

## Functional Foods – What are they and are you getting enough? Part 1.

With the growing concern for living a healthier lifestyle eating is at the forefront of that challenge. We try to watch what we eat and make sure it falls within certain guidelines; at least according to the FDA reports or the latest trending diets. But are we getting the whole picture?

What are functional foods and how can we know if we are getting the most out of the foods we eat? In this two part article we will consider 11 different foods that fall within the classification of ‘Functional Foods’ and their functional components, what they do and the food groups they are found in.

**Definition:** *Functional food: A functional food is a food given an additional function. It is a natural or processed food that contains known biologically-active compounds which when in defined quantitative and qualitative amounts provides a clinically proven and documented health benefit. They include processed food or foods fortified with health-promoting additives, like ‘vitamin-enriched’ products. A modified food that claims to improve health or well-being by providing benefit beyond that of the traditional nutrients it contains.*

Functional foods may include such items as cereals, breads, beverages that are fortified with vitamins, some herbs, and nutraceuticals. Even milk, according to this definition, falls into this category by having vitamin D added.

These are foods that promote optimal health by helping to reduce the risk of disease, boost metabolism, aid digestion, improve nutrient absorption, and help you lose weight, all while satisfying hunger and cravings.



**Part One of this article includes the following examples of functional foods:**

- Omega-3 enriched eggs.
- Oats and Barley.
- Fatty fish.
- Fermented Soy
- Tomatoes and tomato products.
- Sweet Potatoes
- Leafy Greens
- Probiotics.
- Nuts
- Tea
- Spices
- Garlic
- Grape Juice or Red Wine

### OMEGA-3 ENRICHED EGGS



**Functional Components:** Omega-3 fatty acids (DHA); the fatty acid profile of the egg yolks is altered by changing the feed the hens receive. Hens receive feed rich in omega-3s, typically from flaxseed, fish oil or

sea algae. The subsequent eggs the hens lay, contain increased amounts of omega-3s, and decreased amounts of saturated fats.

**What they do:** May lower triglycerides, cholesterol, and reduce the risk for coronary heart disease.

**Foods:** Whole eggs in the carton, labeled “DHA/Omega-3-enriched.” Depending on the brand, omega-3 eggs can contain up to 350 mg omega-3s per egg, compared with 60 mg in a regular egg.

## OATS AND BARLEY



**Functional Components:** These grains contain beta-glucan and phytochemicals called saponins, a type of soluble fiber with antimicrobial and antioxidant capabilities.

**What they do:** Reduce total and LDL cholesterol (also known as bad cholesterol) and may help lower blood pressure.

**Foods:** Whole oats, oatmeal, low-fat granola, whole-oat bread, other whole-oat products.

## FATTY FISH



**Functional Components:** Omega-3 fatty acids (DHA and EPA).

**What they do:** Reduce triglycerides, reduce coronary heart disease.

**Foods:** Salmon, Tuna, Striped Bass, Halibut, Sardines, Trout, Flounder.

## FERMENTED SOY



**Functional Components:** (Caution: Due to studies that show eating non-fermented soy products is actually a health risk it is recommended that you look for only non-GMO fermented soy products). Phytochemicals such as isoflavones and genistein, and soy protein have been linked to serious health issues so stick with fermented soy products only.

Products using fermented soy include:

- Natto
- Miso
- Tempeh
- Soy sauces
- Fermented tofu and soymilk

The truth is tofu is made from soy, and the majority of the time soy is bad for you. ... Unfermented soy products include tofu, edamame and soy milk, while miso, natto, tempeh and tamari are fermented soy products.

Processing of soy protein results in the formation of toxic lysinoalanine and highly carcinogenic nitrosamines. Free glutamic acid or MSG, a potent neurotoxin, is formed during soy food processing and additional amounts are added to many soy foods to mask soy's unpleasant taste.

**What they do:** May reduce total and LDL cholesterol.

**Foods:** Natto, Miso, Tempeh, Soy sauces, Fermented tofu and soymilk.

## TOMATOES AND TOMATO PRODUCTS



**Functional Component:** The phytochemical lycopene.

**What they do:** The strongest evidence exists for lycopene's role in the reduction of prostate cancer, but it also may reduce the risk of certain other cancers, and heart disease.

**Foods:** Whole fresh or canned tomatoes, crushed tomatoes, diced tomatoes, tomato paste, tomato soup (low-salt), salsa, gazpacho.

## SWEET POTATOES



**Functional Component:** Sweet potatoes are rich in many plant compounds such as beta-carotene, chlorogenic acid, anthocyanins, and coumarins and are an excellent source of vitamin A, vitamin C and potassium. They are also a decent source of many other vitamins and minerals.

Most Sweet potatoes are orange, but are also found in other colors, such as white, red, pink, violet, yellow and purple. The antioxidant activity of sweet potatoes increases with the color intensity of the flesh. It is highest in colored varieties, such as purple, deep orange and red.

Absorption of vitamin C and some antioxidants increases in sweet potatoes after cooking, while levels of other plant compounds may decrease slightly. Adding fat to the meal can increase the absorption of some of these compounds.

A raw sweet potato contains 77% water, 20.1% carbohydrates, 1.6% protein, 3% fiber and almost no fat. The most abundant vitamins and minerals in sweet potatoes are:

- Vitamin A
- Vitamin C:
- Potassium
- Manganese
- Vitamin B6
- Vitamin B5
- Vitamin E

**What they do:** Sweet potatoes are a healthier, distant relative of regular potatoes. They have a lower glycemic index, more fiber, contain excellent amounts of vitamin A (found to improve skin health) and do not contain any toxins.



**Foods:** In parts of the USA and Canada, sweet potatoes are referred to as yams. This is a misnomer since yams are actually a totally different species. There are too many different ways of preparing sweet potatoes to list them all here but some of the best are:

- Twice-Baked
- Grilled as fries or Spicy Wedges
- Sweet Potato Spread
- Maple-Walnut, Maple-Pecan Mash or Roasted With Maple Butter
- Sweet Potato Pie with Pumpkinseed Crunch
- Sweet Potato Noodle Kugel



## LEAFY GREENS



**Functional Components:** Phytochemicals such as carotenoids, sulforaphanes, apigenin, and lutein/zeaxanthin.

**What they do:** Carotenoids block carcinogens from entering cells (cancer protective), sulforaphanes and apigenin provide heart protection, lutein reduces blindness in the elderly, and zeaxanthin enhances immune function.

**Foods:** Spinach, kale, collard greens, broccoli, broccoli rabe, broccoli sprouts, arugula and other leafy greens.

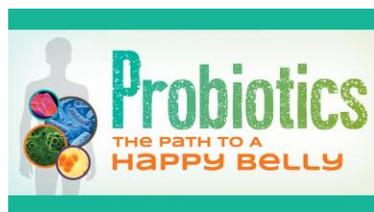
An article from the Mayo Clinic says that functional foods are foods that have a potentially positive effect on health beyond basic nutrition. Proponents say they promote optimal health and help reduce the risk of disease.

The Food and Drug Administration regulates the claims that manufacturers can make about functional foods' nutrient content and effects on disease, health or body function.

What we do know is that functional foods are a healthy alternative to pills and offer far less side effects. It is still uncertain what the long term consequences of using pharmaceuticals or herbal supplements will have on the human body but there is no question that most foods are safe to consume with nearly zero negatives.



## PROBIOTICS



**Functional Components:** “Good for you” bacteria. Over the past several years the benefits of probiotics for the immune system have just begun to be studied and documented. The word ‘probiotic’ is a compound of two Greek words: ‘pro’ to signify promotion of and ‘biotic,’ which means life. Probiotics are microorganisms of over 500 different types of bacteria that work by enhancing the immune system to fight off disease and illness. Typically lactobacillus meaning that the lactose is sufficiently broken down in yogurt making it easy to digest and can usually be enjoyed by those suffering from lactose intolerance.

**What they do:** Support gastrointestinal (GI) health, may boost immunity.

**Foods:** Yogurts supplemented with probiotics (look for a variety of live active cultures), fermented vegetables, and fermented soy products (i.e. tempeh).

## NUTS



**Functional Components:** Nuts are a great source of many nutrients. Besides being packed with protein most nuts contain at least some of these heart-healthy substances:

Unsaturated fats, Omega-3 fatty acids, Fiber, Vitamin E (Vitamin E may help stop the development of plaques in your arteries, which can narrow them), Plant sterols, L-arginine.

Nuts are highly nutritious. One ounce (28 grams) of mixed nuts contains:

- Calories: 173
  - Protein: 5 grams
  - Fat: 16 grams, including 9 grams of monounsaturated fat
  - Carbs: 6 grams
  - Fiber: 3 grams
  - Vitamin E: 12% of the RDI
  - Magnesium: 16% of the RDI
  - Phosphorus: 13% of the RDI
  - Copper: 23% of the RDI
  - Manganese: 26% of the RDI
  - Selenium: 56% of the RDI
- RDI (Recommended Daily Intake)

**What they do:** Although considered a ‘high-calorie’ food, research suggests that nuts may actually help you lose weight. Nuts may help reduce the risk of coronary heart disease by Lowering Cholesterol and Triglycerides. Nuts may also be one of the best foods for people with metabolic syndrome and type 2 diabetes. Some studies suggest that eating nuts may reduce inflammation and promote healthy aging.

**Foods:** Almonds, Brazil nuts, Cashews, Chestnuts, Hazelnuts, Macadamia nuts, Peanuts, Pecans, Pine nuts, Pistachios, and Walnuts.

## TEA



**Functional Components:** Tea consists of theanine,  $\gamma$ -amino butyric acid, tea polysaccharides, tea polyphenols and caffeine. As a drink teas contribution to the health benefits of humans comes from its functional components which include anti-oxidation, anti-virus, cancer prevention, blood pressure and blood fat adjustment, learning and memorizing capacities improvement, immunity enhancement, etc. The unique and pleasant aroma and flavor of tea makes it the world’s most popular beverage.

Camellia Sinesis can result in thousands of different tea varieties each depending on the region in which it's grown, the process it undergoes, and the time of year it is harvested. Most teas are categorized by

their basic forms of Black, Green, Oolong, White, and the Pu-erh, with each kind literally serving a specific purpose.

**What they do:** A Harvard study revealed that people who drank five cups of black tea per day for fourteen days had 10 times more virus-fighting interferon in their blood than those who drank a hot drink as a placebo. Other studies show that Green teas have also demonstrated the potential of being a metabolic booster, helping you burn through more calories during the day.

**Foods:** Tea can be made with leaves such as lemongrass and mint; flowers such as lavender, chamomile and rose; seeds such as cardamom and fennel; barks such as cinnamon; roots such as chicory, ginger and turmeric; and fruits such as apple and peach. The chamomile is one of the most popular varieties of Tisane.

## TURMERIC



**Functional Components:** Phytochemical components of turmeric include compounds called curcuminoids, such as curcumin (diferuloylmethane), demethoxycurcumin, and bisdemethoxycurcumin. Curcumin constitutes 3.14% (on average) of powdered turmeric, having variations in content among the species of *Curcuma longa*.

**What they do:** A very popular spice that has been found to be anti-inflammatory and aids in the prevention and treatment of inflammatory bowel disease (IBD) comprising of ulcerative colitis (UC) and Crohn's disease (CD) is a major ailment affecting the small and large bowel.

**Foods:** The main spice in the Indian dish curry.

## CINNAMON



**Functional Components:** Several phytochemicals from plants have been found to be antimicrobial, inhibiting the growth of bacteria, viruses, fungi and mycoplasma.

A spice obtained from the inner bark of several tree species from the genus *Cinnamomum*.

### Common Types –

- Indian cassia (*C. tamala*) is native to India.
- Indonesian cassia (*C. burmanni*) or Padang cassia.
- Saigon cassia (*C. loureirii*) is native to Indonesia.
- Oliver's Bark (*C. oliveri*) from Australia.
- Mossoia Bark (*Cinnamomum*) is from Papua New Guinea.

**What they do:** Has anti-inflammatory and blood thinning properties. In one study, a half teaspoon of cinnamon a day was found to lower blood pressure, blood sugar and cholesterol.

**Foods:** Cinnamon is used to flavor cereals, grain-based dishes, and fruits. In far eastern countries, cinnamon is also used to flavor meats, poultry, fish, vegetables, tea, and coffee in addition to fruits and grains.

## GINGER



**Functional Components:** Ginger, the rhizome of the *Zingiber officinale* belongs to the family Zingiberaceae and genus *Zingiber*. It has shown a therapeutic role in health management since ancient times and considered as a potential chemopreventive agent. Other names of ginger are African ginger, Black ginger, Cochin ginger, GanJiang, Gegibre, Ingwer, Jamaican ginger, and Race ginger. Turmeric, cardamom, and galangal are other notable members of the ginger family.

**Folklore** - As ginger resembles fingers, pregnant women in China are advised to avoid ginger during pregnancy, as they might give birth to babies with more than five fingers. But after birth a woman may take it for strength, to clean out all poison from her body, and to protect the newborn. In Malaysia and Indonesia, ginger soup is given to new mothers for 30 days after their delivery to help them sweat out impurities. In Arabian medicine, ginger is considered an aphrodisiac. Some Africans believe that eating ginger regularly will help repel mosquitoes and women of central Africa make belts of ginger roots to attract the attention of their husbands. Ginger flowers are traditionally worn by Hawaiian dancers.

**What they do:** Ginger's most well-known medicinal use is as a digestive aid to relieve stomach pain, nausea and diarrhea, but just like cinnamon and turmeric, it is also an anti-inflammatory. Ginger has anti-tumor activity, anti-microbial activity and neuro-protector effects. An important study showed that administration of ginger powder at dose of 500-600 mg for 3-4 days with gap of 4 hours, showed relief from migraine attacks.

**Foods:** Powdered dry ginger is typically used as a flavoring for recipes such as gingerbread, cookies, crackers and cakes, ginger ale, and beer.

## GARLIC



**Functional Component:** Considered nature's protection against physiological threats, Allicin (diallyl-thiosulfinate) is one of the major organosulfur compounds in garlic considered to be biologically active. Garlic is mainly used to combat various physiological threats including oxidative stress, cardiovascular complexities, cancer insurgence, and immune dysfunction.

**What they do:** This potent relative of the onion contains the active ingredient allicin, which fights infection and bacteria. It is also good for heart health.

**Foods:** The compound allicin found in raw garlic activates only when it is crushed or cleaved. If cooked before crushing, it will not have the same health benefits. Best consumed raw crushed and cut, it is recommended that you leave it out for a while before adding it to your recipes.

To prepare, peel the garlic cloves then use a meat mallet to crush the cloves (this is necessary to release the active components of garlic). Spread the crushed garlic on bread or mix with honey and eat.

## GRAPE JUICE OR RED WINE

**Functional Component:** Resveratrol.

**What they do:** Exhibit heart-healthy effects.



**Foods:** 100% juice grape juice or grape juice mixtures (i.e. Grape-Apple 100% juice mixtures); any variety of red wine.

If you want to try functional foods keep in mind that while they may be helpful in promoting wellness, there's no substitute for making wise choices with regards to eating habits. A well balanced diet along with proper exercise has always been proven to be the best method of staying healthy. Choosing your food wisely, mixing in some functional foods and staying active is the only sure way of obtaining the healthiest results.