

## Coronavirus and High Blood Pressure: What's the Link?

If you have high blood pressure, it's a good idea to take extra care to protect yourself during the coronavirus (COVID-19) outbreak. Early research shows that people with the condition may be more likely to:

- Get COVID-19
- Have worse symptoms
- Die from the infection

### High Blood Pressure Risks

Data from China and Italy -- countries hit early by the virus -- show **higher risk of COVID-19 infections** and complications in people with high blood pressure. In China, 25% to 50% of people who came to hospitals with coronavirus had high blood pressure or another health condition like cancer, diabetes, or lung disease. In Italy, more than 99% of people who've died from the virus had one of these conditions -- and 76% of them had high blood pressure.

People with high blood pressure also have a slightly **higher risk of mortality (death)**. Their risk is about 6% higher than the overall population.

### What's the Link?

A **weaker immune system** is one reason people with high blood pressure and other health problems are at higher risk for coronavirus. Long-term health conditions and aging, weaken your immune system so it is less able to fight off the virus. Nearly two-thirds of people over 60 have high blood pressure.

Another possibility is that the higher risk comes not from high blood pressure itself, but from certain **treatments** (drugs used to lower blood pressure) -- ACE inhibitors and angiotensin receptor blockers (ARBs). This is just a theory, since there's no research yet on what impact, if any, these medications might have on COVID-19.

The theory is based on the fact that ACE inhibitors and ARBs raise levels of an enzyme called ACE2 in your body. And to infect cells, the COVID-19 virus must attach itself to ACE2.

Until more research comes out, the American College of Cardiology and American Heart Association recommend that people keep taking high blood pressure medicine as prescribed. If not, it could raise risk for a heart attack or stroke.

### How Coronavirus Affects People With High Blood Pressure

While pneumonia is the most common complication of the virus, it can also damage the cardiovascular system. That's why people with high blood pressure, heart disease, and heart failure are at risk.

High blood pressure damages arteries and reduces the flow of blood to your heart. That means your heart has to work harder to pump enough blood. Over time, this extra work can weaken your heart to the point where it can't pump as much oxygen-rich blood to your body.

Coronavirus can also **damage the heart directly**, which can be especially risky if your heart is already weakened by the effects of high blood pressure. The virus may cause inflammation of the heart muscle called myocarditis, which makes it harder for the heart to pump.

If you also have plaque build-up in your arteries, the virus may make those plaques more likely to break apart and cause a heart attack. Past studies have shown that people with heart disease who get a respiratory illness like the flu or earlier types of coronavirus are at higher risk for a heart attack.