

## Breathing exercises to lower your blood pressure

**A regular breathing practice may reduce blood pressure as much as taking medication.**

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The average person breathes in and out some 22,000 times each day, usually with little effort or thought. But here's something worth pondering: practicing slow, deep breathing for just a few minutes a day can lower blood pressure, potentially reducing the first number in a reading (systolic blood pressure) by up to 10 points.

"Anyone with stage 1 hypertension, which is defined as a systolic reading of 130 to 139, should know that breathing exercises are an effective way to lower blood pressure without medication," says Dr. Kimberly Parks, a cardiologist at Harvard-affiliated Massachusetts General Hospital. For people with elevated blood pressure (a systolic reading of 120 to 129), deep breathing could help them avoid high blood pressure in the future, she adds.

### Deep breathing benefits

For an adult at rest, a normal respiration rate ranges from 12 to 18 breaths per minute. Slow breathing is usually defined as anywhere from six to 10 breaths per minute and features a prolonged, slow exhalation period.

As you slowly inhale, your diaphragm (the strong sheet of muscle that separates your chest from your abdomen) contracts and pulls downward. Fully expanding your lungs stimulates the vagus nerve, which runs from the brain to the colon. This activates the "rest and digest" response of your nervous system. A larger volume of air in the lungs delivers extra oxygen to your body and brain, which increases the release of feel-good chemicals called endorphins and lowers levels of epinephrine, a stress hormone.

As you exhale, the diaphragm presses back upward against your lungs. As blood moves out of your lungs, your blood pressure rises slightly. To counteract that rise, your nervous system automatically lowers your heart rate and widens your blood vessels—another example of the "rest and digest" response. Prolonging your exhalation takes advantage of this reflex.

### What's the evidence?

A review article published Jan. 25, 2023, in *Frontiers in Physiology* looked at the effects of different breathing exercises in people with high blood pressure. Of the 20 studies included in the review, 17 documented declines in both systolic and diastolic blood pressure (diastolic is the second number in a reading). The studies varied widely in terms of how long, how often, and what type of breathing exercises the participants did, so it's hard to provide one specific prescription.

But it's likely that any type of breathing practice can be beneficial, says Dr. Parks. With her patients, she offers a menu of choices. "I tell them, 'Here are several ways you can start a breathing practice. Which one seems best for you?'" Following are her suggestions.

### **For inspiration, count breaths**

Try counting to five while breathing in through your nose, then exhaling for five counts. "Purse your lips, like you're blowing out candles on a birthday cake, which will help slow down your exhalation," says Dr. Parks. You can also try holding your breath after the inhalation period. One common pattern involves inhaling for four counts, holding for seven, and exhaling for eight, but you can vary the timing as you wish. Audio and visual prompts may be helpful. Look online for guided breathing exercises, or download one of the many free apps available for use on a smartphone or smart watch.

Some people are drawn to the ancient technique of *pranayama* (*prana* is Sanskrit for breath; *ayama* means stretching or lengthening). This practice, often done as a part of yoga, comes in many different forms. Harvard Health Publishing's website has video demonstrations; see [/alternate-nostril-breath](#) for one example.

### **Device-guided breathing**

For those who find meditation-focused practices too kooky, using a device might be more appealing, says Dr. Parks. Inspiratory muscle strength training (IMST) uses a small, handheld device that provides resistance as you inhale and exhale. You can buy the devices online for as little as \$20. In 2021, a well-designed study in the *Journal of the American Heart Association* showed that doing IMST for just 30 breaths per day, six days per week, reduced systolic blood pressure by an average of nine points after six weeks.

A more elaborate option is an FDA-cleared device called Resperate, sold online for \$350. It features a chest strap with a sensor to monitor your breathing pattern. You follow musical cues via headphones to gradually slow down your breathing.

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### **About the Author**

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Julie Corliss is the executive editor of the Harvard Heart Letter. Before working at Harvard, she was a medical writer and editor at HealthNews, a consumer newsletter affiliated with The New England Journal of Medicine.