

Masks can significantly reduce the spread of coronavirus

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“We know that wearing a mask protects people from us. Does that protection work in reverse? Am I protected from others if I wear a mask?”

Several readers have written in some version of this question. **We know from many studies that [masks can significantly reduce the spread of coronavirus if the wearer is contagious](#), which is why the Centers for Disease Control and Prevention urged face coverings** in early April. Until very recently, we've had little evidence to support the theory that a mask would also protect the wearer.

But a [recent study gathered what we've learned during the pandemic](#) both in real cases and lab experiments, and found that yes, **our own masks do seem to protect us** to some extent. At the least, it suggests that if we are exposed to the coronavirus while wearing a mask, our illness could be [less severe or even asymptomatic](#) because masks reduce the number of virus particles we breathe in.

In a [separate study](#), researchers in China tested the theory on hamsters by putting some of them behind surgical mask partitions and exposing them to the virus. The ones that were behind the masks were less likely to contract the virus, and the ones that did also had milder infections.

If you'd like some human-based evidence for the benefits of masks, take the tale of two cruise ships. On [the Diamond Princess](#), where masks weren't distributed as the virus spread, around 20 percent of the infected passengers were asymptomatic. On another cruise ship, where an outbreak hit in mid-March and surgical masks were given to all passengers, 81 percent were asymptomatic.

The amount of viral particles someone is exposed to is called the viral dose. Scientists have known for decades that exposure to a small amount of any given virus is easier for our immune systems to overcome than exposure to a large amount. It's hard to research exactly how high a dose of the coronavirus it takes to make someone severely ill, since intentionally exposing humans to it would be unethical. But wearing a mask appears to be a good way to limit our own virus exposure.

Monica Gandhi, an infectious disease expert at the University of California at San Francisco and the lead author on the study, [told the New York Times](#) that different types of masks “block virus to a different degree, but they all block the virus from getting in.” If the virus does get through, the resulting infection could be milder, she said.
