As of March 5, 2021, Mann-Grandstaff VA Medical Center (MGVAMC) currently has two types of COVID-19 vaccines available for Veterans - Moderna and Janssen [Johnson & Johnson] vaccine.

### Key Differences Between the Vaccines

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Moderna</th>
<th>Janssen (Johnson &amp; Johnson)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccine Type</td>
<td>mRNA vaccine¹</td>
<td>Adenovirus vector² vaccine</td>
</tr>
<tr>
<td></td>
<td>2 doses (0.5 mL) given intramuscularly (upper arm) 28 days apart</td>
<td>Single dose (0.5 mL) given intramuscularly (upper arm)</td>
</tr>
<tr>
<td>Vaccine Effectiveness</td>
<td>94% for prevention of COVID-19 &gt; 14 days after dose 2</td>
<td>86% in preventing severe disease in U.S. patients &gt;28 days after vaccination</td>
</tr>
<tr>
<td>Contraindications to Receiving Vaccine</td>
<td>Severe reactions to previous mRNA vaccine or components (PEG) or polysorbate</td>
<td>Severe reactions to any of vaccine components (polysorbate-80)</td>
</tr>
<tr>
<td>Common Side Effects of Vaccine</td>
<td>Injection site pain (92%), fatigue (70%), headache (65%), muscle aches (62%) Greater with dose 2 than with dose 1</td>
<td>Injection site pain (49%), headache (40%), fatigue (38%), muscle aches (33%)</td>
</tr>
</tbody>
</table>

**Understanding mRNA¹ COVID-19 Vaccines**

mRNA vaccines are a new type of vaccine to protect against infectious diseases. To trigger an immune response, many vaccines put a weakened or inactivated germ into our bodies. Not mRNA vaccines. Instead, they teach our cells how to make a protein—in this case, a harmless piece of protein from the surface of the COVID-19 virus called the “spike protein.” This triggers an immune response inside our bodies. That immune response, which produces antibodies, is what protects us from getting infected if the real virus enters our bodies.

Updated 3/3/21
Once the instructions (mRNA) are inside the immune cells, the cells use them to make the protein piece. After the protein piece is made, the cell breaks down the instructions and gets rid of them.

Next, the cell displays the protein piece on its surface. Our immune systems recognize that the protein doesn’t belong there and begin building an immune response and making antibodies, like what happens in natural infection against COVID-19.

At the end of the process, our bodies have learned how to protect against future infection. The benefit of mRNA vaccines, like all vaccines, is those vaccinated gain this protection without ever having to risk the serious consequences of getting sick with COVID-19.

**Understanding Viral Vector² COVID-19 vaccines**

Viral vector vaccines use a modified version of a different virus (the vector) to deliver important instructions to our cells. For COVID-19 viral vector vaccines, the vector (not the virus that causes COVID-19, but a different, harmless virus) will enter a cell in our body and then use the cell’s machinery to produce a harmless piece of the virus that causes COVID-19. This piece is known as a spike protein and it is only found on the surface of the virus that causes COVID-19.

The cell displays the spike protein on its surface, and our immune system recognizes it doesn’t belong there. This triggers our immune system to begin producing antibodies and activating other immune cells to fight off what it thinks is an infection.

At the end of the process, our bodies have learned how to protect us against future infection with the virus that causes COVID-19. The benefit is that we get this protection from a vaccine, without ever having to risk the serious consequences of getting sick with COVID-19. Any temporary discomfort experienced after getting the vaccine is a natural part of the process and an indication that the vaccine is working.

**Which Vaccine Should I Get?**

Any vaccine is better than no vaccine! Both the mRNA and the viral vector vaccine are highly effective and will decrease your risk of severe disease from COVID-19. With what is known so far, there are some people for whom the mRNA vaccine may be preferred. Since MGVAMC has access to both, it is our recommendation that you receive the mRNA vaccine if you:
- Are over 60-years-old and have any of the following medical co-morbidities
  - Cancer, undergoing chemotherapy
  - Diabetes
  - COPD/Emphysema
  - Chronic Kidney Disease
  - Heart conditions such as heart failure, coronary artery disease, or cardiomyopathy
  - Obesity (BMI of 30 or more)
  - Sickle cell disease
  - Tobacco use
- Have an immunocompromised state from organ transplantation or bone marrow/stem cell transplantation

References:

VHA Janssen COVID-19 Vaccine Mandatory TMS Handler Training, March 2, 2021