS).
- Avoiding sugar or restricting to 20g to 25g per day (adults).

- Not snacking in between and consuming healthy beverages.

## Variety of foods essential for a balanced diet

**Nutritionally adequate diet should be consumed through a wise choice from a variety of foods.**

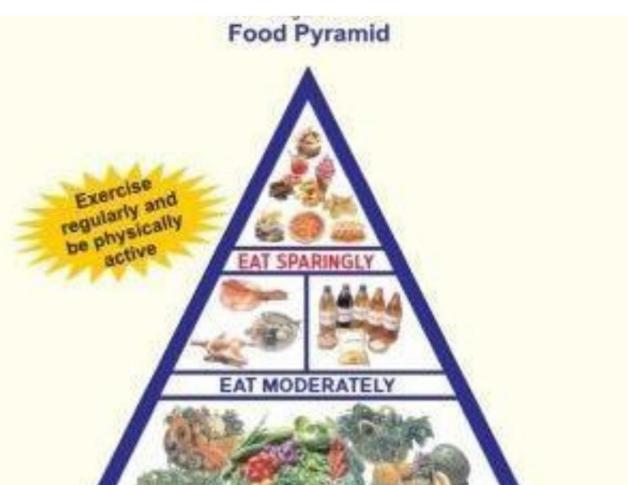
- A diet consisting of several food groups provides all the required nutrients in proper amounts.
- Cereals, millets and pulses are major sources of most nutrients. For example, different types of cereals, millets and pulses have different nutrient profile; hence a variety of cereals, millets and pulses are recommended to be consumed on a daily basis for adequacy of different nutrients. This applies to other food groups such as vegetables and fruits as well.
- Foods such as nuts, oilseeds, fish, etc. are nutrient dense and are rich sources of good quality fats, proteins, vitamins and other nutrients. Different varieties of oilseeds and nuts are advised. Foods such as fenugreek seeds, amaranth seeds, flax seeds, chia seeds and basil seeds have health promoting effects and can be consumed at least three to four times a week.
- Vegetables and fruits are sources of protective nutrients such as vitamins, minerals, phytonutrients, antioxidants and fibre. Different varieties of vegetables and fruits should be consumed.
- Limit intake of foods with added fat/oil and salt. Avoid foods and beverages with added sugars.
- Nutrients of concern for vegetarians - Achieving adequacy of essential Long chain n-3 poly unsaturated fatty acids (PUFA) and B12 is a challenge. May take foods fortified with these nutrients or must ensure adequate intake of n-3 PUFA rich foods (flax seeds, chia seeds, walnuts, vegetables and greens) as only a small amount of n-3 PUFA will be converted to EPA (Eicosa Pentaenoic Acid) and DHA (Docosa Hexaenoic Acid). For B12, milk has small amount of B12.
- Physical activity is also essential for appropriate utilization of all nutrients from a balanced diet.

## Why do we need nutritionally adequate food?

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. Dietary intakes that provide lower or higher than the body requirements can lead to under-nutrition or overweight/ obesity respectively. Eating too little food during certain significant periods of life such as infancy, childhood, adolescence, pregnancy and lactation and eating too much at any age can have harmful consequences.

Carbohydrates, fats and proteins are 'macronutrients,' which are needed in large amounts. Diets must provide adequate essential amino acids (EAA) and essential fatty acids (EFA) to achieve maximum growth potential among children. Vitamins, minerals and phytonutrients constitute the 'micronutrients' and are required in smaller amounts. Both macro and micronutrients are necessary for physiological and biochemical processes by which the human body acquires, assimilates and utilizes food to maintain health and activity.

## What are food groups?

Foods have been categorized into 10 groups to help people make choices from different food groups. Adequate quantities of foods from at least 5–7 food groups should be consumed on a daily basis. Other foods may be consumed at least two to three times a week. This method of ensuring diversity and variety within groups will meet adequacy of most nutrients such as essential amino acids (protein), essential fatty acids, vitamins, minerals, phytonutrients, fibre and bioactive substances. Spices like turmeric, cumin, ginger, garlic, cinnamon, pepper and cloves are rich in antioxidants and could be part of a balanced diet.

The quantities of foods needed to meet the nutrient requirements vary with age, gender, physiological status and physical activity. A balanced diet should provide not more than 45% calories (energy) from cereals and millets (Nutricereals: diversify staples with millets) and up to 15% calories from pulses, beans and meat. Rest of the calories should ideally come from nuts, vegetables, fruits and milk. In other words, this will ensure 50%–55% of total calories from carbohydrates, 10%–15% from proteins and 20%–30% from dietary fats.

Cereals and millets	Rice, wheat, millets and other cereals, etc.
Pulses	Lentil, green gram, chickpea, rajma, cowpea, etc.
Vegetables	Seasonal vegetables
Nuts, oil seeds, oils and fats	Peanuts, walnuts, almonds, pistachio, hazel nuts, and other nuts, vegetable oils, etc.



Green leafy vegetables (GLV)	Seasonal GLVs
Fruits	Seasonal fruits
Dairy	Milk, curd and butter milk
Roots and tubers	Beetroot, radish, carrot, tapioca, sweet potato, etc.
Flesh foods	Marine fish, poultry and lean cut meat
Spices and herbs	Turmeric (haldi), ginger, mustard, pepper, cumin, corriander (dhania), etc.

## What is a balanced diet?

A balanced diet is one which provides all the nutrients in required amounts and proper proportions.

The 'My Plate for the Day' developed by the ICMR-National Institute of Nutrition provides a simple guidance to achieve a balanced diet sourcing energy from different food groups. The proportion of each of the food groups serve an important function. The plate recommends sourcing of macronutrients and micronutrients from a minimum of 10 food groups with vegetables, fruits, green leafy vegetables, tubers and roots forming essentially half the plate of the recommended foods per day. At least half of the recommended cereals should be whole grains such as millets, which are rich sources of micronutrients such as vitamins and minerals, and also provide antioxidants, phytonutrients, fibre and bioactive compounds and induce favourable changes in the gut microbiota (microbes). Millets can be consumed to the extent of 30%–40% of total recommended cereals in raw weight.

## What are nutrient requirements and recommended dietary allowances (RDA)?

Nutrient requirements are the quantities of nutrients that healthy individuals must obtain from food to meet their physiological needs. The [ICMR-NIN Nutrient Requirements- 2020 Report \(Updated-2023\)](#), defines the nutrient requirements for Indians, based on concepts related to the distribution of nutrient requirements in normal individuals. The mean of nutrient requirements distribution is called the Estimated Average Requirement (EAR) and the 97.5th percentile of the requirement distribution is called the Recommended Daily Allowance (RDA). The EAR is used to assess the nutrient adequacy of individuals or population groups, and is also used for planning the dietary nutrient requirements for healthy individuals or population groups. However, while diet planning for individuals and populations is based on EAR, the RDA is intended for the purpose of supervised supplementation in deficient individuals. To prevent the risk of

adverse side effects associated with excessive intake of nutrients, this report also provides Tolerable Upper Limit (TUL) for some important nutrients.

The recommended level of nutrients depends upon the 'bioavailability' of nutrients from a given diet. The term 'bioavailability' indicates what is absorbed and utilized by the body. The nutrient requirements are presented for physiological groups such as infants, pre-schoolers, children, adolescents, pregnant women, lactating mothers and adult men and women, taking into account of their physical activity. However, in practice, fluctuations in intake may occur depending on the food availability and demands of the body. But the average requirements need to be satisfied over a period of time.

## Carbohydrates

The major sources of carbohydrates include cereals and millets. Other sources of carbohydrates are grains, pulses (lentils, beans and peas), nuts, milk, fruits and vegetables. All plant foods have carbohydrates.

Carbohydrates are either simple or complex, and are major sources of energy in all human diets. They provide energy of 4 Kcal/g. The simple carbohydrates, glucose and fructose are found in fruits, vegetables and honey. Sucrose and lactose are disaccharides; while lactose is found in milk, sucrose is the table sugar. Starches and fibre are the two forms of the complex carbohydrates, both are associated with most plant foods such as cereals, millets, pulses, vegetables and tubers. Fibre is the indigestible part of vegetables, fruits, whole grains, pulses, nuts and seeds. These (fibre) are cellulose in vegetables and whole grains, while gums and pectin are present in vegetables, fruits as well as cereals. 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 improves insulin sensitivity. It also increases the bulk of the stools.

## Proteins

Proteins are primary structural and functional components of every living cell. About half the proteins in our body is in the form of muscle and the rest is in bone, cartilage and skin. Proteins are complex molecules composed of 20 different amino acids. Nine of these 20 amino acids are termed 'essential' and have to be obtained from proteins in the diet, since they are not synthesized in the human body. The remaining non-essential amino acids can be synthesized in the body to build proteins. Proteins perform a wide range of functions and also provide energy (4 Kcal/g). Protein requirements vary with age, physiological status and stress. More proteins are required by growing infants and children, adolescents, pregnant women and individuals during infections, illness and physical stress. Animal foods like milk, meat, fish and eggs and plant foods such as pulses are rich sources of proteins. Animal proteins are of high quality as they are bioavailable and provide all the essential amino acids in right proportions, while plant or 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 good quality proteins and essential amino acids.

## Fats (also called lipids and cooking oils)

Dietary fats are derived from two sources viz. the invisible fat present in plant and animal foods, and the visible or added fats and oils (vegetable/cooking oils). Animal foods like fatty fish and plant foods such as nuts and oil seeds and certain beans are rich sources of fats. Grains and pulses are also sources of fats but have low quantities. Fats such as vegetable oils, butter and ghee constitute dietary visible fats. Fats are a concentrated source of energy providing 9 kcal/g, and are made up of fatty acids in different proportions. Fats serve as a vehicle for fat-soluble vitamins like vitamins A, D, E & K and carotenes, and promote their absorption. They are also sources of essential poly unsaturated fatty acids (PUFA). It is necessary to have adequate and good quality fats in the diet with sufficient PUFA in proper proportions for meeting the requirements of essential fatty acids and health (refer Guideline 7). However, it is important to limit intake of cooking oils (vegetable oils), saturated fat (butter, ghee) and avoid partially hydrogenated vegetable oils (vanaspathi).

## Vitamins and minerals

Vitamins are nutrients required by the body in small amounts and must be present in the diet as these are not 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. Vitamins are either water soluble or fat soluble. Vitamins A, D, E & K are fat soluble, while vitamin C and the B-complex vitamins such as thiamin (B1), riboflavin (B2), niacin, pyridoxine (B), folic acid (B9) and cyanocobalamin (B12) are water soluble. Pro-vitamin like beta- carotene is converted to vitamin A in the body. Fat soluble vitamins can be stored in the body while water soluble vitamins are not stored (except vitamin B12 & folate) 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.

Minerals are nutrients found in body fluids and tissues. The important 'macro' minerals are sodium, potassium, calcium, phosphorus, magnesium and sulphur, while iron, zinc, copper, selenium, molybdenum, fluorine, cobalt, chromium and iodine are micro minerals. These 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.

## Importance of Diet during Different Stages of Life

- **Senior Citizens:** For being physically active and healthy
- **Adults :** For maintaining health, productivity and prevention of diet-related diseases
- **Reproductive age :** To meet the extra nutritional needs for child bearing/rearing
- **Adolescent (10 to 19 years) :** For growth spurt, maturation and bone development
- **Child Age (0 - 9 years) :** For growth, development and cognition.
- **Infants & young children (6 months to 2 years) :** For growth, development & cognition (Breast milk and nutrient-rich complementary foods)
- **Infants (0 to 6 months) :** For growth and development (Exclusive breastfeeding)

## Important points

- Choose a variety of foods in amounts appropriate for age, gender, physiological status and

physical activity.

- Use a combination of whole grains of cereals, pulses and millets.
- Prefer fresh and a variety of locally available vegetables in plenty.
- Include foods of animal origin such as milk/eggs and meat, particularly for pregnant and lactating women, children & adolescents.
- Choose nutrient-rich foods such as pulses (lentils, beans, peas), lean meat, fish and low-fat milk for elders.
- Develop healthy eating habits and exercise regularly and be physically active to avoid a sedentary lifestyle.

**Source:** National Institute of Nutrition, Hyderabad 

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**Source** [https://data.vikaspedia.in/short/lc?k=ySq-vQgspAEwdsfv7px\\_cw](https://data.vikaspedia.in/short/lc?k=ySq-vQgspAEwdsfv7px_cw)

