

Should you check your blood pressure at home?

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High blood pressure is something that's mentioned so often—and so casually—on television shows and in books, that it's easy to forget it is a disease that can lead to serious health issues. It affects almost half of all

adults in the United States. And that hasn't changed just because there's a pandemic.

In fact, some doctors worry that the number of cases of [high blood pressure](#) may have grown in the time of COVID-19. "The fallout from the pandemic is still not completely known," says Erica Spatz, MD, MHS, a Yale Medicine cardiologist. "But it has been a stressful time. Some people may be eating more and gaining weight, and some have a lot more stress, and we know those things can raise blood pressure."

For Dr. Spatz and others, a clear directive remains: When it comes to blood pressure, know your numbers, even if it means monitoring them at home.

What is high blood pressure?

High blood pressure, also known as hypertension, has been described as "a silent killer." Most of the time there are no symptoms. But if you have the condition, it means that inside your body, the blood flowing from your heart down through the arteries is exerting too much force on the arterial walls. This extra (high) pressure leads to tears in the walls of the arteries, where fat and cholesterol collect. That leads to the formation of plaque that narrows and blocks the vessels, leading to strokes, heart attacks, and other serious diseases—and even death. According to the Centers for Disease Control and Prevention (CDC), high blood pressure might also put people with COVID-19 at higher risk for severe illness.

This is why your primary care doctor checks your blood pressure during an annual physical, or more frequently if you're at risk for (or have) high blood pressure. But because of the pandemic, some people have avoided or delayed routine medical checkups, which translates into missed blood pressure checks.

And that is concerning to some doctors. "Maintaining a normal blood pressure is critical to good health," says Aldo Peixoto, MD, a Yale Medicine nephrologist. "It's what we call 'primary prevention.' We are trying to prevent the first heart attack, the first stroke, and the development of heart failure and kidney disease," he adds. Treating high blood pressure without knowing a patient's blood pressure numbers is like treating a patient with diabetes without tracking their blood sugar, he says.

Although doctors have been encouraging patients to self-monitor their blood pressure since before the pandemic, many are reluctant. As a nephrologist, Dr. Peixoto cares for people who have kidney disease, which is closely related to high blood pressure. Hypertension is the second most common cause of chronic kidney disease in the United States, and appropriate blood pressure control decreases the chances that kidney disease will progress to kidney failure.

"In a specialized practice like mine, pretty much everybody checks their blood pressure at home, unless they decline to, and there is a small group of patients who prefer not to self-monitor," Dr. Peixoto says.

On the other hand, people who don't see such a specialist—and aren't even seeing their primary care doctor—may not check their blood pressure at all, he points out.

How to check your blood pressure

Measuring your blood pressure is generally a simple process if you have a blood pressure monitor. It has an inflatable blood pressure cuff, which must first be wrapped around your arm—the bottom of the cuff should be placed directly above the bend of the elbow. When you use the machine to inflate it, the cuff will tighten gently while a gauge on it measures your blood pressure. Your reading can be affected by what you

eat or drink beforehand, how you sit, and even how nervous you are beforehand. Be sure to talk to your doctor if you have any questions or concerns related to the accuracy of your at-home blood pressure monitoring.

The CDC provides the following tips to ensure your reading is accurate:

- Avoid eating or drinking 30 minutes beforehand.
- Empty your bladder first.
- Before taking a reading, spend at least 5 minutes sitting in a comfortable chair with your back supported.
- Put both feet flat on the ground and uncross your legs.
- Rest the arm that you will wrap the cuff around on a table at chest height.
- Wrap the cuff against your skin, not over your clothes. Make sure it is snug but not too tight.
- Do not talk while measuring your blood pressure.
- Take at least two readings, one to two minutes apart.

How to interpret blood pressure readings

Blood pressure is measured using two numbers:

- Systolic is the pressure in your arteries when your heart beats (the highest pressure).
- Diastolic is the pressure in your arteries when your heart rests between beats (the lowest pressure).

A normal blood pressure reading would be written as 120 systolic over 80 diastolic, or "120/80 mmHg." Blood pressure readings that are consistently higher than that suggest the presence of hypertension and are a reason to make an appointment with a primary care provider.

"In a nutshell, if you check it twice a day for one week, that will give you a pretty good idea of what it is. Then you should repeat the process every so often to make sure it remains well-controlled," says Dr. Peixoto. "But you don't want to be a slave to the blood pressure machine or drive yourself crazy, which many people do."

You should ask your doctor how often you should check your pressure if you are in a high-risk category for developing high blood pressure, either because you're older (over the age of 50), you have a family history of high blood pressure or chronic kidney disease, or you've had prior high blood pressure readings in previous visits to the doctor, he adds. In the U.S., Black and Hispanic adults are at a higher risk of hypertension than people of any other racial background. Men are more likely than women to develop high blood pressure until age 64; the trend reverses at age 65, when women are at higher risk.

Even if the numbers you are tracking at home are normal, it's useful to bring them to your next doctor's appointment, Dr. Spatz says. "Just write them down—nothing fancy," she says. "This will be so much more valuable than the one-time blood pressure check in the office.

Sometimes you get in the office and maybe it's elevated because you rushed to get there, or you're nervous about being there, or for whatever reason it may be. So, the numbers you track at home are the best indication of whether or not you have high blood pressure, and it's something you can do on your own."

Self-monitoring options—and benefits

For those interested in at-home blood pressure monitoring, there are options. Some patients may check their blood pressure at a pharmacy (the CDC recommends finding a pharmacy that has a digital blood pressure measurement machine). But Drs. Spatz and Peixoto say you can get more accurate readings from a basic one that you can buy for \$40 to

\$60. "It's worth mentioning that these monitors can be used by a few different people in the same household," says Dr. Spatz. "So, a couple could purchase one cuff and each person could still maintain their own data tracking."

Measuring your blood pressure at home is associated with a variety of benefits, Dr. Peixoto says. "Not only does it inform us about how well-controlled your blood pressure is, but it's associated with better rates of control. Basically, we're seeing that as people get more engaged with their care, they're more likely to follow advice that is given regarding diet, exercise, weight loss, alcohol moderation, taking medications, and so on," he says.

Another advantage is the "sort of biofeedback" people get from monitoring their own pressure, Dr. Spatz adds. "A person might notice their blood pressure is high and say, "Oh gosh, I had such a stressful day.'" The doctor can then talk to the patient about managing stress levels—and stress can indeed drive blood pressure up in some people, she says—or remembering to take medication, since missed doses might be a factor in fluctuating readings.

Technology could improve accuracy of home monitoring

Some doctors are becoming more high-tech about gathering blood pressure data from patients. Yale Medicine and the Yale New Haven Health Heart & Vascular Center joined forces before the pandemic to develop and implement a digital hypertension program that uses Bluetooth cuffs that sync directly with the patient's electronic medical record through the patient portal MyChart, eliminating the need for patients to write the numbers down.

"We identified patients who had uncontrolled blood pressure and who we determined would benefit from more intense management," says Dr. Spatz. Doctors gave cuffs to patients seen in their cardiology clinic, as well as to postpartum women who had hypertension or preeclampsia during pregnancy before they left the hospital. This way they could follow them closely for six weeks after birth, which doctors say is still a vulnerable period where blood pressure could increase and lead to life-threatening complications.

While it may take some time before that service is available to more patients, Dr. Spatz hopes to see it become more common in the future, along with other possible innovations. She is also working with Dr. Peixoto, Yale Medicine cardiologist Harlan Krumholz, MD, and collaborators at Texas A&M University to develop a wrist-worn, cuff-less blood pressure monitoring system. The project is funded by the National Institutes of Health, and there is no timeline yet for when such a device will be available for patients.

Hypertension is treatable

When you know your numbers, blood pressure is one of the most treatable conditions there is, says Dr. Spatz. There are many prescription medications that can bring down high blood pressure. High blood pressure can lead to high cholesterol, so doctors may also prescribe statins, which are medications that lower LDL, or bad cholesterol, and are helpful in preventing heart attack and stroke.

But many people who are diagnosed with hypertension early can lower their blood pressure by making lifestyle modifications, such as eating healthier food, cutting back on alcohol and salt, exercising, and losing weight, if necessary. "Lowering salt has some modest effects, but eating healthier is most important," Dr. Spatz says. She recommends the DASH Diet, which has been shown in research studies to reduce high blood

pressure.

Stress management is important, too—and doctors say it's been a particular concern among their patients during the pandemic. "Everyone handles stress differently," Dr. Spatz says, explaining that some patients she's seen are able to maintain a [normal blood pressure](#) when they are stressed, while others will notice a spike after they've been through an especially difficult day or week. "It's really important to have this insight about yourself, and to know, if you have a blood pressure problem, that your health is important enough to make a change," she says.

Either way, it's important to monitor blood pressure, Dr. Peixoto says. While many people will find they are healthy and their [blood pressure](#) is stable, "If you're, say, 60 years old and you've avoided your doctors' appointments for more than a year because of the pandemic, now is the time to check your [blood pressure](#)," he says.

Provided by Yale University

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