

## Vaccine danger? Rare complications after getting a shot could increase severity of COVID-19

Vaccines are designed to produce immune-system agents, including antibodies, that lock onto a virus and thereby neutralize it. In cases of disease enhancement, however, immune agents act in ways that facilitate replication of the virus.

The complication can dangerously increase the severity of the disease in people exposed to the pathogen after they get the shots.

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To avoid the complication, coronavirus vaccine researchers have taken steps such as making available high-quality antigens, something the vaccine either delivers to or produces in the body to trigger a desired immune response.

Some researchers have designed antigens based on the “spike” protein found on the surface of the coronavirus, Dr. [Barney] Graham said. The virus uses the spike protein to latch onto human cells and gain entry.

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Some vaccines under development contain something resembling the spike protein itself while others carry genetic code instructing the body’s own cells to make that protein.

By focusing on the spike protein, a vaccine could primarily generate enough “neutralizing” antibodies to block the virus, Dr. Graham said, and potentially avoid spawning too many other immune-system agents that may attach to other parts of the virus and are suspected in disease enhancement. He said this will have to be proven in studies.

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