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The nutritive and health benefits of fresh raw fruits VS fruit juices

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Abstract

Fruits in terms of functional classification are placed under the “protective foods” category. Fruits are rich source of nutrients like vitamins, minerals, trace elements, energy and phytochemicals including flavonoids, polyphenols and antioxidants that have varied health benefits. A fruit juice offers both good health and profound disease risk reduction properties. Juices help to maintain the body’s acid-base balance, regulate the functioning of the sweat glands to reduce endocrine acidic waste, preventing skin erosion, making skin white, soft, smooth, delicate, and flexible, and to delay skin ageing. Hence, of late, there has been a growing interest in the therapeutic value of fruit juices and this paper is an attempt to throw light on the health benefits of 6 most regularly consumed fruit and fruit juices.

Keywords: fruit, fruit juice, flavonoids, phytochemicals, acid-base balance, skin ageing

1. Introduction

A fruit is the edible fleshy seed bearing part of the plant. Fruits are liked by all due to their attractive appearance, appealing flavors and pleasing odour. Apart from their nutritive value, they are also appreciated for their appetizing effects. It is a well documented fact that when medicines and injections fail to cure a disease, a proper balanced diet, vegetables and fruit and fruit juices show miraculous results. Over the years, many eminent physicians, naturopathists have illustrated the miraculous effects of fruit juices in curing, not only common ailments, but also life threatening diseases like cancer, kidney diseases etc.

Fruit juice is reported to be an excellent health-promoting beverage that is rich in antioxidant substances, such as phenolic compounds and vitamin C (Sun J. *et al.*, 2002) [4]. Consumption of fruit juice is associated with several health benefits, including increased antioxidant capacity, improved endothelial function, reduced low-density lipoprotein oxidation, and improved cardiovascular and neurocognitive function (Ruel G. *et al.*, 2006) [3]. Fruit juices also prevent the formation of kidney and gall stones, due to their potassium salt richness and are recommended in acidosis, diabetes, under-nutrition, gout, and ageing tissues

Research suggests that fruits are a rich source of phytochemicals thereby exhibiting anti-inflammatory, anti-proliferative, anti-carcinogenic, and anti-microbial properties (Prior *et al.*, 2000) [1]. Thus, optimum dietary intake of these phytochemicals is essential for maintaining ideal health and what a better source than drinking fresh fruit juices which are laden with these phytochemicals.

The organic acids present in fruits exert an alkalizing effect on the human body. The main acids, namely citric acid and malic acid are acidulants, and ascorbic acid, an antioxidant. (Young-Hee Pyo, 2014) [5]

The edible part of a fruit is the arils (i.e., pulp and flesh) which can be consumed fresh or as a processed product, such as juice. The outer rind of the fruit is usually not consumable, recent studies suggest that use of the fruit peel can increase the amount of total polyphenols and flavonoids in the juice products. Thus, the removal of peels may result in a significant loss of constituents beneficial to human health.

Some nutrition experts are of the opinion that juicing is better than eating whole fruits and vegetables because the body can absorb the nutrients better and it gives the digestive system rest from working on fiber. Intake of juices can help reduce the risk of cancer, boost immune system, help remove toxins from body, aid digestion and help lose weight.

Dr. Ma Gerson has treated cancer-patients with fruit and vegetable juices and saved many from the jaws of death. The treatment given through vegetable & fruit juices is harmless, edible & without side effect.

Famous studies have documented proof that fruit juices not only help cure illness, but also chronic or hard to cure diseases. Not only does fruit juice enable one to enjoy a healthy life, but it also helps in rejuvenating oneself. Juice-diet has proved considerably effective in case where modern therapies have failed.

They cast out the toxic elements accumulated in the body, fruit juices also increase the quantity of urine through which all the toxic elements of the body are thrown out. Consuming fruit juices have a natural beneficial effect on the human system by hydrating it and acting as a healthy electrolyte drink. These juices lower the urine density and thereby accelerate the elimination of nitrogenous wastes and chlorides by acting as a diuretic. Besides being an effective food in curing dehydration, fatigue, and other digestive, kidney and bladder disorders, certain fruit juices also help in resolving vision problems such as glaucoma and cataract.

However, on the lopsided certain nutrition experts are of the view that juicing can have a negative impact, as Wendy White, a professor of food science and nutrition at Iowa State University, notes that drinking fruit juice spikes blood sugar levels more and faster than eating whole fruit, and one Harvard study linked regular juice consumption to an increased risk of type 2 diabetes.

According to nutrition experts and obesity consultants 'Whether fresh or packaged, juice is not something one should not be drinking. A 250 ml glass would be equal to having 10 spoons of sugar even when no sugar has been added gives a very high sugar rush which can cause burst of energy. There is absolutely no fibre so doesn't keep one full.' Eating too much fruit juice may result in some intestinal discomfort, flatulence, obesity, diabetes mellitus and tooth decay, because fruit juice contains a small amount of sorbitol, a sugar alcohol which the body cannot process but bacteria in the digestive system can break down for energy. But the brighter side of it is that a 250 ml glass of orange juice would have at least 5-6 oranges so is rich in vitamin C content, phytonutrients and micro minerals contributing to positive health.

Therefore, the objective of this paper is:

- To analyze the nutritional values of different raw fruits and their juices.
- To study their health benefits.

2. Methodology

As per convenience, some of the colored fruits and their juices were selected for the study. Nutritional values such as antioxidant level, fibers, carbohydrates, phytochemicals etc of selected raw fruits and their fruit juices were found and analyzed to study their health benefits.

Tabular and graphic methods are employed to analyze the information.

3. Results

Some of the fruits selected for study are Apple, Grapes, Guava, Pomegranate, Pineapple and Orange.

1. **Apple** is considered as one of the best fruits. This sweet sour fruit is nourishing, easily digestible, helps quench thirst. Its expect content relieves cough & helps to eliminate toxins from the body. A valuable remedy for

jaundice. Fresh apple juices are more wholesome when taken with honey. It also helps in giving relief in kidney stones, acidity, headache, asthma & is said to be a natural protector of the teeth.

Table 1: Nutritive value of Apple fruit vs whole fruit juice

Nutrients	Whole Fruit (100gm)	Whole fruit juice (100ml)
Kcal	52 kcal	114 Kcal
Protein	0.26g	0.06gm
Fat	0.17gm	0.12gm
Fiber	2.4gm	0.1g
Calcium	6mg (6%)	20 mg
Potassium	11 mg	125 mg
Vitamin C	4.6 mg	11.7mg

Apple provides 17% of the days RDA for fiber & presence of this soluble fiber (pectin and polyphenols) is beneficial in lowering blood cholesterol levels.

2. **Grapes:** Noblest of all fruits. Maharishi Chavak states that grape juice is sweet, cool, refreshing, stimulating, soothing, and beneficial for throat, hair, dry and dull skin, eyes. It is helpful in eliminating thirst, burning sensation, fever, asthma, leprosy, tuberculosis, irregular menstruation, chronic jaundice. According to Naturopathic doctors 300 ml of grape juice if taken regularly over a period of time helps in competing anemia malice. Citric & tartaric acid found in grapes helps purify blood and stimulated the activity of the bowel as well as the kidney.

Taking grape juice for a few days removes undesirable heat from the body as the blood is cleaned and cooled.

Table 2: Nutritive value of Grapes fruit vs whole fruit juice

Nutrients	Whole fruit(100gm)	Whole Fruit juice(100ml)
Kcal	104kcal	152kcal
Protein	1gm	1gm
Fat	0.3gm	0.2gm
Carbohydrate	37gm	27gm
Fiber	1.4gm	0.4 gm
Calcium	28 mg	15 mg
Potassium	263 mg	288mg
Vitamin C	0.3mg	16.3mg

The antioxidant property of grapes enhances brain function & is also said to improve memory.

3. **Guava:** (*Psidium guajava*): is palatable, astringent and sweet. It is cool & checks the flow of bile. It is an appetizer. It is said to cure delouses, destroy intestinal worm and eliminates constipation. Guava helps to build immunity & helps eliminate body toxins. The vitamin A in guava is said to be 5 times that of an orange besides being a good source of protein, fiber, folic acid and vitamin C.

Table 3: Nutritive value of Guava fruit vs whole fruit juice

Nutrients	Whole fruit(100gm)	Whole Fruit juice(100ml)
Kcal	68kcal	155kcal
Protein	2.6g	0.37g
Fat	0.95gm	0.92gm
Fiber	5.4gm	2gm
Calcium	18mg (2%)	10mg(1%)
Potassium	417mg	228 mg
Vitamin C	228mg	96%

4. **Pomegranate:** (*Punica granatum*) -Pomegranate juice contains a high concentration of antioxidants, which are

responsible for many of its health benefits. According to Cardiovascular Therapies, drinking pomegranate juice regularly can help to reduce the risk of chronic diseases such as heart disease and cancer. The juice is easy to digest, delicious, light, astringent and lubricious. Its regular use is

said to increase intellect, vitalizes the body & satisfy hunger. The juice is beneficial in thirst, fever, cardiac trouble, mouth disease and vocal disorders. It is said to give relief in anemia. The nutritional values of pomegranate juice are very high.

Table 4: Nutritive value of Pomegranate fruit vs whole fruit juice

Nutrients	Whole fruit(100gm)	Whole Fruit juice(100ml)
Kcal	60kcal	83kcal
Protein	1.7gm	0.2gm
Fat	1.17gm	0gm
Fiber	4gm	0.19gm
Calcium	10mg (1%)	1%
Potassium	236mg	214mg
Vitamin C	10.2mg	10

5. Pineapple (*Ananas comosus*): contains chlorine that stimulates the kidneys and helps remove waste from the body. Pineapple juice is effective in abdominal disorders, jaundice, expels gas and beneficial for heart. Fresh pineapple juice

soothes the throat, helps to destroy intestinal worms. Pineapple has a high antioxidant content is often referred as “Power house of antioxidants” The antioxidant content is said to be 1000 times more than any other fruit.

Table 5: Nutritive value of Pineapple fruit vs whole fruit juice

Nutrients	Whole Fruit (100gm)	Whole Fruit juice(100ml)
Kcal	50kcal	56kcal
Protein	0.54gm	0.38gm
Fat	0.12gm	0.1gm
Fiber	1.40 gm	0.2gm
Calcium	13mg (1.3%)	1%
Vitamin C	47.8mg	25 mg

6. Oranges: Popularly referred as a “Super food” is a favorite fruit of all, all over the world. It is sweet sour in taste, juicy and cool. It works as an appetizer, cleanses the blood, soothes the bile and eliminates windiness. Recommended in fever, destroys intestinal worms and allays abdominal pain and also strengthens the bones. The Vitamin C content of oranges is not easily destroyed as it contains the citric acid and the white membrane is an excellent source of calcium. Orange juice is useful in asthma. It is said to improve digestion and increase appetite. Orange juice helps the intestinal tract get rid of hostler microbes and hence improves intestinal health. It is said to give relief to pregnant women suffering from nausea and vomiting.

A cup of orange juice provides as many calories as ¾ of milk cup.

Table 6: Nutritive value of orange fruit vs whole fruit juice

Nutrients	Whole Fruit(100gm)	Whole Fruit juice(100ml)
Kcal	49kcal	47kcal
Protein	0.94gm	0.73gm
Fat	0.3gm	0.21gm
Fiber	2.5gm	0.2gm
Calcium	40mg(4%)	10.3mg(1%)
Potassium	443mg	210mg
Vitamin C	48.5mg	210mg

Table 7: Bioactive compounds in fruits

Constituent Compound	Sources	Effect on human wellness
Phenolic compounds	Apple, Grapes, Pomegranate	Cancer Heart disease,
Anthocyanidins	Apple, Grapes, Pomegranates	Diabetes, Cataracts, Blood Pressure, Allergies
Flavan-3-ols	Apples	Platelet, aggregation,
Flavanones	Oranges, Apples	Cancer
Flavones	Guava	Cancer, Allergies, Heart Problems
Carotenoids Lycopene	Guava	Infertility
Monoterpenes	Oranges	Cancer, heart disease in male
Sulfur compounds	Apple	Cancer, Cholesterol, Blood pressure and Diabetes

4. Conclusion

Fruits are enjoyed by all groups and at all times either as an appetizer, a snack or as a desert. From the analysis, it is clear that both whole fruit and their juices are important sources of minerals and vitamins. Although it is a known fact that eating whole raw food is more nutritive because of its high fiber content and less total sugars as compared to their juices but when the fruits are to be used as curative tools then their juice intake is recommended as it can be consumed in large quantities.

Eating these amazing super foods as part of a healthy diet helps to reduce inflammation and prevent heart disease, cancer and other damaging health conditions; juices can be used as a therapeutic measure when large quantities are required for relief.

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