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SUPERFOODS --REAL OR MYTH?

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Introduction

Etymologically, superfoods are *foods considered especially nutritious or otherwise beneficial to health and well-being*. Superfoods are nutritional powerhouse foods with high phytonutrient content crucial to a healthy long life. Super foods are so nutrient-rich that they can help fight aging and illness including cardiovascular disease, Type II diabetes, hypertension and even certain cancers. Super foods contain high amounts of flavonoids and micro and macro nutrients while being low in calories; they boost our immune system and help us fight everything from the flu to aging.

However, the term is not in common currency amongst dieticians and nutritional scientists, many of who dispute the claims made that consuming particular foodstuffs can have a health benefit. There is no legal definition of the term and it has been alleged that this has led to its being over-used as a marketing tool.

The growing trend of healthier and organic food, along with modern consumers' appetite for international food, is fueling the popularity of ancient superfoods from around the world. Reintroduction of ancient natural foods to modern day lives is expanding the functional food category and providing options with more bio-available essential nutrients, vitamins and minerals than most supplements and chemical extracts. Modern marketing strategies are making these foods more visible in the market place.

Some of the hottest foods of today were virtually unheard of a decade ago. Acai berries from Brazil, sprouted Chia seeds from Chile, goji berries from China, and raw cacao from Peru are the most popular superfood items currently doing the rounds.

These days Superfoods are a buzzword and a number of companies are coming up with a variety of products called **superfoods**. As a result good amount of literature is also being produced on Superfoods and this review is an attempt to peep into this area. It is being claimed that Superfoods *reduce stress* and make us *feel fabulous*.

Ancient superfoods

According to Ayurveda , *we are what we eat*. Hippocrates, the famous Greek physician, says that *all diseases enter our body through our mouth, i.e., through our food* thereby highlighting the significance of our food and its role in treating our ailments. Ayurvedic literature is full of references to wholesome (balanced) foods and therapeutic foods. A balanced food must contain sufficient amounts of proteins, fats, carbohydrates, minerals, vitamins, and calories. Ayurveda tells us that not everyone should eat the same food because of different body types. We are made up of three doshas which are *kapha* (Earth, heavy), *pitta* (Fire, fast) and *vata* (Air, spacy) and their ratios vary from person to person. Therefore, the appropriate food for a vata dominated person is different from that for a kapha/pitta dominated one. Amongst the eight divisions of Ayurvedic therapeutics, specifically two *Rasayana* (Rejuvenation) and *Vajikaran* (Aphrodisiacs) deal with food items for longevity and strength promotion. Rasayan therapy enriches rasa with nutrients to help one attain longevity, memory, etc. Six plants viz. **Amalaki, Haritaki, Garlic, Cannabis, Guduchi** and **Gokshoru** have been referred to as Amrita drugs in Ayurveda .The plants having five rasas and those balancing all the three doshas are also considered significant when we talk about superfoods of today.

In a Chinese system eating a variety of foods is considered to be essential for maintaining health and youthful vitality. Eating a mix of vegetables, fruits and grains of different colours is recommended for good health. Raw fruits and vegetables are a power-house of essential vitamins and minerals and help to keep the body in youthful vibrancy. Chinese look at restoring the balance of yin and yang using the diet and choosing foods that are classified as predominantly either yin or yang.

Though it has not been conclusively proved that those plants that have existed the longest have the most nutritional benefit, it is clear that the “green superfoods” — among them spirulina, chlorella, wheatgrass and barley grass — are some of the easiest and best sources of nutrition available. Some variation of these ancient seaweeds and grasses can be found all over the world, and their use as a source of concentrated nutrition is one of the most ancient plant/human relationships on Earth.

Micro-organisms have been found to create an amazing abundance of healthy fauna and flora in both soil and our intestines. There are some good food items which help us to keep the gut micro flora healthy and thus help in assimilation of nutrients in our body. Similarly, enzymes are the worker bees of the body and they are needed to assimilate the nutrition that comes from the

food. If our food doesn't supply them, then our body must use its own limited resource of enzymes to do the work. When it does this, it takes the enzymes away from the important job of cleansing the body. Eating raw food creates such a situation in our body. At the same time when food is improperly cooked most of the enzymes are lost.

What are Superfoods?

An attempt has been made by some authors to define the principles of superfoods.

Principle 1:

The best diet in the world. Studies of populations that are the healthiest and live the longest show that particular foods eaten by these populations are responsible for their health and longevity.

Principle 2:

Whole foods. Foods that are unprocessed or are minimally processed in such a way that none of their nutritional characteristics has been intentionally modified. Whole foods are complex. They contain hundreds of unidentified compounds and nutrients which work best in concert with each other.

Principle 3:

SuperFoods equals synergy. Food synergy refers to the interaction of two or more nutrients and other healthful substances in foods that work together to achieve an effect that each is individually unable to match. Food synergy is critical to health.

Principle 4:

Simple and positive. A healthy diet is the essential core of a healthy life. Nutrition recommendations that are complicated or challenging can't become a regular part of our routine.

Commonly listed superfoods

Food items commonly listed as superfoods mainly fall under the following categories:

Fresh fruits and vegetables

Omega-3-fatty acids-rich foods

Fibre-rich foods

Antioxidant foods

Fresh juices

Bee products

Dairy products

Other special superfoods

Fresh fruits and vegetables

Available in a rich variety of colors and flavors that benefit health in different but unique ways, fruits and vegetables are vitamin, mineral, and phytonutrient storehouses. There are generally five color categories that are recognized. These include red, blue and purple, yellow and orange, white, and green. Each color category is said to play a different role in health. White, for instance, tends to inhibit cancer and high cholesterol levels while bolstering heart health. The yellow and orange category contributes to healthy eyes as do greens, which also stem cancer growth. All fruits and vegetables contain various levels and types of phytonutrients that are designed to fend off diseases like cancer and to prevent premature aging. **Fresh juices** are an excellent way to maintain high intake of varied fruits and vegetables particularly by combining different varieties in a single, great-tasting juice. Fresh juices are true superfoods, packed with nutrients and minerals. When used wisely, they can increase energy and alertness, can reduce inflammation and can bind with toxins so they are safely and swiftly eliminated from the body.

Berries: An overwhelming body of research has now firmly established that the dietary intake of berry fruits has a positive and profound impact on human health, performance, and disease. Berry fruits include blackberry (*Rubus* spp.), black raspberry (*Rubus occidentalis*), blueberry (*Vaccinium corymbosum*), red raspberry (*Rubus idaeus*) and strawberry (*Fragaria x ananassa*) etc. and sea buckthorn (*Hippophae rhamnoides*), "berry-type" fruits such as the pomegranate (*Punica granatum*), goji berries or wolfberries (*Lycium barbarum*), mangosteen (*Garcinia mangostana*), the Brazilian açai berry (*Euterpe oleraceae*), and the Chilean maqui berry (*Aristotelia chilensis*). Of special mention are:

Blueberries---Packed with antioxidants and phytoflavonoids, these berries are also high in potassium and vitamin C, making them the top choice of doctors and nutritionists. They lower the risk of heart disease and cancer and are also anti-inflammatory. And their flavors satisfy sweets cravings for a fraction of the calories in baked goods. Blueberries also have 3.6g of fibre in every cup.

Wolfberries or goji berries ---Chinese health practitioners have known the amazing health benefits of wolfberries for over 5000 years and only recently experts have found that these berries are a nutrient-rich superfood. They strengthen the `chi' – the body's life force – and those who take them have been known to live a longer, disease-free life. These berries are packed with essential vitamins, amino acids and trace minerals which are all essential for life. Wolfberries are also significantly high in antioxidants. They boost the body's immune system, eliminating any invasive toxins and bacteria, thus preventing the development of many debilitating or critical health conditions.

Brazilian açai berries are rated high as superfoods because of their high oxygen radical absorbance capacity, Omega 6 and 9 fatty acids content and amino acids. **Strawberries** contain ellagic acid with anti-cancer properties.

Other fruits: Kiwis are among the most nutritionally dense fruits, full of antioxidants. It is also one of the few fruits that is a good source of vitamin E. **Papaya, Pineapple & Kiwi** have high amounts of enzymes that help combat everything from autoimmune diseases, allergies, and cancer to AIDS. **Mangoes** contain bioflavonoids that aid the immune system. **Citrus fruits** contain vitamin C which helps your body fight lung, cervical, esophagus & stomach cancers. Fresh **apricots** are high in beta-carotene, vitamin C and fibre; **Bananas** are rich in magnesium that helps protect circulatory system, besides potassium and slowly-absorbed sugars; it is a good source of pectin and so prevents radical swings in blood sugar. Resveratrol rich products such as **grapes** also deserve special mention.

Greens, forebearers of life on Earth: Any green food being rich in vitamins and minerals is considered a superfood. Great cleansing vegetables are bitter greens (chard, escarole, kale). Astringent vegetables (asparagus, artichokes) are especially recommended if you have an inflammatory condition, arthritis or are overweight. **Algae** which are more than 35 billion years old, were the first form of photosynthetic life on earth. Spirulina, one of the forebears of life on Earth, and other blue-green algae, helped produce all the oxygen in the atmosphere. Spirulina and its cousins often are referred to as “whole foods” or “green superfoods” because they contain a complete nutritional profile. **Chhadilla** (*Parmelia perlata*) is an important lichen of high medicinal and food value in Indian markets

Wheat grass---Greens such as wheat grass are considered more nutritionally valuable than other green vegetables. Wheat grass, barley grass, rye grass, oat grass, are all nutritional powerhouses, delivering compact, dense nutrition in relatively small servings. For example, 15 pounds of wheatgrass contains roughly the equivalent nutrients of 350 pounds of fruits and vegetables. And dried barley grass (often marketed as Green Magma) contains 11 times the calcium of cow's milk, five times the iron of spinach and seven times the vitamin C of oranges

Spinach--- Spinach has more than 100% of vitamins K and A and more than half the daily requirements for folate and manganese. Spinach has a special concoction of flavonoids, 13 to be exact, which all work together to help slow a number of cancers including breast cancer. Spinach is also a brain food; it's been associated with improved brain function, eyesight, energy, gastrointestinal function, etc.

Beans--- They are a good, low-fat source of protein, carbohydrates, magnesium, and potassium and dietary fibre. Whole soybeans also contain heart-healthy omega-3 fatty acids. They lower "bad" LDL cholesterol levels in bloodstream which reduces heart disease risk. Studies have shown that people who regularly eat soy products have reduced risk or lower rates of prostate, colon, lung, rectal and stomach cancers.

Broccoli is a rich source of vitamins A, C, beta-carotene (vitamin A) and bone-building vitamin K, and has plenty of fibre. **Carrots** provide enough beta carotene to reduce stroke risk by half for men who already have symptoms of heart disease. **Pumpkin** is another super food full of

nutrients that our body needs every day; it has lots of fibre and beta carotene.

Tomatoes contain lycopenes - an antioxidant more potent than vitamin C. Stimulates immune function and may slow degenerative diseases. **Mushrooms** contain beta-glucan, which stimulates immune system.

Herbs and Spices: Certain herbs become superfoods in detox diets. **Parsley and mint** have powerful cleansing and digestive properties; they can remove bad breath and clear the skin. **Ginger, cinnamon, anise and cayenne pepper** are often used to help detox the body, and **turmeric** is a powerful anti-inflammatory. **Cilantro** protects the body from toxic effects of heavy elements. **Celery** energizes the body, lifts the spirit and is crucial for balancing your health as you remove toxins safely and wisely from your body. **Garlic** lowers cholesterol and blood pressure. May contain chemicals capable of destroying cancer cells. **Chili peppers** the source of capsaicin prevent strokes, lower cholesterol, protect DNA against carcinogens, may stimulate release of endorphins, etc. Peppers are a great way to pump up your metabolism while giving your body important nutrients.

Omega-3-fatty acids-rich foods

Omega-3-fatty acids are most prevalent in fatty, **cold water fish: salmon, herring, sardines, and mackerel**. Other forms of omega 3s are available in fortified eggs, flax seed, cow's ghee and many nuts including walnuts. These superfoods have the added benefit of being high in monounsaturated fats, which can lower cholesterol. These are thought to be superfoods for the heart, joints, and memory.

Nuts have a high fat content but their protein, heart-healthy fats, high fibre, and antioxidant content earn them a place on the top 10 list of superfoods. All nuts -- pistachios, almonds, peanuts, walnuts, or pecans add texture and flavour to salads, side dishes, baked goods, cereals, and entrees and are healthful in small doses, and studies show they can help lower cholesterol levels and promote weight loss; pistachio nuts also contain plant sterols. It is believed that nuts can help decrease your risk of cancer, heart disease, and diabetes. They can also reduce signs of ageing.

Fibre-rich foods

Fibre the indigestible part of plant-based foods, known as roughage, aids weight loss and checks cholesterol. Therefore, a diet high in fibre helps to maintain healthy cholesterol and blood sugar levels. Since fibre also helps one feel full longer, it's a great tool in weight management. **Whole grains, beans, fruit and vegetables** are all good sources of dietary fibre. Besides, it plays an important role in keeping your immune system healthy and in preventing specific diseases. When fibre moves through the digestive tract it remains mostly unchanged, working as a type of internal broom. Then, in the colon, bacteria interact with roughage. Fermentation takes place, producing compounds called short-chain fatty acids (SCFAs) which are known to help soothe ulcerative colitis, an inflammatory gut condition. In a study, Sydney-based scientists have discovered a mechanism that explains how a plant-based diet rich in fibre works with beneficial gut bacteria and the immune system to promote health and potentially prevent a host of diseases. Current research

provides compelling reasons to eat a diet rich in unprocessed whole foods such as fresh fruits, vegetables, grains, nuts and seeds.

Oat bran and Oatmeal contain both soluble and insoluble fibre. They lower cholesterol and blood pressure. May reduce risk of colon cancer. A diet of **soy fibre**, protein from oats and barley, almonds, and margarine lowered cholesterol as much as statins, the most widely prescribed cholesterol medicine.

Antioxidant foods

Antioxidants help eradicate free radicals from the body. Important source of antioxidants is tea. **Tea leaves** contain polyphenols, a type of antioxidant that combat the oxidative stress associated with neurodegenerative and cardiovascular diseases and thus reduce heart disease, cancer and stroke risk. The overall antioxidant power of **black tea** is the same as **green tea** but green tea does have ECGC, a powerful antioxidant that is quite special. Green tea is said to contain eight times more antioxidant because it is less processed. Green tea taken regularly lowers cholesterol and epigallocatechins from tea can inhibit the growth of cancer cells. It is an extraordinary detoxifying drink and cleanser. By adding cloves, cinnamon, ginger and black pepper using almond or rice milk instead of cow's milk enhance taste and usefulness. Green tea eases stress and fatigue. It has also been reported that green tea can help prevent Alzheimer's and improve the psychological well-being of the consumer.

Bee products

Bee pollen is one of the oldest, most researched, healing foods; its complete nutrition is beneficial for anyone looking to improve their mental and physical health, and overall well being. Beekeepers of old especially native to the Caucasus Mountains considered honey rich in pollen to be a source of health and longevity. Bees package their pollen with nectar and enzymes that help it develop into a powerful superfood. In fact, bee pollen contains thousands of enzymes and co-enzymes which are necessary for true vitality. Most of the known vitamins in bee pollen exist in perfect proportion, so they optimally work together. In addition, it is useful for combating fatigue, depression, cancer, colon disorders, nutritional disorders, prostate problems, chronic cystitis, and urinary tract infections. Fresh bee pollen should not cling together or form clumps, and it should be sold in a tightly sealed container. Some people (an estimated 0.05 percent of the population) may be allergic to bee pollen.

Other bee products with extraordinary healing properties include **royal jelly** and **propolis**, which is the antibiotic compound used by bees to disinfect their hives before occupation.

Dairy products

Dairy foods (Low fat or fat-free plain yogurt , Skim milk) contain practically every nutrient need for total nutrition and in just the right balance. **Eggs** are nutritious, versatile, economical, and a great way to fill up on quality protein. Studies show if you eat eggs at breakfast, you may eat fewer calories during the day and lose weight without significantly affecting cholesterol levels. Eggs also contain 12 vitamins and minerals, including choline, which is good for brain development and memory.

Other special superfoods

In ancient Taoist texts, the Masters list some 'immortal foods' such as **lotus seeds, lily bulbs and peach kernel** besides **yam, peanut and corn**.

Other special superfoods detailed are **Ginseng** which apart from being reputed to enhance longevity is well-known for its energy boosting properties. It is thought to help protect the immune system, enhance vitality, improve memory and protect the body from the ravages caused by stress.

Practitioners of Chinese medicine often prescribe ginseng to those who are suffering from low energy or cold conditions. **Amalaki** or **amla** or **Indian gooseberry** (*Emblica officinalis*), a disease-fighting superfood is considered the most effective remunerative agent in the plant kingdom. It is highly regarded for promoting Ojas -- or the end product of perfect digestion -- which leads to radiant health, shining eyes, skin, and hair, and youthful aging. The fruit is a powerhouse of antioxidants including superoxide dismutase, polyphenols, tannins, bioflavonoids, amino acids, trace minerals and other beneficial phytonutrients. It is arguably the most concentrated and bio-available source of Vitamin C.

Some other special superfoods which need mention are **Cod liver oil**, which is a unique package of important nutrients such as vitamin A and Vitamin D which work together to prevent and even cure numerous modern diseases and conditions. For thousands of years the Incas have cultivated a plant called **Maca** (*Lepidium meyenii*, Peruvian ginseng) at more than 12,000 feet above sea level. The plant has been almost unknown outside of the Andes, because it grows nowhere else. The Incas have used it for centuries to increase fertility and sexual desire. But it's only been in the last 10 years or so that modern science has started to take notice.

Conclusion

There are a number of food items which are super rich in essential food nutrients but the term superfood is a product of super marketing strategy. Most of the so called superfoods were already part of human civilization and nothing special has been added by these marketing gimmicks. The consumer must be careful and use his/her intelligence before purchasing these items.

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