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Take Control of Your Health

Herbs Can Help Lower Blood Pressure

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STORY AT-A-GLANCE

- A controlled feeding study of people with known risk factors for heart disease showed eating 6.5 grams of 24 herbs and spices each day lowered systolic blood pressure
- Heart disease has ranked No. 1 in the top 10 leading causes of death in the U.S. for years; the number of deaths has jumped 9% in just six short years
- Vitamin D deficiency has been associated with high blood pressure in adults, and low levels in infants and children are predictive of high blood pressure in later childhood and teen years
- Salt has been vilified as a primary cause of high blood pressure. Yet, evidence shows it is the sodium/potassium ratio that has a greater impact on blood pressure
- Additional strategies that help lower blood pressure include exercise, stress reduction, inspiratory muscle strength training, meditation and sauna bathing

Heart disease has ranked No. 1 in the top 10 leading causes of death in the U.S. for years. In 2020,[1] 690,882 people died from heart disease. This is compared to 633,842 who died in 2015, which represents a 9% jump in six short years. One of the key risk factors for heart disease is high blood pressure.[2] New data show a diet rich in herbs and spices may help reduce high blood pressure.[3]

Blood pressure measurements are expressed as two numbers.[4] The top number is called the systolic number and the bottom is called the diastolic number. These

numbers represent the pressure measured in millimeters of mercury (mmHg) required to move blood through your arteries. The top number is how much pressure is on the artery as the heart beats and the diastolic number is how much pressure remains in the artery between heart beats.

In 2017, the American College of Cardiology,[5] in collaboration with the American Heart Association,[6] published new guidelines that defined high blood pressure. This moved the measurement to diagnose high blood pressure from 140/90 to 130/80 mmHg.[7]

Researchers had been noticing a rise in heart disease in individuals whose blood pressure was previously thought to be within normal limits. With the changed guidelines, the American Heart Association[8] estimated more than 100 million Americans have high blood pressure.

High blood pressure increases the risk of heart attack, kidney disease, vision loss, stroke and damaged blood vessels.[9] New data published in the American Journal of Clinical Nutrition demonstrate how closely associated your diet is to your blood pressure measurement.[10]

24 Herbs and Spices Over Four Weeks Lowered Blood Pressure

Researchers at Pennsylvania State University[11] sought to understand the effect that eating herbs and spices would have on cardiovascular disease. According to the researchers,[12] this was the first controlled feeding study to evaluate mixed herbs and spices in a traditional U.S. diet against the risk factors for heart disease.

The researchers recruited 71 people with known risk factors for heart disease. Of those, 63 participants completed the controlled feeding study. The researchers used blood samples and blood pressure to gauge the effect of a low (0.5 grams), moderate (3.2 grams) and high (6.5 grams) intake of herbs and spices.

The participants consumed each diet in random order for a period of four weeks with a two-week washout between each diet.[13] The remainder of the diet was based on the

average American intake. The herbs and spices included basil, thyme, cinnamon and turmeric.

The researchers discovered that those consuming the diet high in herbs and spices had lower systolic blood pressure then those who consumed the diet with medium or low-dose herbs and spices. The participants wore a blood pressure monitor for 24 hours at the start of the study and at the end of each treatment period.

The researchers were excited by the results because the study did not specifically change the diet to be heart healthy. The only difference was in the number of herbs and spices consumed by the participants. Penny M. Kris-Etherton, professor of nutritional sciences at Penn State Evan Pugh University,[14] said in a press release:[15]

> *"I think it's really significant that participants consumed an average American diet throughout the study and we still found these results. We didn't decrease sodium, we didn't increase fruits and vegetables, we just added herbs and spices. It begs the next question that if we did alter the diet in these ways, how much better would the results be?"*

Vitamin D Deficiency May Be Linked to High Blood Pressure

Several important factors influence your blood pressure, and your vitamin D level is one of them.[16] Researchers have found vitamin D insufficiency and deficiency are associated with high blood pressure in adults and now find that low levels in infants and children can increase the risk of high blood pressure later in childhood and during the teen years.[17]

Vitamin D plays a significant role in several health conditions, and it may be one of the simplest solutions to a wide range of problems. Optimally, you'll want to obtain vitamin D through sun exposure. However, since many dermatologists and other agencies[18,19,20] began telling people to avoid the sun and use liberal amounts of sunscreen, vitamin D deficiency has reached epidemic proportions.[21,22,23]

In the U.K., the optimal level of vitamin D is 20 ng/mL (50 nmol/L) and higher.[24] However, in the U.S., sufficient levels are between 30 ng/mL (75 nmol/L) and 60 ng/mL (150 nmol/L)[25] or from 40 ng/mL (100 nmol/L) to 60 ng/mL (150 nmol/L).[26] One study[27] published in 2018 found 39.92% of the people had a vitamin D level of 20 ng/mL or less and 60.08% had levels of 20 ng/mL or greater.

Since the lowest sufficient level is 30 ng/mL, at least 40% of the population surveyed were deficient in vitamin D, and likely higher. Evidence suggests that low levels are associated with high blood pressure. One literature review[28] of 30 randomized clinical trials and 4,744 participants found that vitamin D3 could help reduce systolic and diastolic blood pressure. The effect appeared dependent on the dose, duration and population.

A second review[29] of 17 trials with 1,687 participants found supplementation with vitamin D had a statistically significant difference in reducing systolic and diastolic pressure in people who were vitamin D deficient and had high blood pressure.

Low levels of vitamin D also appear to have a predictive value in children. Researchers[30] followed 775 children in ages ranging from birth to age 18 from 2005 to 2012 to investigate the effect vitamin D had on the development of high systolic blood pressure. Low vitamin D status was defined as less than 11 ng/mL at birth and less than 25 ng/mL during early childhood.

The researchers[31] compared those with low levels of vitamin D to children who were born with adequate levels. They found that children with low levels had about a 60% higher risk of elevated systolic blood pressure from ages 6 to 18. Children who experienced persistently low levels throughout childhood were at double the risk of elevated systolic blood pressure between ages 3 and 18.[32]

Take Care With Your Sodium/Potassium Ratio

In the U.S. and many other developed countries, salt has been vilified as a primary cause of high blood pressure.[33] The idea is with more salt, your body retains more fluid and

therefore increases the work of the heart. According to research presented at the American Heart Association meeting in 2013,[34] excessive salt contributed to 2.3 million heart-related deaths worldwide in 2010.

However, it is important to understand that sodium and potassium work together to affect your blood pressure. The average reported intake of potassium from food is about half[35] of the 4,700 mg recommended.[36] Research has demonstrated these low levels of potassium may have a significant impact on blood pressure,[37,38,39] especially as it relates to the amount of salt normally found in the Western diet.

Potassium works to relax the walls of your arteries, which keeps your muscles from cramping and lowers your blood pressure.[40] Reduction in blood pressure with added potassium has also been associated with a reduced risk of stroke and all-cause mortality.[41]

It's recommended that you consume in the range of two to three times more potassium than sodium, depending on whether you currently have a heart condition or diabetes.[42,43] But most Americans consume more sodium than potassium.

If researchers are looking only at sodium levels and not the ratio, which is more important than the overall salt intake,[44] then it may appear as if salt is driving high blood pressure. Therefore, by lowering your salt intake you automatically improve the ratio.

More Strategies to Help Control Blood Pressure

There are many factors that can positively or negatively affect your blood pressure. As discussed, your diet plays an important role in the nutrients supplied to your arterial system. Several other strategies you may consider include:

Exercise more — The American Heart Association[45] recommends activity and exercise to help manage blood pressure. Studies have also demonstrated the effectiveness of exercise, including as a preventive strategy.[46] Regular activity[47] can

lower blood pressure, reduce heart rest and prevent remodeling from high blood pressure that is pathological and increases the risk of heart failure and mortality.

Reduce stress — The American Heart Association[48] also recommends managing your stress to help control high blood pressure. Stress stimulates the nervous system to produce hormones that cause vasoconstriction.[49] This may cause short-term increases in blood pressure.[50]

Chronic stress can also affect sleep patterns,[51] dietary habits[52] and motivation to exercise,[53] all of which are key factors in raising blood pressure.[54] Acute stress is also associated with broken heart syndrome, which is a potentially life-threatening condition that mimics a heart attack.[55]

Try inspiratory muscle strength training — One study[56] showed using high resistance inspiratory muscle strength training (IMST) could reduce blood pressure measurements as well as aerobic exercise or meditation. IMST was originally developed for critically ill patients with respiratory diseases. The strategy uses a handheld device that provides resistance to the user as they inhale vigorously, thus strengthening muscles.

Incorporate meditation — Mind-body practices that trigger your body's relaxation response,[57] such as meditation, play an important role in lowering blood pressure by favorably influencing a recently identified set of genes and biological pathways.[58] As the relaxation response is elicited, biochemical changes occur, including decreased oxygen consumption, blood pressure, heart and respiratory rate.[59]

Use intermittent fasting — This is a form of time restricted eating during which you typically fast for 16 to 18 hours with a window of six to eight hours to eat. Evidence shows that there are several benefits to the cardiovascular system, including lowering blood pressure.[60] A recent study[61] from Baylor College of Medicine suggested that fasting may help normalize blood pressure by impacting the gut microbiota.

Sauna bathing — Sometimes some of the simplest strategies can have a tremendous impact. Sweating in a sauna can help expel toxins, improve blood circulation and improve mitochondrial function. In a video lecture by Rhonda Patrick, Ph.D.,[62] she reviews how sauna bathing can be used as an exercise mimetic to increase your longevity.

In this lecture she notes that just a single sauna session has been shown to lower blood pressure, improve heart rate variability, and improve arterial compliance. Some of the positive benefits of the sauna on heart health may have to do with similar physiological changes that also occur during physical exercise.

Check your magnesium — Magnesium deficiency can contribute to a significant number of health problems since it is involved in hundreds of biochemical reactions in the body.[63] One scientific review[64] suggested that low magnesium may be the greatest predictor of heart disease and another[65] suggested subclinical deficiency can compromise cardiovascular health.

Low magnesium levels have been linked to a high risk of high blood pressure,[66] stroke[67] and sudden cardiac death.[68] The best way to determine your status is to do an RBC magnesium test. This measures the amount of magnesium in your red blood cells.

There are several reasons why you may have insufficient or deficient levels of magnesium, including not getting enough from your diet, sweating, stress and lack of sleep. Seek to eat more magnesium-rich foods and consider high-quality magnesium supplements if necessary. Another way of effectively boosting your level is to use an Epsom salt bath as the magnesium is effectively absorbed through your skin.

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