

# **Nutritional Value of Different Vegetarian Food Items in Daily Diet**

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## **Abstract**

*Current advice on healthy eating emphasises the importance of a diet low in saturated fat, high in whole grains, fresh fruit and vegetables. At the Vegetarian Society, we agree with this advice. As a vegetarian, eating a balanced diet with plenty of fresh fruit and vegetables, you should easily exceed the guidelines for eating 5-A-Day fruit and vegetables. A vegetarian diet based on whole grains, pulses, vegetables, nuts and seeds will also be naturally high in fibre and low in saturated fat, which are both good for health. Being vegetarian means getting the nutrients that are associated with the conventional diet of meat, poultry, fish and seafood from other sources. There is sometimes unnecessary concern that a vegetarian or vegan diet will be low in the nutrients found in meat and fish such as protein, iron, calcium, zinc, vitamin B12 and vitamin D or the essential fats sometimes referred to as 'omegas'. In fact these nutrients are part of vegetarian and vegan diets, in some cases in abundance, it's just a good idea to make sure you're familiar with the best vegetarian or vegan sources so you can relax and enjoy being vegetarian.*

**Keywords:** *Nutrition, Carbohydrate, Protein, Minerals, Vitamins, Calcium, Fruits, Vegetables, Milk, Cereals.*

## **Contents**

Nutrition is a science important to health and fitness. Nutrition, or the science of nourishing the body is a relatively new science. Human beings have always been interested in the consumption of food its use by the body and effects in the body. In the late 1700's Lavoisier observed that substances burned in the body in a manner similar to the burning of a fuel in a flame: today he is known as the father of the science of nutrition. He began the studies which developed into later nutrition investigation.

Thus, by the beginning of the present century, the science of nutrition was primarily concerned with the question of energy (calories), the total needs of humans being for energy, and the comparative values of the three organic food stuffs: carbohydrates, fats and proteins very shortly thereafter significant differences were noted among the proteins from various sources and a new era of nutrition study (protein investigation) developed. Minerals and vitamins were subsequently discovered, becoming known as the "little things in nutrition."

Adequate and optimum nutrition: Today it is realized that adequate nutrition is not synonymous with optimum nutrition. The adequate diet supplies the minimum requirements of each nutrient plus a reasonable margin of safety, usually figured at about 50 percent. The optimum diet provides a liberal excess of nutrients beyond the minimum figures.

Essential of good nutrition:

1. Adequate energy for body needs and for maintenance of the correct weight for the height and age.
2. Protein; adequate in quality and quantity to build and repair muscle tissue, to regulate and to furnish some energy and to provide certain amino acids necessary for the formation of important body compounds.

3. Adequate minerals, as building materials for body structures and blood and as regulators of important body processes.
4. Adequate vitamins, as regulating substances for growth and health.
5. Sufficient water and bulk for roughage for regulation.
6. Palatability and digestibility of foods; these carbohydrates, fats proteins, minerals, vitamins and water are known as foodstuffs, food constituents, food principles nutritional essentials or simply nutrients.

Characteristics: A body capable of assuming and maintaining good posture is characteristic of good nutrition. Other characteristic include good skeletal development with straight bones and arums and enlarged joints, broad flat chest capable of fair expansion: normal pelvic arch; well shaped and well developed jam and strong teeth, well enameled and free from caries; well developed muscles, padded with firm flesh and of good to nus; firm and abundant subcutaneous fat, smooth and lustrous hair. Less obvious characteristics include proper functioning of the digestive, circulatory respiratory, eliminative and glandular systems and reasonable resistance to infections. A good appetite and relish for good are considered, along with the above as evidence of good nutritional condition as well as ability to work with satisfaction, comfort and emotional stability.

Milk and milk products; Milk as an article of food: The milk of several different animals is used as foods but cow's milk is the only one of much commercial importance, milk has always been the main source of nourishment for the infant and young child. As new discoveries have been made in nutrition. More emphasis has been placed on milk in the diet at all ages. It is now realized that vitality of adult is improved when milk takes a prominent place in the diet. Milk is one of the few foods that contain all the factors known to be needs in nutrition and is a food for which no fully satisfactory substitute has been found.

Composition and nutritive value of milk: Milk usually understood in this country to mean cow's milk. Varies a little in composition and can be safely counted upon to contain about 87% water, 3 to 4% protein, 3 to 5% fat, 4 to 5% carbohydrate and 0.7% mineral matter.

All the substance known to be essential to good nutrition are contained in milk although some are present in very small quantities. Fat is present in milk in the form of cream which is freshly drawn milk, is in such fine state of emulsion that the fat globules are held in suspension. However, these fat cells are so much lighter than water that the cream raises to the top when the milk has been allowed to stand. When this cream is separated and shaken or churned, the aluminous coating of the fat cells is broken and the contents merge, forming butter.

Carbohydrates occur in the milk in the form of the sugar, lactose, it is only in the milk that this substance occurs naturally. It is not as sweet as sucrose and does not ferment as readily. But it can be acted upon by a type of bacterial which splits it with the formation of lactic acid.

Protein occurs in milk in the form of casein, which is held in combination with calcium salts in the form of calcium caseinate and in the form of lactalbumin. Eighty percent, 05% and 0.005% of the total protein in the milk are in the forms of casein, lactalbumin and another protein, called lactoglobulin respectively. Casein is important protein in cheese making as it can be precipitated by coagulation with acid (curdling) or by an enzyme (rennet); lactalbumin is unaffected by acid and semen although it is coagulated by heat. Both casein and lactalbumin are complete proteins.

Minerals occur in milk, mainly in the form of calcium found in relatively large amount safely large amounts of phosphorus magnesium potassium, sodium, some iodine and very small amount of iron. The mineral content is well balanced with exception of copper and iron and the proportion of calcium to phosphorus is considered good. Milk is especially valuable for its calcium content.

All vitamins are present in milk in varying amounts but with better proportions of more of them than in many other foods. The vitamin A value is variable; being dependent upon the amount of green foods the cow has in her diet. Winter milk is lower in vitamin A value when the herd are off green feeds which contain carotene, the precursor of vitamin A. In some modern dairies, cow's are stall fed the jar round with vitamin rich green foods dehydrated in such a way that all nutrients are relative with the result that the milk has a uniform vitamin A value of 200 to 255 international units per quart. Without seasonal variations. Ordinary sun drying or curing of green foods causes loss of most of the vitamin A value.

Milk is better source of vitamin C than B. The former being associated with the greenish yellow pigment in the whey of milk. Vitamin C is present in fresh milk in small amounts but is so unstable that it is lost with light, when milk is heated especially in the presence oxygen.

The amount of vitamin D varies in milk, its presence being dependent on the season and the amount of sunshine received by the cow. Summer milk may be nine times as rich in vitamin D as winter milk. Milk may contribute more vitamin D to the diet than is appreciated because of the fact that it is used in so many different forms.

Place of milk in the diet: according to science no other food can so well serve as the foundation of an adequate diet as milk because no other food reinforces the diet at so many points.

Cheese as an article of foods: Cheese is the first form in which milk was preserved for future use and also the first commercial product to be manufactured from milk. There is a great variety of cheeses and it is an important item of the diet in number of countries. The United States is one of the lowest cheese consuming countries, although the consumption and production have increased since 1929. For people in the United States cheese has formerly been an additional item in the diet; for European, it has been a main dish. However, as meat becomes scarce or more expensive, cheese provides an important meat substitute.

Composition and nutritive value of cheese: cheese is a very concentrated food containing approximately 28% protein and 35% fat. The food value depends upon the kind of milk used in its production. This way is skim, whole or either combined with cream. Generally speaking, cheese has practically the source food value as the milk from which it was produced, but it is more concentrated like milk, it is a protective food. Its protein is complete. Since most cheddar cheese is made from whole milk, it is high in fat. If it is made from whole milk, it is an excellent source of calcium and vitamin A. A third of a pound of cheese is about equivalent to one quarter of milk one pound of cheese contains the casein and fat of one gallon of milk and traces of whey.

Commercial cottage cheese or pot cheese is usually made from skim milk. A so called “creamed” cottage cheese, cottage cheese to which a certain amount of cream is added and the mixture made very smooth is available in some localities, cottage cheese made coagulating milk with rennet, contains more calcium than that made by coagulation with acid.

Place in the diet: fat and protein content is high in cheese and therefore should be used in place of meat and eggs in the diet, rather than in addition to them. Its more extensive use in the diet could well be recommended, especially in low cost diets, as it is relatively inexpensive protein food. The deficiency of cheese in carbohydrate makes it a good combination with such starchy food as rice and macaroni.

Fruits as an article of food: fruits have always been popular in man’s diet but not always in the cultivated form with which we are now familiar, wild fruits were formerly sought for their flavor and the variety which they added to the diet, now there is hardly a community in which a family wide array of fruits is unavailable.

In the United States, oranges, bananas, apples, grapes and peaches have been consumed in large quantities, grapefruit, pears and strawberries also being popular. The factors responsible for the decided upward trend in the consumption of fruits during the past fifty-year include

improvement in cultivation, transportation, refrigeration storage, early harvesting and artificial ripening and greater availability of frozen fruits.

Composition and nutritive value of fruits: fruits vary in their calorie and protein value and are lacking in fat, with exception of avocado and olive. They are chiefly significant as a source of minerals and vitamins in the diet. In some countries such fruits as the banana, coconuts, dates, and figs are depended upon for considerable energy. As a class fruits are low in calcium, although individual fruits as oranges, figs, lemons and grapes fruits may contain appreciable amounts; fruit also contribute to the iron in the diet, dried ones (with the exception of raisings) being especially good. Fruits are poor in vitamin A and D (with the exception of yellow fruits, which have vitamin A) but they are fair sources of both thiamin and sipolfamin.

Place of fruits in the diet: the national food guide gives prominence to citrus fruits as well as to other fruits in the daily diet. Oranges, grape fruit or tomatoes should be eaten every day contributions of citrus fruit juices to the daily vitamin C requirement of the adult male. In order to get maximum value from oranges and grape fruit, the whole fruit should be eaten rather than just the juice as the pulp contains more vitamin C and iron.

Vegetable as an article of food: A great transformation has occurred in vegetables production and consumption during the past fifty years. Vegetables are not only more available now but they are also more popular. The American consumer can now purchase garden products the year round because of more rapid transformation and because of the great development of our present day refrigeration. A continuous upward trend in the consumption of a wide variety of vegetable has been taking place in the food habits of the people to a certain degree; this has been caused by a greater recognition of the importance of vegetables in nutrition. Both fruits and vegetable are considered “protective” foods since they make good deficiencies or inadequate amounts of mineral and vitamins in other foods.

Composition and nutritive value: with the exception of the starchy vegetable like potatoes, corn and beans vegetables yield but little energy. They also lack fat. The protein content is not considered adequate in either kind or amount, legumes being the only ones which furnish even appreciable amounts. As a group they are valuable for their cellulose content, minerals, vitamins and base forming properties. Leaves and stems are especially valuable for calcium and leafy other green and yellow vegetables for vitamin A. Aside from these values, vegetables have certain esthetic appeal because they are colorful, palatable good in textures if raw or properly cooked and refreshing and give variety of interest to the diet.

Special mention needs to be made of the green leafy vegetable, as they are better for certain minerals and vitamins than other parts of the plant. They are especially valuable for calcium, iron and vitamin A. young leaves are high in vitamin C and riboflavin.

Place in the diet: the daily diet should contain at least one serving of potatoes, preferably cooked with jackets and two or more servings of other vegetables; one of which is a leafy, green or yellow. Raw vegetables should be consumed at least three times weekly, if not oftener. Vegetables are an important as good as they supply many of the minerals and vitamins apt to be lacking because of the scarcity of butter; wheat and citrus fruits. In a scarcity of vitamin A, more greens yellow vegetables and tomatoes are necessary; in a citrus fruit storage more raw cabbage, turnips, green pepper, beet and turnip tops and potatoes in the jackets are need in a meat shortage, green vegetable, tomatoes and dried peas and beans will add the Vitamins B to the diet; iron, lacking because of meat scarcity, will be furnished green. Leafy vegetables, dried beans. Recent dietary studies have revealed that the nation needs to consume twice as much leafy, green, and yellow vegetable for food nutrition.

Cereals and cereals products; Foods high in carbohydrate: The most economical and available sources of energy are those goods which predominate in carbohydrates. These carbohydrates are either sugar, the monosaccharides or disaccharides or starches, belonging to the

polysaccharides, foods rich in sugar are the purified sugars, syrups, molasses, candies, jams, jellies, marmalades etc. fruits also contain sugar. Foods high in starch include such cereal grains as wheat, oats, corn, rice, rye, barley, buckwheat and their flours, breakfast foods, macaroni products and flour mixture (batters and dough) of various kinds.

Cereals as a food article: This group of foods derives its name from Ceres, an ancient Greek Goddess, who was protector of the grains and harvest. It includes all grains and cultivated grasses whose seeds are used for food, such as wheat, oats, corn, rice, rye, barley and buckwheat and the products from these grains.

Cereals and their products are used more largely throughout the world than any other type of food. The consumption of bread and flour has decreased in the United States during the past fifty years because the need for total calories has decreased along with the changes in the way of living. Approximately one third of the total calories consumed in the United States and Great Britain come from cereal products, more in Europe and still more in Asia.

Composition and nutritive value of cereals: Breakfast cereals contain approximately 66 to 80% carbohydrate, 8 to 12% protein and 0.3 to 2% fat, they average 1600 calories per pound or about 100 calories per serving. Because of the high percentage of carbohydrate cereals are excellent sources of energy. Quantitatively cereals are also good sources of protein, especially in low cost diets where large proportions of cereals predominate. However in quality, the protein is less complete and needs supplementing with protein from animal sources. Cereal grains are deficient in calcium and in vitamins A, C & D. the remainder of the mineral and vitamin content depends upon the milling process. Whole grains are good sources of phosphorus, iron and thiamin and contain less of riboflavin. Sprouting grains develop ascorbic acid. Wheat and barley may be sprouted wheat germ is a good source of thiamin riboflavin.

Place in the diet: the importance of cereals and cereal grains in the diet is demonstrated by the fact that one third of the total calories consumed by the of the United States comes from this

group of foods and that is suggested by nutrition. Authorities that one fifth or more of the food money be expended on cereals and cereal products including breads. Whole grains are especially valuable in low cost diets because they furnish source of minerals and vitamins likely to be low in diets when families have to cut down the amount of milk, eggs, fruits and vegetable to the minimum cereals can be used not only in their familiar breakfast form but also to extend. Meat dishes as in meat loaf, meat patties, stuffing for the cheaper cuts of other meats and thickening for gravies. The whole grain and enriched flours can be used in any kind of flour mixtures. Many pudding and cookies may be made from cereals. These cereals dessert dishes should be served in meals that don not have cereals in the main course.

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