Ask-the-Expert: COVID-19 & Vaccines

Vaccines & DM
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Global vaccine uptake

- 8.28 billion doses administered globally
- 55.3% of the world has received at least one dose
How mRNA vaccines work

1. mRNA with instructions for making the spike protein is developed in a lab.

2. mRNA vaccine.

3. mRNA enters the cell.

4. COVID-19 virus spike protein created.

5. Antibodies.


- Spike proteins are recognized by the immune system, which produces specific antibodies against the COVID-19 virus.
- If you’re infected with the COVID-19 virus, antibodies bind to virus & stop it from replicating.

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How viral vector vaccines work

1. Spike protein
2. Spike protein genetic material extracted
3. COVID-19 virus
- Genetic material inserted into inactive (harmless) virus
- Unrelated, harmless (vector) virus
- Viral vector vaccine
- Human cell

4. COVID-19 virus spike protein created
5. Antibodies
- Spike proteins are recognized by the immune system, which produces specific antibodies against the COVID-19 virus
- If you’re infected with the COVID-19 virus, antibodies bind to virus & stop it from replicating

Myotonic Dystrophy Foundation
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Vaccine Safety

• mRNA vaccines do not enter the nucleus
  → cannot change our DNA

• Vaccine components in DM
  → not known to interact with RNA repeats

• For people with DM
  • Risks of COVID >>> Risks of Vaccines

• Boosters recommended even after natural infection
## Vaccine Schedules and Boosters

### Primary series

<table>
<thead>
<tr>
<th>Vaccine manufacturer</th>
<th>Age indication, years</th>
<th>Number of doses in primary series (interval between doses)</th>
<th>Additional primary dose in immunocompromised persons (interval since second dose)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td>5-11</td>
<td>2 (21 days)</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Pfizer-BioNTech</td>
<td>≥12</td>
<td>2 (21 days)</td>
<td>1 (≥28 days)</td>
</tr>
<tr>
<td>Moderna</td>
<td>≥18</td>
<td>2 (28 days)</td>
<td>1 (≥28 days)</td>
</tr>
<tr>
<td>Janssen</td>
<td>≥18</td>
<td>1 (Not applicable)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Boosters

<table>
<thead>
<tr>
<th>Vaccine manufacturer</th>
<th>Age indication, years</th>
<th>Number of doses</th>
<th>Interval between last primary (including additional) dose to booster dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td>≥18</td>
<td>1</td>
<td>≥6 months</td>
</tr>
<tr>
<td>Moderna</td>
<td>≥18</td>
<td>1</td>
<td>≥6 months</td>
</tr>
<tr>
<td>Janssen</td>
<td>≥18</td>
<td>1</td>
<td>≥2 months</td>
</tr>
</tbody>
</table>
Omicron Variant and Vaccines

• Efficacy of vaccines being studied
  • Vaccines likely still give good protection against severe disease
  • Possibly less “neutralizing activity” in the lab against new variants
  • Need to correlate results in the lab with real world outcomes
  • Boosters may help with vaccine efficacy

• Even if you are vaccinated and then get exposed
  • Get tested soon
  • Call your doctor about options for outpatient treatment
  • Treatments likely still effective – studies underway
Questions

For Dr. Subramanian about vaccines and DM.