

Blood Pressure and Your Brain

High blood pressure (hypertension) can impact your brain as well as your heart. But these 5 steps can help you lower your blood pressure and protect your health.



Blood pressure and the heart-head connection

There's a reason why your blood pressure is taken every time you visit a doctor's office or hospital, regardless of the complaint that brought you there. High blood pressure is rightly known as "the silent killer." It often carries no symptoms or warning signs but can drastically increase your risk of having a heart attack or stroke. The higher the number, the harder your heart is having to work to pump blood around your body and the more likely it is that damage is being done to the heart muscle. Since all parts of your body rely on circulation, though, it's not just your heart that high blood pressure can impact. If blood doesn't flow easily, it can harm your arteries as well as vital organs such as the kidneys, eyes, and brain.

High blood pressure (or “hypertension”) has been shown to damage the tiny blood vessels in the parts of your brain responsible for cognition and memory, greatly increasing your risk of developing [Alzheimer’s disease](#) or another dementia. Being diagnosed with cardiovascular disease can also take an emotional toll, affecting your outlook and making you more susceptible to anxiety and depression. And just as blood pressure may have an impact your mood, the reverse can also be true:

Stress can increase the body’s production of hormones such as adrenaline and cortisol which in turn raises blood pressure.

[Self-medicating your mood with alcohol](#), nicotine, junk food, or recreational drugs can also elevate your blood pressure.

Even isolating yourself from family and friends—a common [symptom of depression](#) and anxiety—can push your blood pressure higher and damage your cardiovascular health.

High blood pressure and common mental health problems can often be attributed, at least in part, to the same unhealthy lifestyle factors, such as overwhelming, stress, poor diet, and a lack of exercise. Changing your lifestyle to address high blood pressure can help to improve your mental health—and vice versa.

Since new guidelines released in 2017 lowered the threshold for what should be considered high blood pressure, more and more of us find ourselves at risk. In fact, nearly half of adults in the United States have high blood pressure. While hypertension is very common, the good news is that it’s also very easy to rectify. In many cases, simple lifestyle changes can have a huge impact on your numbers and help protect both your heart and brain health.

Measuring blood pressure

Blood pressure is measured as millimeters of mercury (mm Hg)—a holdover from the traditional mercury gauges used by the medical industry—and has two components:

1. The higher number, or **systolic blood pressure**, is measured as your heart pumps blood into your arteries.
2. The lower number, or **diastolic blood pressure**, is measured as your heart relaxes between beats.

The systolic number is recorded first, with an ideal blood pressure reading being below

120/80 (expressed as “120 over 80”). The American Heart Association and American College of Cardiology define high blood pressure, or hypertension, as 130/80 or above (a systolic reading of at least 130 mm Hg or a diastolic reading of at least 80 mm Hg, or both).

Blood Pressure Categories



BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

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Monitoring your numbers

Your blood pressure fluctuates throughout the day, with lots of ups and downs. It will typically spike if you’re exercising or running late for a meeting, for example, and drop when you’re sleeping or relaxing with loved ones. Since blood pressure can vary so much, if you’ve been diagnosed with hypertension you may want to monitor your blood pressure at home.

Choose a home blood pressure monitor that wraps around your upper arm. They tend to be more accurate than those that work on your wrist or finger.

Don’t drink caffeine or smoke for at least 30 minutes before measuring your blood pressure. Sit quietly in a chair for a few minutes before measuring, then make sure your arm is supported and your elbow is at about heart level as you run the test.

Small changes can make a big difference. According to a Harvard study, having

hypertension can increase your risk of stroke by 220%. On the flip side, reducing your systolic blood pressure by 10 mm Hg can cut your risk of stroke by as much as 44%.

If you have low blood pressure ...

Low blood pressure (known as “hypotension”) is a much less common problem than hypertension, but it can still significantly impact blood flow to the brain and increase your risk of shock, stroke, heart attack, and kidney failure.

There is no specific reading that determines when blood pressure is too low. Rather, doctors rely on the presence of symptoms such as dizziness, fainting, blurred vision, and unsteadiness when standing to diagnose hypotension.

If you experience such symptoms, your doctor will look for underlying causes such as medication side effects, nutritional deficiencies, or a heart issue. Aside from a low-sodium diet, many of the same lifestyle changes used to treat high blood pressure can also be effective for managing low blood pressure.

Causes of high blood pressure

There’s no single cause of high blood pressure, but rather many contributing factors. Some are out of your control, such as age, race, gender, and family history—blood pressure tends to increase over the age of 70, affects more women than men over the age of 55, and is more common in African Americans than Caucasians, perhaps due to a genetic sensitivity to salt.

Many other risk factors for hypertension are within your control. Being overweight, eating a poor diet high in salt, smoking, drinking excessively, and not getting enough physical exercise can all impact your blood pressure.

There are also specific substances that can raise your blood pressure, such as:

Caffeine, including coffee, tea, soda, and energy drinks.

Prescription medications, including some of those [used to treat ADHD](#), birth control pills, corticosteroids, atypical antipsychotics, MAOIs and SNRIs used to [treat depression](#), and some cancer drugs.

Nonsteroidal anti-inflammatory drugs (NSAIDs), such as aspirin and ibuprofen (Motrin, Advil).

Cough and cold medications containing decongestant or NSAIDs.

Herbal supplements, such as ephedra and yohimbine.

Recreational drugs, such as cocaine and methamphetamine.

Licorice found in some candies and gum.

5 steps to lowering your blood pressure

The first line of treatment for high blood pressure is to make healthy lifestyle changes:

1. Get active
2. Eat a heart-healthy diet
3. Lose weight
4. Manage stress
5. Quit smoking

It's also important to take any antihypertensive medications your doctor recommends. There are many different types of medications available to control high blood pressure, so if one drug causes unpleasant side effects, your doctor can help you find a more suitable one.

Even if your doctor also prescribes you medication to help tackle hypertension, controlling your weight, quitting smoking, improving your diet, managing stress, and getting regular exercise are critical for keeping your heart in shape and managing your blood pressure over the long term.

If you've just been [diagnosed with cardiovascular disease or have suffered a serious health event](#) such as a stroke or heart attack, you may be experiencing a great deal of emotional upheaval. It's important to give yourself time to process the change in your health and be kind to yourself as you adjust to your new situation. But it's also important to know there are plenty of things you can do to come to terms with your diagnosis and regain control of your health.

Tips for making healthy lifestyle changes

If you suffer with high blood pressure, it's easy to feel intimidated by the changes you need to make in order to improve your health. While some people may only need to work on one or two areas to reduce their blood pressure—getting more exercise or quitting smoking, for example—most of us find that we need to improve our habits in at least 3 or 4 areas. But even if you smoke, drink heavily, are overweight, stressed out, sedentary, and eat nothing but junk and processed food, that doesn't mean you have to tackle everything all at once. Making lots of different lifestyle changes at the same time can be overwhelming. And when we feel overwhelmed, it's easy to opt for doing nothing rather than doing something.

Start gradually and make one or two changes to begin with. Once those changes have become habit, you can tackle one or two more, and so on. For example, you may decide to start by giving up smoking—and adopting some relaxation techniques to help with the stress of quitting—then move on to losing weight or improving your diet.

Lose the all or nothing thinking. Doing something, no matter how small, is always better than doing nothing. If you're eating healthy food during the week, for example, then resorting to takeouts at the weekends, your blood pressure and overall health will still be in better shape than if you were eating takeout every day.

Set specific goals. The more specific your goal, the easier it is to stick to. For example, instead of saying, "I'll eat healthier and get more exercise," try "I'll add two servings of vegetables to my evening meal and walk for 30 minutes in my lunch hour."

Make a plan. Be as specific in your plans as you are with your goals. If your goal is to exercise, when will you do it? If you can't find a 30-minute window in your day, plan for two 15-minute sessions instead. If your goal is to lose weight, make a plan to cope with cravings or manage your day-to-day stress without turning to food.

Change is a process. Changing your habits and lifestyle tends to happen in stages rather than all at once. Be patient with yourself and focus on your long-term goals, even on days when you feel deflated.

Prepare for relapse and setbacks. Nobody gets it right all the time. We all cheat on our diets every now and then, skip a workout, or backslide into unhealthy habits from time to time. Don't beat yourself up. Instead, turn the relapse into a rebound by learning from your mistake. Identify what derailed you from your lifestyle change and make a new plan.

Making changes if you have anxiety or depression

If your high blood pressure is co-occurring with a mental health problem such as depression or anxiety, it can be even tougher to find the energy and motivation to make the necessary lifestyle changes. Just thinking about exercising or preparing a healthy meal, for example, can seem overwhelming. But by focusing all your efforts on one tiny change at a time, you'll find that you're capable of more than you realized.

Take the first step. It could be as simple as going for a walk or downloading a meditation app or buying some nicotine patches. It can take time for lifestyle changes to register as a reduction in blood pressure—but sometimes they can improve your mood much sooner. Taking that first step is always the hardest.

Focus on small steps. It's easy to get overwhelmed by daily life when you're battling depression, anxiety, or another mood disorder. By taking small but positive steps each day, though, you'll find that your energy and outlook will gradually start to improve. Once you feel happier and more positive, you'll find it easier to forge ahead with lifestyle changes and see the results in both your blood pressure readings and your overall outlook and wellbeing.

Step 1: Get active

As with the other muscles in your body, your heart will get stronger when you exercise regularly. That means your heart will be able to pump blood around your body more efficiently. Regular aerobic activity can also help improve your cholesterol levels.

If you have been diagnosed with heart disease or another serious health problem, consult your doctor before starting an exercise program. Otherwise, to reap the heart and brain benefits of exercise, aim for:

At least 150 minutes (2.5 hours) of moderate-intensity aerobic activity per week, such as walking briskly. That's 30 minutes a day for five days a week, broken down into 10- or 15-minute bursts if that's easier. Moderate intensity means that you're able to speak in full sentences as you move, but not sing.

Or 75 minutes of vigorous-intensity aerobic exercise per week will deliver similar benefits if your fitness level allows you to work out harder. That means running for 15 minutes on five days each week instead of walking briskly for 30 minutes. Vigorous intensity means that you are too breathless to speak in full sentences as you move.

Making the exercise habit stick

Despite our best intentions, many of us struggle ditching our sedentary lifestyle. But there are steps you can take to make exercise less intimidating and more fun.

Start small and build momentum. If exercising for 30 minutes a day, 5 times a week sounds overwhelming, set a smaller goal and gradually build up as you gain self-confidence and momentum.

Reward yourself. Once it becomes a regular habit, exercise will reward you with more energy, better sleep, a greater sense of well-being, and improved cardiovascular health. When you're starting out, though, give yourself a simple reward for successfully completing a workout, such as having a hot bath or a favorite cup of coffee.

Choose activities you enjoy. You're more likely to stick with a workout you find pleasurable. If you hate running but like yoga or dancing, for example, don't force yourself onto the treadmill every day. Pick activities that fit your lifestyle, abilities, and taste.

See [How to Start Exercising and Stick to It](#) to learn more.

The effects on your blood pressure

30 minutes of moderate aerobic exercise, such as walking, for five days of the week can reduce your reading by 4 to 11 mm Hg.

Step 2: Eat a heart-healthy diet



The foods you eat can have a major impact on your blood pressure, not to mention your heart and brain health. Rather than focusing on specific foods, though, it's your pattern of eating that's most important. Instead of processed food, packaged meals, and sugary snacks, a heart-healthy diet is built around "real," natural food.

A number of different diet plans can help in controlling blood pressure, but they all feature a reduction in salt, alcohol, and [refined carbohydrates](#), and an increase in fruit and vegetables.

The DASH diet (Dietary Approaches to Stop Hypertension) is a specially designed eating plan to help you lower your blood pressure. When combined with a reduction in salt, the DASH diet can even be more effective at lowering blood pressure than medication. See "Get more help" below for resources.

The Mediterranean diet emphasizes eating lots of fresh fruit and vegetables, nuts, fish, and olive oil—and only modest amounts of meat and cheese. Following a [Mediterranean diet](#) limits your intake of refined breads, processed foods, and red meat—all factors that can help lower your blood pressure and prevent heart disease and stroke.

Limit your alcohol consumption. Drinking as little as one or two alcoholic beverages can cause a temporarily spike in your blood pressure. But drinking excessively over time can greatly increase your risk of hypertension, stroke, and heart disease. Alcohol consumption can also interfere with some blood pressure medications.

Increase your potassium intake from food. Potassium can help your body get rid of excess sodium and relax blood vessels, thus helping to lower blood pressure. Bananas, oranges, broccoli, and spinach are all high in potassium.

Reducing your salt intake

The American Heart Association recommends no more than a teaspoon of salt a day for adults. That may sound alarmingly small, but there are many painless ways to reduce your sodium intake.

Reduce canned and processed foods. Much of the salt you eat comes from canned or processed foods like soups, convenience meals, and fast food.

Cook more meals at home. [Preparing your own meals](#) gives you more control over your sodium intake. Use fresh ingredients whenever possible and cook without salt.

Use spices as alternatives to salt. Try fresh herbs like basil, thyme, or chives, or dried spices such as allspice, bay leaves, or cumin to flavor your meal without sodium.

Substitute reduced sodium versions. Choose your condiments and packaged foods carefully, looking for foods labeled sodium free, low sodium, or unsalted.

See [Heart-Healthy Diet Tips](#) to learn more.

The effects on your blood pressure

Adopting the DASH diet, eating plenty of fruit and vegetables, and reducing your consumption of unhealthy fats can lower your blood pressure by about 11 mm Hg.

Cutting back on sodium by about 1,000 mg per day can reduce your blood pressure by 5 to 6 mm Hg.

Increasing your potassium intake from food to 3,500-5,000 mg can knock 4 to 5 mm Hg off your reading.

Limiting your alcohol intake to two drinks per day if you're male, or one drink per day if you're female can lower your reading by about 4 mm Hg.

Step 3: Lose weight

Carrying extra weight forces your heart to work harder circulating blood around your body, raising your blood pressure. The more weight you're carrying, the greater the risk of hypertension. The good news is that shedding pounds can have a marked impact on blood pressure. Losing just 10 pounds could reduce your systolic blood pressure by as much as 10 mm Hg.

Of course, as anyone who's ever tried to lose weight knows, there's no easy fix for dropping pounds. Since our bodies are different and we respond differently to different foods, what works for one person may not necessarily work for you. To find the most effective weight loss method may take some time and experimentation with different foods and different diets.

It's also true that many of us don't always eat simply to satisfy our hunger. We turn to food when we're stressed, anxious, bored, or lonely, which can wreck any diet. Recognizing your [emotional eating](#) triggers and finding healthier ways to deal with stress can make all the difference to achieving a healthy weight.

See [How to Lose Weight and Keep It Off](#) to learn more.

The effects on your blood pressure

Varies greatly from person to person depending on factors such as your starting weight, but expect to lower your blood pressure by about 1 mm Hg for every 1-2 pounds lost.

Step 4: Manage stress

In today's hectic world, many of us find ourselves constantly feeling frazzled and overwhelmed. While not all stress is bad for you, persistent and chronic stress can take a toll on your blood pressure and heart health. In addition to exercise and diet, there are lots

of ways you can help combat stress and bring your body and mind back into balance.

Adopt a relaxation practice. [Practicing a relaxation technique](#), such as mindfulness meditation, progressive muscle relaxation, or deep breathing can elicit the relaxation response, a state of deep rest that puts the brakes on stress, slows your breathing and heart rate, and lowers your blood pressure.

Talk to a trusted friend. Nothing eases stress more effectively than chatting face-to-face with a friend or loved one. Make time to connect with the people closest to you.

Get enough sleep. A lack of sleep can exacerbate stress just as stress can make it harder to get a good night's sleep. You can break the cycle and ensure you get enough [quality sleep](#) at night by modifying your daytime habits and developing a peaceful bedtime routine.

See [Stress Management](#) to learn more.

The effects on your blood pressure

One study found that eight weeks of practicing relaxation techniques helped participants lower their blood pressure by more than 5 mm Hg and reduce their medication levels.

Step 5: Quit smoking

The nicotine in tobacco causes your body to release adrenaline that stimulates your nervous system and forces your heart to work harder to circulate blood. This increases your heart rate and blood pressure—not just while you're smoking, vaping, or chewing tobacco, but for some time afterwards as well. Nicotine can also interfere with certain blood pressure medications.

While quitting is never easy, once you stop your body will benefit from improved circulation almost immediately. To successfully kick the habit, you'll need to address both the addiction and the habits and routines that go along with it. But it can be done. With the right support and quit plan, any smoker can kick the addiction—even if you've tried and failed multiple times before.

See [How to Quit Smoking](#) to learn more.

The effects on your blood pressure

Kicking the habit can reduce your systolic blood pressure by an estimated 2 to 8 mm Hg.



Get more help

[Controlling Your Blood Pressure](#) - How to keep blood pressure in a healthy range by making lifestyle changes. (Harvard Medical School Special Health Report).

[Changes You Can Make to Manage High Blood Pressure](#) - Measuring blood pressure and making the changes that matter. (American Heart Association)

[Blood pressure and your brain](#) - How hypertension can affect the brain. (Harvard Men's Health Watch)

[DASH Eating Plan: Lower Your Blood Pressure](#) (PDF) - Reducing high blood pressure through diet. (National Heart, Lung and Blood Institute)

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