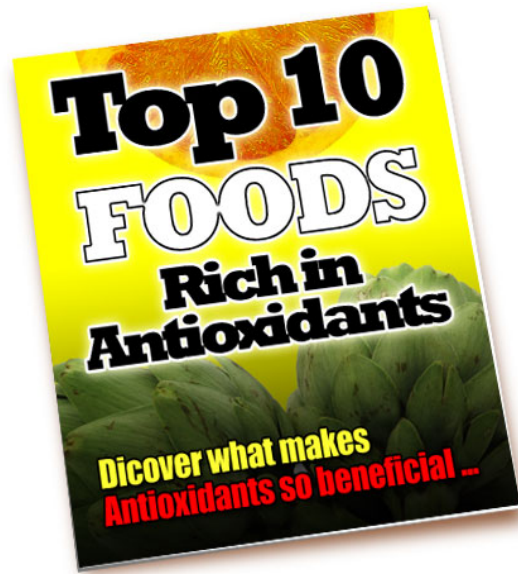


## Top 10 Foods Rich in Antioxidants



For years now, scientists have touted antioxidants as the answer to all sorts of diseases, even aging. From preventing heart disease to slowing down degenerative diseases, to stopping cancer, to reducing blood pressure – you name it and everything points right back to antioxidants. But what makes antioxidants so beneficial to the body?

### **Antioxidants and Free Radicals – The Real Story**

They're called **Free Radicals**, and they are the real culprits as to why people, especially old people, develop chronic diseases. Free radicals are highly unstable chemical substances that lack one electron. In their attempt to get their full complement of electrons, these free radicals react with other molecules around them (like those found in cell membranes) and in the process cause these otherwise healthy molecules to lose an electron, causing *them* as well to become unstable. This could result in massive degeneration of cells, leading to the development of chronic disorders such as Alzheimer's disease, heart disease, cancer, among others.

The production of free radicals is actually a normal part of life. They are a direct result of the process of oxidation. The moment we breathe, our body is undergoing the oxidation process and releases free radicals into our cells. Usually, the body's natural defense systems neutralize free radicals that develop, rendering them harmless.

Environmental assaults on the body, however, such as UV-radiation, pollutants and alcohol, can overpower the body's ability to neutralize free radicals. This allows them to cause damage to the structure and function of the body's cells. Scientists point to accumulation of free radicals as the contributing factors that lead to aging and a host of other illnesses, including cancer and heart disease.

To lessen and ultimately prevent the damaging effects of free radicals, the responsibility lies with **antioxidants**. These are substances (vitamins, minerals, and other nutritive compounds) whose sole responsibility is to scavenge free radicals inside the body so they can break the damage chain they create and neutralize the free radicals as a result. Antioxidants are very important to our bodily processes, because by preventing cell damage, they help enhance the body's defense system.

But, the human body is incapable of producing its own concentration of antioxidants. In fact, humans are among the few animal species that cannot produce its own source of antioxidants. For this reason, we depend solely on our daily diet in order to get the store of antioxidants we need to combat diseases.

### **Antioxidant-Rich Foods – Source of our Body's Defense System**

Antioxidants protect the body from harmful, excess free radicals, sweeping them up before they can cause damage.

These days, when we talk about antioxidants, the first thing that comes to people's minds is "supplements." However, studies on antioxidant supplements are for the most part inconclusive and so far, no one study has come up with the same result during antioxidant supplements tests. No problem though because you can always find antioxidant foods almost anywhere.

Through consumption of antioxidant food source, you can help your body provide for itself the tools necessary to neutralize harmful free radicals.

It is estimated that there are more than 4,000 compounds in antioxidant food sources have been found to have the same function as antioxidants. The most studied antioxidant food sources are those that are rich in vitamins C and E, beta carotene and the mineral selenium.

Still, the best way to lay an antioxidant-rich foundation that is inhospitable to toxins and free radicals is through a **combination of whole foods**. With antioxidant supplements still far

from high expectations of the scientific community, you can in the meantime turn to the more reliable source of these helpful compounds – ***antioxidant-rich foods***.

Recently, nutrition scientists working at the U.S. Department of Agriculture (USDA) measured antioxidant levels of more than 100 foods contained in their list of antioxidant-rich foods. The list includes fruits, vegetables, nuts, dried fruits, spices, and cereals. Interestingly enough, several types of beans, berries, and nuts appear frequently at the top of the list.

Below are the ***top food sources of antioxidants*** that you may include in your daily consumption of foods:

### ***#1 - Small Red Beans***

First on the list is the small red bean. According to the food pyramid released by the USDA, half a cup of dried small red bean can contain as much as 13727 antioxidant capacity per serving size. The healthy elements found in the small red bean include the following:

- Anthocyanins – have antioxidant effect against arteriosclerosis, anti-blood clot, tired eyes, and eyesight problems
- Folic Acid – effective against baldness, mouth ulcer, anemia, and arteriosclerosis and improves anti-blood clotting property and blood circulation
- Kalium – high blood pressure, diabetes, diuretic action, constipation, mental health, reducing stress, dementia, and cancer
- Molybdenum – cancer, fatigue, and anemia
- Niacin – skin, baldness, insomnia, hangover, brain, diabetes, mental health, blood circulation, liver complaint
- Pantothenic Acid (Vitamin B5) – reducing stress, fatigue, baldness

- Vitamin B1 – anti-aging, immunity, insomnia, fatigue, skin, mucous membranes, physical exhaustion, diabetes, arteriosclerosis, mental health, reducing stress, blood circulation, muscle, liver complaint, beriberi, stiff neck
- Vitamin B6 – hay fever, antioxidant effect, mouth ulcer, reducing stress, mental health, diabetes, skin, anemia, immunity, and baldness

### ***A Note On Beans:***

Just recently, a new dietary guidance message was announced by the American Dry Bean Board. The message said that “diets including beans may reduce your risk of heart disease and certain cancers.”

The reasons are many – from the fact that beans are known to be naturally low fat and contain no saturated fat or cholesterol to it being rich sources of important nutrients, such as fiber, protein, calcium, iron, folic acid, and potassium. Ultimately, however, the health benefits of beans can all be attributed to the rich presence of antioxidants.

“In many parts of the world, beans are an important dietary staple, but Americans are not eating enough,” said Stacey Zawel, Ph.D., the executive director of the Beans for Health Alliance.

She further added that, “Ideally, adults should be eating three cups of beans per week. This dietary guidance message will illustrate to Americans the importance of including beans in their diet.

### **#2 – Wild Blueberry**

The provocative allure, the fragile charm, the rich concentration of nutrients. All these spell the one of the most important antioxidant foods – berries. Berries are full of fibers, minerals and vitamins. They are also loaded with healing antioxidants, which of course make them excellent food sources of antioxidants.

There are several kinds of berries, as you well know, and each kind has a different concentration of antioxidants. In some recent studies, purple berries (such as Elderberry and black currant) are considered as the richest antioxidant foods. However, raspberries, cranberries, blueberries, and

blackberries are also good antioxidant foods that are rich in proanthocyanidins which help prevent cancer and heart disease.

Both wild and cultivated blueberries especially have been heralded for their high antioxidant content. In fact, three of the top five antioxidant-rich foods studied were beans. Still, the wild blueberry occupies the second to the top spot. One cup of wild blueberry contains 13427 antioxidant capacity per serving size.

“We’ve always known that all blueberries are healthy and nutritious, but now there’s no longer any doubt that wild blueberries have more antioxidant activity than their cultivated cousins,” said John Sauve of the Wild Blueberry Association of North America (WBANA).

According to Sauve, a team led by Dr. Wilhelmina Kalt, Ph.D., of Agriculture and Agri-Food Canada in Kentville, Nova Scotia, had previously investigated the differences between wild blueberries and cultivated blueberries determining that wild blueberries are consistently higher in anthocyanins, total phenolics, and antioxidant capacity.

“Nova Scotia’s work coupled with USDA’s new findings, clearly show a difference between types of blueberries with wild blueberries emerging as a power fruit,” said Sauve.

According to Susan Davis, MS, RD, Nutrition Advisor to the Wild Blueberry Association of North America, research into antioxidant activity often shows that color is a strong indicator of phytonutrient activity. This means that the more colorful the fruits and vegetables are, the higher they are ranked in terms of overall antioxidant potential.

Davis also noted that anthocyanin, the deep blue-purple pigment in foods like wild blueberries is a potent phytonutrient that acts as an antioxidant and anti-inflammatory.

“On-going research into the health effects of plant-based compounds is going to dominate research for years to come. We’re only just beginning to understand how fruit and vegetable compounds work together in the body to prevent disease. For wild blueberries, this means more investigation into potential effects in the areas of aging, cancer prevention, heart health, vision health, and urinary tract health,” Davis added.

### **#3 – Red Kidney Bean**

Another member of the bean category, the red kidney bean is ranked third in USDA's top 20 list of foods with the highest antioxidant capacity. According to the list, a half cup of powdered red kidney bean contains as much as 13259 antioxidant capacity per serving size.

Red kidney beans are available both dried and canned throughout the year. The dried variety, however, are generally more available in prepackaged containers. Kidney beans stay true to their name in that they are kidney-shaped and are especially good in simmered dishes where they absorb the flavors of seasonings and the other foods with which they are cooked.

Kidney beans are very good sources of cholesterol-lowering fiber, as are most other beans. In addition, its high fiber content also prevents blood sugar levels from rising too rapidly after a meal. This makes the red kidney bean an especially good choice for individuals with diabetes, insulin resistance or hypoglycemia.

When combined with whole grains, kidney beans provide virtually fat-free high quality protein. But this is far from all kidney beans have to offer. Kidney beans are an excellent source of the trace mineral molybdenum, an integral component of the enzyme sulfite oxidase, which is responsible for detoxifying sulfites.

#### **#4 – Pinto Bean**

Yet another bean category that made it to the list is the pinto bean. Half a cup of pinto beans contains 11864 antioxidant capacity per serving size.

The pinto bean actually got its name from the Spanish word for "painted." Appropriate really, considering the bean's reddish-brown streaking across a background of pale pink. The beans are grown in the United States Southwest and are common in most Spanish-speaking countries, where they are often served with rice or used in soups and stews.

The pinto can be used interchangeably with the pink bean, which is lighter in color prior to cooking but looks the same afterwards. Both the pinto and pink bean are commonly used in the preparation of refried beans and chili con carne.

Aside from antioxidant nutrients, the pinto bean also contains the following health elements:

- Agglutin – modifies disease susceptibility

- Lectin
- Protein – 14.0391 grams per 1 cup
- Fat – 0.8892 grams per 1 cup
- Carbohydrate – 43.8615 grams per 1 cup

#### **#5 – Blueberry (cultivated)**

Next on the list is the cultivated variety of blueberry. Berries have always been known to contain high concentration of antioxidants. But according to the USDA release, distinctions should be made as to which types of berries have more antioxidant capacity.

Wild blueberries apparently are richer in antioxidants. Blueberries, however, also contain a whopping 9019 antioxidant capacity per serving size in one cup.

#### **#6 – Cranberry**

The United States and Canada have been producing too many cranberries in recent years, and the Cranberry Institute, a trade association for cranberry growers in both countries, has decided that the best way to sell more cranberries is to promote their healthful virtues instead of their taste. The USDA study only serves to affirm their goal.

According to USDA's recent food list, one cup of whole cranberries contain 8983 antioxidant capacity per serving size, giving it the rank of 6<sup>th</sup> out of 20 antioxidant-rich foods.

And yet, even before the recent discovery about the antioxidant properties of cranberries, cranberries had a lot going for them. Not the least of which is the scientific confirmation of the old wives' tale about the value of cranberries in reducing the risk of urinary tract infections.

No less than eight scientific studies have established this anecdotal tale, giving it scientific basis. Research has show that cranberries keep E. coli from adhering to the walls of the urinary tract. Eighty to ninety percent of urinary tract infects are caused by E. coli.

## **#7 – Artichoke**

USDA has ranked cooked artichokes number 10 from their list of top 20 antioxidant-rich foods. The study showed that one cup (hearts) of artichoke contains up to 7904 antioxidant capacity per serving size.

The artichoke is popular for its pleasant bitter taste, a property attributed mostly to a plant chemical called cynarin found in the green parts of the plants. Both leaves and heads from artichokes are rich in phenolic compounds belonging to different classes -- benzoic and cinnamic derivatives, flavonoids, and tannins. However, Cynarin is still considered as one of the artichoke's main biologically active chemicals.

European scientists were the first to document cynarin's ability to lower cholesterol in human's in the 1970s. Over the years, other researchers have continued to document artichoke's effect in this area.

One of the more recent studies, published in 2000, was a double-blind, randomized, placebo-controlled study. The researchers used an artichoke leaf extract that was standardized to its cynarin content. For six weeks, 143 patients with high cholesterol were given the extract. At the end of the test, results showed a decrease of 10%-15% in total cholesterol, low density lipoprotein (LDL), and ratio of LDL to high-density lipoprotein (HDL) cholesterol.

In 2002, a finding noted that an artichoke leaf extract reversed damage done by harmful chemicals in rat liver cells and, in doing so, enhanced bile production. This became the focus in another 2002 study which aimed to specifically find out the antioxidant effects of artichoke extract in cultured blood vessel cells. The study reported that the extract demonstrated "marked protective properties against oxidative stress induced by inflammatory mediators..."

## **#8 – Blackberry**

An ancient fruit, the plump but sweet blackberries are also a rich source of antioxidants. In fact, one cup of blackberries contains 7701 antioxidant capacity per serving size. Blackberries grow wild across most of North America and are also a good source of manganese and tannins.

Because of their high tannin content, blackberries are considered to be an astringent. In many studies, it has been shown that tannins tighten tissue, lessen minor bleeding, and may help to alleviate diarrhea and intestinal inflammation.

The main antioxidant found in blackberries are called anthocyanin, which are pigments responsible for the purplish-black color of blackberries. Additional antioxidants in blackberries are vitamins C and E, and ellagic acid. All may provide protection against cancer and chronic disease.

### **#9 – Dried Prune**

Sweet with a deep taste and a sticky chewy texture, prunes are not only fun to eat they are highly nutritious as well. As with other dried fruits, they are available year round.

The USDA ranked dried prunes number 9 from a list of 20 antioxidant-rich foods. One half cup of dried prunes contain 7291 antioxidant capacity per serving size. The main biologically active ingredient found in prunes with antioxidant effects is beta-carotene. This form of vitamin A acts as a fat-soluble antioxidant, eliminating free radicals that would otherwise cause a lot of damage to our cells and cell membranes.

Only after cholesterol has been oxidized by free radicals does it pose a threat to artery walls. The build-up of cholesterol in the artery walls forms plaques that can either grow so large they block blood flow or rupture, releasing a clot that can impede the flow of blood, and triggering a heart attack or stroke.

### **#10 – Raspberry**

Another healthy addition to your diet is red raspberries. Not only is this fruit delicious, it's nutritious as well. The USDA named the raspberry number 10 in terms of antioxidant capacity. One cup of this fruit contains about 6058 antioxidant capacity per serving size.

The most promising benefit that red raspberries hold for consumers is their substantial quantity of ellagic acid. Ellagic acid is phenolic compound that has become known as a potent anti-carcinogenic/anti-mutagenic compound.

Clinical tests conducted at the Hollings Cancer Institute at the Medical University of South Carolina (MUSC) show promising results that ellagic acid, a naturally occurring plant phenol may help prevent cancer, inhibit the growth of cancer cells, and arrest the growth of cancer in subjects with a genetic predisposition for the disease.

And so these are the top 10 antioxidant-rich foods. If you want to get all the health benefits of antioxidants, be sure to include at least one of these excellent antioxidant food sources in your diet.

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