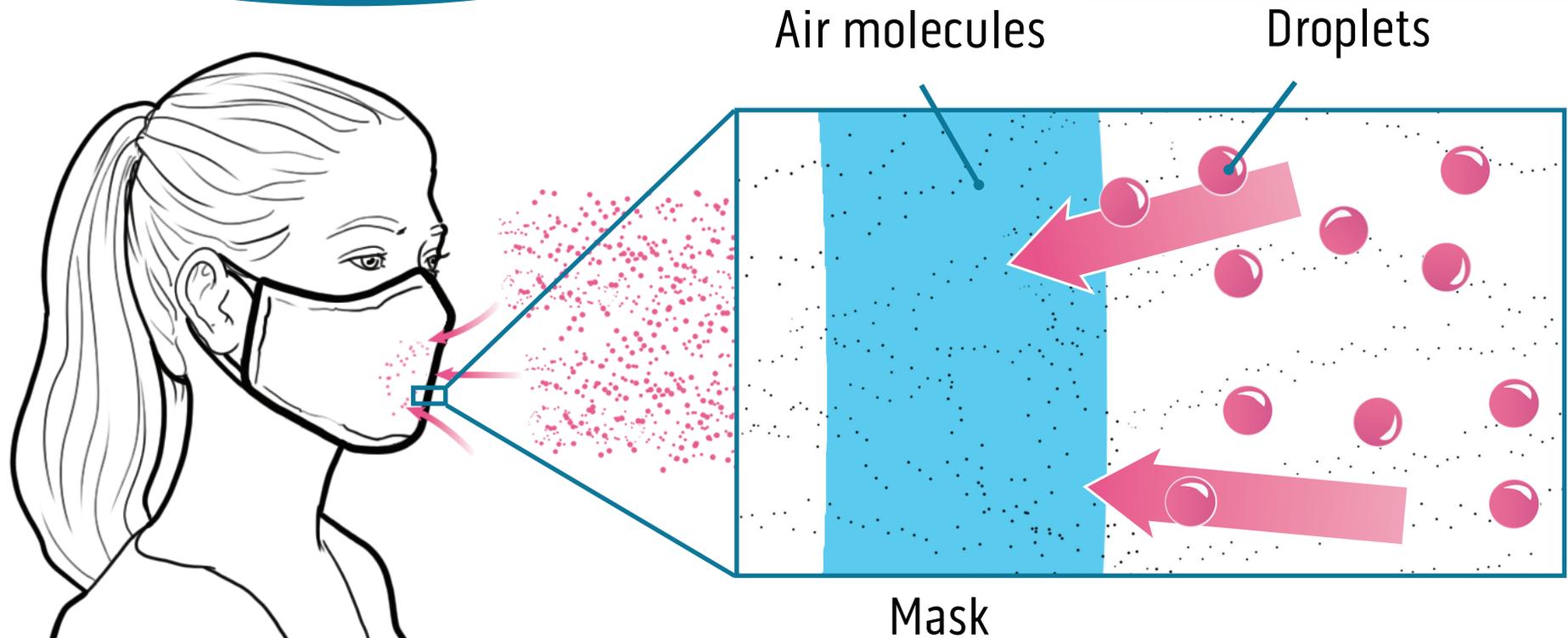


Learn more about **HOW MASKS WORK**

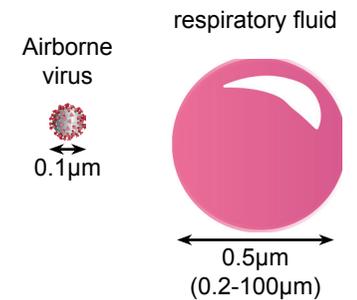
Masks filter droplets but not air particles

Did you know ??

While viral particles are small, they don't exist on their own. They are contained in fluid, like water or mucus, in droplets. And one droplet can contain multiple viral particles.



Air molecules like carbon dioxide (0.00065 micron) and oxygen (0.0005 micron) are much smaller than the tiny droplets (1 micron). This is why air molecules pass through masks much more easily.



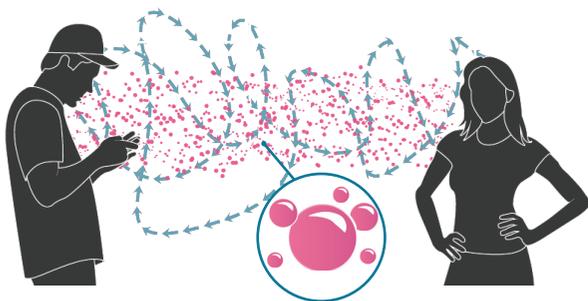
Learn more about **HOW MASKS WORK**

Why do you wear a mask?

Did you know ??

A mask uses small holes to keep out bigger objects. The holes are small enough to allow air molecules through. Most of the microscopic droplets that contain viral particles are too large to pass through.

COVID-19 is spread by droplets:

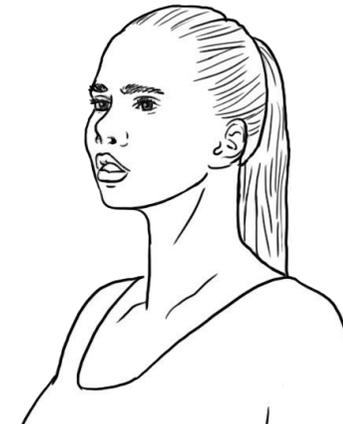


Like the flu, COVID-19 viral particles are contained in microscopic wet droplets. The droplets float around on air currents and eventually fall onto surfaces.

A good mask does both:



A mask keeps **your germs** contained while still allowing you to **exhale** normally.

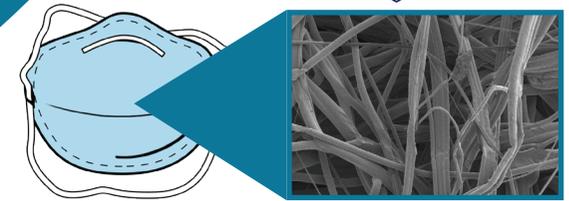


It also keeps **other people's germs** from getting into your mouth and nose, while letting you **inhale** normally.



Learn more about **HOW MASKS WORK**

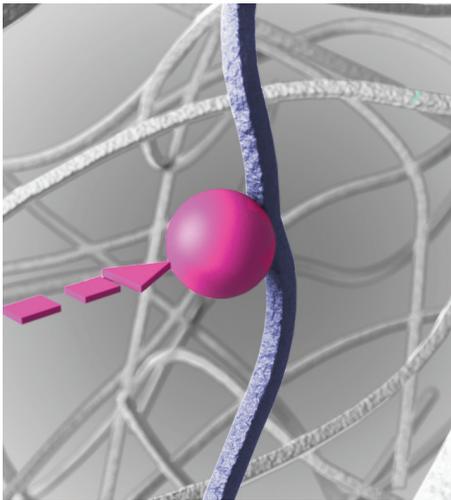
Fibers are the key to protection



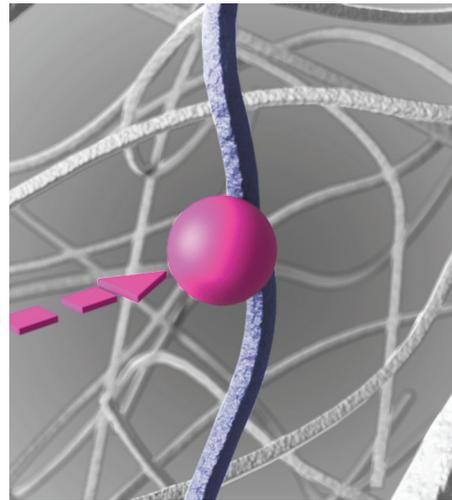
Credit: Stanford University, Cui et al.

The material of a mask is made up of fibers. Different masks use different types of fibers. But many masks, like N95 respirators and procedure masks, are made of materials that are naturally sticky to droplets. Though the droplets get caught, the smaller molecules of the gasses in the air you breathe do not stick to the fibers.

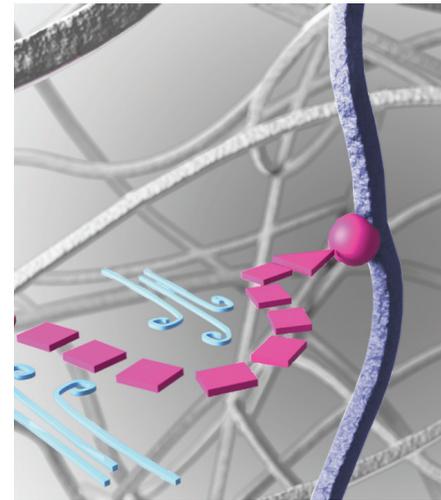
The four ways virus-carrying droplets get stuck to fibers:



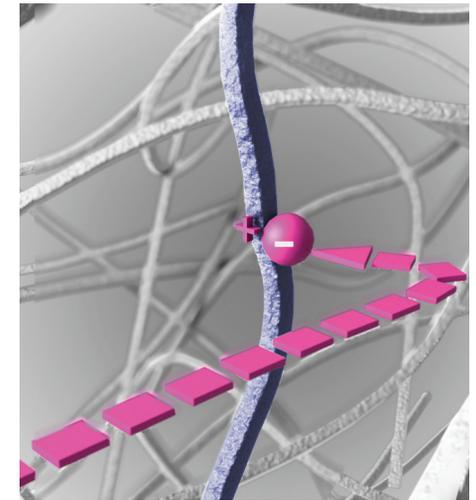
Some droplets have head-on collisions with the fibers. The droplet smashes right into a fiber and sticks to it.



Some droplets graze the fibers while passing by and get stuck to them.



Even if the droplets avoid an initial collision, currents of air swirl the droplets around until most of them end up running into a fiber.

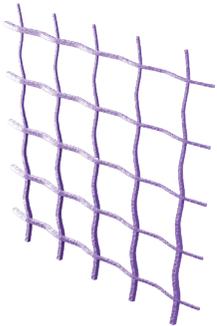


Some masks, like procedure masks and N95s, are made of fibers that carry a static electricity charge which pulls the droplets towards the fibers.

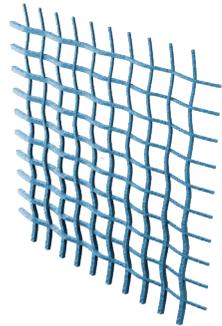
Learn more about HOW MASKS WORK

Mask layers

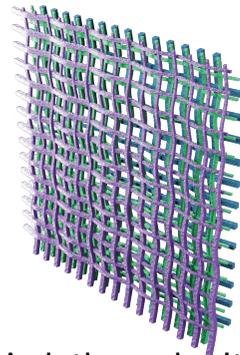
Part of how effective a mask is has to do with how close the fibers are together and how many layers of fibers you have. The more tightly they are packed and the more layers there are, the more chances the droplets have to get stuck.



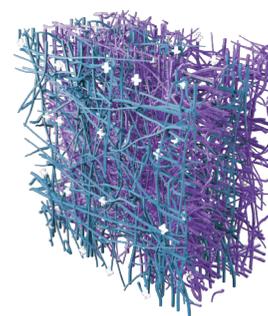
Bandanas and other very thin or nearly see through face coverings have very few fibers. It might filter some larger droplets but a lot of smaller droplets get through.



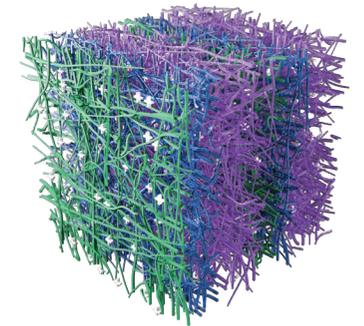
A cloth mask is better because it is thicker, has more tightly woven layers, and offers more protection.



A cloth mask with multiple woven layers is better than a regular cloth mask because it is thicker and offers more protection.



Procedure masks have multiple non-woven layers that make a tricky maze for droplets to get through. And the static charge of the fibers causes droplets to stick to them.



KF94, N95, and KN95 have a dense mesh work of static-charged fibers that filter in both directions and allow you to breathe. Check the [NIOSH website list](#) of up-to-date respirators.

Learn more about **HOW MASKS WORK**

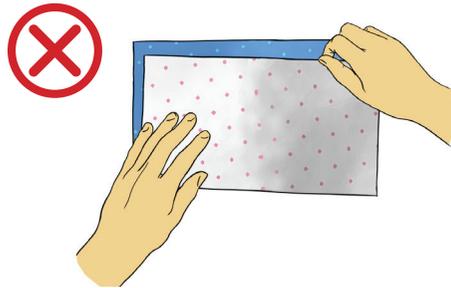
Look for the balance of breathable and filtration

IMPORTANT

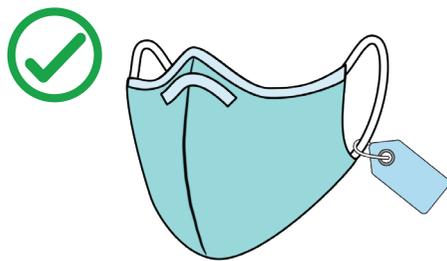
Dense fabrics are better than ones that you can see through. Multiple layers are more effective than just one, but don't use so many layers that you can't breathe through them.

If it's too many layers:

air will not be able to get through the mask and you can't breathe.



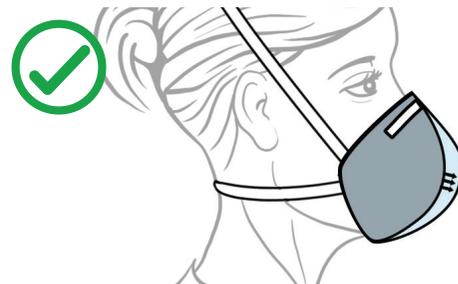
If you make the mask too many layers, it will be too hard to breathe through.



A mask you buy at the store will not have too many layers.



If you are layering masks, never layer a mask under a respirator or the respirator will not form a seal.



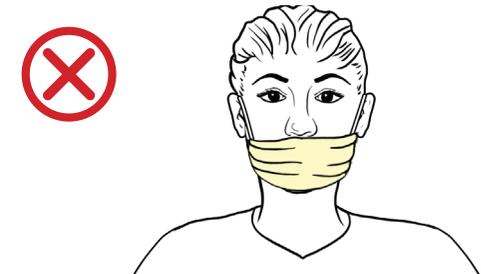
It's okay if your mask dents in when inhaling and balloons out when exhaling.

It is not a good fit if:

air is not going through or being filtered by the mask.



If the mask is too big you will have big gaps beside your nose or cheeks where air will come in.



If you wear the mask under your nose, air will only go through your nose.