

COVID-19 Vaccination Information and FAQ

mRNA Vaccine Background and Development

mRNA vaccines have been in development for several years and offer several advantages including more rapid production and potential adaptations to virus changes. Two mRNA vaccines (Moderna and Pfizer-Biontech) now have FDA-Emergency Use Authorization. They include a code that tells your body how to produce the spike protein with the SARS-CoV₂ virus uses to invade our cells. Our body's immune system then responds to the protein and begins to generate the immune response which allows us to be prepared when the live virus enters our body preventing that spike protein from gaining entry to the cells. That prepared immune response is absolutely critical to stopping infection. Think of it as if we had obtained the blue print of a new enemy bomber allowing us to determine what to target on the aircraft to destroy it when it entered our airspace. We would produce that anti-aircraft weapon system ahead of time to be prepared rather than developing it "on the fly" as the bomber was wreaking havoc.

These vaccines went through normal process to ensure safety and efficacy. The largest phase 3 trials included over 73,000 people between the two vaccines with no serious side effects with more than 2 months of follow up data of safety and efficacy. Both vaccines were shown to be over 90% effective at preventing symptomatic infection. The most common side effect is mild to moderate pain at the injection site. In addition, some recipients had headaches, fatigue, muscle aches, and low grade fever usually coming on in the first 48 hours and resolving within 2-3 days. This was rarely enough to limit work or job performance. The likelihood of these types of side effects is greater with the second dose. It should be noted that most serious side effects of a vaccine will show up within 2 months and these studies have over 2 months of safety data.

At this time over 1 million first doses of these two vaccines have been administered and there is post vaccination surveillance continuing for safety, efficacy, and durability continuing.

For the Nebraska National Guard, we will be getting the Moderna vaccine at least to start with. It is important to know there are other vaccines that are in phase three trials that may be available sometime in 2021 depending on the results of those trials and submission to FDA.

Frequently Asked Questions and Concerns

1. Will this vaccine alter my DNA/Genetics?
 - A. Absolutely not. The mRNA can't enter the nucleus of our cells where DNA resides. Just like our own body's mRNA does not change our DNA. mRNA is used to tell our body how to make a protein from the amino acids a process called translation. It is then degraded over a period of time.

2. Will the vaccine give me COVID-19?

- A. No this is not a live virus vaccine and as discussed above, it only produces a protein from the virus using our body's own machinery
3. How many shots are there?
- A. The Moderna vaccine initial vaccination is a 2 shot series 28 days apart and the Pfizer-Biontech is 2 shots 21 days apart
4. How long will the immunity last?
- A. This is being determined so far clear evidence of at least 3 months and the anticipation is that likely booster shot at 1 year but we will know more in the coming months
5. If I have already had COVID-19 do I need the vaccination?
- A. If you currently have COVID-19 vaccination should not be given until you are recovered and out of isolation. If you have had COVID-19 the vaccination is still recommended. Based on the date it is unclear how long one is protected after infection and vaccination is still advised. If your infection has been within the last 90 days, there is the option of delaying vaccine to allow doses for those who have not had the infection.
6. Will the vaccination cause infertility?
- A. No—This is social media misinformation. There is no evidence or mechanistic reason this would occur. The American College of Obstetrics and Gynecology as well as the Society of Maternal Fetal Medicine is recommending this vaccine for women of childbearing age. There is also no reason to believe the vaccine would cause infertility in men either. We don't know what the long term fertility impact of actual infection will be on fertility. Virus has been found in both ovarian and testicular tissue.
7. Should I get this vaccine if I am pregnant, planning to becoming pregnant, or breastfeeding?
- A. This vaccine is recommended regardless of the above due to the fact there is a clear increased risk to the mother and the fetus with COVID-19 infection. This is not a live virus vaccine. Pregnant women who contract the virus have a greater likelihood of ending up in the ICU and appear to have greater likelihood of miscarriage. This appears to be higher than with influenza infection. The trials did not include pregnant women but there were a small number of women who became pregnant without complications. There are ongoing studies but it appears to be safe and The American College of Obstetrics and Gynecology as well as the Society of Maternal Fetal Medicine is recommending this vaccine for women regardless of pregnancy status when it is recommended for them based on phasing. We recommend woman consult with their obstetrician.
8. Can I get COVID-19 vaccination with other vaccines?
- A. The recommendation is to not give any other vaccinations within 14 days
9. If I have allergies should I get the vaccine?

A. If you have allergies to medications or seasonal allergy etc, there appears to be no risk and you can still receive vaccination. If you have allergies to any of the components in you should not receive it. If you have history of anaphylaxis to other injectable vaccines, we would suggest speaking with your healthcare provider. The risk vs benefits should be weighed. There are no common ingredients in these vaccines and other commonly used vaccines. There have been more episodes of anaphylaxis with the at least the Pfizer-Biontech vaccine since approval and this as well as Moderna are being evaluated. The benefits of the vaccine for protection outweigh the risks.

10. If I have a history of Guillain Barre Syndrome should I receive this vaccine?

A. There is now evidence of a link between this vaccine and Guillain Barre Syndrome and this was not seen in any of the trials.

11. Does this vaccine cause Bell's Palsy?

A. Bell's Palsy is facial muscle weakness that occurs and is not uncommon. It was seen in the trials more commonly in the vaccinated group but not to a level that was more than what occurs in the general population over a period of time. All patients fully recovered. It is continuing to be monitored.

12. After Vaccination can I stop wearing a mask and physical distancing?

A. No—there are two reasons you will need to continue following the non-pharmaceutical mitigation measures:

1. We don't know yet if the vaccination prevents asymptomatic disease early evidence suggests it does but needs further evaluation
2. We will need a large part of the population to have been vaccinated to reach herd immunity. The vaccine does represent the best hope for ending the pandemic but it will take time

13. Will the vaccine protect against the new COVID-19 strains I hear about?

A. The current vaccines cover the wide range of the spike protein, while it is possible that a virus mutation could occur enough to evade a vaccine it does not appear that any of these currently circulating strains meet that criteria. This will continue to be monitored and adjustments in subsequent vaccines made. That is another potential advantage of this vaccination platform as this would be easier and faster to do than some of the other platforms.

14. Is vaccine is produced from human or fetal tissue?

A. No, this is a synthetic vaccine not produced from human or fetal tissues

15. Will I test positive for COVID-19 if I have this vaccination?

A. The vaccine does not affect the results of the standard nasal swab PCR or antigen tests but antibody testing may be positive. Therefore, if COVID symptoms occur after vaccination you can still have testing to determine presence of infection using the nasal swabs.

16. Will an adverse reaction to the vaccination be “In the line of duty”?

A. Yes, if you are on a status, an adverse reaction to a vaccination is treated as “In the line of duty”.

17. Is this vaccination mandatory?

A. No this is a voluntary vaccine. The preponderance of the evidence shows this to be safe and effective at dramatically reducing symptomatic infections. The opinion amongst national and local experts is that benefits of the vaccine far outweigh the risks.

Vaccine Components

Description	Pfizer-BioNTech COVID-19 vaccine	Moderna COVID-19 vaccine
mRNA	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2
Lipids	2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide 1,2-distearoyl-sn-glycero-3-phosphocholine Cholesterol (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate)	Polyethylene glycol (PEG) 2000 dimyristoyl glycerol (DMG) 1,2-distearoyl-sn-glycero-3-phosphocholine Cholesterol SM-102 (Proprietary to Moderna)
Salts, sugars, buffers	Potassium chloride Monobasic potassium phosphate Sodium chloride Dibasic sodium phosphate dihydrate Sucrose	Tromethamine Tromethamine hydrochloride Acetic acid Sodium acetate Sucrose