

Double-masking can increase your protection. But not all masks should be layered

17 February 2021, by Grace Dickinson



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Quicker and easier spreading variants of the coronavirus are making some wonder if they should upgrade their mask, or double up with ones they already own. In a question posed to Curious Philly,—our platform where readers ask us questions and reporters hunt down the answers—a reader asked:

"What is better? An N95 mask or two blue [surgical masks](#)?"

We consulted local health experts, as well as the latest masking guidance from the Centers for Disease Control and Prevention, to lay out the most effective masking strategies.

For starters, N95 masks are considered the gold standard, but they're not currently recommended for the general public. Unlike cloth and surgical masks, every N95 must be tested rigorously by the National Institute for Occupational Safety and Health (NIOSH), a branch of the CDC. To get a NIOSH stamp of approval, each mask must filter out a minimum of 95% of very small particles in the

air.

But because supply remains limited, the CDC says N95s should be reserved for healthcare workers. Unless you're an essential worker, you're advised to seek out masks with two or more layers of washable, breathable, tightly woven fabric, like cotton, or three-ply surgical masks. When worn correctly, these will help prevent you from getting and spreading COVID-19.

"You probably don't need to achieve that 95% because your exposure to the virus isn't likely to be at the sustained amount that, for example, a dental worker may encounter," says Neal Goldstein, an assistant research professor of epidemiology and biostatistics at Drexel University. "But regardless of the type of mask you're wearing, you still have to follow the basic health guidelines—social distancing, proper hand hygiene, avoiding crowds."

However, if you're interested in upgrading your mask, there are more readily available alternatives to N95 masks, like the KN95 mask. It's the standard in China, and while KN95 masks aren't tested by NIOSH, they're rated to filter out 95 percent of airborne particles. "As long as you can verify that your mask is an actual KN95, and it fits properly, it will protect you better than a standard cloth mask or surgical, medical-grade mask," says Craig Shapiro, a pediatric infectious diseases specialist at Nemours/Alfred I. duPont Hospital for Children.

As Shapiro points out, verifying that your mask is actually a KN95 is important. In the U.S., 60 percent of KN95 masks are counterfeit, according to the CDC. Before making a purchase, consult the FDA's list of approved masks and the CDC's guidance on KN95s.

It doesn't matter if you're wearing one, two, or six

masks—if the mask(s) doesn't fit properly, you lose the benefit. "I would rather wear a well-fitting cloth mask than a poor fitting surgical mask," says Shapiro.

However, a verified KN95 or three-ply surgical mask that fits snug to your face is going to be a step up from most cloth masks. "Even your best cloth masks probably aren't going to offer the same protection as a medical grade mask," says Shapiro.

How do you know if you've got a good fit? You should feel warm air come through the front of the mask and may be able to see the mask material move in and out with each breath, says the CDC. There also shouldn't be any gaps. Even the smallest gaps can leak respiratory droplets in the air to your nose and mouth.

You can also try securing a loose surgical mask using the CDC-recommended "Knot and Tuck" method. It entails tying a knot on the ear loops where they join the edge of the mask, and folding and tucking any excess material under the mask's edges. In laboratory testing, this method was shown to substantially improve protection against exposure and transmission of the virus. Here's a video on how to do the Knot and Tuck:

Surgical and KN95 masks aren't always cheap, and because they're disposable, the price can quickly add up. If opting for a cloth mask, the CDC recommends looking for ones with multiple layers of fabric and a nose wire, a metal strip along the top of the mask. The nose wire can be bent around your nose to create a better fit and prevent air leaks.

The CDC recently updated its mask guidance to include advice on double-masking. In laboratory testing, wearing a disposable mask underneath a cloth mask was shown to substantially improve protection against exposure and transmission of the virus. This can be an effective way to seal a looser fitting surgical mask to your face.

Again, the fit here is crucial. If adding a surgical mask underneath your cloth mask creates gaps, this defeats the purpose. Likewise, if double-masking is uncomfortable and causing you to

constantly readjust or touch your face, you're better off wearing just one.

"Unless the masks are secure, you may actually be putting yourself at greater risk," says Shapiro.

According to the CDC, the outer cloth mask should push the edges of the surgical mask against your face. If this affects your ability to breathe, again, stick to a single, well-fitting surgical or multi-layer cloth mask.

"If you're able to double-mask in a way that's safe and it doesn't impact your ability to breathe, then I'd absolutely support that, but I don't want anyone to feel like they must wear two masks at the expense of their own health," says Shapiro.

The CDC's recently released research on double-masking only looked at one type of surgical mask and one type of cloth mask, among the many brands on the market. And the experiments didn't include any other combinations of masks, such as cloth over cloth, surgical mask over surgical mask, or surgical procedure mask over cloth. While the findings showed that wearing a cloth mask over a surgical mask offers more protection against the [coronavirus](#), experts say the key takeaways: You need a good fit to maximize protection, and there are multiple ways to achieve that.

It's important to note that not every type of mask can be layered effectively.

- Don't double surgical masks. As for the original Curious Philly question, "Are two surgical masks better than an N95?", the answer is a hard and fast "no." Because of their loose-fitting nature, surgical masks should never be layered. Adding a second one may actually make the fit worse.
- "Don't layer a KN95 mask with any other mask, says the CDC. And this likely applies to N95 masks, too. "The concern is that it would restrict airflow too much," says Goldstein. "If the mask is overly restrictive, it may cause skin irritation or develop air leaks on the side. Overly restricting your airflow may have consequences on the effectiveness of the mask."

The CDC hasn't yet released guidance on wearing two cloth masks or the efficacy of doing so.

Masks are critical for preventing the spread of COVID-19. And the good news is that research is uncovering ways to improve mask usage for better protection. This, however, doesn't negate the importance of other protective measures, like social distancing. These are now as essential as ever amidst more transmissible variants.

"I don't want someone to think, 'I put on two [masks](#), and now I'm golden—I can safely hang out with a group of friends'," says Goldstein.

And again, Goldstein emphasizes that what matters most is mask fit. "At the end of the day, it's the proper fitting of the mask that's going to make me more comfortable."

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APA citation: Double-masking can increase your protection. But not all masks should be layered (2021, February 17) retrieved 21 June 2022 from <https://medicalxpress.com/news/2021-02-double-masking-masks-layered.html>

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