On COVID-19 Vaccines & Why You Should Get Vaccinated

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October 2021
Introduction
Presentation Outline

• How Vaccines Work
• Addressing Common COVID-19 Vaccination Concerns
• Resources
• Questions
How Vaccines Work
VACCINES ARE ONE OF THE BIGGEST PUBLIC HEALTH VICTORIES IN HUMAN HISTORY

#vaccineswork
HOW DO VACCINES WORK?
Vaccines reduce the risk of infection by working with the body’s natural defenses to safely develop immunity to disease.

A weakened or killed form of the disease is injected into the body.

The body creates antibodies to fight the germs.

If the actual disease germs ever attack the body, the antibodies return to destroy them.

(MLive.com)
There are three main approaches to making a vaccine:

- Using a whole virus or bacterium
- Parts that trigger the immune system
- Just the genetic material
COVID-19, long-term immunity and vaccines

Vaccines train your immune system using a harmless form of the virus.

The vaccine activates your adaptive immune response.

The adaptive immune response involves:
- **B cells** that make highly specific antibodies to stop the virus getting into your cells.
- **T cells** that can help stimulate the B cells and kill any infected cells.

These cells remember the virus and remain in the body. This is **immune memory**.
If you encounter the real virus in the future, your immune system responds faster and more effectively to prevent infection. This is **long-term immunity**.

An effective COVID-19 vaccine will produce a strong, long-term, adaptive immune response. It might stimulate B cells and specific antibodies or T cells or a combination of both.
### How coronavirus vaccines compare to vaccines for other viruses

<table>
<thead>
<tr>
<th>VACCINE</th>
<th>VACCINE EFFECTIVENESS</th>
<th># OF RECOMMENDED DOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu (Influenza)</td>
<td>44.0%</td>
<td>1</td>
</tr>
<tr>
<td>AstraZeneca novel coronavirus</td>
<td>70.0%</td>
<td>2</td>
</tr>
<tr>
<td>Chickenpox (Varicella)</td>
<td>92.0%</td>
<td>2</td>
</tr>
<tr>
<td>Moderna novel coronavirus</td>
<td>94.1%</td>
<td>2</td>
</tr>
<tr>
<td>Pfizer novel coronavirus</td>
<td>95.0%</td>
<td>2</td>
</tr>
<tr>
<td>Measles (MMR)</td>
<td>97.0%</td>
<td>2</td>
</tr>
<tr>
<td>Polio</td>
<td>99.0%</td>
<td>3–4</td>
</tr>
</tbody>
</table>

**Note:** Flu vaccine effectiveness calculated based on yearly average from 2009 to 2019. AstraZeneca, Moderna, and Pfizer coronavirus vaccine efficacy based on early clinical trial results. AstraZeneca results based on an average of two different vaccine dose regimens.

**Source:** CDC; AstraZeneca; Moderna; Pfizer
Addressing Common COVID-19 Vaccination Concerns
Concerns About COVID-19 Vaccination

- I'm not too sure that it's safe to be vaccinated.
- We don't really need this vaccine, we're young and healthy!
- I was already sick with COVID so I don't need the vaccine.
- Unknown effects of this new vaccine might be worse than COVID!
- I don't like needles.

- This virus doesn't exist! Vaccine companies just want money...
- I heard COVID is like the flu and I was so sick last year after my flu shot.
How Do We Know that COVID-19 Vaccines are Safe?

• There are strict protections in place to help ensure the safety of all COVID-19 vaccines

• Before receiving validation from WHO and national regulatory agencies, COVID-19 vaccines must undergo rigorous testing in clinical trials to prove that they meet internationally agreed benchmarks for safety and efficacy

“So, how safe are COVID-19 vaccines?
The short answer: Very.”
COVID-19 vaccine development timeline

Typical vaccine development timeline
How Do We Know that COVID-19 Vaccines are Safe?

• As with all vaccines, WHO and regulatory authorities will **continuously monitor** the use of COVID-19 vaccines to identify and respond to any safety issues that might arise.
If mRNA Vaccines are Based on New Technology, How Do We Know They’re Safe?

1. COVID-19 mRNA vaccine technology has been **rigorously** assessed for safety

2. Clinical trials have shown that mRNA vaccines produce an immune response that has **high efficacy** against disease (it works!)

3. mRNA vaccine technology has been studied for **several decades**, including in the contexts of Zika, rabies, and influenza vaccines

4. mRNA vaccines are **not** live virus vaccines and do not interfere with human DNA
What are the Side Effects of COVID-19 Vaccines?

Common mild side effects after getting a COVID-19 vaccine may include:

- Soreness or redness around injection site
- Mild fever
- Tiredness
- Headache
- Muscle or joint aches

You can manage these side effects with rest and taking medicines for fever and pain, if needed.
Serious illness following vaccination is rare and is usually coincidental.

Systems are in place to carefully investigate and monitor any kind of serious illness following vaccination.

The health and safety of you and your community is the highest priority.
What about the Long-Term Effects?

• Serious long-term side are extremely unlikely following any vaccination, including COVID-19 vaccination

• Vaccine monitoring has historically shown that side effects generally happen within six weeks of receiving a vaccine dose

• Millions of people have received COVID-19 vaccines, and no long-term side effects have been detected
Is the COVID-19 Vaccine Safe for Women Who are Pregnant or Breastfeeding?

• WHO recommends that for pregnant women the use of the COVID-19 vaccine be considered on the basis of a benefit vs risk assessment

• WHO does not recommend:
  – Pregnancy testing prior to vaccination
  – Delaying pregnancy or terminating pregnancy because of vaccination
  – Discontinuation of breastfeeding after vaccination
Do the COVID-19 AstraZeneca and J&J Vaccines Cause Blood Clots?

• There have been reports of very rare but serious cases of blood clots accompanied by low platelet counts occurring 3 to 30 days after vaccination.

• The data has shown that blood clots are rare:
  – AstraZeneca vaccine (15 July 2021): 4-6 people out of every million vaccinated.
  – Janssen vaccine (7 May 2021): 28 reports of TTS out more than eight million people vaccinated.

• It is possible that there is a causal link between the vaccine and these symptoms, but more data is needed.
Is There a Risk of Heart Inflammation from mRNA COVID-19 vaccines?

• There have been reports of very rare cases of myocarditis and pericarditis following the second dose of mRNA COVID-19 vaccines.

• Myocarditis and pericarditis can be caused by many factors, including:
  – Infections
  – Viruses
  – Medicines
  – Environmental factors
Is There a Risk of Heart Inflammation from mRNA COVID-19 vaccines?

• Current data suggests that there is also a potential relationship between these symptoms and mRNA vaccines

• Research is underway to understand more

• Benefits of these vaccines greatly outweigh the risk of myocarditis and pericarditis by preventing deaths and hospitalizations due to COVID-19
Are Vaccines Effective Against the Delta Variant?

- COVID-19 vaccines are **effective** against severe disease and death from variants of the virus that causes COVID-19, **including the Delta variant**

- Infections happen in only a **small proportion** of people who are fully vaccinated, even with the Delta variant

- When these infections occur among vaccinated people, they tend to be **mild**
What are the Benefits of COVID-19 Vaccination?

1. COVID-19 vaccines are **safe**
2. Prevent you from **getting and spreading** the virus that causes COVID-19
3. Vaccines continue to be **highly effective** at preventing hospitalization and death
4. Can help keep you from getting **seriously ill** even if you do get COVID-19

**Vaccines:**
- Free
- Safe for pregnant and breastfeeding women
- Reduces symptoms if you get COVID
- Previous infection doesn't qualify as protection
What are the Benefits of COVID-19 Vaccination?

5. If you get COVID-19, you also risk giving it to loved ones who may get very sick; getting a COVID-19 vaccine is a safer choice.

6. Vaccines continue to reduce a person’s risk of contracting the virus that cause COVID-19, including the Delta variant.
What are the Benefits of COVID-19 Vaccination?

8. Evidence is emerging that people get better protection by being fully vaccinated compared with having had COVID-19

9. None of the COVID-19 vaccines contain the live virus that causes COVID-19 so a COVID-19 vaccine cannot make you sick with COVID-19
Vaccination develops immunity from COVID-19 more effectively than getting infected and sick

Vaccination reduces the risk of getting seriously ill or dying from COVID-19. Those who have already had COVID-19 may not acquire full immunity. Getting vaccinated provides a stronger level of immunity.
Vaccines are highly effective against severe illness and death caused by COVID-19 variants, including Delta

COVID-19 vaccines may be slightly less effective at preventing infection and mild symptoms caused by the Delta variant, but they are **highly effective** at preventing severe illness and death. Some variants spread more easily.

Getting vaccinated can save your life and protect you from severe disease.

30/7/2021
Everyone Has a Choice
Learn More About Basics of COVID-19 Here

https://youtu.be/hcs2Esr0CFQ
Acknowledgments

• With thanks to Jamie Jablonowski for her support in developing these slides.
Any questions, please contact
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DHMOSH Public Health Videos available at
https://www.youtube.com/channel/UCOLCJEwi8aAf8cGEn4_qLGQ