

# PARENTS PACK

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## Medications and COVID-19 Vaccines: What You Should Know

April 2021

Trivia Corner



### What is NOT a reason why we give vaccines?

- To prevent common infections
- To dampen the immune system
- To prevent infections that could easily reemerge
- To prevent infections that are common in other parts of the world

Many people take regular medications, so as they prepare to get the COVID-19 vaccine, they wonder whether their medications will interfere with the vaccine or vice versa. In this article, we will discuss why some medications may be expected to alter the response to the vaccine and others would not. However, given the almost 40 different categories of medications (bit.ly/2RRfuP8p) and the thousands of medicinal products distributed, this article will not exhaustively address the topic. With this in mind, individuals should always consider three important points:

- Never stop taking a medication prescribed by a healthcare provider without checking whether it is safe to do so.
- Every medication — prescription, over the counter, illicit, or so-called “natural remedy” — has some effect on your body.
- If you have a question about a medication you are taking, talk to your doctor as they know your medical history and current medical situation, so they will be in the best position to help assess potential risks and benefits related to the medication itself or its interaction with something else, such as a vaccine.

Four types of medications have been commonly discussed related to COVID-19 vaccinations, so we will start by addressing these:

- Antipyretics
- Analgesics
- Anticoagulants
- Antihistamines

### Antipyretics and analgesics

Antipyretics are medications that reduce fever (bit.ly/3sQE64s), such as salicylates (e.g., aspirin), acetaminophen (e.g., Tylenol®) and non-steroidal anti-inflammatory drugs, or NSAIDs, (e.g., Advil® or Aleve®). Analgesics are medications that reduce pain. Each of the types of medications listed as antipyretics (salicylates, acetaminophen, and NSAIDs) are also analgesics, but stronger medications such as opioids or combination medications (e.g., Tylenol with Codeine) also fall into the category of analgesics.

People commonly view fever and pain as being caused by a pathogen because they occur at the same time as an infection or injury, but in reality they are effects of our own immune responses. Fevers increase the effectiveness of our immune system (bit.ly/3upk9lA), and during an infection, they make it more difficult for a pathogen to function effectively. Likewise, pain often occurs at the site of an injury as blood vessels expand and immune cells descend on the injured or infected area, often causing swelling that is felt as pain. Vaccines cause our immune systems to respond, so they, too, can cause fever or pain. Because fever and pain are signals that our immune system is working, taking medications that reduce the fever or mask the pain may alter the immune response.

For COVID-19 vaccinations, public health officials from the Centers for Disease Control and Prevention (CDC) have recommended that individuals not take these medications prior to vaccination in anticipation of experiencing side effects from the COVID-19 vaccine because we do not know what the effects on the immune response will be. However, if individuals are uncomfortable after getting vaccinated, they can take these medications if necessary and medically appropriate.

Also of note, if a doctor has prescribed a regular regimen of one of these medications, such as daily aspirin therapy following a stroke or heart attack, individuals should continue with their usual doses. While these people may have a somewhat lower response to the vaccine, they will still develop some immunity, and the risks of stopping the medication may outweigh the benefits. However, with this said, individuals who have not been prescribed this type of therapy, but use daily aspirin therapy on their own to reduce the chance of a first stroke or heart attack, should consider stopping not only prior to vaccination, but permanently. Studies have shown that daily aspirin therapy does not reduce the risk of first-time stroke or heart attack.

### Anticoagulants

Anticoagulants, or blood thinners, are medications prescribed to decrease the chance for blood clots. Some examples include heparin, Coumadin®, Xarelto® and Eliquis®, among others. Because their blood is less likely to clot, people using anticoagulants are at increased risk of bleeding.

The COVID-19 vaccines currently approved for use in the U.S. are given intramuscularly. On occasion as the needle punctures the skin, capillaries below the surface are disturbed, causing small amounts of bleeding. For a patient on blood thinners, it can be more difficult to stop the bleeding. So, while these individuals can usually get the COVID-19 vaccine, the person administering the vaccine should be made aware of the recipient's increased risk, so that they can monitor for prolonged bleeding.

[Continued on next page]



**Trivia Answer:** The correct answer is B. Vaccines are given to prevent common infections and prevent infections from re-emerging. Some infections, although eliminated in the U.S., are still common in other countries. Because international travel to these parts of the world is common, vaccines to prevent these diseases are still given.

Go to [vaccine.chop.edu/trivia](http://vaccine.chop.edu/trivia) to play *Just the Vax*, the Vaccine Education Center's trivia game, where you can find this question and others like it.

## Medications and COVID-19 Vaccines: What You Should Know [cont.]

### Antihistamines

Antihistamines are used to decrease allergic reactions caused when the immune system produces excessive histamine. Examples include Zyrtec®, Benadryl®, Allegra®, Alavert® and Claritin®, among others. Because the mRNA vaccines have caused some people to have severe allergic reactions, called anaphylaxis, some have wondered if it would be useful to take an antihistamine prior to vaccination to decrease the chance of experiencing anaphylaxis. Pretreating with antihistamines is not recommended because it does not decrease the chance for anaphylaxis and may mask important signs of an allergic response to the vaccine.

With this said, individuals who typically take antihistamines for an existing condition do not need to stop taking their medication prior to vaccination. Because their body is used to the typical level, an allergic response to the vaccine would likely still be noticeable and these medications do not work in a manner that would be expected to alter the immune response to the vaccine, since it is not a histamine-based response.

### Other types of medications

Many individuals have reached out to the Vaccine Education Center (VEC) about other medications. Generally, we recommend that they speak with their own healthcare providers, who know why they are taking the medications, what the dose is, and any other details about their medical history that may be relevant. However, we will address a few additional types of medications here:

- **Antivirals** — These medications treat viral infections, so some naturally wonder if they can get vaccinated while taking antivirals. Examples of antivirals include oseltamivir (Tamiflu®), penciclovir, Truvada® and acyclovir, among others. Because the current vaccines used in the U.S. are not live vaccines, no virus is produced and, therefore, an antiviral medication would not be expected to alter the response to the vaccine. However, if an individual is still experiencing symptoms from the viral infection for which the medication was prescribed, they may consider delaying vaccination so that the cause of any symptoms can more easily be determined.
- **Antibiotics** — These medications treat bacterial infections. As such, they would not be expected to affect the immune response to the vaccine. However, as mentioned with antivirals, if the individual is still experiencing symptoms, they should consider delaying vaccination, so effects of the vaccine can be distinguished from effects of the infection. Examples of antibiotics include penicillin (e.g., amoxicillin), cephalosporin (e.g., cefalexin), tetracycline (e.g., doxycycline) and macrolide (e.g., azithromycin), among many others.
- **Corticosteroids** — Often referred to as steroids, these medications are typically used to decrease inflammation caused by overreaction of the immune system. Corticosteroids are used to treat a variety of conditions, including rheumatoid arthritis, asthma, allergies, lupus, and vasculitis, among others. They can be administered by mouth, as drops, or via injection. Because of the wide range of conditions, medications, dosing regimens and delivery methods, and because these medications directly affect the immune system, it is recommended that individuals with questions speak with the prescribing doctor to assess whether the medication might affect the immune response to COVID-19 vaccination. In many cases, the doses will be low enough or sufficiently localized that they will not be of concern.
- **Biologics** — This group of medications targets specific components of the immune system that when not functioning properly lead to autoimmune conditions, such as lupus, rheumatoid arthritis, Crohn's disease, ulcerative colitis, psoriasis, diabetes and multiple sclerosis, among others. As a result of the wide array of conditions that biologics can treat, many people use them. Some of the more commonly known biologics include Humira®, Enbrel®, Remicade® and Rinvoq®; however, many others are also commonly used. As with corticosteroids, given the wide array of variables related to these medications and because they directly affect some aspect of the immune system, individuals taking them should discuss their personal situation with the prescribing doctor when considering COVID-19 or other vaccinations. This Q&A sheet ([bit.ly/3rUrpEq](https://bit.ly/3rUrpEq)) discusses vaccines and biologics in more detail.

In sum, many people take medications and some of these might affect the individual's immune responses — not just to vaccines, but to potential infections or other medications. Therefore, it is important to learn more about the potential effects of any medications you take, refrain from using unnecessary medications, and check with your doctor about medication changes or with other questions.

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