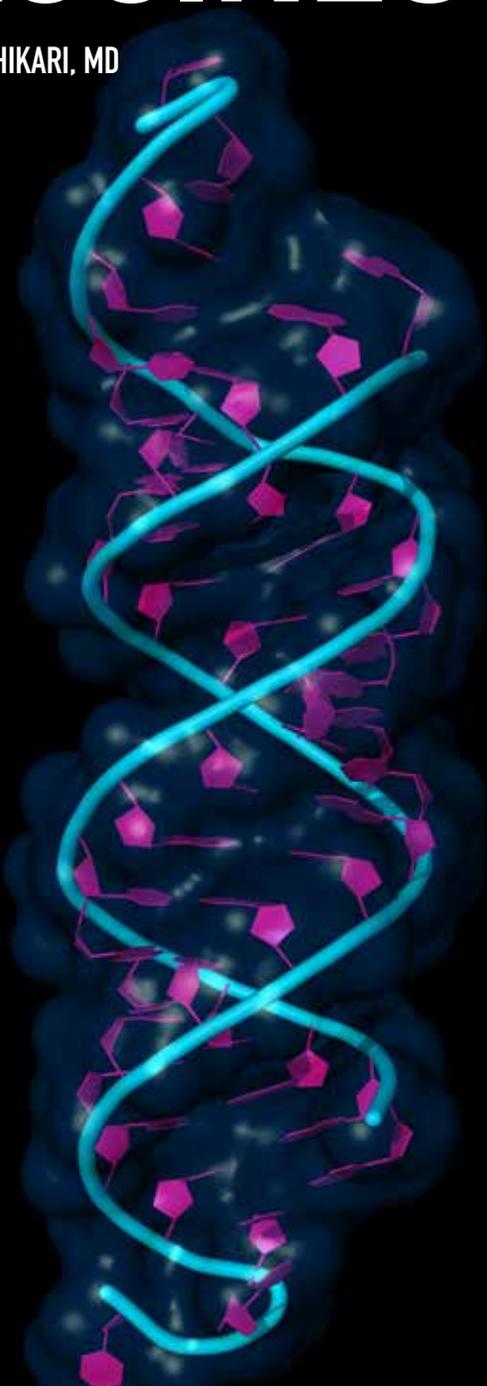


COVID-19 VACCINES

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Currently, the two available vaccines for coronavirus disease 2019 are messenger RNA (mRNA) vaccines. This type of vaccine teaches cells how to make a protein, starting an immune response that creates antibodies. The antibodies protect us from getting infected when exposed to COVID-19.

The COVID-19 vaccine is different than influenza, or other vaccines, that rely on either live or inactivated virus to create the immune response.

There are two vaccines approved by the FDA. Both were tested to prevent COVID-19 disease.^{1,2}

| |  Pfizer vaccine (BNT162b2) |  Moderna vaccine (mRNA-1273) |
|--------------------------------|--|--|
| Approved age groups | >16 years | >18 years |
| Timing of 2nd dose | 3 weeks (19-23 day range) | 1 month (28 day) |
| Efficacy after 2nd dose | 95% (90-97%): after 1-2 weeks | 94.1%: after 2 weeks |

Pregnancy & Lactation

- There is no evidence suggesting risk from mRNA vaccines in pregnant or lactating women, but long-term safety and efficacy studies have not yet been published. That said, there is no biologically plausible evidence to suggest that harm to a pregnant woman or her fetus is possible from these vaccines. The currently available COVID-19 vaccines contain a piece of mRNA delivered within a lipid capsule. This capsule fuses with the cell membrane to deliver the mRNA. This mRNA sends a message to the cell to trigger the immune response and then is quickly degraded, never entering the nucleus or changing DNA in any way.
- According to the American College of Obstetricians and Gynecologists (ACOG), the COVID-19 vaccine should not be withheld from pregnant women who meet criteria for vaccination.³
- The vaccine also should be offered to lactating women.³ There is potential for a vaccinated mother to make protective antibodies that are passed to her infant based on experience with other vaccines in pregnancy (such as influenza vaccines), although this has not been completely studied yet for the COVID-19 vaccine.
- The recommended considerations for vaccinating a pregnant woman against COVID-19 include the level of community transmission, her personal risks, and anticipated side effects, which are thought to be similar to other vaccines.
- If a fever develops, pregnant women may take acetaminophen.
- There is no need for a pregnancy test before vaccination.

FREQUENTLY ASKED QUESTIONS

Once vaccinated, do I need to wear a mask?

- Although the vaccines are highly protective, neither Pfizer nor Moderna vaccines provide 100% efficacy. We need more information to tell whether a vaccinated person can become infected **without** symptoms, or still pass the virus to others. This is being studied but it means we still have to wear masks after vaccination.

Can I get another vaccine at the same time as the COVID vaccine?

- The recommendation is to administer the COVID-19 vaccine alone, with minimal interval of 14 days from other vaccines. If accidentally done, neither vaccine should be re-administered.⁴

What if I miss the window for the second dose?

- For either vaccine, if you miss the recommended timeframe for the second dose you should get it at the earliest opportunity. You do not need to restart the series.

Are the vaccines interchangeable?

- No, the two vaccines (Pfizer vs Moderna) are not interchangeable. If inadvertently done, no additional doses should be administered until more is known.

Are mRNA vaccines safe?

- Yes, these vaccines are safe, and they stimulate our body to make antibodies so our cells can fight off the SARS-CoV-2 virus that causes COVID-19 disease. The technology used to create them is not new, and is based on sequencing technology that has been around for years, but has not been used as part of a coordinated global effort to address a public health crisis such as this.
- Older vaccines like influenza require large amounts of live virus to be grown in special labs. This takes time and for COVID-19 would require extreme safety measures.
- The mRNA vaccines are not live virus, and are developed based on the sequence of the virus that is known. This makes vaccine development much faster, but still very accurate, and safe.

If I had COVID or was exposed to the virus, should I still get the vaccine?

- Yes, even those who had COVID-19 should be vaccinated once they are recovered. We do not yet know how long the immune response to natural infection lasts, and the vaccine has been shown to be effective in preventing infection.
- **If you are acutely infected**, you should wait until you have recovered to receive the vaccine.
- **If you are recently exposed or in quarantine**, you should wait until the end of quarantine to avoid exposure to health care workers.

If I had COVID or was exposed, do I need to get blood work done to look for antibodies before getting the vaccine?

- No, there is no need to evaluate for antibodies before vaccination.

If I have medical conditions, like diabetes or high blood pressure, should I get the vaccine?

- Yes! These medical conditions may result in a more severe infection with COVID-19 so it is important to get vaccinated.

If I am immunocompromised should I get the vaccine?

- There is limited data available, but vaccination may provide key protection against the virus in those with suppressed immune systems. The COVID-19 vaccines do not contain live virus.

Does either COVID-19 vaccine cause infertility?

- No, neither is linked to infertility.
- Despite social media chatter, antibodies to the spike protein have not been linked to infertility after COVID-19 infection, and there is no scientific reason to believe this will change after vaccination for COVID-19.
- No other viral infection or vaccination-inducing immunity by similar mechanisms has been shown to cause infertility.
- Women should feel comfortable that this claim has no basis in science.

Does the COVID-19 vaccine cause Bell's palsy?

- This question comes from the side effects reported in the Moderna vaccine trial, which included 30,400 participants.

- Companies track every complaint, regardless of whether linked to vaccination.
- In the trial,² 4 participants reported Bell's palsy symptoms: 3 in the vaccine and 1 in the placebo group. This was not a significant difference, and thus was not attributed to the COVID-19 vaccine.

Will the vaccine cause male pattern hair growth?

- No, there is no evidence the vaccine causes women to grow beards or mustaches.
- In contrast, COVID-19 illness has been linked to **hair loss**.⁵
- Thus, vaccination will not increase undesired hair growth and may prevent undesired hair loss from COVID-19.

How does the vaccination affect testing for COVID-19 disease?

- Vaccination will not affect results of nasal, nasopharyngeal, or saliva PCR or rapid antigen tests for diagnosis of acute infection.
- Currently, the antibody tests available in laboratories check for IgM or IgG to either spike or nucleocapsid proteins.
- Positive antibody (IgG) to **spike protein** could mean evidence of prior infection or vaccination.
- To document prior natural infection with live virus, laboratory evidence of antibody to **nucleocapsid protein** is needed.

How do I know if symptoms after vaccination are due to the vaccine or COVID-19 infection?

- Signs and symptoms **unlikely** to be from COVID-19 vaccination include: Cough, shortness of breath, rhinorrhea, sore throat, loss of taste or smell;
- Signs and symptoms that may be from **either** COVID-19 vaccination, SARS-CoV-2 infection, or another infection include: Fever, fatigue, headache, chills, myalgia, and/or arthralgia.

Who should not get the COVID-19 vaccine?

- People who have had anaphylaxis or severe allergic reaction to any component of the vaccine.

References

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