

Quercetin: 8 Proven Benefits of This Antioxidant (#1 Is Incredible)

By [Jillian Levy, CHHC](#)

September 24, 2019

- [What Is Quercetin?](#)
- [Benefits](#)
- [Food Sources](#)
- [Supplements and Dosage](#)
- [Side Effects, Risks and Interactions](#)



Have you ever wondered what makes a “superfood” super? Or what [top superfoods](#) like red wine, green tea, kale and blueberries all have in common? The answer is quercetin, a natural compound tied to what all of us seek: better longevity, heart health, endurance, immunity, and more.

Quercetin is considered to be the most widely distributed and extensively studied flavonoid, according to a [2018 review](#).

It’s been shown in dozens of [studies](#) to have anti-carcinogenic, anti-inflammatory and antiviral activities. In fact, there isn’t much this powerful antioxidant compound can’t do, especially when combined with the health [benefits of bromelain](#), an anti-inflammatory enzyme.

All this explains why many experts recommend consuming food sources that contain quercetin regularly.

So what are those foods, and how much should you consume? Let’s explore.

What Is Quercetin?

Quercetin is a type of [flavonoid](#) antioxidant that's found in plant foods, including leafy greens, tomatoes, berries and broccoli. It's technically considered a "[plant pigment](#)," which is exactly why it's found in deeply colored, nutrient-packed fruits and vegetables.

Considered one of the [most abundant](#) antioxidants in the human diet, quercetin plays an important part in fighting free radical damage, the effects of aging and inflammation, according to many [studies](#).

While you can get plenty of it from eating a healthy diet, some people also take this compound in concentrated supplement form for even stronger anti-inflammatory effects.

What is quercetin used for? According to the [Department of Pathology and Diagnostics](#) at the University of Verona in Italy, quercetin glycosides and other flavonoids, (like kaempferol and myricetin) are "anti-viral, anti-microbial, anti-inflammatory and anti-allergic agents."

They have potential to be expressed positively in different cell types in both animals and humans.

Flavonoid polyphenols are most beneficial for down-regulating or suppressing inflammatory pathways and functions. Quercetin is considered the most diffused and known nature-derived flavonol there is, showing strong effects on immunity and inflammation caused by leukocytes and other intracellular signals.

How It Works

Research shows that [anti-inflammatory foods](#) containing quercetin can help manage a number of inflammatory health problems, including heart disease and blood vessel problems, allergies, infections, chronic fatigue, and symptoms related to autoimmune disorders like arthritis. How exactly do flavonoids benefit us?

It all comes down to [high-antioxidant foods](#)' ability to be "scavenge free radicals."

As a major bioflavonoid in our diets, quercetin (a type of "polyphenolic antioxidant") helps slow the aging progress because it [lessens the effects](#) of oxidative stress on the body. Oxidative stress takes place in all of us but is increased by things like a poor diet, high levels of stress, a lack of sleep and exposure to chemical toxins.

Quercetin plays a role in regulating the immune system's response to outside stressors through cell signaling pathways called kinases and phosphatases, two types of enzyme and membrane proteins needed for proper cellular function.

The Disease-Fighting Power of **QUERCETIN**

As a flavonoid, quercetin acts as an antioxidant that fights inflammation — specifically, quercetin food sources have the most documented evidence of combatting inflammation while more research is needed on quercetin supplements.

Inflammation is the root of most diseases, and quercetin is reported to effectively fight inflammatory-related conditions such as:

atherosclerosis

high cholesterol

heart disease

circulation
problems

insulin resistance
and diabetes

eye-related
disorders including
cataracts

allergies, asthma
and hay fever

stomach ulcers

cognitive
impairment

gout

viral infections

inflammation of the
prostate, bladder
and ovaries

chronic fatigue
syndrome

cancer

chronic infections
of the prostate

skin disorders

Dr. Axe

Benefits

1. Lowers Inflammation

Flavonoids, (aka bioflavonoids or bioflavonoide) including quercetin, are important anti-inflammatories because they act as antioxidants, which mean they literally fight the natural process of “oxidation” that takes place over time as we age.

Quercetin can help stop damaging particles in the body known as free radicals, which negatively impact how cells work — including damaging cell membranes, changing the way DNA works, increasing cell mutations and causing healthy cells to die. It can also [reduce expression](#) of inflammatory genes such as interleukin.

Research now shows us that [inflammation](#) is the root of most diseases, including heart disease, cancer, cognitive decline, some mental disorders and autoimmune disorders.

At this time, practitioners and patients report using quercetin to effectively fight conditions related to inflammation, including:

- “hardening of the arteries” (atherosclerosis)
- high cholesterol
- heart disease and circulation problems
- insulin resistance and diabetes
- eye-related disorders, including cataracts
- allergies, asthma and hay fever
- stomach ulcers
- cognitive impairment
- gout
- viral infections
- inflammation of the prostate, bladder and ovaries
- chronic fatigue syndrome
- cancer
- chronic infections of the prostate
- skin disorders, including dermatitis and hives

2. Fights Allergies

Is quercetin an antihistamine? Some consider it to be a natural antihistamine and an anti-inflammatory, possibly making it effective for lowering the effects of seasonal and [food allergies](#), plus asthma and skin reactions.

However, most research to date has been conducted on animals and not humans.

[Histamines](#) are chemicals that are released when the immune system detects an allergy or sensitivity, and they are what account for uncomfortable symptoms we face whenever the body has an allergic reaction.

Quercetin can help stabilize the release of histamines from certain immune cells, which results in decreased symptoms like coughs, watery eyes, runny noses, hives, swollen lips or tongue, and indigestion.

It's long been used in ancient Chinese herbal formulas created to block allergies to certain foods (such as peanuts). [Studies](#) conducted on mice suggest that it may be equivalent at fighting allergies as some prescription medications, all with little to no side effects.

3. Supports Heart Health

Because of its ability to lower inflammation and [oxidative stress](#), quercetin seems to be beneficial for people with heart and blood vessel-related disorders, according to a number of [studies](#).

For example, eating lots of deeply colored fruits and veggies that contain flavonoids is [linked](#) to a lower risk of cardiovascular disease, and even death, in older adults, among [reduced risk](#) for vascular diseases.

It's also been [connected](#) to reduced risk for type 2 diabetes and obesity, which have many of the same risk factors as heart disease.

Studies done in animal and some human populations show that various types of flavonoids (quercetin, [resveratrol](#) and catechins, for example) can help reduce the risk of atherosclerosis, which is a dangerous condition caused by plaque building up within the arteries. Cut-off blood flow in the arteries is one of the primary risk factors for experiencing a heart attack or stroke, which is why cardiac arrest is less likely among people who eat a nutrient-packed diet.

Antioxidants also seem to protect the body from experiencing increases in LDL "bad" cholesterol and can help regulate blood pressure levels. Certain studies show that quercetin prevents damage to LDL cholesterol particles, and it seems that people who eat the most flavonoid-rich foods typically have healthier and [lower cholesterol levels](#), plus fewer incidences of hypertension and high blood pressure.

In fact, if you've ever heard that red wine is good for your heart, that's because it's a natural source of quercetin. It's one of the main active ingredients in red wine extract, which is associated with healthier heart function.

4. Helps Fight Pain

Taking quercetin supplements may help lower pain associated with autoimmune conditions such as arthritis, as well as infections, including those of the prostate and respiratory tract.

That's because [studies](#) suggest quercetin reduces inflammatory pain. For example, there's some evidence from several small studies that people experiencing bladder pains from infections (causing an urgent need to urinate, swelling and burning) have fewer symptoms when taking quercetin supplements.

Flavonoids are also linked to reduced symptoms of prostatitis (inflammation of the prostate) and rheumatoid arthritis (RA). There's evidence that when patients with RA switch from eating a "typical Western diet" to one higher in antioxidant-rich foods (like uncooked berries, fruits, vegetables, nuts, roots, seeds and sprouts), they experience less pain and reoccurring symptoms.

5. Might Help Improve Energy and Endurance

Quercetin is added to some athletic supplements because it's believed to help increase athletic performance and endurance, likely because of its positive effects on blood flow.

Researchers from the [School of Applied Physiology](#) at the Georgia Institute of Technology found that, on average, "quercetin provides a statistically significant benefit in human endurance exercise capacity (VO2 max) and endurance exercise performance."

While improvements were at times small, it makes sense that antioxidants could boost physical performance since they help increase the health of blood vessels, which carry oxygen and nutrients to muscle and joint tissue.

Other studies also show that it helps increase immune function and prevents susceptibility to illnesses that can occur when someone trains intensely and experiences exhaustion. [One study](#) found evidence that taking 500 milligrams of quercetin twice daily helped protect cyclers from developing exercise-induced respiratory infections following periods of heavy exercise.

Because it can boost your energy level, does quercetin affect sleep? For example, is there a link between quercetin and insomnia?

[One study](#) found evidence that it may alter the sleep-wake cycle partly through activation of GABA receptors. However, insomnia is generally not believed to be a common side effect of taking it in dietary supplement form.

6. Might Help Fight Cancer

A Boston University School of Medicine study published in the *[Journal of Biological Regulators and Homeostatic Agents](#)* shows a link between a nutrient-dense diet rich in quercetin plus other antioxidants and a lowered risk of cancer.

Quercetin seems to have potential [chemo-preventive activity](#) and might have a unique antiproliferative effect on cancerous cells, making it an effective addition to any natural cancer treatment approach. Research shows that this may result from the modulation of either EGFR or estrogen-receptor pathways.

[Recent studies](#) have found quercetin can help stop the processes involved in cell proliferation and mutation, the growth of tumors, and symptoms related to typical cancer treatments, such as radiation or chemotherapy. At this time, the majority of studies done on quercetin's effects on cellular functioning [have involved animals](#), so more research is still needed to reveal specific effects on human cancer cells. This is especially true when taken in high doses above the amount someone would get from a healthy diet.

7. Helps Protect Skin Health

Capable of blocking "[mast cells](#)," which are immune cells critical in triggering allergic reactions, inflammatory disease and autoimmune disease, [research](#) shows that quercetin helps protect skin from the effects of disorders like dermatitis and photosensitivity.

Flavonoids like quercetin block the release of many pro-inflammatory cytokines, such as IL-8 and TNF, which helps stop symptoms related to skin inflammation, even in people who don't find relief from other conventional treatments or prescriptions.

Studies have found that this compound has antioxidant and anti-inflammatory effects that help fight allergic and inflammatory diseases, as well as some prescriptions, when taken in oral supplement form. For example, some people take [quercetin for eczema](#) since it can inhibit the secretion of histamine and pro-inflammatory markers.

8. Protects Liver Health

Recent [research](#) has shown that this antioxidant has protective effects when administered to rats with ethanol-induced acute liver injury. Researchers concluded that "quercetin, by multiple mechanisms interplay, demonstrates hepatoprotective effect on liver-injury induced by alcohol, by increasing ethanol metabolizing enzyme activities, increasing antioxidant system activities against oxidative stress, lowering the expressions of pro-inflammation cytokines."

A [2017 study](#) found evidence indicating that quercetin attenuates liver inflammation and fibrosis in mice through inhibiting macrophages infiltration. Researchers believe it "holds promise as potential therapeutic agent for human fibrotic liver disease", a condition triggered by liver injury and inflammation.

9. Protects Against Neurological Disorders

There's [mounting evidence](#) showing that quercetin [offers neuroprotective benefits](#), due to its ability to defend the brain against oxidative stress and inflammation, leading to potentially less risk for cognitive conditions like Alzheimer's disease and dementia.

A [2018 study](#) concluded that "findings suggest a possible new protective role for dietary flavonoids on alzheimer's disease (AD)." The study found that administration of quercetin in early-middle stages of AD pathology ameliorates cognitive dysfunction and boosts protection mainly related to increased A β clearance and reduced astrogliosis, which is related to destruction of neurons.