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# Here's Why Your Symptoms May Be Worse After Your Second COVID-19 Shot

By [Caroline Tien](#)February 17, 2021 | **NEW**

## Key Takeaways

- The second dose of the COVID-19 vaccine may cause more symptoms than the first dose like chills, fever, and fatigue.
- While the first dose of the COVID-19 vaccine kickstarts the production of an immune response, the second dose amplifies that response, making you more likely to experience symptoms.
- You can prepare for the second dose by resting, notifying your workplace about possibly needing a day off, and checking in with your primary care physician if necessary.

The second of the two shots you need in order to be considered fully vaccinated against COVID-19 reportedly causes more symptoms than the first. Within 24 hours of receiving it, you may experience some combination of chills, headache, fever, fatigue, muscle aches, and pain and swelling at the injection site. While these side effects are temporary, they're far from pleasant.

But, paradoxical as it may sound, side effects are a sign that your immune system is responding correctly to the vaccine. [Leana Wen, MD, MSc](#), visiting professor of health policy and management at the George Washington University's Milken School of Public Health, drove this point home, telling Verywell "they are expected, they show that the vaccine is working."

By contrast, allergic reactions such as hives, wheezing, and generalized swelling can be life-threatening and warrant immediate medical attention.

It's also perfectly normal to feel fine in the immediate aftermath of the second shot, she adds. Symptom status does not have any bearing on immunity.

## Why Does The Second Shot Cause More Side Effects?

The first dose of the vaccine, the "primer," introduces your immune system to SARS-CoV-2, the virus that causes COVID-19. Over the next few days, immune cells familiarize themselves with the features of the virus's signature spike protein and begin to produce antibodies that are capable of binding to the spikes to effectively neutralize the pathogen.

The second dose of the vaccine, the "booster," prompts the immune system to recognize the spike protein, compelling immune cells to kick antibody production into high gear.

**Related:** [Expect Mild Side Effects From COVID-19 Vaccines, CDC Advisory Group Says](#)

At this point in the inoculation process, a "higher level of antibody will be quickly built up and, unfortunately, some of the immunized people will experience severe side effects from the antibody amplification stage," [Zucaï Suo, PhD](#), professor of biomedical science at the Florida State University College of Medicine, tells Verywell.

However, some, as Wen notes, will not. Your reaction—or lack thereof—to the second dose depends in large part on the intricacies of your own biology: how your immune system responds to the invasion and how your body tolerates that response.

**Related:** [CDC Reports Few Cases of Severe Allergic Reactions to Pfizer COVID-19 Vaccine](#)

"Some folks will feel less or lighter symptoms while others experience more or stronger symptoms," Suo says. "Regardless, the symptoms will go away with time, usually in a day or so. In general, the side effects in people of advanced ages tend to be less or lighter since their immune systems are not as strong as those of younger people."

### What This Means For You

If you are younger, you may experience more symptoms in the wake of the second shot of the COVID-19 vaccine, compared to someone who is older. Regardless of your age, you should prepare for the possibility of side effects by staying hydrated and getting plenty of rest.

## How Should You Prepare for Your Second Shot?

You can expect to receive the second dose three to four weeks after the first. The Centers for Disease Control and Prevention (CDC) recommends spacing Moderna doses 21 days apart and Pfizer-BioNTech doses 28 days apart in accordance with company directives.

If you're concerned about side effects, you can take preliminary steps to reduce their potential severity, such as resting and ensuring that any existing medical conditions are well controlled.

While you should make sure that you have ibuprofen, aspirin, acetaminophen, or antihistamines on hand as well, Wen strongly recommends against medicating beforehand.

**Related: [5 Ways To Prepare for Your COVID-19 Vaccination](#)**

"There is some mixed data about this, but some people believe that if you blunt your response by taking Tylenol or ibuprofen, it may reduce the effectiveness of the vaccine," she says. "Now, I'd say that that is quite controversial, and there isn't definitive evidence about this."

However, it's probably better to play it safe. Some studies have found that over-the-counter pain relievers can interfere with the immune response provoked by vaccines, including the COVID-19 vaccine.

One such study linked the use of nonsteroidal anti-inflammatory drugs (NSAIDs), including ibuprofen, to a decrease in cytokine activity and antibody production. These findings, the authors wrote, raise "the possibility that NSAIDs may alter the immune response to SARS-CoV-2 vaccination."

**Related: [NSAIDs \(Advil, Motrin\) May Dampen the Antibody Response to COVID-19 Vaccines](#)**

If you do begin to fall ill after receiving the second dose, Suo recommends taking a sick day as well as asking a friend or family member to monitor you until your symptoms have abated entirely. Further measures depend on the nature of your symptoms.

For localized soreness, the CDC recommends exercising your arm and applying "a clean, cool, wet washcloth" to the affected area; for a fever, the CDC recommends dressing lightly and drinking plenty of fluids. You should be aware that immunity may take up to two weeks to kick in.

#### Article Sources

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3. Chen J, Madel Alfajaro M, Chow R, Wei J, Filler R, Eisenbarth S, Wilen C. Non-steroidal anti-inflammatory drugs dampen the cytokine and antibody response to SARS-CoV-2 infection. *Journal of Virology*. January 2021. doi:10.1128/JVI.00014-21