

Kiwifruit : Health benefits and medicinal importance

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Fruits are an important part of a healthy diet in our daily routine. They are of course naturally low content of calories, sodium, fat, and cholesterol. Stuffed with vitamins, enzymes, minerals, they are very flavour some and quickly digestible and also may reduce risk for many illnesses. Kiwi fruit has become terribly popular during the past two decades due to its various medicinal properties. It is also known as Macaque peach and Mihoutau and Chinese goesberry. It is said that the fruit got its name Kiwi from the land of New Zealand. It is native to Chang Kiang valley (Yang Tao) of northern China. In the early 1900, kiwi fruit was first exported to

Asia as an ornamental vine. The plant is a vigorous, deciduous climber that grows to about 9 meters in height, tolerating full sun or semi-shade. Kiwi plants were originally grown in mountainous, forested regions of China. It is a small fruit approximately 3 inches long and has a brown hairy peel with a green flesh and white pulp

in the center with many tiny black edible seeds. This is not only consumed fresh, but also used to produce dried kiwi, frozen kiwi, jam, jelly, marmalade, juice, nectar, etc. Kiwi fruit juice has been used in some cultures as a traditional meat tenderizer. Kiwifruit contains numerous phytonutrients as well as well known vitamins and minerals that promote health. It also contains lots of glucose and fructose and a small amount of sucrose. It contains very good levels of vitamin-A, vitamin-E, vitamin-K and flavonoid anti-oxidants such as beta-carotene, lutein and xanthin. Some studies revealed that diseases like asthma cough and diabetes have shown positive improvements with the daily consumption of kiwi fruit. It has more potassium than a banana or citrus fruits. Many studies have shown that it contains many medicinally useful compounds, which may be beneficial in the treatment of sleep disorders. Commonly Some varieties of kiwi fruit found in China have a strong anti-mutagenesis effect. Moreover, these fruits have the effect of increasing immune function. To

enhance kiwi fruit's health care effects, withdrawing the effective components, e.g., anti-cancer isoflavones, organic acids, polysaccharide and trace element, by formulation and scientific experiments to produce functional health care products/drink, can enhance the whole anti-cancer defensive system. Motohashi *et al.* (2002) found kiwi fruit to contain a number of valuable anti-cancer bioactive materials that are prooxidant (at higher concentrations) and antioxidant (at lower concentrations), as well as having tumour selective, cytotoxic and antimicrobial activity.

Medicinal and health benefits of this fruit have been discussed as under:

Digestive health: Kiwifruit stores a good amount of proteolytic enzyme actinidin a protein-dissolving enzyme which improves the digestion of proteins and can help digest a meal much like the papain in papaya or bromelain in pineapple. It facilitates smooth traffic through the digestive system.

Skin health: It is a good source of vitamin C which is essential nutrient that works in our bodies as an antioxidant to help prevent damage caused by the sun, pollution and smoke, smooth wrinkles, keep the skin young, vibrant and improve overall skin texture. It also a good source of vitamin E which makes the skin soft and moist and protect the skin from degeneration. Vitamins also aids in regeneration of cells which in turn makes the skin youthful and flexible. The vitamin C is the responsible for the formation of collagen. Collagen is a connective protein repairs the skin and keeping the skin firm and supple. It helps it to recover from cuts and wounds and prevent from rough and dry skin. It also rich antioxidants and Vitamin E which are essential for a healthy and glowing skin. Kiwifruit contains amino acids that protect the skin from sun damage.

Bone health: Folate, magnesium and Vitamin E are all well represented in kiwifruit, offering health benefits that range from bone formation. Vitamin K also has a potential



role in the bone mass building by promoting osteotropic activity in the bone.

Heart health: The fibre and potassium in kiwis support heart health. Fiber can reduce high cholesterol levels, which may reduce the risk of heart disease and heart attack. Poor magnesium status is associated with heart disease, myocardial infarction and hypertension. Fresh kiwi fruit is a very rich source of heart-healthy electrolyte “potassium.” 100 g contains 312 mg or 7 per cent electrolyte. An increase in potassium intake along with a decrease in sodium intake is the most important dietary change that a person can make to reduce their risk of cardiovascular disease. Potassium is an important component of cell and body fluids that help regulate heart rate by countering malefic effects of sodium. Kiwi-fruit seeds are an excellent source of omega-3 fatty acids. Several research studies show that consumption of foods rich in omega-3 fatty acids may reduce the risk of coronary heart disease, stroke. Folate, Magnesium and Vitamin E also reduced the risks of heart disease.

Hair health: Fruit is rich in minerals like zinc, magnesium and phosphorus that improves hair growth and enhances

blood circulation. It also contains Vitamin C and E which helps in reducing hair fall. Kiwi seed oil contains omega-3 fatty acids that prevent the hair from losing its moisture. Kiwifruit is rich in copper which helps the hair in preserving its natural colour and also protects from premature greying. The iron content of fruit helps in nourishing the hair and also promotes proper blood circulation in the scalp. Thus it strengthens the hair from their roots.

Eye health/Macular degeneration: Kiwifruit is rich in phytochemicals xanthophylls and especially a subcomponent, lutein. Lutein is known to accumulate in the retina of the eye. Kiwifruit contains the phytochemical lutein. Lutein is a carotenoid vitamin which can prevent age-related blindness. The body can't synthesize the lutein, therefore it's especially important to get plenty of foods that contain lutein, like kiwi.

Physical fitness: It contains a wide range of

minerals which is essential for replenishing those lost during exercise especially in hot environments. In China, a kiwi-based sport drink was designed to overcome athletic training in a hot environment, where large amounts of minerals can be lost in sweat.

Cardiovascular health: Kiwifruit is a good source of protective polyphenols along with vitamin C, vitamin E and potassium. These are effective in the maintenance of cardiovascular health. Kiwifruit exerts inhibitory activities which aids in the reduction of triglycerides in the blood.

Pregnant women's health: It is a good source of folate (vitamin B6), which is beneficial for Pregnant women because it helps in the development of the foetus, making it healthy. It is also considered to be good for growing children.

Blood clotting and absorption of vitamin D: Vitamin K of fruit helps with blood clotting and absorption of vitamin D.

Better sleep: Kiwifruit is a source of serotonin which helps to promote better sleep. The consumption of kiwi may also help in improving the sleep onset and reducing the waking time after the onset. Kiwi consumption also provides relief from the sleep disturbances. The peel of



Table 1 : Food value per 100 g of edible portion of kiwifruit

	Fresh	Canned	Frozen
Calories	66	-	66
Moisture	81.2 g	73.0 g	80.7 g
Protein	0.79 g	0.89 g	0.95 g
Fat	0.07 g	0.06 g	0.08 g
Carbohydrates	17.5 g	25.5 g	17.6 g
Ash	0.45 g	0.45 g	0.53 g
Calcium	16 mg	23 mg	18 mg
Iron	0.51 mg	0.40 mg	0.51 mg
Magnesium	30 mg	30 mg	27 mg
Phosphorus	64 mg	48 mg	67 mg
Thiamine	0.02 mg	0.02 mg	0.01 mg
Niacin	0.50 mg	0.40 mg	0.22 mg
Riboflavin	0.05 mg	0.02 mg	0.03 mg
Vitamin A	175 I.U.	155 I.U.	117 I.U.
Ascorbic Acid	105 mg	103 mg	218 mg

Source: Morton *et al.* (1987). Fruits of warm climates.

kiwi is a potent ingredient for the development of natural sleeping aids.

Depression: Inositol is found in kiwifruit which works as a precursor of an intracellular second messenger system, can be beneficial in the treatment of depression.

Anemia: The consumption of this fruit facilitates the absorption of iron, which helps to prevent anemia

Reduce stone: High potassium intakes are also associated with the reduction in the formation of kidney Stones. Magnesium contains of fruit also decreased the risk of kidney stones.

Blood pressure: Because of their high potassium content, kiwis can help negate the effects of sodium in the body. It is possible that a low potassium intake is just as big of a risk factor in developing high blood pressure as a high sodium intake. Copper also is a mineral involved in making red blood cells and developing a strong immune system.

Cancer: The consumption of Kiwifruit works against cancer by being cytotoxic to malignant cancer cells without affecting the normal, healthy cells. The great amount of dietary fibre in kiwi fruit helps in decreasing the probability of colon cancer. Kiwifruit has been shown to contain an antimutagenic component, helping to prevent the mutations of genes that may initiate the cancer process. It contains Catechin, a phytochemical which helps in reducing the toxicity of anti-cancer agents by stimulating the bone marrow proliferation. Lutein, an important phytochemical found in kiwifruit, has been linked to the prevention of prostate and lung cancer. The presence of glutathione may account for the reduction. The biochemical composition of kiwi fruit like plethora of antioxidants, carotenoids, vitamins and fibres are effective in the prevention or healing of cancers.

Diabetes: Kiwi has low glycemic index which makes it suitable for the individuals with diabetes. In addition, fibre-

rich foods, like kiwifruit, are good for keeping the blood sugar levels of diabetic patients under control.

“Here we have summarized that the some health significant properties of this fruits are makes it superior fruits so, the consumption of this may be useful in prevention and deterioration of many diseases. This fruit is the most nutrient dense fruit which we want to eat more frequently, for better health.”

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