

# Six things you need to know about the science behind wearing a homemade mask

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Credit: CC0 Public Domain

There's a good reason you may be having trouble figuring out whether to wear a face mask when you go out, according to University of Alberta infectious disease specialist Lynora Saxinger.

The scientific evidence supporting masks for community use is thin and this has led to some confusing public health messages, she said.

"There's not strong evidence that wearing a mask is helpful outside health-care settings," said Saxinger, who is also medical lead of the Antimicrobial Stewardship Program for Northern Alberta with Alberta Health Services and co-chair of AHS' Scientific Advisory Group on COVID-19.

"This uncertain body of evidence is being looked at and contextualized by different pressures in different places," she said.

"That has resulted in really varied strengths of recommendations, from 'we don't think masks really help' to 'if you want to wear a mask you should use it when you can't maintain social distancing' all the way through to places that are mandating that people must wear masks.

"I think a member of the public would be wondering what the heck is going on here."

Folio asked Saxinger to sift through the evidence and provide her best advice on what it all means.

## **The masking advice changes depending on where you live**

The scientific argument over masks got heated in early April, when the U.S. Centers for Disease Control and Prevention (CDC) stated that Americans should wear a cloth face covering whenever they leave home.

Meanwhile, the World Health Organization remained neutral on masks, pointing out the risks and lack of evidence associated with homemade

cloth masks, and making it clear that medical masks should be reserved for health-care professionals.

Alberta Health Services and the Public Health Agency of Canada currently advise people to wear a cloth mask when social distancing is not possible.

Saxinger said the differences in public health advisories are partly due to public pressure in different places.

"If we had come in really early with a strong requirement for community cloth masks based on the uncertain body of evidence that actually exists, we might have seen tremendous pushback," she said.

"With a more restrained approach, we have people asking us, "Why don't you tell us to wear masks more?" she said. "So there are a lot of considerations for what people are demanding and pushing for and will accept."

She pointed out that in some parts of the world masking is routinely done to suppress infectious epidemics.

"But even there, it's unclear how much the masking adds to the other community measures such as distancing and the shutdowns," she said. "There are a lot of questions to be answered."

## **A mask may protect others, but likely not you**

Saxinger said the evidence suggests that a mask can protect others when you are sick, but not likely the other way around.

"It can protect others from your droplets, so it's a formalized version of covering your cough all the time," Saxinger said.

She said this evidence means that masking orders make more sense in areas where an outbreak is developing and people live in close quarters.

"The idea is that people who are infected but not yet symptomatic enough to realize it would be wearing a mask to possibly reduce them transmitting infection to others."

## **The best designs fit close to the face, with layers of fabric**

Saxinger said while more research is needed, preliminary studies show wide variability in the capability of different types of cloth to filter aerial droplets that can carry the virus.

"The current rough guide, if you decide to use a mask, is to choose a material you can tolerate wearing that has at least a few different layers, because that improves the filtering," she said.

"And it should fit closely against your face so you're not breathing out the top and sides of the mask," she added. "It should be close enough to your face that most of your airflow is actually going through the mask."

## **Don't touch your mask except to put it on and off**

Saxinger said wearing a mask can actually increase your own risk of exposure because of the possibility of mishandling a contaminated mask.

"You should only handle it to remove it and only touch the sides and the back when you do," she said. "After you remove it you need to dispose of it safely, so put it in a bag until you can put it in the laundry."

"Masks need to be washed daily."

Saxinger advised washing your hands both before and after handling the mask.

## **We've got a lot more to learn when it comes to masks**

Saxinger hopes more research will be done on the filtering qualities of different mask materials.

"For example, some weaves might be better at not releasing virus when touched again—like it really traps the virus in there and then it's less risky to handle taking off," she said. "That would be great."

"Also, expect more information about mask design as this is an incredibly important topic of study right now."

Saxinger said she supports the World Health Organization's request of countries where masking is mandated to provide solid scientific evidence about the impact of masks in preventing the spread of contagion during the pandemic.

"They want researchers to look hard at how they can improve the level of evidence for masks," she said. "I thought that was pretty telling."

She said the evidence could guide public health officials on whether masks could be used more extensively as the economy returns to normal.

"Is there a possibility that mask use could aid us in a graduated return to activity in society?" she asked. "If this is a tool, I would love to have some better evidence that it works in a community setting as we negotiate the way back towards normalcy, whatever normal will be in the future."

## **Social distancing and handwashing are still the best**

In the meantime, Saxinger advises sticking with what we already know for sure.

"There is a risk that people who wear masks will feel perhaps too confident and behaviors may change," she said.

"To be honest, masks are unlikely to be a substitute for maintaining distancing and handwashing—those are our really solid, proven, core measures right now."

Provided by University of Alberta

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