

- a. Banana
- b. Apple
- c. Oranges
- d. Strawberry

A good source of protein is often a combination of various foods, because different foods are rich in different amino acids. Healthy people eating a balanced diet rarely need protein supplements.

Fats and oils

These are one of the three macronutrients found in our foods. Fats, also known as triglycerides, are esters of three fatty acid chains and the alcohol, glycerol. Fats serve both structural and metabolic functions. They are necessary part of the diet. Fats are broken down to release their constituents, glycerol and fatty acids. They are the most energy dense, providing 9 kcal/g. Thus, fat is a concentrated form of energy, and its inclusion will raise the calorific value of the diet without much increase in its bulk. Fats are also sources of essential fatty acids, an important dietary requirement. Vitamins A, D, E, and K are fat-soluble, meaning they can only be digested, absorbed, and transported in conjunction with fats.

Fats play a vital role in maintaining healthy skin and hair, insulating body organs against shock, maintaining body temperature, and promoting healthy cell function.

Fat that is solid at room temperature.

Oil a fat with short or unsaturated fatty acid chains that is liquid at room temperature

Essential fatty acids: Fatty acids set free by the digestion of ingested fats, because they cannot be synthesized in the body from simpler constituents. Two essential fatty acids are: Alpha-linolenic acid (an omega-3 fatty acid) and Linoleic acid (an omega-6 fatty acid).

Classification of fats based on number and bonding of the carbon atoms in the aliphatic chain.

1. Saturated fats: have no double bonds between the carbons in the chain.
2. Unsaturated fats: have one or more double bonded carbons in the chain.

from glucose, alcohol and fats. A deficiency can lead to pellagra, which causes insomnia, aggression, dermatitis, and other ailments. Chicken, turkey, salmon and other fish including canned tuna packed in water are all excellent natural sources of niacin. Fortified cereals, legumes, peanuts, pasta and whole wheat also supply varying amounts.

- **Vitamin B5 (Pantothenic Acid)** – Pantothenic acid is found in almost all food, it breaks down fat and carbohydrates and converts them into energy. A deficiency can cause paresthesia, a tingling and burning of the skin, and acne. Yogurt and avocado are both excellent sources of pantothenic acid. Legumes including lentils and split peas, sweet potatoes, mushrooms and broccoli are also good sources.
- **Vitamin B6 (Pyridoxine)** – Pyridoxine controls the quantities of homocysteine, an amino acid in the body. A deficiency can cause seborrheic dermatitis, which is a skin condition. Poultry, seafood, bananas, leafy green vegetables such as spinach, potatoes and fortified cereals supply the body with the required vitamin.
- **Vitamin B7 (Biotin)** – Biotin supports the health of the skin, nerves, digestive tract, metabolism and cells. Biotin may also help to treat some types of nerve pathology, such as peripheral neuropathy that can result from kidney failure or diabetes. Lack of biotin does not affect adults, but can cause growth issues and neurological disorders in children. Liver and egg yolks are the richest dietary sources of biotin. Salmon, pork and avocado are good sources; most fruits and vegetables contain a little biotin, as do cheeses and grain foods.
- **Vitamin B9 (Folate)** – Folate, or folic acid, is extremely important for pregnant women and infants, as it is essential for the proper growth and development of the baby, as well as preventing neurological defects. Folate also plays a role in the making of red blood cells. Pregnant women who do not have enough folic acid have given birth to children with birth defects. Leafy greens such as spinach and turnip greens and other fresh fruits and vegetables are all excellent sources of folate.

Vitamin B3 - niacin	Required for the nervous system and digestive system and also for healthy skin.	Tuna, dairy, wholegrain or enriched breads and cereals, vegetables, meat and all protein products, as well as peanut butter.
Pantothenic acid	Aids in supporting the body's metabolism.	Animal liver, kidney, fish, legumes, mushroom, avocado, broccoli.
Biotin	Fraction of enzyme needed for energy metabolism.	Common in foods. Also produced bacterially in intestinal tract.
Vitamin B6 - pyridoxine	Part of enzyme needed for protein metabolism. It also helps in the production of red blood cells. Significant function in protein metabolism.	Fish, organ meats, starchy vegetables
Folic acid	Needed in the making of red blood and new blood cells. Instrumental for pregnant woman, as it prevents neural defects.	Leafy vegetables and legumes, orange juice, liver, seeds.
Vitamin B₁₂ - Cobalamin	Part of enzyme crucial for new cell synthesis. It also aids in the maintaining of nerve cells.	Animal products, eggs, poultry, seafood, milk and dairy products and eggs. It cannot be found in plant foods.
Vitamin C - ascorbic acid	Important for immune system health and invaluable in the absorption of iron. Essential element in collagen formation. It is an antioxidant.	Abundant in most fresh fruits, but especially citrus fruits and vegetables from the cabbage family, as well as cantaloupe, strawberries, tomatoes, potatoes, peppers, lettuce, papayas, kiwifruit and mangoes.

fats, proteins, vitamins, minerals and water in the right proportions. Food groups consist of nutritionally closely related food stuffs which supply the body with similar nutrients. Inclusion of foods from those particular food groups results in ingestion of a balanced diet.

Food Groups

Five Food Groups by ICMR

Food Group	Main Nutrients
I. Cereals, Grains and Products : Rice, Wheat, Ragi, Bajra, Maize, Jowar, Barley, Rice flakes, Wheat Flour.	Energy, protein, Invisible fat Vitamin B1, Vitamin – B2, Folic Acid, Iron, Fibre.
II. Pulses and Legumes : Bengal gram, Black gram, Green gram, Red gram, Lentil (whole as well as dhals) Cowpea, Peas, Rajmah, Soyabeans, Beans	Energy, Protein, Invisible fat, Vitamin –B1, Vitamin – B2, Folic Acid, Calcium, Iron, Fibre.
III. Milk and Meat Products : Milk : Milk, Curd, Skimmed milk, Cheese Meat : Chicken, Liver, Fish, Egg, Meat.	Protein, Fat, Vitamin –B ₁₂ , Calcium. Protein, Fat, Vitamin – B2
IV. Fruits and Vegetables : Fruits : Mango, Guava, Tomato Ripe, Papaya, Orange. Sweet Lime, Watermelon. Vegetables (Green Leafy) : Amaranth, Spinach, Drumstick leaves, Coriander leaves, Mustard leaves, fenugreek leaves Other Vegetables : Carrots, Brinjal, Ladies fingers, Capsicum, Beans, Onion, Drumstick, Cauliflower.	Carotenoids, Vitamin –C, Fibre. Invisible Fats, Carotenoids, Vitamin – B2, Folic Acid, Calcium, Iron, Fibre. Carotenoids, Folic Acid, Calcium, Fibre
V. Fats and Sugars : Fats : Butter, Ghee, Hydrogenated oils, Cooking oils like Groundnut, Mustard, Coconut. Sugars : Sugar, Jaggery	Energy, Fat, Essential Fatty Acids Energy