



## Eat Antioxidant Foods

**CHALLENGE**  
Eat antioxidant  
foods – at least  
1 serving every  
meal.

### Requirements to Complete this HEALTH CHALLENGE™

1. Read “What are antioxidants?” Also read “Where to find antioxidants” and “Eat a variety of foods.”
2. To complete the Challenge, you must eat at least one serving of an antioxidant food at every meal on at least 22 days this month. Use your monthly Health Challenge Calendar to keep track.
3. Keep records of your completed Challenge in case your organization requires documentation.

### What are antioxidants?

You might have heard about antioxidants, but do you know what they are? Antioxidants are positively charged molecules that neutralize free radicals. Ultimately, antioxidants appear to protect the body against diseases such as cancer, heart disease, stroke, diabetes, Parkinson’s disease, and cataracts. Antioxidants may also help keep your immune system healthy, your brain sharp, and your skin healthier.

Here’s how the process works: As part of your normal day, you eat, breathe, and drink water. You might even take prescription medicines. As your body metabolizes these substances, it naturally creates some free radicals. Fortunately, your cells have a built-in repair system. But the repair process can’t keep up when your body is subjected to a constant barrage due to excessive free radicals generated from:

- Environmental factors, such as pollution, natural radiation, cigarette smoke, pesticides and herbicides
- Your immune system, in an attempt to neutralize viruses and bacteria
- Dietary factors, such as fried foods or alcohol

A free radical is a mutated (and therefore unstable) oxygen molecule – a molecule that is missing at least one electron.

Once formed, these highly reactive molecules travel throughout your body seeking stabilization by stealing electrons from healthy cells. When they are successful in their electron-stealing attempt, the free radicals leave behind damaged cells.

Antioxidants block this damaging process by donating an electron to the free radical before it can oxidize other cell components. Since the free radical is stabilized, it becomes non-toxic to cells.

According to the American Dietetic Association, this process is similar to what happens when you slice an apple. When exposed to the air, the inside of the apple begins to turn brown. But, if you dip it in orange juice, it stays white. Orange juice is high in the antioxidant vitamin C.

### Where to find antioxidants

You can get all the antioxidants your body needs by eating lots of fruits, vegetables, whole grains, nuts and other healthy fats, and legumes. When researchers with the United States Department of Agriculture (USDA) studied the antioxidant concentration in foods and beverages commonly consumed in the United States, they found that many foods pack a real antioxidant punch.

**Berries, apples, and other fruits** might just keep the doctor away. In terms of antioxidant content per typical serving, berries top the list – comprising 6 of the top 12 high-antioxidant foods. Blueberries, cranberries, blackberries, raspberries, and strawberries ranked highest. Other fruits also high in antioxidants include apples, cherries, prunes, and plums.

### Legumes are linked to longevity.

Legumes include beans, peas, and lentils. In the USDA study, 3 of the top 4 antioxidant foods were beans! A study sponsored by the International Union of Nutritional Sciences and the World Health Organization (called Food Habits in Later Life) found that for every daily increase of 20 grams of legumes (less than two tablespoons) there was an 8% decrease in death risk. This was true regardless of smoking status, alcohol consumption, total calories eaten, and saturated fat intake.



**Grape juice gets a “thumbs up.”** While red wine contains flavonoids and other antioxidants, it appears that purple grape juice has the most staying power. Alcohol accelerates the deterioration process of antioxidants.

### These fresh herbs contain the same antioxidant activity as an apple:

- 1 tablespoon of oregano
- 3 tablespoons of dill
- 4½ tablespoons of thyme
- 7 tablespoons of sage
- 8 tablespoons of parsley

**Enhance flavor with herbs.** In addition to making food tastier, herbs and spices can be an abundant source of antioxidants and could provide potential anti-cancer benefits when part of a balanced diet. On an ounce-by-ounce basis, herbs and spices have the highest antioxidant activity of all the foods. But, of course they are eaten in relatively small quantities.

Of 27 culinary and 12 medicinal herbs tested in the laboratory, oregano had the highest antioxidant activity. Oregano has 42 times more antioxidant activity than apples, 30 times more than potatoes, 12 times more than oranges, and 4 times more than blueberries, according to the U.S. Department of Agriculture (USDA) study.

Some people prefer to drink herbal extracts in the form of tea. Others use a dash and a pinch of leafy or powdered versions of herbs to season foods. Fresher is better because they contain higher antioxidant levels compared with powdered versions.

### Satisfy your chocolate craving with dark cocoa.

A cup of dark cocoa contains nearly twice the antioxidants of a glass of red wine and up to 3 times those found in a cup of green tea. Cocoa contains a high content of compounds called phenolic phytochemicals, or flavonoids. But before you rush to the store for your favorite chocolate bar, consider this: while high in antioxidants, a milk chocolate bar also contains 8 grams of fat. So when you have a chocolate craving, choose dark chocolate or a mug of cocoa made with low-fat or fat-free milk.

## Eat a variety of foods

Researchers and leading health organizations recommend that you eat a variety of nutrient-rich foods daily from all the basic food groups. Nutrients in pill form usually show no benefit – the health benefits are present when eaten in foods. Current research literature suggests that the antioxidant benefit from food is stronger when antioxidant-rich foods are eaten in combination (i.e., fruits, greens, nuts, and whole grains every day).

One reliable way to identify antioxidant-rich foods is by their distinctive colors: the deep red of cherries and tomatoes; the orange of carrots; the yellow of corn, mangos, and saffron; and the blue of blueberries, blackberries, and grapes. The list below describes food sources of common antioxidants.

- **Beta-carotene** is found in many foods that are orange in color, including sweet potatoes, carrots, cantaloupe, squash, apricots, pumpkin, and mangos. Some green leafy vegetables including collard greens, spinach, and kale are also rich in beta-carotene. Sources of vitamin A include milk, cheese, and eggs.
- **Lutein**, best known for its association with healthy eyes, is abundant in green, leafy vegetables such as collard greens, spinach, and kale.
- **Lycopene** is a potent antioxidant found in red and pink foods, such as tomatoes, watermelon, guava, papaya, apricots, pink grapefruit, and blood oranges. Approximately 85% of the American dietary intake of lycopene comes from tomatoes and tomato products.
- **Selenium** is a mineral, not an antioxidant. However, it acts as an antioxidant and is a component of antioxidant enzymes. Plant foods like brown rice and whole-grain wheat are the major dietary sources of selenium in most countries. Brazil nuts also contain large quantities of selenium.
- **Vitamin C**, also called ascorbic acid, can be found in high abundance in many fruits and vegetables, including red and green peppers, guavas, and grapefruit, green broccoli, kiwi, and collards, and orange papayas, mangoes, tangerines, and oranges.
- **Anthocyanins** are the compounds that give many berries their dark blue color. Some lesser-known purple berries (i.e., elderberry, black currant, and chokeberry) have as much as 50% more antioxidants than some of the more common berries.
- **Vitamin E**, also known as gamma-tocopherol, is most common in foods and the one that helps the body the most. It is found in filberts (hazelnuts), sunflower seeds, almonds, wheat germ, and in many oils including wheat germ, safflower, corn and soybean oils.
- **Fiber** is found in all colors of fruits and vegetables, and in legumes, whole grains, nuts, and soy. Among its other benefits, fiber can reduce blood sugar concentrations, reduce inflammation, and enhance the antioxidant process. All of these might help to protect the lungs against environmental insults, such as exposure to secondhand smoke.



Whether a food is eaten fresh, frozen, processed, or cooked will affect its antioxidant potency. For example, tomatoes release the most antioxidants when cooked. Blueberries, on the other hand, are most beneficial when eaten raw. Carrots and spinach are most nutritious when eaten fresh and raw. So in addition to eating a wide variety of foods, it is also important to eat many fresh foods each day – but they don't all need to be raw.

## Functional Foods

“Functional foods” are foods or dietary components that may provide a health benefit beyond basic nutrition. Below is a list of antioxidants from the International Food Information Council Foundation.

Examples of Functional Components*		
Class/Components	Source*	Potential Benefit
<b>Carotenoids</b>		
Beta-carotene	carrots, various fruits	neutralizes free radicals which may damage cells; bolsters cellular antioxidant defenses
Lutein, Zeaxanthin	kale, collards, spinach, corn, eggs, citrus	may contribute to maintenance of healthy vision
Lycopene	tomatoes and processed tomato products	may contribute to maintenance of prostate health
<b>Flavonoids</b>		
Anthocyanidins	berries, cherries, red grapes	bolster cellular antioxidant defenses; may contribute to maintenance of brain function
Flavanols – Catechins, Epicatechins, Procyanidins	tea, cocoa, chocolate, apples, grapes	may contribute to maintenance of heart health
Flavanones	citrus foods	neutralize free radicals which may damage cells; bolster cellular antioxidant defenses
Flavonols	onions, apples, tea, broccoli	neutralize free radicals which may damage cells; bolster cellular antioxidant defenses
Proanthocyanidins	cranberries, cocoa, apples, strawberries, grapes, wine, peanuts, cinnamon	may contribute to maintenance of urinary tract health and heart health
<b>Isothiocyanates</b>		
Sulforaphane	cauliflower, broccoli, broccoli sprouts, cabbage, kale, horseradish	may enhance detoxification of undesirable compounds and bolster cellular antioxidant defenses
<b>Phenols</b>		
Caffeic acid, Ferulic acid	apples, pears, citrus fruits, some vegetables	may bolster cellular antioxidant defenses; may contribute to maintenance of healthy vision and heart health
<b>Sulfides/Thiols</b>		
Diallyl sulfide, Allyl methyl trisulfide	garlic, onions, leeks, scallions	may enhance detoxification of undesirable compounds; may contribute to maintenance of heart health and healthy immune function
Dithiolthiones	cruciferous vegetables—broccoli, cabbage, bok choy, collards	contribute to maintenance of healthy immune function
<b>Whole Grains</b>		
Whole grains	cereal grains	may reduce risk of coronary heart disease and cancer; may contribute to reduced risk of diabetes

*Chart adapted from International Food Information Council Foundation: Media Guide on Food Safety and Nutrition: 2004-2006.  
\*Not a representation of all sources*

**Having free radicals isn't bad – since the natural process of breaking down your food causes them. It's when there are an excess free radicals roaming unchecked by antioxidant foods that health problems occur.**

### Sources:

- National Cancer Institute. *Antioxidants and Cancer Prevention Fact Sheet*; American Heart Association;
- National Institutes of Health; American Dietetic Association; Keith J. *Everyday Memory Builder*. Berkley Publishing Group; *Journal of Agricultural and Food Chemistry* Dec 15, 2004; *Current Medical Research and Opinion*; 15(4):316-20; *Agricultural Research Service, Asia Pacific Journal of Clinical Nutrition*; 13(Suppl):S126.





# Eat Antioxidant Foods

## Instructions

1. Post this calendar where you will see it daily (bathroom, kitchen, bedroom, etc.).
2. Record each day you eat at least one serving of antioxidant foods at every meal.
3. At the end of the month, total the number of days you ate at least one serving of antioxidant foods with each meal. You must meet this goal at least 22 days during the month to complete the Challenge. Then keep up this practice for a lifetime of good health and wellbeing.
4. Turn in your Health Challenge™ form if requested, or enter your completion of this Challenge on the Health Activity Tracker report for the month, if applicable. Keep this record for evidence of completion.

**CHALLENGE**  
**Eat antioxidant foods – at least 1 serving every meal.**

MONTH:							HC = Health Challenge	ex. min. = exercise minutes
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	Weight & weekly summary	
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\_\_\_\_\_ Number of days this month I ate at least one serving of antioxidant foods at every meal

\_\_\_\_\_ Number of days this month I got 30+ minutes of physical activity such as brisk walking

**Other wellness projects completed this month:**

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Name \_\_\_\_\_ Date \_\_\_\_\_

