

- Virus / Vaccination

## Still Unvaccinated? Here's What COVID Can Look Like In Your Lungs

Visual representations for learning and educating the public should never be underestimated, and this could not be more relevant than when deciding whether or not to get vaccinated

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DESPITE being one of the first countries in the world to offer the COVID-19 vaccine, the United States ranks 18th among all the countries in the world for its percentage of population who are vaccinated. As of last month, approximately 65% of the US population was fully vaccinated against COVID-19, which means one in three Americans remains unprotected. Cuba, Chile and Iran all rank higher than the US.

There are many factors to consider in Americans' reluctance to get vaccinated, some of which may be deeply rooted in perspectives on vaccine efficacy, vaccine side effects and even politics. Many of those who choose not to get vaccinated likely do not have a solid understanding of what it means to be infected or how a vaccine can actually impact their illness.

For example, most Americans receive information regarding COVID-19 in selective ways, through their favorite news outlets, podcasts or social media usually ones that reinforce their personal views on a topic. Even programs that present a more balanced take on

public health recommendations often get mired down in statistics that may sway some individuals, but, in my opinion, not many.

Much of this information centers around public health experts presenting epidemiologic statistics and data regarding the number of positive infections, hospitalizations and deaths. For example, according to the Centers for Disease Control and Prevention, as of Jan. 28, unvaccinated individuals are 5.2 times as likely to die if infected with COVID-19 compared to fully vaccinated individuals, who have received booster doses. They are 12.7 times more likely to die than fully vaccinated individuals who have not received booster doses.

While this type of data is pivotal in understanding the epidemiology of the disease and the public health impact, it provides little visual understanding of what the virus looks like in a patient or how a vaccine can affect the natural history of the disease itself.

A more impactful motivator to encourage vaccination could be contrasting a CT image of an unvaccinated patient testing positive with COVID-19 to a vaccinated patient testing positive for COVID-19. The vast majority of

vaccinated patients who test positive for COVID-19 show normal or mild imaging abnormalities on CT. But unvaccinated patients demonstrate more dramatic findings that could spell longterm trouble for their lung function, according to a study published by my colleagues Drs. Rydhwana Hossain, Jean Jeudy and Charles White from the University of Maryland School of Medicine in the journal *Radiology Cardiothoracic Imaging*.

According to a 200 German study from the University of Leipzig, 65% of us are visual learners. Showing the public cases of how COVID-19 differs dramatically between vaccinated and unvaccinated individuals could be a powerful tool in promoting public health awareness of the virus and understanding how vaccines can profoundly impact the natural history of illness. If

the general public can “see” what the virus can do in the lungs and visualize the difference in imaging appearance between vaccinated and unvaccinated cases, individuals may think twice about whether or not to receive the vaccine.

Showing visual representation of disease is not new in society. At the end of the 20th century, many countries

started to display repulsive images of cancerous tongue boils on cigarette packs in an attempt to stop people from smoking. It worked. Vivid images of COVID-19 as depicted on CT scans could have a similar resonating effect on the population. Simply showing statistics, bar graphs and charts about total hospitalization and death rates will do little in swaying public opinion on whether to get vaccinated. As learners, we need to intimately visualize what this virus is capable of and how a vaccine can affect that. Being as transparent as possible to the general public will do wonders in informing vaccination decisions.

In the end, a picture is worth a thousand words or statistics, in this case. Visual representations for learning and educating the public should never be underestimated, and this could not be more relevant than when deciding whether or not to get vaccinated.

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