



# WellnessOne Newsletter

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## The Amazing Nutrient that Lowers Your Blood Pressure

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Research has recently found that vitamin D has a protective effect against arterial stiffness and impaired blood vessel relaxation.

Study participants with reduced levels of vitamin D had increased arterial stiffness and vascular function impairment. However, among those whose vitamin D levels were normalized over a six month period, vascular health improved and blood pressure measurements declined.



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Science Newsline Reports:

*"The results add to evidence that lack of vitamin D can lead to impaired vascular health, contributing to high blood pressure and the risk of cardiovascular disease."*

In related news, researchers have also found that [high level of vitamin D could be protective against the development of early age-related macular degeneration \(AMD\)](#), a leading cause of vision loss in adults.

In women younger than 75, those who had 25-hydroxy vitamin D concentrations lower than 38 nanomoles per liter were more likely to have age-related macular degeneration than women with concentrations greater than 38 nanomoles per liter.

### Sources:

- » [Science Newsline April 4, 2011](#)
- » [Archives of Ophthalmology April 2011; 129\(4\): 481-489](#)

### Dr. Mercola's Comments:

This isn't the first time vitamin D has been linked to improved heart health. In fact, there's overwhelming evidence that this nutrient is essential for your heart and cardiovascular system.

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## Vitamin D Deficiency Linked to Stiffer Arteries and High Blood Pressure

Even if you're considered generally "healthy," if you're deficient in vitamin D, your arteries are likely stiffer than they should be, and your blood pressure may run higher than recommended due to your blood vessels being unable to relax. That's the conclusion researchers from the Emory/Georgia Tech Predictive Health Institute has reached. Their findings were recently presented at the annual American College of Cardiology meeting in New Orleans.

According to researcher Dr. Al Mheid:

*"We found that people with vitamin D deficiency had vascular dysfunction comparable to those with diabetes or hypertension."*

That's a truly profound statement!

Unfortunately, the *vast majority* of people are severely deficient in vitamin D, regardless of race or nationality. In the United States, the late winter average vitamin D is only about 15-18 ng/ml, which is considered a *very serious* deficiency state. Overall, it's estimated that 85 percent of the American public are deficient, and as much as 95 percent of U.S. senior citizens.

In light of that fact, the link between vitamin D status and heart health becomes even more apparent when you consider that only [ONE out of 1,900 people evaluated meet the American Heart Association \(AHA\) definition of ideal cardiovascular health!](#)



The AHA's definition of ideal cardiovascular health is the combination of the following seven factors:

1. Nonsmoking
2. body mass index less than 25
3. goal-level physical activity
4. healthy diet
5. untreated cholesterol below 200
6. blood pressure below 120/80
7. fasting blood sugar below 100

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And out of 1,900 people, only *one single person* could claim this health status. Is it any wonder heart disease is one of the top killers in the US?

## Raise Your Vitamin D Status to Improve Your Cardiovascular Health

Fortunately, it's been repeatedly shown that by increasing your vitamin D levels, you can improve your cardiovascular health and lower your blood pressure, and this latest research confirms this. Forty-two of the participants who raised their vitamin D to normal levels had an average drop in blood pressure of 4.6 millimeters mercury.

Keep in mind that "normal" is not the same as optimal, so increasing your levels to the recommended optimal levels as indicated in the chart below will undoubtedly impart an even more beneficial effect—not just for your cardiovascular health but also your health in general, from improving your immune function to cutting your risk of cancer in half.

But just how does vitamin D work in respect to your vascular health?

[Science Newline explains](#):

*"Throughout the body, a layer of endothelial cells lines the blood vessels, controlling whether the blood vessels constrict or relax and helping to prevent clots that lead to strokes and heart attacks.*



*"There is already a lot known about how vitamin D could be acting here," Al Mheid says. "It could be strengthening endothelial cells and the muscles surrounding the blood vessels. It could also be reducing the level of angiotensin, a hormone that drives increased blood pressure, or regulating inflammation."*

[Vitamin D also improves your cardiovascular health](#) through a number of other mechanisms, such as:

- Increasing your body's natural anti-inflammatory cytokines
- Suppressing vascular calcification
- Inhibiting vascular smooth muscle growth

A previous study found women who take vitamin D supplements [lower their risk of death from heart disease by one-third](#), and other researchers have found that people with the lowest average vitamin D levels had a 124 percent greater risk of dying from all causes and a [378 percent greater risk of dying from a heart problem](#).

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## How Vitamin D Helps Reduce Heart Disease Risk if You have Diabetes

Low levels of vitamin D are also known to nearly **double** your risk of cardiovascular disease if you have diabetes. A [2009 study](#) shed light on why vitamin D has such a significant impact on diabetics' heart health.

Diabetics who are deficient in vitamin D cannot process cholesterol normally, so it builds up in their blood vessels, hence increasing the risk of heart attack and stroke. Vitamin D inhibits the uptake of cholesterol by cells called macrophages. Macrophages are dispatched by your immune system in response to inflammation and are often activated by diseases such as diabetes.

When you're deficient in vitamin D, your macrophage cells absorb more cholesterol, and can't get rid of it. The macrophages then get clogged with cholesterol and become what scientists call "foam cells," which are one of the earliest markers of atherosclerosis.

So, if you're diabetic it's even more important to maintain therapeutic levels of vitamin D.

## High Vitamin D Status also Improves Survival Rates in Heart Failure Patients

[Patients with heart failure also have reduced survival rates if they're deficient in vitamin D, according to a study from last year.](#)



The study, conducted at the University Medical Center in the Netherlands, also suggested that low levels of vitamin D are associated with activation of the Renin Angiotensin System (RAS – a pivotal regulatory system in heart failure) and an altered cytokine profile.

According to the researchers, patients with lower concentrations had a higher risk of death or required re-hospitalization, whereas patients with higher concentrations had lower survival risks for these endpoints.

## How Much Vitamin D do You Need to Decrease Arterial Stiffness?

In March of last year, a [study published in the Journal of Clinical Endocrinology & Metabolism](#) looked at the effect of different dosages of vitamin D in relation to arterial stiffness in African American teens.

Forty-four participants were randomly assigned to receive either 400 IU of vitamin D per day (which is the recommendation of the American Academy of Pediatrics) or 2,000 IU of vitamin D per day.

Those who took 400 IU's a day did not achieve vitamin D sufficiency while those who took 2,000 IU's a day did, and consequently had a decrease in central arterial stiffness. As

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demonstrated in this study, there's no doubt that the current daily recommended allowances (RDA) for vitamin D are FAR too low to achieve optimal health benefits!

As of right now, the conventional RDAs are only:

- 400 IU for infants, children and adolescents
- 200 IU for adults up to age 50
- 400 IU for adults aged 51 to 70
- 600 IU for seniors over 70

Research has repeatedly shown you may need as much as ten times these amounts, depending on your current status!

According to vitamin D experts, the ideal vitamin D levels are actually far higher than the conventional "normal," so when you get your levels checked, don't be satisfied with a simple, "You're within the normal range." Instead, make sure your levels are within these ideal *therapeutic ranges*:



## VITAMIN D LEVELS 25 HYDROXY D

Deficient	Optimal	Treat Cancer and Heart Disease	Excess
< 50 ng/ml	50-70 ng/ml	70-100 ng/ml	> 100 ng/ml

As you can see, anything below 50 ng/ml is now believed to be a deficiency state, and the optimal range to treat heart disease is between 70-100 ng/ml. Meanwhile, conventional medicine still considers 32 ng/ml to be the threshold for "optimal health." Please do not be fooled by that conservative recommendation!

Please note that levels over 100 ng/ml are likely only a problem if they are obtained by swallowing oral vitamin D3. If you raise your level to over 100 by sun exposure it is unlikely to be problematic. In the winter I live in the sub-tropics on the beach and typically get two hours of sun every day, which raises my levels to over 100 ng/ml. This is also typical for many healthy lifeguards in the summer.

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## Vitamin D Status and Your Vision

Another [recent study has also implicated vitamin D deficiency in the development of macular degeneration](#), which is the leading cause of blindness in the US.

In women younger than 75, having vitamin D levels below 38 nanomoles per liter equated to higher risk of developing age-related macular degeneration. Those whose vitamin D intake was among the top one-fifth of participants had a 59 percent lower risk of developing AMD compared to women whose intake was among the lowest fifth.

## Take Action Before it's Too Late

Unfortunately, the most common symptom of heart disease is [sudden death](#), so you simply MUST be proactive.

Typically, there are absolutely no indications of a problem, no signs like chest pain or shortness of breath. You simply have NO symptoms at all before getting struck by the chest pain that kills you. Sudden cardiac death strikes more than 300,000 people every year in the US alone.

This is a tragedy made even more upsetting as heart disease, just like [type 2 diabetes](#), is one of the easiest diseases to prevent and avoid, if you're proactive! For example, vitamin D deficiency is incredibly easy to diagnose and fix, and can *dramatically* reduce your risk.



Next, assess your heart disease risk factors.

Keep in mind that your total cholesterol level is just about worthless in determining your risk for heart disease unless it's close to 300 or higher. And, perhaps more importantly, you need to be aware that [cholesterol is not the CAUSE of heart disease](#). If you become overly concerned with trying to lower your cholesterol level to some set number, you will be completely missing the real problem.

The ratios you need to be concerned with when evaluating your heart disease risk are:

- Your HDL/Cholesterol ratio
- Your Triglyceride/HDL ratios

Your HDL percentage is a very potent heart disease risk factor. Just divide your HDL level by your cholesterol. That percentage should ideally be above 24 percent. Below 10 percent, it's a significant indicator of risk for heart disease.

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You can also do the same thing with your triglycerides and HDL ratio. Simply take your triglyceride level and divide it by your HDL level. That percentage should be below 2.

### **Fasting Insulin Levels: Another Important Risk Factor for Heart Disease**

There's a reason why diabetes significantly raises your risk of heart disease. The factor that links these two diseases is insulin, so naturally, keeping your insulin levels low is imperative for preventing and treating both.

Further, studies have shown that people with a [fasting blood sugar level](#) of 100-125 mg/dl had a nearly 300% increase higher risk of having coronary heart disease than people with a level below 79 mg/dl.

Normal fasting blood glucose is below 100 mg/dl, but for optimal health it should be closer to 80.

Any meal or snack high in unhealthy carbohydrates like sugar and refined grains generates a rapid rise in blood glucose, followed by insulin to compensate for the rise in blood sugar. The insulin released from eating too many carbohydrates promotes fat and makes it more difficult for your body to lose fat, particularly around your belly, and this is one of the major contributors to heart disease.

Reducing your intake of fructose and grains, including corn-based foods and potatoes is perhaps THE most important strategy to help you lower your blood glucose and prevent insulin resistance, diabetes, and heart disease.



### **Helpful Supplements for Heart Disease and Macular Degeneration**

Emerging research is pointing to L-arginine, an amino acid, as a powerful player in your cardiovascular health. In the latest research, supplementation with L-arginine resulted in multiple beneficial vascular effects in people with multiple risk factors for heart disease.

L-arginine is a precursor to nitric oxide and is actually the only known nutritional substrate in your vessel lining available to endothelial cells (a layer of cells that line the interior surface of blood vessels) for nitric oxide production. In other words, the lining in your vessels (endothelium) need L-arginine to [create nitric oxide](#), which acts as a cellular signaling molecule in your body to help promote healthy blood vessel flexibility and dilation.

This is why a high-quality L-arginine supplement may be a simple way to enhance your body's supply, especially if you know you have risk factors for heart disease, such as high blood pressure, excess weight, or high insulin levels (diabetes).

You can also find L-arginine in dietary sources and may be able to somewhat enhance your levels by eating more:

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- Nuts (walnuts, hazelnuts, pecans, Brazil nuts, almonds, cashews and peanuts)
- Sesame and sunflower seeds
- Coconut
- Raisins
- Dairy and meat

Additionally, chronic inflammation is a hallmark of everything I've covered in this article—diabetes, heart disease, and macular degeneration. A potent supplement to help [keep inflammation in check is astaxanthin](#). This potent antioxidant exhibits VERY STRONG free radical scavenging activity, and protects your cells, organs and body tissues from oxidative damage.

### **What to Do if You're at Risk**

If you find that you are at risk for heart disease, I urge you to [get your vitamin D levels checked](#), and if you are deficient, [take steps to increase your levels to the therapeutic range](#).



Then simply apply the [Take Control of Your Health program](http://products.mercola.com/take-control/) (<http://products.mercola.com/take-control/>). This will virtually eliminate your risk -- sometimes quite rapidly-- because it helps to significantly reduce inflammation in your body. And, [keeping your inflammation levels low](#) is key if you want to reduce your risk of heart disease.

An added boon of applying this program is that it will automatically also help you to prevent and treat type 2 diabetes.

**Talk to your WellnessOne Doctor about the Vitamin D solutions available to you in our office.**

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