

# The Beauty of Vaccines and Natural Immunity

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As scientists, we have been stunned and disheartened to witness many strange scientific claims made during this pandemic, often by scientists. None is more surprising than the false assertion made in the John Snow Memorandum – and signed by current CDC Director, Rochelle Wolensky – that ["there is no evidence for lasting protective immunity to SARS-CoV-2 following natural infection."](#)

**Natural Infection Confers Protection Against Severe Disease**

It is now well-established that natural immunity develops upon infection with SARS-CoV-2 in a manner analogous to other coronaviruses. While natural infection may not provide permanent infection-blocking immunity, [it offers anti-disease immunity against severe disease](#) and death that is likely [permanent](#). Among the millions that have recovered from COVID19, [exceedingly few have](#) become sick again.

- Propagated by the media, the idea that infection does not confer effective immunity has made its way into decisions by governments, public health agencies, and private institutions, harming pandemic health policy. The central premise underlying these regulations is that only vaccines make a person clean. For instance:
- The state of Oregon has instituted a discriminatory vaccine passport system that [provides privileges](#) to the vaccinated but treats recovered COVID patients like second-class citizens even though natural infection confers disease protection.
- The European Union will be [open](#) to vaccinated tourists this June, but not to recovered COVID patients.
- The Centers for Disease Control (CDC) [recently amended](#) their mask guidelines, no longer recommending masks outdoor for those vaccinated.

However, those who are immune by natural infection are out of luck and must continue to wear masks.

- Universities like [Cornell](#) and [Stanford](#), which are supposed to be bastions of scientific knowledge, have mandated vaccines for students and faculty. Neither exempt people who are immune by dint of natural infection.
- Even the World Health Organization (WHO) has stumbled. In the fall, [they changed](#) their definition of herd immunity to something achieved through vaccination rather than a combination of natural immunity and vaccines. Only after a public backlash did they change it back in January to reflect reality.

## **COVID Vaccines Should Be Used to Protect the Vulnerable**

The COVID vaccines are a fantastic technology that, if used properly, can [end the epidemic](#) around the world. Among all medical inventions, vaccines [have saved](#) more lives than any other – except perhaps basic hygiene measures like proper [sewage systems](#) and [clean drinking water](#). Vaccines themselves do not protect us; it is our immune system's reaction to the vaccine that protects us. The beauty of vaccines is that we can activate our immune system against serious diseases without becoming seriously ill.

Natural infection typically confers better and broader

protection, but this comes at a [cost](#) to those who are vulnerable to severe illness and death. For those in the vulnerable group, including the elderly and those with chronic disease, it is [safer](#) to acquire future protection against the disease via vaccination than by recovering from the disease. At the same time, it makes little sense to ignore the scientific fact that infection does confer long-lasting future protection for the millions of people who have had COVID.

In the 18th century, milkmaids were considered "[fair of face, the prettiest girls in all the land](#)." Unlike others, they did not have the common face scars from smallpox infection. Through their close contact with cows, they were exposed to and infected by cowpox, a mild disease that generates immunity to smallpox. In 1774, a Dorset farmer named [Benjamin Jesty](#) purposely inoculated his wife and two sons with cowpox, and vaccines were born (the Latin *vaccinus* = "from cows").

Though vaccines are vital tools in fighting infectious diseases – including COVID – we should be mindful of the uses to which they are put and remember natural immunity in our policymaking. In an environment of worldwide vaccine scarcity, vaccinating those who have been sick with COVID-19 is not only unnecessary but immoral. By giving vaccines to the already immune, we are withholding life-saving vaccines for older high-risk persons who have not had the disease. There is a [thousand-fold difference](#) in the risk of mortality from

COVID-19 infection between the young and the old. While most older, affluent [Americans](#) and [Europeans](#) have already [been vaccinated](#), that is not true for those less affluent and certainly not for older people in [India](#), [Brazil](#), and many other countries. The denial of natural immunity has thus led to many unnecessary deaths.

Much of the impetus for vaccine passports has arisen from the false idea that universal COVID vaccination – including in young children in whom the vaccine has not been adequately tested – is necessary to end the pandemic. Given the natural history of the SARS-CoV-2 virus, the vaccines are likely only to confer long-term protection against severe disease rather than all infection *per se*. Any infection-blocking effects are probably short-term unless the vaccine does very much better than natural immunity, which is rare in medicine. As such, the vaccines cannot be used to achieve zero disease transmission. Instead, we should use the vaccines to protect the vulnerable against severe disease and death from COVID.

Businesses that exclude the unvaccinated are, in effect, discriminating against the working class and the poor who have already suffered through the disease. The lockdowns have protected the more affluent, “work-from-home” class while exposing those who deliver their food and provide other necessities. Since their immunity counts for nothing, many will be coerced into taking the vaccine to return to everyday life. Though the vaccine’s side effects

are mostly mild, common vaccine adverse reactions may lead some workers to lose several days of income. Immunity denial is simultaneously heartless and scientifically ignorant.

## **Restore Trust in Public Health and Science by Acknowledging Natural Immunity**

The rapid development of Covid19 vaccines is a tremendous achievement for the scientific community and the public. The vaccines have already saved countless lives. It is the one bright spot in an otherwise dim track record for the public health community, which has failed to follow [basic public health principles](#) and gutted [public trust](#) in public health. To rebuild that trust, acknowledging natural immunity is an essential first step.

It is not enough that such affirmation comes from front-line scientists. Public acknowledgment of natural immunity must come from the top: from the directors of the Centers for Disease Control (CDC), the National Institutes of Health (NIH), the National Institutes of Allergy and Infectious Disease (NIAID), the Food and Drug Administration (FDA), the European Centre for Disease Prevention and Control (ECDC), and the World Health Organization (WHO). On the individual level, we need acknowledgments from leading academics and journalists – such as university presidents and scientific journal editors.



In his *History of the Peloponnesian War* (~400 BC), the Greek historian Thucydides wrote of a great plague that hit Athens in the middle of its war with Sparta. It killed a quarter of the inhabitants of Athens before the disease burned out (presumably because herd immunity hit). Here is the key [passage](#) from Book 51:

*"...more often the sick and the dying were tended by the pitying care of those who had recovered, because they knew the course of the disease and were themselves free from apprehension. For no one was ever attacked a second time, or not with a fatal result. All men congratulated them, and they themselves, in the excess of their joy at the moment, had an innocent fancy that they could not die of any other sickness."*

The ancients understood immunology better than we do. If scientific leaders do not acknowledge immunity from natural infection, public confidence in vaccines and public health institutions will further deteriorate, imposing great harm to the public's well-being.



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**Closed Primaries Must Go!**