

Moderna's COVID Vaccine is Arguably 100% Effective, Not 94%



By Josh Bloom — December 1, 2020

We've finally had some amazing (and badly needed) news about COVID. Vaccines from Pfizer and Moderna are about 95 percent protective against COVID. But perhaps more importantly, according to interim analyses, Moderna's vaccine is 100% protective against severe COVID. This number is not only more impressive but may also be more clinically relevant.



Image: Wikipedia Commons

Let's say that there was an upper respiratory bug going around. If you caught it life wouldn't exactly be nirvana, but after a few days in bed with a low-grade fever, stuffy nose, and cough you'd be back to work. Perhaps you'd be tired for another week and maybe lose your [sense of smell and taste](#) ^[1] for a while **(1)** but not become ill enough to be hospitalized. What would people call it? Probably a cold.

It's not that far-fetched. These are all [symptoms of a cold](#) ^[2].

Would a world-wide bad cold be on the news 24 hours per day? No way. It wouldn't even be discussed. In terms of public health, colds are more or less irrelevant. This is why it is perfectly reasonable to claim that the protection afforded by the Moderna vaccine is effectively 100%. Whether the vaccine prevents disease entirely or limits it to something like a cold doesn't make a

great deal of difference in the context of a deadly pandemic. It's the protection against serious diseases and deaths that really count.

Here are the numbers (interim analysis) from one of the Moderna Phase III trials called COVE:

Of the thirty-thousand participants, half got vaccinated and half got a placebo. A total of 196 people came down with COVID, 185 in the control group and 11 in the treated group, which makes the vaccine ~94% effective in *preventing* COVID. Perhaps more intriguing (and also more important) is the secondary endpoint of the study – severe illness. A total of 30 people developed severe COVID disease. **All** were in the placebo group. No one in the vaccinated group required hospitalization. Therefore, Moderna's mRNA-1273 prevented everyone from becoming seriously ill **(2)**.

Let's ponder a question. Six months ago the world was in a panic and one experimental therapy after another was failing. At that time, if data from a trial showed that all people who were vaccinated and later became infected by coronavirus developed only cold-like symptoms – no deaths, no hospitalizations – then you'd better believe that the headlines would say "Vaccine is 100% effective!"

It's all a matter of perspective **(3)** but in reality, it is fair to say that mRNA-1273 works 100% of the time (assuming that this trend stands after more time and testing). Remarkable.

How remarkable? Ask an expert.

"I would still like to see all of the actual data, but what we've seen so far is absolutely remarkable"

[Dr. Paul Offit, November 30, 2020](#) [3]

NOTES:

(1) Although both colds and COVID can cause loss of taste and smell the effects of the two viruses are different. In particular, these effects resulting from COVID last longer. Perhaps much longer.

(2) Pfizer's vaccine performed similarly. Of the 10 severe cases, nine were in the control group and one in the vaccinated group.

(3) Here is a different perspective from ACSH advisor Dr. Henry Miller who looks at things in a different way. For individuals who *have been vaccinated* everything I've written above holds, but the situation is quite different when considering the effectiveness of the vaccines population-wide where many people will not be willing or able to be vaccinated.

"For a virus that's this infectious and that spreads exponentially -- and given that not everyone will opt to be vaccinated -- it does make a difference whether the vaccine mainly prevents infections and especially, severe infections, or whether it actually creates "sterile immunity," such that the virus won't replicate in and be shed by people infected. I don't know about the Moderna trial, but I believe the criteria for "infection" in the Pfizer trial were a positive PCR test and at least one symptom. (So we don't know about sterile immunity.)

In other words, there's a huge difference between the vaccine eliciting sterile immunity in 94% of subjects (who will then not be able to be unable to spread the virus) and just preventing symptomatic infection (in which case the virus would replicate and be shed, and infect unvaccinated people)."

Thank you, Henry. As usual.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Source URL: <https://www.acsh.org/news/2020/12/01/modernas-covid-vaccine-arguably-100-effective-not-94-15188>

Links

[1] <http://www.healthline.com/health/anosmia>

[2] <https://www.mayoclinic.org/diseases-conditions/common-cold/symptoms-causes/syc-20351605>

[3] <https://www.sciencemag.org/news/2020/11/absolutely-remarkable-no-one-who-got-modernas-vaccine-trial-developed-severe-covid-19>