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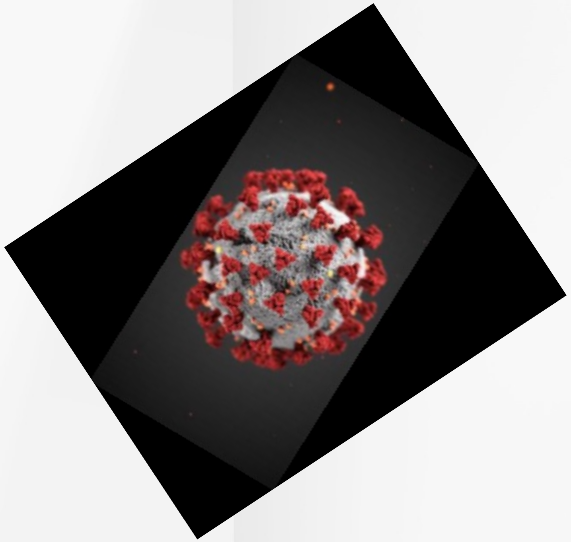
Understanding How COVID-19 Vaccines Work

Goals of the Presentation

- Help increase your understanding of how COVID-19 vaccines work
- Help you know what to expect after being vaccinated
- Share resources on where you can learn more about the vaccine, who is eligible to get it and how to get it
- Address your questions/concerns about the COVID-19 vaccine



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The Immune System—
The Body's Defense Against Infection

When germs, such as the virus that causes COVID-19, invade our bodies, they attack and multiply.

This invasion, called an infection, is what causes illness

Our immune system uses several tools to fight infection:

Macrophages: are white blood cells that allow our body to fight infection by swallowing up and digesting germs. The macrophages leave behind parts of the invading germs called **antigens**. The body identifies antigens as dangerous and stimulates antibodies to attack them.

B-lymphocytes: are defensive white blood cells. They produce antibodies that attack the pieces of the virus left behind by the macrophages.

T-lymphocytes: are another type of defensive white blood cell. Called memory cells, they attack cells in the body that have already been infected

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COVID-19 in your body:

- The first time a person is infected with the virus that causes COVID-19, it can take several days or weeks for their body to make and use all the germ-fighting tools needed to get over the infection.
- After the infection, the person's immune system remembers what it learned about how to protect the body against that disease.
- People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness.

Symptom include: Fever or chills, Cough, Shortness of breath or difficulty breathing, Fatigue, Muscle or body aches, Headache, New loss of taste or smell, Sore throat, Congestion or runny nose, Nausea or vomiting, Diarrhea

Symptoms may appear 2-14 days after exposure to the virus.

What your body remembers:

- The body keeps a few T-lymphocytes, called memory cells, that go into action quickly if the body encounters the same virus again.
- When the familiar antigens are detected, B-lymphocytes produce antibodies to attack them. Experts are still learning how long these memory cells protect a person against the virus that causes COVID-19.

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How COVID-19 Vaccines Work

- Different types of vaccines work in different ways to offer protection.
- Helps our bodies develop immunity to the virus that causes COVID-19 without us having to get the illness.
- With all types of vaccines, the body is left with a supply of “memory” T-lymphocytes as well as B-lymphocytes that will remember how to fight that virus in the future.
- It typically takes a few weeks for the body to produce T-lymphocytes and B-lymphocytes after vaccination.

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Types of Covid-19 Vaccine

mRNA Vaccines: Contain material from the virus that causes COVID-19 that gives our cells instructions for how to make a harmless protein that is unique to the virus.

- After our cells make copies of the protein, they destroy the genetic material from the vaccine. Our bodies recognize that the protein should not be there and build T-lymphocytes and B-lymphocytes that will remember how to fight the virus that causes COVID-19 if we are infected in the future.

Protein subunit vaccines: Include harmless pieces (proteins) of the virus that cause COVID-19 instead of the entire germ.

- Once vaccinated, our immune system recognizes that the proteins don't belong in the body and begins making T-lymphocytes and antibodies. If we are ever infected in the future, memory cells will recognize and fight the virus.

Vector vaccines: Contain a weakened version of a live virus—a different virus than the one that causes COVID-19—that has genetic material from the virus that causes COVID-19 inserted in it (this is called a viral vector).

- Once the viral vector is inside our cells, the genetic material gives cells instructions to make a protein that is unique to the virus that causes COVID-19. Using these instructions, our cells make copies of the protein. This prompts our bodies to build T-lymphocytes and B-lymphocytes that will remember how to fight that virus if we are infected in the future.

(Pfizer, Moderna)

(Pfizer, Moderna)

(Pfizer, Moderna)

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What To Expect After Being Vaccinated

Sometimes after vaccination, the process of building immunity can cause side effects such as:

-fever
-pain in area of the shot
-fatigue
-muscle aches and headache (for about one day)

These symptoms are normal and are a sign that the body is building immunity

*It is possible that a person could be infected with the virus that causes COVID-19 just before or just after vaccination and then get sick because the vaccine did not have enough time to provide protection.

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Commonly Asked Questions:

How long will the vaccine protect me, and will I need to get vaccinated every year?

- It is currently unknown how long the protection from the vaccine will last. It is possible that additional boosters may be needed in the future.
- All but one of the COVID-19 vaccines that are currently in Phase 3 clinical trials in the United States use two shots.
- The first shot starts building protection. A second shot a few weeks later is needed to get the most protection the vaccine has to offer.

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Commonly Asked Questions:

Can I catch COVID-19 from the vaccine?

No, there is no live virus in the vaccines, so it is not possible to get COVID-19 from vaccination.

If you do experience symptoms in the days following the vaccine, it is most likely a result of your body generating an appropriate and expected immune response to the vaccine.

When will the vaccine become available to our patients and families?

Increased production of vaccines is expected over the next several months, with increasing availability throughout the first half of 2021. The hope is that most people will have access to vaccination by mid-2021.

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Commonly Asked Questions:

What if I am sick with COVID-19 or another respiratory virus when I am offered the vaccine?

If you are sick with COVID-19 and on home isolation, you need to wait 30 days after a COVID-19 infection before receiving the vaccine.

Every person will be screened for signs/symptoms of illness. If the screen is positive, the person will not be vaccinated, but will be referred to a testing side for screening.

If you are on home quarantine due to an exposure to the virus, you should not receive the vaccine until quarantine is over.

Can or should I receive the vaccine if I already had COVID-19 and/or if I have antibodies? There are rare cases of reinfection with the virus that causes COVID-19 being reported around the globe. Therefore, you can and should receive a SARS-CoV-2 vaccine even if you previously had COVID-19. However, it is recommended that you wait for three months after you have recovered to be vaccinated. During this period you still need to follow maximum public health precautions to protect yourself from illness.

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Commonly Asked Questions:

Can or should I receive the vaccine if I already had COVID-19 and/or if I have antibodies?

There are rare cases of reinfection with the virus that causes COVID-19 being reported around the globe. Therefore, you can and should receive a vaccine even if you previously had COVID-19.

However, it is recommended that you wait for three months after you have recovered to be vaccinated. During this period you still need to follow maximum public health precautions to protect yourself from illness.

Commonly Asked Questions:

Can I receive the vaccine if I'm pregnant or breastfeeding?

Pregnant females are at risk for severe COVID-19, however vaccine trials have not really included pregnant females.

It's best to discuss the risk and benefits of vaccination with your obstetrician, but this vaccine is not contraindicated for pregnant or lactating women.

Can I receive the vaccine if I'm immunocompromised?

Immunocompromised individuals are eligible to receive the vaccine and although we do not yet have enough data, it may be that they will have a reduced immune response to vaccination

The Bottom Line On COVID-19

- Getting vaccinated is one of many steps you can take to protect yourself and others from COVID-19.
- Protection from COVID-19 is critically important because for some people, it can cause severe illness or death.
- Stopping a pandemic requires using all the tools available.
- Vaccines work with your immune system so your body will be ready to fight the virus if you are exposed.
- Other steps: like masks and social distancing, help reduce your chance of being exposed to the virus or spreading it to others.

Together, COVID-19 vaccination and following CDC's recommendations to protect yourself and others will offer the best protection from COVID-19.

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New Yorkers age 65 or older are now eligible for the COVID-19 vaccine!

New Yorkers age 65 or older can now schedule an appointment to receive the COVID-19 vaccine. **To learn more or to find out where to get vaccinated, visit nyc.gov/vaccinefinder.**

To make an appointment at an NYC Health Department or NYC Health + Hospitals site, eligible New Yorkers can call 877-VAX4NYC.

The following groups are also currently eligible to receive the COVID-19 vaccine:

- **Health care workers and staff with direct patient contact**
- **Dentists and staff**
- **Pharmacists and pharmacy aids**

- **Residents and staff in group living facilities**
- **Teachers, education and child care workers, and in-person college instructors**
- **First responders**
- **Public safety workers**
- **Public transit workers**
- **Corrections officers**
- **Individuals living or working in a homeless shelter**
- **Public-facing grocery store workers**

For a list of all eligible groups, visit nyc.gov/covidvaccinedistribution.

NYC Health

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Tarrytown	555 South Broadway Tarrytown, NY	Drive-Up	COVID Public Health Outreach Site 1 [10200233]	Mon - Fri 9 AM-4:30PM (Blocked 12PM-1PM)	Not Open
Fordham University	2691 Southern Blvd. Bronx, NY	Drive-Up	COVID Public Health Outreach Site 2 [10200234]	Mon – Sun 9 AM-4:30PM	1/9 & 1/10 9 AM – 4:30 PM
Castle Hill	2175 Westchester Avenue, Bronx, NY	Office	COVID Public Health Outreach Site 3 [10200235]	Mon - Sun 9 AM-3:30PM (Blocked 12PM-1PM)	1/9 & 1/10 9 AM - 3:30PM (Blocked 12PM-1PM)
Hutch Tower 2	1250 Waters Place, Bronx, NY	Office	COVID Public Health Outreach Site 5 [10200215]	Mon - Fri 8:15 AM – 4:00 PM	Not Open
Weiler Hospital	1825 Eastchester Road, Bronx, NY	Office	COVID Public Health Outreach Site 6 [10200216]	Mon - Fri 9 AM – 4:30 PM (Blocked 12PM-1PM)	Not Open
Moses Grand Hall	110 E. Gunhill Rd, Bronx, NY	Office	COVID Public Health Outreach Site 7 [10200217]	Mon – Sun 9 AM – 4:30 PM (Blocked 12PM-1PM)	1/9 & 1/10 9 AM – 4:30 PM
Wakefield/ CAMP Building	4141 Carpenter Ave, Bronx, NY	Office	COVID Public Health Outreach Site 8 [10200218]	Mon - Fri 9 AM – 4:30 PM (Blocked 12PM-1PM)	Not Open

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New York City Health Department Testing Site

To find public/private testing sites across NCY: Call 212-COVIDovid19 or Go to nyc.gov/covidtest

NYC HEALTH+ HOSPITALS | Test & Trace Corps

BRONX TESTING SITES*

H+H test site updates: bit.ly/HH_testsites
H+H wait times: bit.ly/HH_waittimes

Week of Jan. 11-17, 2021

H+H sites offer NO-COST tests.
H+H sites may ask, but don't require ID/insurance.
Sites test age 2 & older, unless otherwise noted.

NYC Health+Hospitals Testing Sites (ongoing)
Days and times vary

Gotham Health, Belvis
545 East 142nd Street
Bronx, New York 10454
844-NYC-4NYC
Also offers Antibody Tests/Flu Shots
Mon – Sat, 9 a.m. – 3:30 p.m.
Sun, 9 a.m. – 2 p.m.

North Central Bronx Hospital
3424 Kossuth Avenue
Bronx, New York 10467
Appointments: 844-692-4692
General Information: 718-918-5700
Also offers Antibody Tests/Flu Shots
Mon – Sun, 8:30 a.m. – 4:30 p.m.

Rain Boston Road Senior Ctr
2424 Boston Road
Bronx, NY 10467
Also offers Flu Shots
Mon – Sun, 9 a.m. – 7 p.m.

Wakefield
4101 White Plains Road
Bronx, NY 10466
Mon – Sun, 9 a.m. – 7 p.m.

Jacobi Hospital
1400 Pelham Parkway South
Bronx, New York 10461
718-918-5000
Also offers Antibody Tests/Flu Shots
Mon – Fri, 8:30 a.m. – 3:30 p.m.
Sat – Sun, 9 a.m. – 3:30 p.m.

Gotham Health, Morrisania
1225 Gerard Avenue
Bronx, New York 10452
844-NYC-4NYC
Also offers Antibody Tests
Mon – Fri, 8:30 a.m. – 4 p.m.
Sat, 9 a.m. – 3:30 p.m.
Sun, 10 a.m. – 2 p.m.

St. James Rec Center
2530 Jerome Avenue
Bronx, NY 10468
Mon – Sun, 9 a.m. – 7 p.m.
Also offers Rapid Molecular Tests
Rapid testing is sometimes limited.

Lincoln Hospital
234 East 149th Street
Bronx, New York 10451
718-579-5000
Also offers Antibody Tests/Flu Shots
Mon – Fri, 9 a.m. – 6 p.m.
Sat – Sun 9 a.m. – 4 p.m.

Edward L. Grant Community Ctr
1302 Edward L Grant Hwy
(Enter W. 169th/Cromwell)
Bronx, NY 10452
Mon – Sun, 9 a.m. – 7 p.m.
Also offers Rapid Molecular Tests
Rapid testing is sometimes limited.

Co-op City Retail Space
105 Dreiser Loop
Bronx, NY 10475
Also offers Rapid Antigen Tests/Flu Shots
Mon – Sun, 9 a.m. – 7 p.m.

H+H Mobile Testing Van
Days/times vary

Morris Heights
Mon-Fri, Jan. 11-15: 9:30am-4:30pm
NYCHA Mill Brook Houses
Parking Lot #7 (Spaces 37 and 37) 161 Cypress Ave.

Temporary Partner Sites (Age 4 and older)
Days/times vary & are subject to change.

Mott Haven
Mon - Fri Jan. 11-15: 9am-5pm
BronxWorks/ERM Neighborhood Senior Center
515 Jackson Ave. Bronx, NY 10455

Wakefield
Mon - Fri Jan. 11-15: 8am-4pm
RAIN Nereid Neighborhood Senior Center
720 Nereid Ave. Bronx, NY 10466

Kingsbridge
Mon - Fri Jan. 11-15: 8am-4pm
RAIN Bailey Neighborhood Senior Center
950 Union Ave. Bronx, NY 10459

Morrisania
Mon-Fri, Jan. 11-15: 8am-1pm
Morris HS Educational Campus
110 Boston Rd. Bronx, NY 10456

Foxhurst
Mon / Wed / Fri Jan. 11, 13, 14: 9am-3pm
PSS Davidson Neighborhood Senior Center
950 Union Ave. Bronx, NY 10459

Allerton
Tue & Thu, Jan. 12 & 14: 9am-3pm
PSS Parkside Neighborhood Senior Center
644 Adee Ave. Bronx, NY 10467

Partner Mobile Testing Van (blue & white van)
Days vary. Testing Hours: 8am-7pm (Age 4 and older)

Laconia
Mon-Sun, Jan. 11-17
NYCHA Eastchester Gardens
*Also offers Rapid Antigen Tests
Street parking by 1210 Burke Ave.
Bronx, NY 10469

Belmont
Fri-Sun, Jan. 8-10
Crotona Pool
*Also offers Rapid Antigen Tests
Fulton Ave & East 173rd St.
Near Pool/ Bathgate Playground
Bronx, NY 10457

Woodlawn
Mon-Fri, Jan. 11-15
Woodlawn Playground
4370 Van Cortlandt Park E
#1867
Bronx, NY 10470

Morrisania
Thurs & Fri, Jan. 14 & 15
NYCHA Morrisania
By bball Court nr 3074 Park Ave
Bronx, NY 10456

Castle Hill
Mon-Sun, Jan. 11-17
NYCHA Castle Hill Houses
*Also offers Rapid Antigen Tests
2144 Seward Ave.
Bronx, NY 10473

Mott Haven
Mon-Sun, Jan. 4-10
NYCHA Patterson Houses
Corner of East 145th St.
& College Ave.
Bronx, NY 10451

Grand Concourse
Mon-Wed, Jan. 11-13
Hostos College
149th St. & Grand Concourse
Bronx, NY 10451

Mott Haven (weekend only)
Sat & Sun, Jan. 16 & 17
NYCHA Mitchel Houses
Parking lot by 190 Lincoln Ave.
Bronx, NY 10454

NYC Health Department COVID-19 Express
Hours of Operation: Mon - Fri, 9am-5pm
By appointment only: nyc.gov/health/covidexpress

Morrisania
1309 Fulton Avenue
Bronx, NY 10456

TO FIND PUBLIC/PRIVATE TESTING SITES ACROSS NYC:
Call 212-COVID19 or go to nyc.gov/covidtest

v1: 01/10

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Resources

www.cdc.gov
www.cdc.gov/cdc
www.nyc.gov
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