

LAYER UP

The WHO's guide to making more effective reusable masks

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FROM OUR OBSESSION

Being Human

We've never been as connected, or as isolated.

Seven months into the pandemic, cloth masks are now [fashion statements](#). But when you're building up your wardrobe, it's worth considering not just your mask's pattern, but its protective power.

Fabric masks slow the spread of viruses from the wearer to others. But their efficacy depends on how they're made. Many cloth masks you can buy today are made of simple cotton, but the World Health Organization [recommends](#) that non-medical fabric masks have three layers of fabric, each made of a different material to serve a different protective role.

A number of household items can be combined to make a more effective mask. Here's how to layer up, according to the WHO's guidelines, issued in early June:

Layer 1: Stay comfy, trap droplets

The layer of the mask that covers the nose and mouth should be cotton, or a soft material that absorbs water, [recommends](#) Larry Chu, an anesthesiologist at Stanford University who co-authored [a paper](#) cited by the WHO's guidelines.

Cotton is soft, so you'll be happier wearing your mask consistently in public. It should also trap any droplets coming from your nose and mouth. And, because it's woven together, it forms tiny peaks and valleys that can thwart infectious pathogens that may try to work their way out, Christopher Zangmeister, a researcher at the National Institute of Standards and Technology, [told NPR](#).

Layer 2: Increase filtration

The middle layer should be some sort of material that increases filtration, like the polypropylene used in reusable grocery bags. Synthetic, non-woven materials like this are smoother and less porous than pure cotton.

Fewer pores means extra protection against any droplets coming from the wearer's nose or mouth; a regulatory group called the French Standardization Association recommends cloth masks should prevent a minimum of 70% of droplet transmission. Some mask designs include a pocket to insert a sheet of this kind of material between the internal and external layers; thicker face tissues could go here, too.

Layer 3: Resist water, stay breathable

The outermost layer should be made out of some kind of polyester-cotton blend or nylon, like the material used in exercise or rain

gear. [Pantyhose will do in a pinch](#) (and let's face it: you don't need them now anyway).

This outer layer can repel some moisture or droplets coming in from the outside, but its most important job is to keep the wearer's droplets *inside* to protect others. That external layer shouldn't come at the expense of breathability: Wearers should be able to blow out a candle about 12 in (30 cm) away, Amy Price, a co-author of the paper with Chu, [said in a press release](#). Waxy coatings, which may make the mask more water resistant from the outside, tend to make masks so impenetrable that they aren't breathable.

But a cotton-only mask is still far better than no mask. Try to make sure it's double or quadrupled up in order to maximize filtration, or just wear two at a time.

Regardless of how your reusable mask is made, you can keep it in good condition by treating it like your underwear. The WHO recommends you wash cloth masks in the laundry or with boiled water after every use, discard them if they start to fall apart, and don't share them with others.