

HEALTH NEWS

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Monoclonal Antibody Treatment for COVID-19: Effectiveness, Cost, and More



Written by [Shawn Radcliffe](#) on August 25, 2021 — [Fact checked](#) by Jennifer Chesak

Lab-grown antibodies can help the immune system fight the coronavirus, but they're no substitute for COVID-19 vaccination.



A monoclonal antibody is a laboratory-produced protein that functions like the antibodies made by the immune system in response to infection. [Craig F. Walker/The Boston Globe via Getty Images](#)

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of the country with low vaccination rates.

According to the [Food and Drug Administration \(FDA\)](#), this experimental

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system's ability to fight off harmful antigens such as viruses" like SARS-CoV-2.

It's especially useful for people with weakened immune systems who may not generate a robust response to the COVID-19 vaccines, and for others at high risk of severe illness.

While monoclonal antibodies can start to clear the coronavirus within hours of being infused intravenously (IV) into the body, this treatment may not work for everyone.

That's why experts recommend that people get fully vaccinated against COVID-19, which is known to prevent severe illness and hospitalization due to the disease.

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How do monoclonal antibodies work?

A monoclonal antibody is a laboratory-produced protein that functions like the antibodies made by the immune system in response to infection.

By binding to a specific molecule on a virus or bacteria — known as an antigen — a monoclonal antibody can enhance or restore the immune response against these pathogens.

Monoclonal antibody treatment has been [used and tested](#) for the Ebola

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Scientists are also developing monoclonal antibodies that target cancer cells.

Scientists sometimes develop monoclonal antibodies by isolating certain immune cells — called B cells — from a person who has successfully recovered from an infection.

With COVID-19, “we looked in people who had a good antibody response to the virus and picked out the very best antibodies that they made,” said [Robert Carnahan](#), PhD, associate director of the Vanderbilt Vaccine Center in Tennessee.

Scientists use isolated B cells to recreate monoclonal antibodies in a laboratory. This can be mass produced and given to people through an IV.

A monoclonal antibody targets a specific antigen on a virus or bacteria. So this treatment differs from convalescent plasma, which contains multiple antibodies that target different antigens.

Most of the monoclonal antibodies being developed to treat COVID-19 target the spike protein, which the coronavirus (SARS-CoV-2) uses to enter the host cells.

By binding to the spike protein, a monoclonal antibody can help prevent the virus from infecting human cells.

[Research](#) suggests that certain monoclonal antibodies can reduce the risk of hospitalization and death in people with asymptomatic or mild COVID-19.

Scientists are also looking at whether this treatment can reduce the risk of someone with COVID-19 transmitting the virus to others in their household.

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Who can get monoclonal antibody treatment?

Several monoclonal antibodies have received [emergency approval](#) from the FDA:

- **REGEN-COV2.** This drug cocktail contains two monoclonal antibodies, [casirivimab and imdevimab](#). It's approved for people over age 12.
- **Sotrovimab.** This drug is authorized for adults and kids over 12 years old.
- **Actemra (tocilizumab).** This treatment is [authorized](#) for both hospitalized adults and children 2 years and older.
- **Bamlanivimab/etesevimab.** In June, the U.S. government [paused distribution](#) of these two monoclonal antibodies because tests showed that they did not work against the Beta and Gamma variants of the coronavirus. The FDA recommends that health professionals use other monoclonal antibodies instead.

All of these monoclonal antibodies received emergency approval for treatment of mild to moderate COVID-19 in people 12 years or older who tested positive for the coronavirus and are at high risk of severe COVID-19.

This includes people who have weakened immune systems, older adults, pregnant people, and those with obesity, diabetes, or other chronic diseases.

While monoclonal antibodies can reduce the risk of severe illness in these people, full vaccination is also important

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“If you are immunocompromised, I really hope you are already vaccinated,” Dr. Vincent Rajkumar, an oncologist at Mayo Clinic, [wrote](#) on Twitter.

“But in case you are not, the [recommendations] for monoclonal antibody still apply to you: If exposed to someone with COVID, or you get COVID, try and get monoclonal antibody treatment,” Rajkumar continued.

Both vaccinated and unvaccinated people who fit these criteria are eligible to receive this treatment.

Monoclonal antibody treatment is generally given within 10 days of a positive COVID-19 test.



“If the [monoclonal] antibodies are given relatively soon in high-risk patients, then [the treatment] can have an impact,” said Carnahan. However, “the later someone is in their disease course, the less likely that antibodies are going to be helpful.”

Regeneron’s antibody cocktail also has emergency approval for use in people at high risk of severe COVID-19 who were exposed to the coronavirus, but haven’t yet tested positive or developed symptoms.

This is useful in situations where an unvaccinated person is exposed to COVID-19.

With the two-dose mRNA vaccines, full protection doesn’t occur until 2 weeks after receiving the second dose. By then, people might already be severely ill.

Shortly after exposure to the virus, “the vaccine’s probably not going to do someone any good. It won’t take effect soon enough for the person to be protected,” said Carnahan. “Whereas with antibodies, the protection is available within minutes to hours.”

The CDC still [recommends](#)  that people who have had COVID-19 consider getting vaccinated. Some [studies](#)  suggest that vaccination

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How much does monoclonal antibody treatment cost?

The cost of Regeneron's two-drug cocktail is \$1,250 per infusion, according to [Kaiser Health News](#). The federal government currently covers this.

Compare this to the cost of a single dose of the COVID-19 vaccine — [about \\$20](#) — which is also covered right now by the federal government.

The cost of GSK's and Vir's monoclonal antibody costs about \$2,100 per infusion. This is covered by a combination of government payments,

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However, some infusion centers may charge treatment fees. These are covered by Medicare, Medicaid, and most private health insurances, although some plans may charge a copay.

If you're uninsured or concerned about cost, ask the treatment center beforehand if you'll be charged for the infusion.

In order to receive monoclonal antibody treatment, you must have tested positive for COVID-19 within the last 10 days. You will also need a referral from a healthcare professional.

If you're seeking treatment after exposure to the virus — and before a positive test or symptoms — talk with your doctor about your options.

Monoclonal antibody treatment is being offered at outpatient locations, hospitals, urgent care centers, and some physician's offices throughout the country. The U.S. Department of Health and Human Services has an infusion location finder on its [website](#).

Although many infusion centers are ramping up around the country, experts emphasize that monoclonal antibody treatment is not a substitute for COVID-19 vaccination.

“Because of their ease of delivery and low cost, the vaccines are going to outweigh [monoclonal] antibodies in many situations,” said Carnahan. “That’s why everyone should get vaccinated. The vaccines are going to provide — we hope — durable long-term immunity in an easy-to-distribute format.”

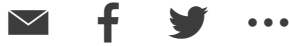
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