



Exploring How Nutraceutical Products Impact Heart Health

A whitepaper collating the latest research
on supplements for heart health



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Table of Contents

Table of Contents	2
Nutraceutical Products For Heart Health	3
Overview	4
Coq10 for Heart Health	7
Green Tea for Heart Health	9
Ashwagandha for Heart Health	10
Magnesium and Heart Health	11
Probiotics and Heart Health	13
Selenium and Heart Health	14
Garlic Supplements	16
L-Carnitine and Heart Health	17
Olive Leaf Extract	18
Turmeric: Blood Pressure and Heart Health	19
For Business Inquiries	20



Nutraceutical Products For Heart Health

Medical conditions of the heart are steadily rising across different states though they can be preventable in some cases. Heart disease is currently the leading cause of death in the United States and accounts for nearly one in every four deaths. An estimated 6.2 million Americans are suffering from heart failure. This paper will address how nutraceutical products can play a significant but limited role in improving heart health.

Many Americans are already taking supplements for heart health, but not all supplements are created equal.

Certain types of nutraceutical products can directly impact your blood pressure and optimize cardiac health. Many Americans are taking various types of supplements for heart health, and it's not hard to see why. Heart failure is one of the leading causes of death in the country. Despite how it sounds, you don't suddenly drop dead if you are diagnosed with heart failure. It is a progressive condition caused by the heart's reduced ability to pump blood and oxygen, but it is treatable. There is a wide range of treatment options for heart failure. The more heart failure progresses, the more invasive these options become. Doctors may recommend lifestyle changes and medications to manage the condition and reduce the need for a surgical solution.

While studies have focused extensively on how various supplements can help to improve heart health, the results are often not conclusive.

Not all studies are based on randomized controlled trials, so it is important to take a close look at claims. Furthermore, people who take supplements tend to be healthier, which results in an inherited bias in the results. However, certain supplements are promising and may be able to improve health conditions such as hypertension. We will cover supplements like green tea, Coenzyme Q10, and garlic in this paper. These supplements lower bad cholesterol and triglycerides and cut plaque buildup along your blood vessels. Some supplements are used by people for heart health conditions, even though the studies have produced mixed or inconclusive results.



Overview

This paper will discuss various types of supplements and vitamins that may be able to improve your heart health. Some supplements can support heart health, and these health claims are based on decades of research and randomized controlled trials. However, other nutraceutical products that have become more popular recently are less reliable options for improving heart health, due to the lack of studies. Many Americans also unnecessarily take supplements and can achieve the same health benefits through a healthy diet. Furthermore, some supplements can also cause health issues for individuals, if taken in excess.

A healthy diet and supplements can provide a limited impact on heart health in some cases.

Before taking any supplements for heart health, always seek a qualified doctor's opinion. While nutraceutical supplements have the desired effect on different cardiovascular conditions, the best way to guarantee a healthy heart is to be healthy. It is helpful to switch to a wholesome diet with minimal sodium and fats. Furthermore, ensure that you get plenty of physical activity to burn the fat that would otherwise clog your arteries.

In many cases, you do not need to rely on supplements and can consume enough of a vitamin naturally through your diet.

Many Americans unnecessarily consume supplements when they could easily modify their diet and enjoy the same health benefits. In many cases, it is better to get these vitamins from food sources rather than supplements. Some studies have even linked certain supplements and excess levels of vitamins to health issues such as cancer. However, older individuals or people with vitamin deficiencies should definitely turn to supplements.



Antioxidants and fiber are a great way to boost your heart health and can be found in many different foods.

Vitamin E: Common foods include leafy vegetables, nuts, grains, oatmeal, sweet potatoes, and wheat germ.

Beta Carotene: Dark orange, red and dark green vegetables and fruits.

Vitamin C: Vitamin C is also considered an antioxidant, and is easily found in many types of foods.

Selenium: Selenium is found in many types of common foods, including fish, ham, enriched foods, pork, beef, chickens, eggs, spinach, milk, lentils, and bananas. Selenium deficiency is extremely rare.

Fiber is commonly found in many types of grains, fruits, and vegetables.

If you are going to take supplements for heart health, CoQ10 and magnesium may be two of the best options. Both have been shown to improve heart health.

However, magnesium can still be found commonly in many types of food, including whole grains, dark leafy vegetables, milk, yogurt, almonds, peanut butter, bread, and other fruits and vegetables.

Coq10 is probably one of the most popular supplements for heart health, as it has been studied extensively for decades.

Many types of teas, including green tea, can help improve your heart health.

Green tea is relatively effective for heart health because it can lower cholesterol levels and help with hypertension. Studies in countries like Japan have shown that green tea can help reduce the risk of health issues such as cancer and cardiovascular diseases. Notably, green tea is superior to other types of tea, such as black tea, which does not provide any significant heart health benefits. White tea is also another excellent tea for heart health because it can help to improve circulation.



Furthermore, various types of tea can moderately improve heart health due to their ability to reduce stress and improve sleep. Ashwagandha tea is popular because of its calming and stress-reducing properties. Similarly, teas like valerian root tea and chamomile tea can help to improve one's sleep, which can produce general and heart health benefits. However, the impact of these teas is limited, and there are not enough studies focused on these areas.

While Vitamin D, probiotics, garlic, and turmeric are available in supplement form, you can also naturally include these in your diet.

Vitamin D supplements have become popular because they can potentially improve heart health. However, most studies show that Vitamin D deficiency causes heart health issues. There is no evidence that Vitamin D supplements are necessary for most people. Products such as Vitamin D, probiotics, garlic, and turmeric can be consumed naturally in your diet, although supplements are another option.

L-carnitine and olive leaf extract are two unique products to consider, which may help boost heart health.

L-carnitine and olive leaf extract are two nutraceutical products that are not commonly associated with heart health. However, both of these supplements are solid options to consider if you are looking for nutraceutical products that can improve your heart health.

We avoided products with limited studies to support the claims, and also stated the limitations of popular supplements such as Vitamin D for example.

One could dig deeper and start mentioning other nutraceutical products, such as lion's mane, moringa powder, and MCT oil. Some of these products may be able to improve multiple health issues associated with poor heart health, including hypertension in some cases. However, many claims directed toward heart health care are either inconclusive or based on animal studies.



Coq10 for Heart Health

CoQ10 is one of the most popular supplements used to help with heart health conditions.

Coenzyme Q10 (CoQ10) is a promising option that has been examined, mainly because CoQ10 deficiency has been linked to certain heart health conditions such as myocarditis. Coenzyme Q10 (CoQ10) can significantly impact heart health because it is readily available in your body. It is a fat-soluble compound that facilitates cell growth, maintenance, and energy production. CoQ10 has antioxidant properties that help reduce cardiovascular disease risk.

Coenzyme Q10 (or CoQ10) is an important chemical that helps cells generate adenosine triphosphate (ATP).

ATP is an energy source that powers almost all the human body's processes. The heart, liver, and kidneys have the highest levels of CoQ10 because they require a lot of energy to function normally. CoQ10 is also a powerful antioxidant with anti-inflammatory effects that occurs naturally in protein sources like meat and nuts, although not in high enough concentrations to impact the amount of CoQ10 in one's body.

Serious cardiac conditions like heart failure are characterized by low levels of CoQ10.

Researchers theorized that taking CoQ10 for heart health can help bring cells in the heart out of a low-energy state. A comprehensive review of a randomized controlled trial published by the American Heart Association in 2016 found that patients at risk for heart failure had fewer cardiac events while taking CoQ10 as a supplement.



CoQ10 can help lower your cholesterol and blood pressure, which may be able to help you manage your heart health.

Lowering Bad Cholesterol: Studies have shown that CoQ10 can reduce low-density lipoprotein or bad cholesterol and lowers your risk of stroke. Consequently, this substance can raise your high-density lipoprotein even if you are on statin medications. Additionally, CoQ10 reduces negative symptoms like general weakness and pain generally associated with cholesterol-reducing medicines.

Lowering Blood Pressure: The coenzyme directly impacts blood pressure as it lowers systolic and diastolic figures with minimal side effects. Moreover, one study indicated the positive effects of CoQ10 during post-recovery by patients who had experienced a heart attack. This effect is also present in patients who have undergone heart surgery.

CoQ10 may even be helpful for more serious conditions such as heart failure or heart attacks.

Taking coQ10 after a heart attack: One study found that people who began taking CoQ10 supplements three days after a heart attack were less likely to experience subsequent heart attacks and chest pain.

Heart Failure: Studies have focused on how CoQ10 may be able to prevent heart failure, but the results from studies are controversial. Heart failure may sometimes be associated with lower CoQ10 levels, but treatment with supplementation is not a viable solution.

Taking CoQ10 can provide an energy boost to heart cells without putting too much stress on other systems.

MayoClinic rates CoQ10 as a “generally safe” supplement with few side effects. As a supplement with real benefits backed by evidence, CoQ10 should be considered a relatively cheap and safe way to slow the progression of heart failure. However, one shouldn’t deviate from their current treatment plan and should consult their doctor before taking CoQ10 as a regular supplement.



Green Tea for Heart Health

Green tea has numerous health benefits, and green tea consumption can even reduce the risk of certain types of cancers. The simple beverage is packed with antioxidants critical for your immune system and can also improve your blood pressure and cholesterol. All of these benefits extend to your cardiovascular system to protect against heart disease and sores along blood vessels.

Green tea can help lower your blood pressure and cholesterol, and consequently may be able to reduce the risk of cardiovascular diseases.

A key aspect of green tea is its comparative abundance of polyphenols compared to black tea and other tea types. The polyphenols in green tea, alias catechins, protect various aspects of the cardiovascular system like counteracting thrombogenesis and improving HDL. Green tea may improve some of the main risk factors for these diseases, which include improving total cholesterol and LDL (bad) cholesterol levels.

Green tea also increases the antioxidant capacity of the blood, which protects the LDL particles from oxidation, which is one part of the pathway toward heart disease. Given the beneficial effects on risk factors, it may not be surprising that people who drink green tea have a 31% lower risk of dying from cardiovascular disease.

Green tea also cuts blood sugar levels by boosting insulin sensitivity and consequently lowering the risk of diabetes. As diabetes is connected to hypertension, green tea can therefore combat high blood pressure.

A study in Japan showed that green tea consumption is correlated to a lower risk of developing cancer or cardiovascular health issues.

A study on over 40,000 Japanese adults found that adults who drank more than five cups of green tea had a 26% lower risk of dying from a heart attack. This may occur because green tea helps to lower LDL cholesterol and triglycerides. The study also found that black tea did not affect heart health.



Ashwagandha for Heart Health

Many people in western countries have been increasingly turning to Ashwagandha for its stress-relieving properties and its other favorable health benefits. Research is beginning to increasingly focus on the health benefits of Ashwagandha, which has been shown to have a wide range of beneficial effects on the human body and heart health.

One of the most commonly known benefits of Ashwagandha is its ability to help people relax and feel less stressed after consuming it.

Ashwagandha has been shown in several trials to significantly reduce stress and anxiety in participants. According to one study, Ashwagandha may help with sleep quality as well participants reported sleeping better with ashwagandha doses than with placebos. During one study, 46 adults were either given Ashwagandha or a placebo daily for 60 days to see how this would alter their stress and anxiety levels. It was noted that cortisol levels dropped for the group that received ashwagandha, and more people reported a reduction in stress levels after 60 days. The reduction in cortisol is very significant, given that high cortisol levels can cause heart issues, stroke, diabetes, or other serious health conditions. Ashwagandha has been shown to help reduce cholesterol and triglycerides in the blood, which can have a significant impact on many areas of one's health, including heart health. Furthermore, Ashwagandha has also been shown to help lower blood pressure and potentially help offset some of the symptoms of diabetes. All of these factors bode well for heart health.

One unique benefit of Ashwagandha is its ability to enhance VO2 max, which can help improve cardiovascular health.

Ashwagandha has been demonstrated in at least two trials to enhance VO2 max, the maximum quantity of oxygen you can take in when exercising. These values measure cardiorespiratory endurance, which shows how well the heart and lungs can supply oxygen to the muscles when you're doing out. To put it another way, greater VO2 max values can indicate a strong, healthy heart. While this study was done with healthy, athletic individuals alone, the results may not be generalizable because it was not undertaken with a more varied set of participants.



Magnesium and Heart Health

Your body needs magnesium to provide the body with optimum energy levels and move different electrolytes around the body. Electrolytes like calcium and potassium are critical for relaying nerve signals. Moreover, these ions facilitate muscle contractions and are essential for proper heart rhythm.

Your heart has to work every second of every day to keep you alive, which requires an extensive amount of energy. This needs an enormous amount of energy. ATP, or adenosine triphosphate, is the energy source for your heart. ATP is derived from the food you consume, especially glucose from carbs. However, ATP cannot be synthesized without magnesium. Magnesium is required for all three steps of glucose to ATP conversion. Once synthesized, ATP must be attached to a magnesium ion before being utilized by the body; magnesium is included in each ATP molecule.

If you're an athlete, you already know how critical magnesium is for muscle health. Higher magnesium levels are required for people who are physically active, to ensure that their muscles can function properly. So, what about your body's most vital muscle?

Magnesium deficiency in the diet is associated with an increased risk of heart disease. This occurs because magnesium feeds the heart, preserves the heart's pump, helps avoid heart attacks, and gives flexibility to the heart and blood arteries. Furthermore, magnesium can help to protect the heart from the stress experienced when exercising.

Blood Pressure: Magnesium also has a direct effect on blood pressure, as evidenced by a 2011 study. Magnesium also blocks the attachment of sodium to blood vessel walls and triggers vasodilation. Having a lower blood pressure has been shown to reduce the risk of cardiovascular events by 20%.



According to a 2016 study, magnesium helps prevent calcium buildup in the heart and circulation.

Calcium buildup is a risk factor for cardiovascular mortality and a sign of atherosclerosis.

Individuals with the most excellent serum magnesium levels had a 42% reduced risk of coronary artery calcification than those with the lowest serum magnesium levels.

Additionally, they had a 48% reduced risk of hypertension and a 69% lower risk of myotonic dystrophy.



Probiotics and Heart Health

As it turns out, probiotics can do much more for you than merely improve your gut health. Studies have continued to unfold how probiotics can help to improve your mood, boost your immune system and even help to improve your heart health.

Probiotics can help improve blood health and even help to lower blood pressure, which is both good for heart health. Moreover, probiotics are also able to help improve your cholesterol, which can also help improve your blood health. While the exact reason is not entirely clear, and more human studies are needed, it is clear that probiotics can indirectly and perhaps directly improve one's heart health in many ways.

Probiotics have been proven to help lower blood pressure and LDL cholesterol levels. Both of these factors can help improve heart health.

Studies have also focused on whether probiotics can help to prevent serious heart issues such as cardiovascular diseases²⁵. One of the most established benefits of probiotics is their ability to help lower LDL cholesterol levels, which can certainly improve heart health and potentially help to prevent cardiovascular diseases. We anticipate that there may be more clarity on how probiotics can improve heart health in the future, as more studies have focused on supplements such as CoQ10, for example.

According to a new journal published by the American Heart Association, it may help lower blood pressure and reduce the risk of hypertension. Notably, consumers can receive these benefits by consuming foods (yogurt/sauerkraut) or probiotic supplements. The findings from 9 studies showed that probiotics benefited people with higher blood pressure (130) the most. Moreover, people need to consume probiotics for more than eight weeks to begin experiencing these health benefits.



Selenium and Heart Health

Numerous studies have revealed that selenium can improve heart health, which is wonderful news for the millions of people struggling with heart health issues. People who want to improve their heart health may rely on common medical advice, such as avoiding sugar, reducing stress, exercising, and consuming a healthy diet. It is clear that selenium can improve heart health as well, especially when it is combined with other types of nutraceutical products such as CoQ10. Most people can consume enough selenium in their diet, and selenium toxicity is rare. However, selenium supplements are still popular and can be another alternative for people who do not consume enough selenium. Selenium is one of many nutraceutical products that we believe can improve heart health.

Selenium, which is commonly found in many types of foods, has been shown to be able to improve cardiovascular health.

Selenium can help prevent and treat numerous disorders related to cardiovascular diseases, such as atherosclerosis²⁹ and coronary heart disease. Numerous studies have shown that diets that are rich in antioxidants can significantly reduce the risk of developing cardiovascular diseases. This shows that selenium is one of many nutraceutical products that can help with serious health issues. Luckily, selenium is very well known and has been studied extensively, so there is data to support how selenium can improve heart health. Selenium is a component of selenoproteins and enzymes, which both have antioxidative properties and provide the body with numerous health benefits. Selenium has been studied quite extensively, as it can be used both as a supplement and for more serious medical conditions in some cases.

There have been several studies that show how consuming selenium can improve your heart health and also provide the body with other health benefits. Selenium has also been shown to slightly reduce LDL cholesterol levels, which can benefit your heart health. One key finding from this study is that selenium supplementation may be less necessary for certain countries where there is an adequate supply of selenium in people's diets. One study also noted that increasing selenium levels by 50% resulted in a 24% reduction in the risk of coronary heart disease. It is clear to see that low selenium levels can result in numerous health issues. However, not everyone may need selenium, based on their current health situation and diet.



Selenium may be even more beneficial for your heart health if it is combined with CoQ10 supplements.

Some studies have also focused on how selenium and CoQ10 can work together to improve your heart health. Both are crucial for optimal cell functioning in the body and can be used in supplementation form to improve heart health. The study referenced here focused on individuals in Europe, as selenium levels are generally lower there. The study was also performed on elderly patients, given that Coq10 levels tend to naturally drop as people age. The findings were encouraging and displayed how multiple nutraceutical products can work together to potentially target serious health issues.



Garlic Supplements

Garlic has a rich medicinal profile and is effective against multiple diseases, including cardiac-related conditions. The spice also has abundant antioxidants that protect body cells from damage by free radicals. This property also boosts your immunity and helps you fight against heart disease.

Garlic supplements exhibit antihypertensive properties as they directly impact blood pressure. In human and animal studies, garlic powder caused a drop in both systolic and diastolic blood pressure. This decrease is possible because garlic's constituents control the expansion and relaxation of the endothelial walls. Moreover, garlic relaxes the external vascular structure to enhance vasodilation.

A 2002 study reported that garlic contributes to aortic stiffness, which protects the vessels' elasticity over time. The ingredient mainly counters plaque buildup along the artery walls that leads to atherosclerosis.

Harbor General Hospital did a detailed study to take a closer look at how garlic supplements could help to improve heart health.

One study performed at Harbor General Hospital examined the impact of garlic's direct effect on the heart arteries. During this study, patients were either given AGE (aged garlic extract) or a placebo and received heart scans before and after the study. The study demonstrated that there was a slight reduction in the amount of plaque. The study also showed that garlic may lower blood pressure and cholesterol.

Most randomized controlled trials show that garlic can help with hypertension. But its direct impact on heart health is less established.

An article published in the Journal of Nutrition also examined all double-blinded randomized controlled trials on garlic and its impact on hypertension and coronary artery calcium. The studies collectively showed that garlic supplements could help reduce systolic blood pressure by 7-16 mm Hg and diastolic blood pressure by 5-9 mm Hg.



L-Carnitine and Heart Health

L-carnitine, commonly known as levocarnitine, is an amino acid molecule that occurs naturally in the body. People may also receive it through their food or by taking an oral supplement. L-carnitine³⁷ is essential for energy generation because it turns fat into energy. Most individuals will obtain enough L-carnitine through their food. Those with lower L-carnitine levels, on the other hand, may benefit from an oral supplement. L-carnitine may benefit several other activities in the body, such as preserving overall brain function and lowering the risk of certain illnesses, in addition to helping energy production.

L-carnitine supplementation may assist increase L-carnitine levels inside a failing heart, improving heart health, including circulation there in the short term after a heart attack. Supplementation may also aid heart failure symptoms such as chest discomfort and arrhythmia. More studies are necessary, but initial insights are encouraging.

Studies have shown that L-Carnitine helps to improve heart health in individuals from multiple age groups. This health benefit mainly occurs because L-carnitine can help with health issues such as hypertension, hyperlipidemia, hyperglycemia, and obesity to name a few. However, studies exclusively focusing on L-Carnitine and heart health are limited.

However, the L-carnitine found in processed red meat may have a negative impact on your heart health.

Some studies have even focused on potential negative aspects of L-Carnitine. A study published in Nature Medicine found that the L-carnitine present in red meat could be responsible for heart issues. Animal studies revealed trimethylamine-N-oxide (TMAO) was responsible for atherosclerosis, which results in the clogging of arteries. Studies are still not conclusive, and it was also discovered that eating unprocessed red meat was associated with a lower risk of heart issues.



Olive Leaf Extract

Notably, olive leaf is the hallmark of the Mediterranean diet, which has been linked to lower rates of cancer and other illnesses.

Olive leaf extract (OLE) has multiple science-backed health benefits. You can potentially treat common health issues like diabetes or hypertension using this supplement. OLE may be able to help improve heart health because it can help lower blood pressure and cholesterol. Multiple factors affect your heart's well-being, but your diet and daily habits are primary drivers of heart health. Incorporating olive leaf extract benefits your cardiovascular system and guarantees a healthy lifestyle.

Animal and human studies have shown that olive leaf extract can help with issues such as high cholesterol, diabetes, and hypertension. Improving these issues could help boost your heart health.

There are several ways olive leaf extract boosts heart health. A 2015 study on rats showed that olive leaf extract could cut low-density lipoprotein [LDL]. Scientists have revealed that OLE supplements can be used against high blood pressure. During a 2011 experiment, the extract had the same effect as hypertension medications like captopril.

Another study showed that olive leaf extract could lower total cholesterol and stabilize blood pressure. LDL is often referred to as bad cholesterol. In large amounts, the fat will accumulate along the walls of your arteries to form plaque. This added layer narrows the diameter of your arteries and strains your heart to deliver blood across your body.



Turmeric: Blood Pressure and Heart Health

We evaluated several studies on how turmeric can lower your blood pressure, and some of the results look convincing.

High blood pressure may increasingly activate platelet activity, which can cause numerous health issues. High blood pressure can result in decreased blood flow from the heart to the rest of the body, which can result in serious issues like a stroke or blood clots for example. However, turmeric has been shown to have anti-platelet characteristics⁴⁴, which makes it an interesting option to consider. Turmeric supplementation may be helpful for people struggling with serious hypertension issues that result from excess platelet activity. It is crucial to check with your doctor to see how turmeric interferes with other forms of medication, especially if you are considering higher-dose turmeric supplements.

Overall, it appears that more studies should be conducted on how effective turmeric is in preventing hypertension, and what exactly causes turmeric to do this. Some studies have shown that turmeric can lower blood pressure because it regulates α_1 receptors⁴⁵ located in the arteries. It appears that turmeric is useful in lowering blood pressure only in certain cases. Some of the studies have also noted that turmeric may likely be more effective in lowering systolic blood pressure⁴⁶, rather than diastolic blood pressure.

Turmeric is also praised for its ability to help with inflammation. This characteristic may allow turmeric to contribute to improved heart health.

Some studies have focused on how turmeric can help reduce the risk of cardiovascular diseases. Turmeric is helpful because of its anti-inflammatory and oxidative characteristics. One study found that individuals who took turmeric supplements for 12 weeks experienced lower blood pressure and improved heart health. Other studies have noted that turmeric may be able to provide protection against various cardiac health issues. Notably, turmeric can also work alongside other medications to help lower one's cholesterol. The combined lower blood pressure and cholesterol can help improve one's heart health.





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