

Study: These 3 Supplements Boost Your Heart Health

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STORY AT-A-GLANCE

- › An analysis of 884 randomized controlled trials including 27 micronutrients and 883,627 participants demonstrated that folic acid, coenzyme Q10 and omega-3 fatty acids could reduce heart disease mortality, heart attack and coronary heart disease events
- › Omega-3, folic acid and CoQ10 help support more than your heart, including reducing the risk of dementia, age-related cognitive decline and major depressive disorder, promoting DNA synthesis and red blood cell production, lowering blood pressure and decreasing brain shrinkage, to name a few
- › While the study is encouraging, you can do more to protect your heart health, including getting adequate sleep, appropriate exercise, using a sauna and doing breathing exercises, taking care of your gums and avoiding lifestyle choices that damage heart health

A December 2022 paper¹ analyzed 884 clinical trials and 27 micronutrients to determine the nutrients that have the biggest impact on heart health. The focus on heart disease is important since it continues to be the leading cause of death in the U.S.²

Cardiovascular disease is a term that encompasses several types of conditions, many of which are related to atherosclerosis. In this condition, there's a buildup of plaque along the walls of the artery which makes it more difficult for blood to flow and oxygen to reach the muscles. Heart disease contributes to some of the other leading causes of death, including stroke, diabetes and kidney disease.

According to the World Health Organization,³ 4 out of every 5 cardiovascular deaths are due to heart attacks and strokes, and roughly one-third of these occur in people under 70 years of age. In the U.S.,⁴ one person dies every 33 seconds from cardiovascular disease, someone has a heart attack every 40 seconds and roughly 1 out of every 5 heart attacks are silent. This means the heart attack happened, the damage is done, but the person is not aware of the event.

According to the National Center for Chronic Disease Prevention and Health Promotion,⁵ 90% of the annual health care bill totaling \$4.1 trillion is dedicated to caring for people with chronic and mental health conditions. Of those, one-third of all deaths are from heart disease and stroke, which has an economic burden of \$216 billion every year and \$147 billion in lost productivity.

Cardiovascular disease is a multifactorial health condition that must be addressed using a variety of strategies. This systematic review of the literature⁶ helped identify three nutritional supplements that have had the biggest impact, but not the only impact, on cardiovascular disease and stroke.

Data Show 3 Supplements Boost Heart Health

The study⁷ was published in the Journal of the American College of Cardiology with the objective of providing an up-to-date evidence-based diagram of the impact that micronutrients have on cardiovascular disease outcomes.

The researchers analyzed 884 randomized controlled clinical trials that included 27 micronutrients and 883,627 participants. The supplements tested included omega-3 and omega-6 fatty acids, folic acid, vitamin D, magnesium, L-arginine, coenzyme Q10 (CoQ10), melatonin, curcumin and quercetin, to name a few. These were among the supplements that suggested moderate to high-quality evidence for reducing risk factors associated with heart disease.

Specifically, the researchers found that omega-3 supplementation reduced heart disease mortality, heart attack and coronary heart disease events. Folate

supplementation was associated with a reduced risk of stroke and CoQ10 helped reduce all-cause mortality events. The researchers concluded that their data highlighted the "importance of micronutrient diversity and the balance of benefits and risks to promote and maintain cardiovascular health in diverse populations."⁸

In other words, the diversity and balance of vitamins, minerals and micronutrients from a well-balanced, whole-food diet could help promote and maintain heart health.

Unfortunately, monocropping,⁹ nitrogen fertilizers and pesticides have destroyed soil health,¹⁰ so with each passing year it becomes more challenging to get enough vitamins and minerals from whole foods.^{11,12}

The data also showed that supplementing with beta-carotene could increase the risk of death,¹³ which is likely because it converts to vitamin A in the body and supplementing increases the risk of toxicity.¹⁴ In a press release,¹⁵ the researchers acknowledged that antioxidants have long been known to play a role in heart health by reducing oxidative stress.

They believe that one reason past studies have been inconsistent is that the approach of using antioxidant therapy hasn't been widely adopted in preventive cardiology. The researchers said the findings suggest there is a need for personalized dietary interventions and further study is required to look at the long-term effects that some micronutrients have on health.

Dr. Simin Liu, professor of epidemiology and medicine at Brown University and a principal investigator for the study, discussed the results of the study in a press release:¹⁶

"Research on micronutrient supplementation has mainly focused on the health effects of a single or a few vitamins and minerals. We decided to take a comprehensive and systematic approach to evaluate all the publicly available and accessible studies reporting all micronutrients, including phytochemicals and antioxidant supplements and their effects on cardiovascular risk factors as well as multiple cardiovascular diseases."

Heart Problems May Be Linked to Herbal Supplements

Since much of mainstream reporting appears bent on generalizations that serve the purpose of advertisers, it is crucial to ask questions as you read, and not take things at face value. For example, a December 2022 Insider article¹⁷ reported that even though researchers found three supplements that could help improve heart health, and one that doesn't help, there were other studies showing problems with fish oil.

The article gives several examples and links to more research, but what it illustrates is that, depending on the publication and the authors' affiliations and objectives, it's important to keep an open mind when you see a study, and to remember this is one reason why it's important to keep your doctor informed about what you're taking, if for no other reason than because some supplements can interfere with certain prescription drugs.

Another concern is that cardiologists are seeing a rise in heart problems in connection with certain herbal remedies, specifically, heart arrhythmias in young people.¹⁸ (Herbal remedies are derived from a plant's seeds, berries, roots, leaves, bark or flowers,¹⁹ and besides in pill form, they often come as a liquid extract, tea, bath salt, oil or ointment.)

According to Cleveland Clinic,²⁰ herbal supplements have been used for centuries, as they are believed to have healing properties. Some examples include aloe vera, echinacea, peppermint oil and chamomile.

The "herbal" supplements that Insider named included fish-based omega-3 and beta carotene, even though fish oil doesn't qualify as an herbal supplement. In the article, California-based cardiologist Dr. Danielle Belardo names ephedra and bitter orange as the supplements causing the most trouble.

The U.S. banned ephedra in 2004 because it causes arrhythmia, heart attack, stroke and death, but it still shows up in some herbal supplements.²¹ The evidence against bitter orange is inconclusive when taken at commonly used dosages.

Insider also discusses conflicting findings on the benefits of fish oil and ashwagandha, while links within the article lead to more discussion on the pros and cons of fish oil – a source of omega-3, but not the only source.²²

When analyzing all the different outcomes, it's likely that the mixed research results reflects cases where participants are not always tested for deficiency before the potential benefits of supplementation are measured. It's also important to note that while nutrients are necessary for optimal health, more of a good thing isn't necessarily beneficial.

Omega-3, Folate and CoQ10 Help More Than Your Heart

While the featured study has confirmed what past research has found – that these supplements are associated with improved cardiovascular health – these three nutrients have other health benefits. For example:

- **Omega-3** – Just some of the health benefits of maintaining an optimal or near optimal balance of omega-3 and omega-6 include reducing your risk of Alzheimer's disease,²³ cognitive decline,²⁴ autoimmune diabetes (Type 1 diabetes),²⁵ eczema or psoriasis,²⁶ tumor growth,²⁷ major depressive disorder and other psychiatric disorders,²⁸ and poor weight management.²⁹

Balanced omega-3 to omega-6 levels also offer protection for people with amyotrophic lateral sclerosis (ALS),³⁰ cognitive aging,³¹ and improved recovery after traumatic brain injury.³²

- **Folate** – Folate is the **natural form of vitamin B9** that's found in food, while folic acid is the synthetic type of B9 found in supplements. Vitamin B9 is essential; your body cannot synthesize it so you must consume it.

Folate is required for DNA synthesis, protein metabolism and red blood cell production.³³ It also supports fetal development, cognitive function during aging,³⁴ lowering blood pressure and decreasing brain shrinkage.³⁵ Deficiency can lead to depression, infertility, heart disease, anemia, muscle weakness and dementia.³⁶

- **CoQ10** – Coenzyme Q10 is an antioxidant your body produces, and the highest levels are found in the pancreas, liver, kidneys and heart.³⁷ Evidence demonstrates that it is integral to mitochondrial function.³⁸

One of the functions of CoQ10 and ubiquinol – the reduced form – is to neutralize the byproducts of cellular metabolism and therefore lower the levels of reactive oxygen species (ROS).³⁹ Supplementation can help lower the incidence of atrial fibrillation⁴⁰ improve mitochondrial function, and may halt the progression of nonalcoholic fatty liver disease (NAFLD).⁴¹

Several More Steps to Protect Your Heart Health

While this study is encouraging, supplementing with omega-3, folic acid and CoQ10 are not singular strategies that protect your heart health. In other words, your heart health is affected by several factors over which you have control. These include:

Sleep – Insufficient sleep⁴² and the time you go to bed⁴³ influence your heart health. In the short-term, sleep deprivation also negatively affects your judgment, ability to learn and mood, and increases your risk of an accident or injury.⁴⁴

Exercise – Exercise, including aerobic and **resistance training**, helps preserve cardiovascular health. The American Heart Association recommends at least 2.5 hours of getting your heart above a resting rate each week⁴⁵ to help improve the risk factors associated with heart disease.⁴⁶ Resistance training reduces muscle loss, which is associated with insulin resistance,⁴⁷ metabolic dysfunction⁴⁸ and cardiovascular disease.⁴⁹

Sauna use – Sauna use mimics exercise and **improves heart health**. Men using a Finnish-style, dry heat sauna seven times per week cut their risk of death from fatal heart problems in half, compared to those who used it only once a week.⁵⁰

Breathing exercises – Two minutes of **slow rhythmic breathing** help lower blood pressure,⁵¹ which the researchers suggested could be used therapeutically. A

separate study⁵² from the University of Colorado Boulder and the University of Arizona found five minutes of focused high-resistance inspiratory muscle strength training (IMST) could lower blood pressure.

Gum health – People with periodontal disease have a higher risk of a serious cardiovascular event, including a stroke or a heart attack.⁵³ It is important to note that people with heart disease don't all have unhealthy gums and not everyone with unhealthy gums gets cardiovascular disease. Daily flossing and tooth brushing can help reverse the early stages of gum disease, which when left untreated can turn into periodontal disease.

Nutrition – Polyphenol proanthocyanidins unique to cranberries may help support heart health,⁵⁴ vitamin D can improve heart failure outcomes⁵⁵ and a vitamin D deficiency is a significant predictor of mortality.⁵⁶

Adequate amounts of **vitamin K2** in the diet can significantly lower the risk of atherosclerotic-related heart disease,⁵⁷ and **magnesium**, which is essential to many bodily functions, helps maintain normal blood pressure, combats inflammation and improves blood flow, thereby lowering the risk of cardiovascular disease.⁵⁸

Avoiding lifestyle choices that damage heart health – As important as doing something to improve your heart health is not doing the things that damage your heart. For example,⁵⁹ smoking, excessive alcohol consumption, overeating, a sedentary lifestyle and substance abuse are choices that damage your heart.

There are also medications and over-the-counter drugs that can cause heart damage in people with diabetes, including commonly used nonsteroidal anti-inflammatory drugs, like ibuprofen (Advil).⁶⁰

Sources and References

- ^{1, 6, 7, 8} [Journal of the American College of Cardiology, 2022;80\(24\)](#)
- ² [National Center for Health Statistics, Leading Causes of Death](#)
- ³ [World Health Organization, Cardiovascular Diseases](#)

- ⁴ Centers for Disease Control and Prevention, Heart Disease Facts
- ⁵ National Center for Chronic Disease Prevention and Health Promotion, Health and Economic Costs of Chronic Diseases
- ⁹ Food Revolution Network, March 18, 2022
- ¹⁰ Yale Environment 360, May 3, 2017
- ¹¹ NPR, February 24, 2021
- ¹² Journal of the American College of Nutrition, 2004;23(6)
- ¹³ Insider, December 13, 2022 para 4
- ¹⁴ AOL, December 14, 2022
- ^{15, 16} American College of Cardiology, December 5, 2022
- ¹⁷ Insider, December 13, 2022
- ¹⁸ Insider, September 7, 2022
- ¹⁹ Mount Sinai. Herbal Medicine
- ²⁰ Cleveland Clinic, Herbal Supplements
- ²¹ National Center for Complementary and Integrative Health, Bitter Orange
- ²² NIH. Omega-3 Fatty Acids
- ²³ Alzheimer's Dementia, 2010;6(6)
- ²⁴ Nutritional Neuroscience, 2008;11(2)
- ²⁵ Diabetes Care, 2021;44(2)
- ²⁶ Dermatology Times, December 11, 2022
- ²⁷ JPEN, Journal of Parenteral and Enteral Nutrition, 2002; 26(5)
- ²⁸ Integrative Medicine Research, 2015;4(3)
- ²⁹ BMJ Open Heart, 2016;3(e000385)
- ³⁰ Neurology, June 21, 2023
- ³¹ Neurology, September 25, 2013
- ³² Cell Transplant, 2017;26(4)
- ³³ Harvard T.H. Chan School of Public Health, Folate
- ³⁴ Scientific Reports, 2016;6(37486)
- ³⁵ PNAS, 2013;110(3)
- ³⁶ Cleveland Clinic, Folate Deficiency, Complications due to deficiency and symptoms of deficiency
- ³⁷ National Center for Complementary and Integrative Health, CoQ10
- ³⁸ Integrative Medicine, 2014;13(4)
- ³⁹ Redox Report, 2018;23(1)
- ⁴⁰ Journal of Investigative Medicine, 2015;63(5)
- ⁴¹ Archives of Medical Research, 2014;45(7)
- ⁴² European Heart Journal, 2021; 2(4)
- ⁴³ Study Finds, November 9, 2021
- ⁴⁴ Better Health Channel, Sleep Deprivation
- ⁴⁵ American Heart Association Recommendations for Physical Activity in Adults and Kids
- ⁴⁶ Harvard Health Publishing, January 1, 2023
- ⁴⁷ Diabetes Care, 2009;32(2)

- ⁴⁸ Journals of Gerontology, 2017;73(8)
- ⁴⁹ American Journal of Preventive Medicine, 2022; 63(2)
- ⁵⁰ JAMA, 2015;175(4)
- ⁵¹ Frontiers in Physiology, 2023;14
- ⁵² Journal of Applied Physiology, October 6, 2022
- ⁵³ Science Daily, February 22, 2021
- ⁵⁴ Food and Function, 2022;7
- ⁵⁵ American Journal of Clinical Nutrition, 2006;83(4)
- ⁵⁶ European Journal of Heart Failure, 2014;14(4)
- ⁵⁷ SciTech Daily, January 1, 2022
- ⁵⁸ BMC Medicine, 2016;14(210)
- ⁵⁹ Stanford Medicine Heart Health, Lifestyle Risk Factors
- ⁶⁰ European Society of Cardiology, August 23, 2022