They Are Creating a Mask That Inactivates Coronavirus With Heat

Scientists at MIT are developing a mask that would kill COVID-19 through heat.

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- Current prototypes include a 9-volt battery, which would provide enough power to heat the mask for a few hours and cool the air before inhaling it.
- This mask is based on a different mechanism than those commonly used today and works predominantly by thermal inactivation.

Since **COVID-19** became a pandemic, many researchers and scientists have sought to improve or develop face masks that effectively filter the air, and the designs and innovations have surprised us all.

In this context, scientists from **the Massachusetts Institute of Technology (MIT)** are creating a mask capable of inactivating **SARS-CoV-2** through heat using a heated copper mesh that is surrounded by insulating neoprene and works with batteries.

Image: MIT News.

“As the person wearing the mask inhales and exhales, the air repeatedly flows through the mesh, and the viral particles in the air slow down and become inactive due to the mesh and high

temperatures," they explain in *MIT News* .

Michael Strano, a professor of chemical engineering at MIT and a participant in the project, says that this mask will not completely block the virus, but it does slow it down and inactivate it. They are currently in the prototype development phase and hope to be able to test them soon.

How does the mechanism work?

The researchers highlighted that most of the institutes and companies are developing masks that, although they filter the virus, do not deactivate it. To obtain this mechanism, the scientists performed some mathematical models in order to determine the temperature range they would need to deactivate COVID-19.

Samuel Faucher, lead author of this project, comments that this mask is based on a different mechanism than those commonly used today and works predominantly by thermal inactivation.

The scientists found that a temperature of 90 degrees Celsius could achieve a reduction of between one thousand and one million viral particles, depending on the final size of the mask.

They also showed that this temperature can be achieved by passing electrical current through a 0.1 millimeter thick copper mesh or a battery-powered thermoelectric heater.

Image: MIT News.

No it doesn't burn

Current prototypes include a 9-volt battery, which would provide enough power to heat the mask for a few hours and cool

the air before inhaling it.

On the other hand, they explain that the copper mesh will be surrounded by neoprene, an insulating material that prevents the mask from getting too hot.

https://www.entrepreneur.com/article/358356