



Be a Hero: Wear a Mask

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Wearing a mask is one of the most important steps we can take to reopen our country safely. It is not the only step – social distancing, frequent handwashing, and increasing diagnostic testing capacity are also critical – but it is an easy way to provide significant protection as the economy starts to ramp up. The health of one person affects the health of the entire community.

The initial guidance from public health authorities on the novel coronavirus did not emphasize mask use for the general public. ‘It’s a cultural thing’, we thought of widespread mask wearing in Asia. ‘It won’t make a difference’, we suggested, not knowing just how difficult this virus is to contain, given the high prevalence of asymptomatic and pre-symptomatic spreaders. ‘We need to save masks for the healthcare workforce.’ Yes, but cloth masks are almost as effective at reducing community spread and don’t draw from the medical supply chain.

The country is reopening, but you aren’t much safer from COVID-19 this summer than you were in the spring. Non-pharmaceutical interventions – social distancing, handwashing, and mask wearing – are your best protection against contracting COVID-19. There are many public settings where social distancing is not possible, and handwashing does not protect us from aerosol transmission. There is a vast swath of public life where we cannot socially distance and wearing a face mask is the best protection against further spread of the disease.

Let’s reset to explain what we know about how and why masks protect against disease spread. There are two types of masks with two different primary targets: preventing exit (egress) and entrance (ingress) of viral particles. Let’s call them exit and entrance masks.

Exit masks are far more common among the general public. Preventing the exit of viral particles - COVID-19 transmission from you to others – is pretty easy.

[You can think of it like stopping water from coming out of a hose.](#) When you turn off the faucet and stop the water at the source, you have stopped most of the water from coming out (a few drops might escape). Similarly, an exit mask stops most viral particles from leaving our mouths. [Research shows that even a basic mask, such as a surgical mask or a home-sewn cloth mask, can reduce the emission of viral particles from our mouths by up to 99%. The effect increases with additional layers, filters, and other protective measures.](#)

Exit masks provide modest protection to the wearer. There is moderate filtration of incoming air, and it is a good reminder not to touch your face. The real benefit though, is for everyone else around you.



Entrance masks are quite different. The best-known entrance mask is the N95 mask, which is so named because it captures 95% of challenge aerosol in studies. Unlike exit masks, N95 and other highly protective entrance masks are chiefly meant for the healthcare workforce and remain in limited supply.

There is a growing body of scientific research about face masks. [A recent study in Health Affairs examined the effect of state government mandates for face masks on COVID-19 growth rates.](#) Their estimates indicated that, between March 31 and May 22, the orders in 15 states and Washington, DC may have reduced COVID-19 cases by 230,000 – 450,000. [A study in The Royal Society performed a similar analysis at the national level, with similar findings.](#) Mask use correlated with lower rates of COVID-19 spread and associated deaths. [And yet another study notes that in countries with cultural norms or government policies supporting public mask-wearing, per capita coronavirus mortality increased on average by just 8% each week compared with 54% each week in countries not adopting widespread mask use.](#)

The use of masks should not be conflated with making a political statement. Their use is a matter of straightforward public health protection. A person who chooses not to wear a seatbelt or don a motorcycle helmet does so at their peril. A person who chooses not to wear a mask puts others at risk, plain and simple. People can be infected with COVID-19 and can spread it without showing any symptoms. This is one of the biggest challenges for COVID-19, and one of the reasons why masks are so important.

The U.S. government can do a lot more to help. [At the present time, only 20 states have put in place a mandatory requirement for mask use, similar to what California recently enacted.](#) Modeling the right behavior would be an obvious first step. And putting forth concrete actions to support mask use should be initiated now. The federal government, in conjunction with state and local governments, needs to provide standards for appropriate masks, and educate the public on proper use of masks. We have enough smallpox vaccine in the Strategic National Stockpile for every person in America; we should be able to ensure that all Americans have effective face masks.

Looking ahead, the U.S. government should invest in research and development of improved face masks. Imagine a face mask with the protective capacity of the N95 mask that could be washed and reused – that would be a gamechanger. The government should provide financial support for the production and distribution of masks to Americans that are having trouble obtaining them. Finally, the U.S. government should ensure that we have sufficient and rapid manufacturing capacity for masks onshore. COVID-19 has revealed the dangers of relying on foreign supply chains for essential medical equipment. We need increased physical productive capacity and improved manufacturing technology.

Until long term solutions are put in place, short term solutions will have to do. Practice social distancing. Be a hero and wear a mask.