



Potatoes, nutrition and diet

Potatoes can be important staple foods, but balanced diets need to include other vegetables and whole grain foods

Key Points

The potato is a good source of dietary energy and some micronutrients, and its protein content is very high in comparison with other roots and tubers.

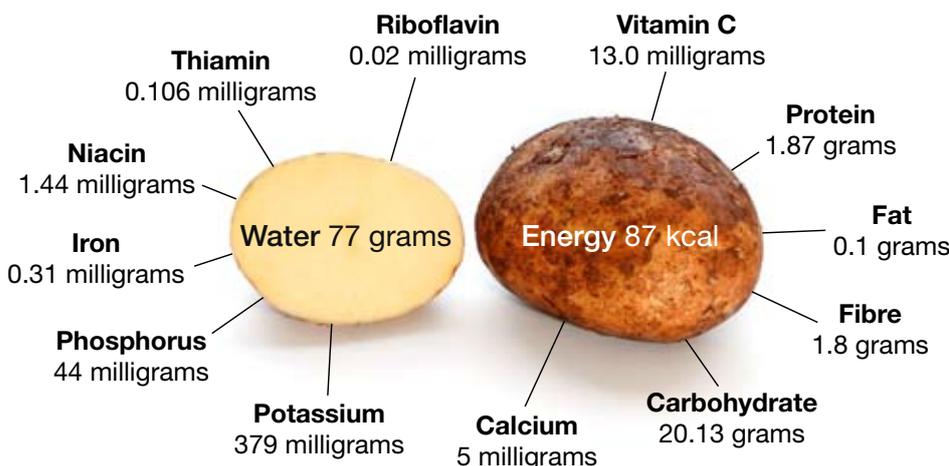
Potato is low in fat – but preparing and serving potatoes with high fat ingredients raises the caloric value of the dish.

Boiling potatoes in their skins prevents loss of nutrients.

Potatoes are important in many diets, but need to be balanced with other vegetables and whole grain foods.

Further research is needed to determine the link between potato consumption and Type 2 diabetes.

Nutrient content of potatoes



(Per 100 g, after boiling in skin and peeling before consumption)

Source: United States Department of Agriculture, National Nutrient Database

Potato is a versatile, carbohydrate-rich food highly popular worldwide and prepared and served in a variety of ways. Freshly harvested, it contains about 80 percent water and 20 percent dry matter. About 60 to 80 percent of the dry matter is starch. On a dry weight basis, the protein content of potato is similar to that of cereals and is very high in comparison with other roots and tubers. In addition, the potato is low in fat.

Potatoes are rich in several micronutrients, especially vitamin C – eaten with its skin, a single medium-sized potato of 150 g provides nearly half the daily adult requirement (100 mg). The potato is a moderate source of iron, and its high vitamin C content promotes iron absorption. It is a good source of vitamins B1, B3 and B6 and minerals such as potassium, phosphorus and magnesium, and contains folate, pantothenic acid and riboflavin. Potatoes also contain dietary antioxidants, which may play a part in preventing diseases related to ageing, and dietary fibre, which benefits health.

Effects of potato preparation methods

The nutritive value of a meal containing potato depends on other components

served with them and on the method of preparation. By itself, potato is not fattening (and the feeling of satiety that comes from eating potato can actually help people to control their weight). However, preparing and serving potatoes with high-fat ingredients raises the caloric value of the dish.

Since the starch in raw potato cannot be digested by humans, they are prepared for consumption by boiling (with or without the skin), baking or frying. Each preparation method affects potato composition in a different way, but all reduce fibre and protein content, due to leaching into cooking water and oil, destruction by heat treatment or chemical changes such as oxidation.

Boiling – the most common method of potato preparation worldwide – causes a significant loss of vitamin C, especially in peeled potatoes. For french fries and chips, frying for a short time in hot oil (140 °C to 180 °C) results in high absorption of fat and significantly reduces mineral and ascorbic acid content. In general, baking causes slightly higher losses of vitamin C than boiling, due to the higher oven temperatures, but losses of other vitamins and minerals during baking are lower.

Potato's role in the developing world's "nutrition transition"

In many developing countries, and especially in urban areas, rising levels of income are driving a "nutrition transition" toward more energy-dense foods and prepared food products. As part of that transition, demand for potato is increasing. In South Africa, potato consumption has been growing in urban areas, while in rural areas maize is still the staple. In China, higher income and increased urbanization have led

to increased demand for processed potatoes. Thus, the potato already plays a role in diet diversification in many countries. However, where other staple crops are available to meet energy requirements, potato should not replace them but rather supplement the diet with its vitamins and mineral content and high quality protein. Potatoes can be important staple foods, but balanced diets need to include other vegetables and whole grain foods.

As part of the trend toward greater consumption of "convenience foods", demand for fried potatoes is increasing. Over-consumption of these high-energy products, along with reduced physical activity, can lead to overweight. Therefore the role of fried potato products in the diet must be taken into consideration in efforts to prevent overweight and diet related non-communicable diseases, including heart disease and diabetes. Type 2 diabetes is caused by many factors, and further research is needed to determine whether potato consumption and Type 2 diabetes may be linked.



Toxic components of potato

As part of the potato plant's natural defences against fungi and insects, its leaves, stems and sprouts contain high levels of toxic compounds called glycoalkaloids (usually solanine and chaconine). Glycoalkaloids are normally found at low levels in the tuber, and occur in the greatest concentrations just beneath the skin.

Potatoes should be stored in a dark, cool place in order to keep glycoalkaloid content low. Under exposure to light, potatoes turn green in colour due to increased levels of chlorophyll, which can also indicate higher levels of solanine and chaconine. Since glycoalkaloids are not destroyed by cooking, cutting away green areas and peeling potatoes before cooking ensures healthy eating.

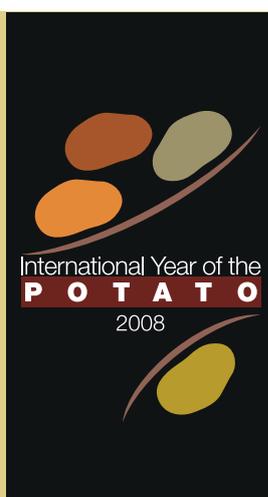
About IYP 2008

The **International Year of the Potato**, to be celebrated throughout 2008, aims at raising global awareness of the potato's key role in agriculture, the economy and world food security.

www.potato2008.org

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