

THE TRINIDAD & TOBAGO HEART FOUNDATION'S

*Guide to*

# MANAGING YOUR BLOOD PRESSURE



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HEART FOUNDATION



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# About the **TRINIDAD & TOBAGO HEART FOUNDATION**

The Trinidad and Tobago Heart Foundation (TTHF) is a non-profit, non-governmental organisation that focuses on educating the citizens of Trinidad and Tobago about cardiovascular disease (CVD) - also known as heart disease, advocating for healthy lifestyles to help reduce the prevalence of CVD. We promote heart health awareness, healthy lifestyles and proper dietary habits, highlighting the risk factors for CVD including hypertension (high blood pressure), obesity and smoking, in an effort to reduce the incidence of heart disease and stroke. The Trinidad and Tobago Heart Foundation (TTHF) was incorporated on 17th April 1998 and is governed by a Board of Directors which serves on a voluntary basis without any honoraria or allowances; its projects are self-financed largely from corporate sponsorship, donations from the public and fundraising activities.

## **Vision**

A decrease in the rate of NCDs in Trinidad and Tobago, specifically Cardiovascular Disease, through the cooperation, awareness and contributions of all stakeholders in society which include government, corporate entities, NGOs and the citizens.

## **Mission**

To assist in the prevention of Cardiovascular Disease (CVD) in Trinidad and Tobago by creating awareness of heart health, healthy lifestyles and proper dietary habits in an effort to reduce the incidence of heart disease and stroke in Trinidad and Tobago.

## **Our Objectives**

**AWARENESS:** To promote healthy lifestyles to lower CVD.

**EDUCATION:** To educate the community on preventative avenues to sustain healthy hearts.

**RESEARCH AND DEVELOPMENT:** To raise funds for research and development in heart disease prevention.

**COMMUNITY OUTREACH:** To encourage heart professionals to give of resources to community education.

**COLLABORATION:** To collaborate with the State (and other NCD organisations) on setting health policy matters such as food criteria, tobacco legislation and budgetary provisions to support CVD eradication.

For further information, feel free to contact us at :

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# What you need to know about **HYPERTENSION**

## **According to the American Heart Association:**

“Hypertension or high blood pressure is when your blood pressure, the force of your blood pushing against the walls of your blood vessels, is consistently too high.”

It is often called the silent killer as most people have no symptoms until after damage has been done to organs like your heart, blood vessels and kidney. Sometimes the first time persons are diagnosed with hypertension is after they are admitted to hospital for a stroke. Persons with hypertension are also at higher risk for severe illness and death due to COVID-19 infection.

Hypertension affects more than 30% of the adult population worldwide, more than one billion people around the world. The burden of hypertension is felt disproportionately in low- and middle-income countries, where two thirds of cases are found, largely due to increased risk factors in those populations in recent decades. The Caribbean Region has the highest prevalence (23.1%) of high blood pressure in the Region of the Americas with the highest prevalence in Saint Lucia, Trinidad and Tobago and Saint Kitts and Nevis. What's more, around half of people living with hypertension are unaware of their condition, putting them at risk of avoidable medical complications and death.

In the Caribbean and worldwide, hypertension is the leading risk factor for illness and premature death from cardiovascular disease, especially coronary heart disease and stroke, but also for chronic kidney disease, heart failure, arrhythmia and dementia.

Accurate blood pressure (BP) measurement is essential for the proper diagnosis and management of hypertension.



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# What you need to know about **BLOOD PRESSURE**

Your blood pressure depends on how much blood your heart is pumping, and how much resistance there is to blood flow in your arteries. The narrower your arteries, the higher your blood pressure. Your blood pressure is measured in millimeters of mercury, which is abbreviated as mm Hg. There are two numbers involved in the measurement:

## **Systolic blood pressure:**

The top number represents the force of the pressure when your heart pushes blood into the arteries throughout the rest of your body.

## **Diastolic blood pressure:**

The bottom number represents the pressure in your blood vessels between beats, when your heart is filling and relaxing.



Here is what you should know about your blood pressure readings:

**Normal:** Less than 120/80 millimeters of mercury (mmHg)

**Elevated:** Systolic between 120 and 129 mmHg and diastolic less than 80 mmHg

**Stage 1:** Systolic between 130 and 139 mmHg or diastolic between 80 and 89 mmHg

**Stage 2:** Systolic at least 140 mmHg or diastolic at least 90 mmHg

**Hypertensive Crisis:** Systolic over 180 mmHg or diastolic over 120 mmHg, with patients needing prompt changes in medication if there are no other indications of problems, or immediate hospitalization if there are signs of organ damage

The good news about elevated blood pressure is that you can make changes to significantly reduce your numbers and lower your risk without requiring medications. Here are some effective ways to lower your blood pressure levels.





# Steps you can take to lower your **BLOOD PRESSURE**

## *1. Increase Activity & Exercise More*

Aerobic and resistance exercise can significantly lower blood pressure, especially for men. In a 2013 study, sedentary older adults who participated in aerobic exercise training lowered their blood pressure by an average of 3.9% systolic and 4.5% diastolic. These results are as good as some blood pressure medications. As you regularly increase your heart and breathing rates, over time your heart gets stronger and pumps with less effort. This puts less pressure on your arteries and lowers your blood pressure.

### **How much activity should you strive for?**

A 2019 report by the American College of Cardiology and the American Heart Association advises moderate- to vigorous-intensity physical activity for 40-minute sessions, three to four times per week. If finding 40 minutes at a time is a challenge, there may still be benefits when the time is divided into three or four 10- to 15-minute segments throughout the day. But you don't have to run marathons. Just do it regularly and work up to at least half an hour per day of moderate activity.

Increasing your activity level can be as simple as:

- Using the stairs
- Walking instead of driving
- Doing household chores
- Gardening
- Going for a bike ride
- Playing a team sport

There are also many combinations of exercise that can lower blood pressure such as:

- Aerobic exercise
- Resistance training
- High-intensity interval training
- Short bouts of exercise throughout the day





# Steps you can take to lower your **BLOOD PRESSURE**

## *2. Cut Back On Sugars & Refined Carbohydrates*

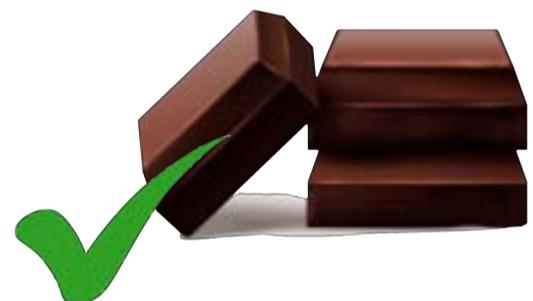
Many studies show that restricting sugar and refined carbohydrates can help you lose weight and lower your blood pressure. Sugar, especially fructose, may increase your blood pressure more than salt, according to one 2014 review. In trials lasting at least 8 weeks, sugar increased blood pressure by 5.6 mm Hg diastolic & 6.9 mm Hg systolic.



A 2020 study that compared various popular diets found that for people who with more weight or obesity, low carb and low fat diets lowered their diastolic blood pressure by an average of about 5 mm Hg and their systolic blood pressure 3 mm Hg after 6 months. Another benefit of a low carb, low sugar diet is that you feel fuller longer, because you're consuming more protein and fat.

## *3. Eat Some DARK Chocolate (in moderation)*

Dark chocolate (NOT those with added sugars, milk or processed ingredients) has been shown to lower blood pressure.



But the dark chocolate should be 60 to 70 percent cacao.

A review of studies on dark chocolate has found that eating one to two squares of dark chocolate per day may help lower the risk of heart disease by lowering blood pressure and inflammation.

The benefits are thought to come from the flavonoids present in chocolate with more cocoa solids. The flavonoids help dilate, or widen, your blood vessels.





# Steps you can take to lower your **BLOOD PRESSURE**

## *4. Eat More Potassium and Less Sodium*

Increasing your potassium intake and cutting back on salt can also lower your blood pressure. Potassium is a double winner: It lessens the effects of salt in your system and eases tension in your blood vessels. However, diets rich in potassium may be harmful to people with kidney disease, so **talk with your doctor** before increasing your potassium intake. It's easy to eat more potassium. So many foods are naturally high in potassium. Here are a few:

- Low fat dairy foods, such as milk and yogurt
- Fish
- Fruits, such as bananas, apricots, avocados, and oranges
- Vegetables, such as sweet potatoes, potatoes, tomatoes, greens, and spinach

**NOTE:** People respond to salt differently. Some people are salt-sensitive, meaning that a higher salt intake increases their blood pressure. Others are salt-insensitive. They can have a high salt intake and excrete it in their urine without raising their blood pressure.

The National Institutes of Health recommends reducing salt intake using the **DASH** (Dietary Approaches to Stop Hypertension) diet which emphasizes:

- Low sodium foods
- Fruits and vegetables
- Low fat dairy
- Whole grains
- Fish
- Poultry
- Beans
- Fewer sweets
- Fewer red meats



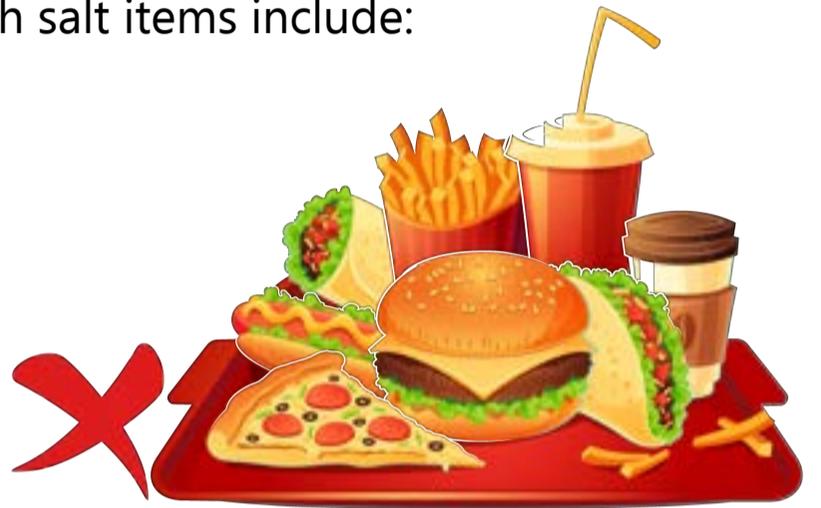


# Steps you can take to lower your **BLOOD PRESSURE**

## *5. Eat Less Processed Foods*

Most of the extra salt in your diet comes from processed foods and foods from restaurants, not your salt shaker at home. Popular high salt items include:

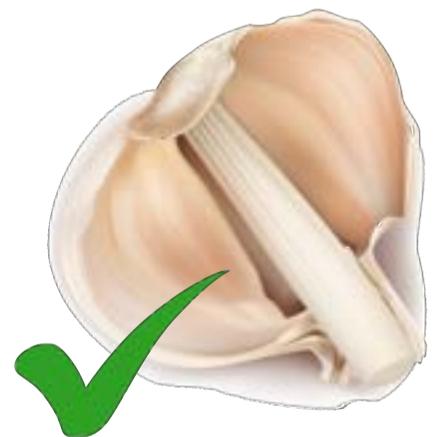
- Deli meats
- Canned soup and savoury sauces
- Pizza
- Chips
- Other processed snacks



Foods labeled “low fat” are usually high in salt and sugar to compensate for the loss of fat. Fat is what gives food taste and makes you feel full. Cutting down on — or even better, cutting out — processed food will help you eat less salt, less sugar, and fewer refined carbohydrates. All of this can result in lower blood pressure. Make it a practice to check nutrition labels. According to the Food and Drug Administration (FDA), a sodium listing of 5% or less on a food label is considered low, while 20% or more is considered high.

## *6. Eat Garlic Or Take Garlic Extract Supplements*

Fresh garlic or garlic extract are both widely used to lower blood pressure. A meta-analysis found that for people with high blood pressure, garlic supplements reduced their systolic blood pressure by up to about 5 mm Hg and reduced their diastolic blood pressure as much as 2.5 mm Hg.



According to a 2009 clinical study, a time-release garlic extract preparation may have a greater effect on blood pressure than regular garlic powder tablets.





# Steps you can take to lower your **BLOOD PRESSURE**

## *7. Stop Smoking*

It can be difficult to do, but it's worth it.

Stopping smoking is good for your all-around health.

Smoking causes an immediate but temporary increase in your blood pressure and an increase in your heart rate. In the long term, the chemicals in tobacco can increase your blood pressure by damaging your blood vessel walls, causing inflammation, and narrowing your arteries.

The hardened arteries cause higher blood pressure.

The chemicals in tobacco can affect your blood vessels even if you're around second-hand smoke. A study showed that nonsmokers who were able to go to smoke-free restaurants, bars, and workplaces had lower blood pressure than nonsmokers in areas that had no smoke-free policies affecting public places.



## *8. Drink Less Alcohol*

Alcohol can raise your blood pressure, even if you're healthy. It's important to drink in moderation. According to a 2006 study, alcohol can raise your blood pressure by 1 mm Hg for each 10 grams of alcohol consumed. A standard drink contains 14 grams of alcohol.



### **What constitutes a standard drink?**

One 12-ounce beer, 5 ounces of wine, or 1.5 ounces of distilled spirits.

Moderate drinking is up to one drink a day for women and up to two drinks per day for men. A review found that although drinking more than 30 grams of alcohol may initially lower blood pressure, after 13 hours or more, systolic blood pressure increased by 3.7 mm HG and diastolic blood pressure increased by 2.4 mm Hg.





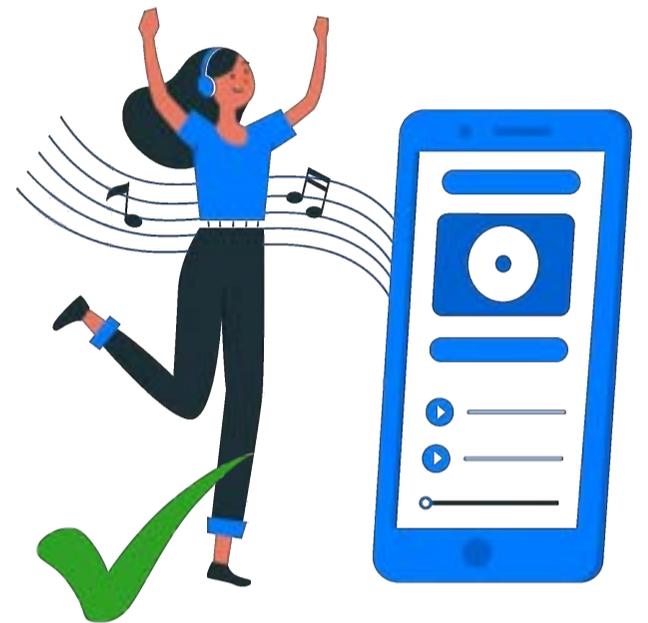
# Steps you can take to lower your **BLOOD PRESSURE**

## ***9. Reduce Excess Stress***

We live in stressful times. Workplace and family demands, national and international politics — they all contribute to stress. Finding ways to reduce your own stress is important for your health and your blood pressure.

There are lots of ways to successfully relieve stress, so find what works for you. Practice deep breathing, take a walk, read a book, or watch a comedy.

Listening to music daily has also been shown to reduce systolic blood pressure . A 20-year study showed that regular sauna use reduced death from heart-related events. And one small 2015 study has shown that acupuncture can lower both systolic and diastolic blood pressure.



## ***10. Try Meditation Or Yoga***

Mindfulness and meditation, including transcendental meditation, have long been used and studied — as methods to reduce stress. Yoga, which commonly involves breathing control, posture, and meditation techniques, can also be effective in reducing stress and blood pressure.



A 2013 review on yoga and blood pressure found an average blood pressure decrease of 3.62 mm Hg diastolic and 4.17 mm Hg systolic when compared with those who didn't exercise. Studies of yoga practices that included breath control, postures, and meditation were nearly twice as effective as yoga practices that didn't include all three of these elements.





# Steps you can take to lower your **BLOOD PRESSURE**

## *11. Cut Down On Your Caffeine*

Caffeine raises your blood pressure, but the effect is temporary. In a 2017 study, the systolic blood pressure of 18 participants was elevated for 2 hours after they drank 32 ounces of either a caffeinated drink or an energy drink. Blood pressure then dropped more quickly for the participants who drank a caffeinated drink. Some people may be more sensitive to caffeine than others. If you're caffeine-sensitive, you may want to cut back on your coffee consumption, or try decaffeinated coffee.



## *12. Lose Weight (if overweight)*

If you're overweight, losing 5 to 10 pounds can reduce your blood pressure & lower your risk of other potential medical problems. A review of several studies reports that weight loss diets reduced blood pressure by an average of 3.2 mm Hg diastolic and 4.5 mm Hg systolic.





# Steps you can take to lower your **BLOOD PRESSURE**

## *13. Take Your Prescription Medications*

If your blood pressure is very high or doesn't decrease after making these lifestyle changes, your doctor may recommend prescription drugs. They work and will improve your long term outcome, especially if you have other risk factors. However, it can take some time to find the right combination of medications. Talk with your doctor about possible medications and what might work best for you.



## *14. Ensure You Get Good Restful Sleep*

Your blood pressure typically dips down when you're sleeping. If you don't sleep well, it can affect your blood pressure. People who experience sleep deprivation, especially those who are middle-aged, have an increased risk of high blood pressure.

For some people, getting a good night's sleep isn't easy. These are some of the many ways to help you get restful sleep:

- Try setting a regular sleep schedule.
- Spend time relaxing before bedtime.
- Exercise during the day.
- Avoid daytime naps.
- Make your bedroom comfortable.



The 2010 national Sleep Heart Health Study found that regularly sleeping fewer than 7 hours a night and more than 9 hours a night was associated with an increased rate of high blood pressure. Regularly sleeping fewer than 5 hours a night was linked to a significant risk of high blood pressure long term.





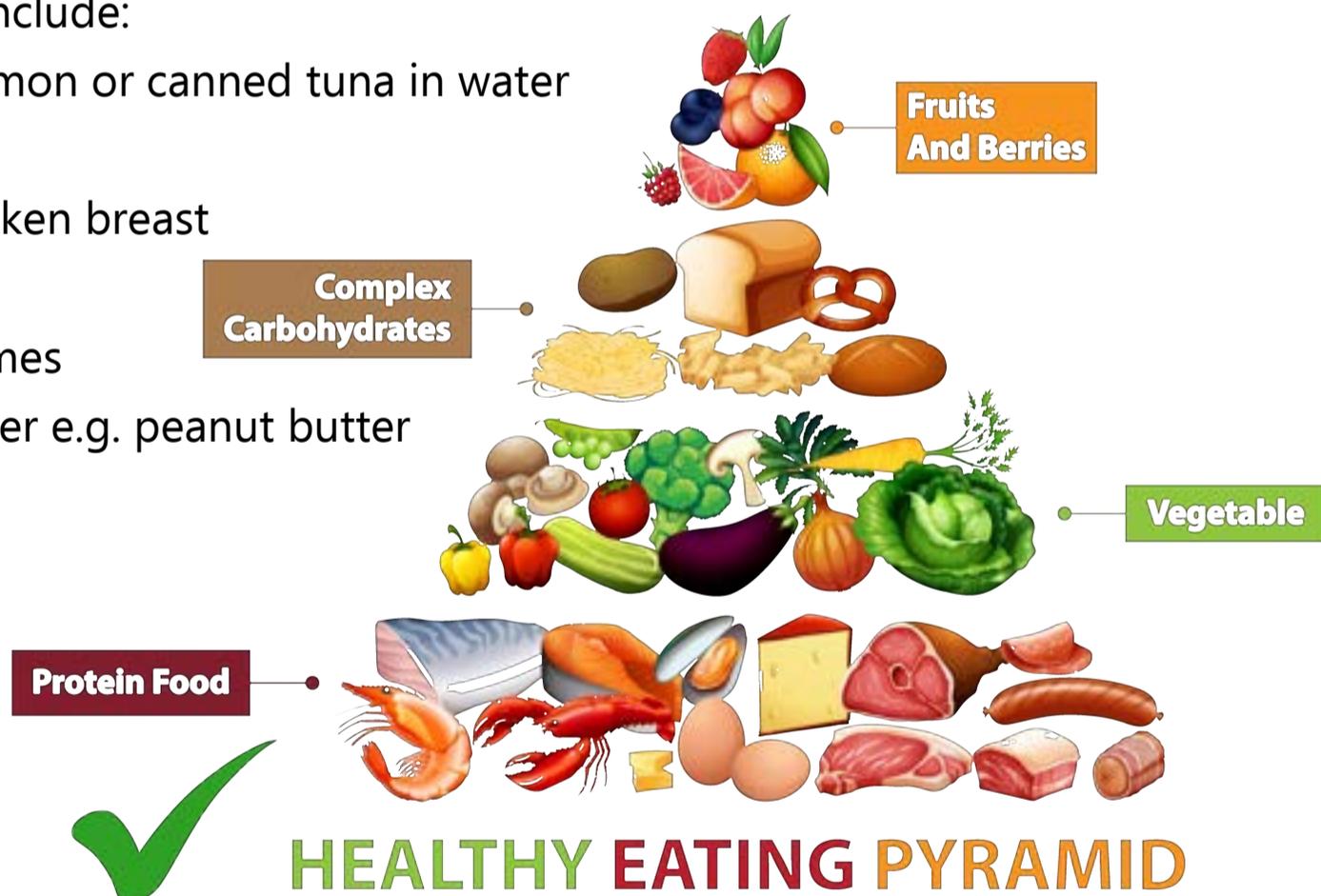
# Steps you can take to lower your **BLOOD PRESSURE**

## *15. Eat Healthy High-Protein Foods*

A long-term study concluded in 2014 found that people who ate more protein had a lower risk of high blood pressure. For those who ate an average of 100 grams of protein per day, there was a 40 percent lower risk of having high blood pressure than those on a low protein diet. Those who also added regular fiber into their diet saw up to a 60 percent reduction of risk. However, a high protein diet may not be for everyone. Those with kidney disease may need to use caution. It's best to talk with your doctor. It's fairly easy to consume 100 grams of protein daily on most types of diets.

High protein foods include:

- Fish, such as salmon or canned tuna in water
- Eggs
- Poultry, e.g. chicken breast
- Beef
- Beans and legumes
- Nuts or nut butter e.g. peanut butter
- Chickpeas
- Healthy cheeses



A 3.5-ounce serving of salmon can have as much as 22 grams of protein, while a 3.5-ounce serving of chicken breast might contain 30 grams of protein. With regard to vegetarian options, a half-cup serving of most types of beans contains 7 to 10 grams of protein. Two tablespoons of peanut butter would provide 8 grams.





# Steps you can take to lower your **BLOOD PRESSURE**

## *16. Blood Pressure Lowering Supplements*

These supplements are readily available and have demonstrated promise for lowering blood pressure. **NOTE: Always consult your doctor before taking any supplements to lower your blood pressure.**

### **Omega-3 polyunsaturated fatty acid**

Adding omega-3 polyunsaturated fatty acids or fish oil to your diet can have many benefits. A meta-analysis of fish oil and blood pressure found a mean blood pressure reduction in those with high blood pressure of 4.5 mm Hg systolic and 3.0 mm Hg diastolic.

### **Whey protein**

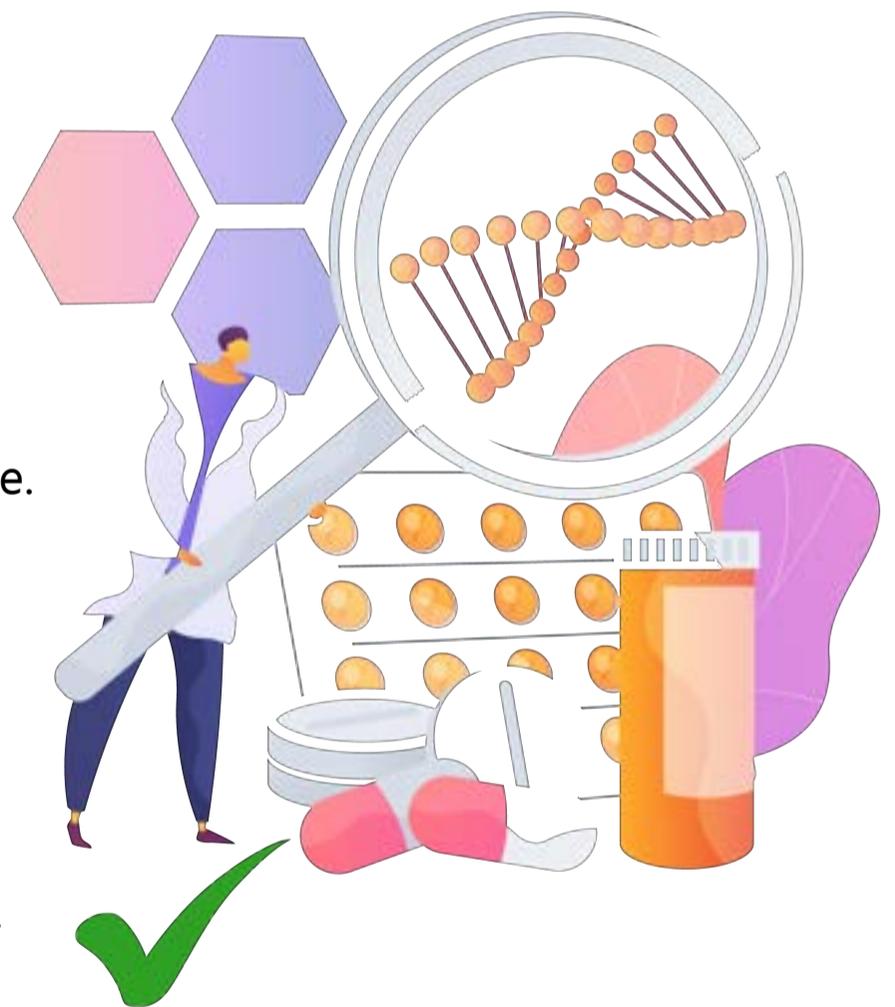
This protein complex derived from milk may have several health benefits in addition to possibly lowering blood pressure.

### **Magnesium**

Magnesium deficiency is related to higher blood pressure. A meta-analysis found a small reduction in blood pressure with magnesium supplementation.

### **Citrulline**

Oral L-citrulline is a precursor to L-arginine in the body, a building block of protein, which may lower blood pressure.





# Steps you can take to lower your **BLOOD PRESSURE**

## *17. Try Herbal Medicine*

Herbal medicines have long been used in many cultures to treat a variety of ailments.

Some herbs have even been shown to possibly lower blood pressure. However, more research is needed to identify the doses and components in the herbs that are most useful.

**Always check with your doctor or pharmacist before taking herbal supplements.** They may interfere with your prescription medications.

Here's a partial list of plants and herbs that are used by cultures throughout the world to lower blood pressure:

- Black bean (*Castanospermum australe*)
- Cat's claw (*Uncaria rhynchophylla*)
- Celery juice (*Apium graveolens*)
- Chinese hawthorn (*Crataegus pinnatifida*)
- Ginger root
- Giant dodder (*Cuscuta reflexa*)
- Indian plantago (blond psyllium)
- Maritime pine bark (*Pinus pinaster*)
- River lily (*Crinum glaucum*)
- Roselle (*Hibiscus sabdariffa*)
- Sesame oil (*Sesamum indicum*)
- Tomato extract (*Lycopersicon esculentum*)
- Tea (*Camellia sinensis*), especially green tea and oolong tea
- Umbrella tree bark (*Musanga cecropioides*)

