COVID-19 disease and vaccines: What you need to know

A discussion guide for you to use with your colleagues

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COVID-19 disease background

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COVID-19 disease is caused by the SARS-CoV-2 virus

SARS-CoV-2

- COVID-19 disease is caused by a **coronavirus** called **SARS-CoV-2**
- Scientists think SARS-CoV-2 likely originated in bats, then spread to other animals, including humans[2]

Transmission

- SARS-CoV-2 is **primarily spread over short distances** when a person with COVID-19 disease coughs, sneezes, sings, talks, or breathes[3]
- Less commonly, SARS-CoV-2 can also survive on surfaces and spread from contact with these surfaces[4]

Symptoms

- Classic symptoms of COVID-19 disease include **fever, cough, shortness of breath, aches and pains, and loss of taste and smell**[3]
- COVID-19 disease **may be spread** by **symptomatic** and **asymptomatic** individuals[5]

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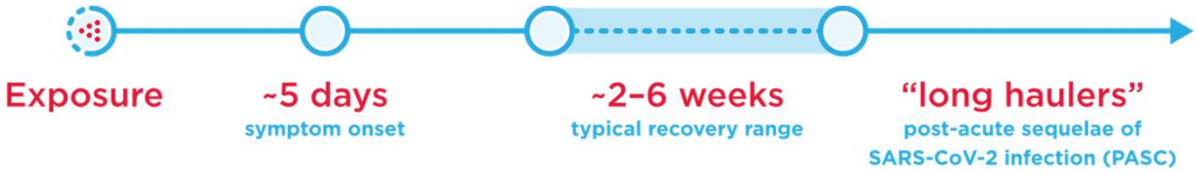
Though there is a typical disease course for COVID-19, some people experience complications



Symptom onset is typically ~5 days after exposure, but it can range from 2–14 days[6]

- **Most people** (80%) with COVID-19 disease experience **mild symptoms** or moderate illness, but they can spread disease to those 20% at risk for severe illness (eg, people with comorbidities and older adults)[6]
- **~10–15%** of cases progress to **severe disease**, and about **5%** become **critically ill**[6]
- For some "**long haulers**," PASC (including loss of taste or smell, fatigue, and breathing problems) may linger or recur for weeks or months following initial recovery
- Some patients experience **complications** that may have lasting health effects, including stroke, heart disease, chronic lung scarring, and chronic shortness of breath[7]

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COVID-19 disease presents unique challenges

The COVID-19 pandemic has been particularly challenging for healthcare professionals[8]

- Challenges with early shortages of and ongoing use of cumbersome PPE
- Managing limited resources for patients with severe disease
- Coping with isolation from their family members and with patients' isolation from family members
- Even **healthcare workers** who do not have COVID-19 disease are suffering from the **stress** of caring for people with COVID-19 disease
- Certain populations are at **much greater risk for developing severe COVID-19 symptoms**, including people of color, older adults (aged ≥65 years), people who are obese, people with diabetes, and people with high blood pressure[9-11]

A lot about COVID-19 disease is not known[12]

- Impact of variants on vaccinated and unvaccinated people
- New emerging variants
- Variability of symptoms

Though ongoing studies will continue to provide clinical data, the long-term effects of COVID-19 disease are currently unknown[13]

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Vaccine history

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Vaccines are one of the greatest advancements in modern medicine[14]

Historically, vaccines have played an important role in public health

Vaccines throughout history have:

- Eradicated smallpox
- Nearly eliminated wild poliovirus
- Minimized effects of measles, diphtheria, and whooping cough[15]
- Lowered cases of infectious disease
- Reduced serious consequences of preventable diseases like tetanus

According to the CDC, the benefits of vaccines outweigh the risks for most people[15]

The CDC has stated that vaccines have never been safer than they are today[16]

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COVID-19 vaccines

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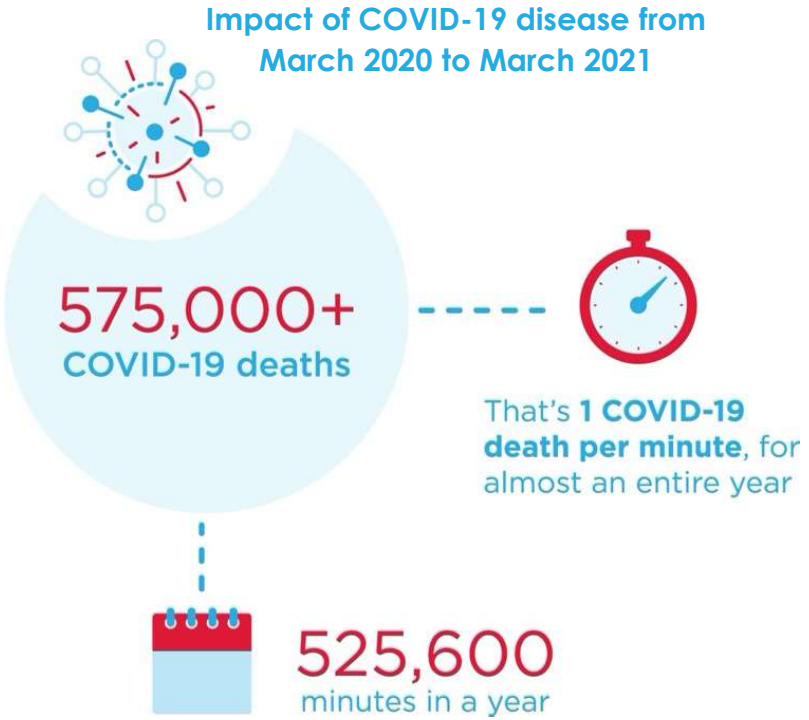
Vaccination can help to diminish the impact of COVID-19 disease

As of June 2, 2021, more than 595,000 people in the US have died from COVID-19 disease, making it one of the **leading causes of death** in the US since March 2020.[17]

Even mild cases of COVID-19 disease are a **serious public health concern**. It is estimated that a person with the disease spreads it to 2–3 other people, on average.[18]

Vaccination can help prevent severe COVID-19 disease, including long-term disease and death, as a result of SARS-CoV-2 infection.

In addition, wearing face masks, hand washing, and social distancing can be effective measures in reducing COVID-19 infection.



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There are vaccines available to help prevent COVID-19 disease

As of April 20, 2021, 3 vaccines have been authorized for emergency use by the FDA

- 2 utilize mRNA science

- 1 is a viral vector vaccine

Together, we can help patients understand the potential benefits of vaccination against the possibly life-threatening COVID-19 disease

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Why and how were COVID-19 vaccines developed and distributed so quickly?

- The spread of SARS-CoV-2 created an **emergency situation**[19]
- The **FDA worked with vaccine manufacturers** to reduce overall timelines by overlapping portions of clinical trials and accelerating review of data due to the global health crisis
- **FDA authorized COVID-19 vaccines for emergency use** on a rolling basis

Although the COVID-19 vaccines were developed quickly, the processes and technologies used in their creation were in development long before the COVID-19 pandemic

All 3 vaccines are part of ongoing studies that continue to evaluate their safety and efficacy throughout Emergency Use Authorization, FDA approval, and continuing beyond[20]

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Many Americans have been vaccinated, and the number of people who are fully vaccinated continues to grow.

As of June 2, 2021, ~50% of people in the US have gotten one shot, and 41% are fully vaccinated. Anyone who is aged 12 or older is eligible for vaccination now.[22]

- The CDC has stated that fully vaccinated people can start resuming normal activities[23,24]
  - Visit bars and restaurants indoors
  - Gather with larger groups at outdoor concerts without a mask
  - Travel domestically and abroad
- People should continue to refer to local regulations and policies on wearing masks and social distancing

The CDC continues to evaluate what is safe for vaccinated people, but we know that the COVID-19 vaccines can help protect people from severe illness and death caused by COVID-19 disease.

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About mRNA vaccines

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How mRNA vaccines work

mRNA medicines and vaccines provide sets of instructions that direct cells in the body to make proteins to prevent or fight diseases[25]

Step 1

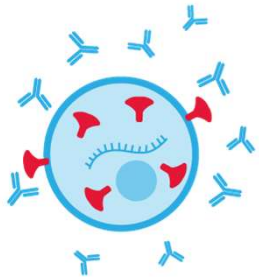
The vaccine is made with a **synthetically produced mRNA** sequence of a virus.

The vaccine does not contain live virus, does not use virus as a vector for delivery, and is not a DNA vaccine.

Step 2

The **vaccine delivers mRNA** to instruct cells to make a protein, such as the spike protein of SARS-CoV-2, **to trigger a robust immune response.**

The vaccine **does not enter the nucleus** of the cell and **does not interfere with the patient's DNA.**



Step 3

Antibodies produced by the immune response **protect the patient** against diseases like COVID-19 disease.

Step 4

After delivering instructions to the cells, the **mRNA dissolves and disappears** in the body.

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Resources

US Centers for Disease Control & Prevention (CDC):
www.cdc.gov

US Food & Drug Administration (FDA):
www.fda.gov

World Health Organization:
www.who.org/

Your state or local public health department:
www.usa.gov/state-health

Moderna EUA site for healthcare professionals:
www.modernatx.com/covid19vaccine-eua/providers/

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Thank you

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