



Vaccination Guidance for Influenza Virus 2021-2022

Influenza

Influenza, commonly known as the flu, is a contagious respiratory illness caused by influenza viruses that infect the nose, throat and lungs that can cause mild to severe illness. Serious outcomes of flu infections can result in hospitalization or death. The best way to prevent the flu is by getting vaccinated every year.

Most often present in the fall and winter months, the flu can reach epidemic proportions in many geographic areas and communities. According to the CDC, each year between 3,000 and 49,000 Americans die from influenza-related complications, depending on the severity and length of each flu season.

Three types of influenza viruses infect humans: Influenza A, B and C. Type A and B cause seasonal epidemics. Influenza A is the only type known to cause pandemics and is further divided into subtypes, such as the H1N1 and H3N2 viruses. Influenza type C infections differ from Types A and B as they generally cause mild illness and are not thought to cause widespread flu. Currently, the circulating influenza viruses are related to the pandemic 2009 H1N1 virus.

Each year, the seasonal influenza vaccine is designed to cover the three most common viruses expected to infect humans in the coming year. There are three kinds of flu that are important to understand:

- **Seasonal flu** occurs each year, usually during late fall through early spring. Typically, between 5% and 20% of the U.S. population contract seasonal influenza, although only between 3% and 11% become symptomatic as seasonal flu is so common and most have developed some natural immunity to these strains.

- **Pandemic flu** is a specific kind of seasonal flu that occurs when a new influenza A virus emerges for which most humans have little or no immunity and, thus, can spread efficiently and quickly. An influenza virus is called **pandemic flu** when it rapidly spreads from person to person to create a worldwide epidemic (**pandemic**).

- **Avian (H5N1) flu** is a subtype of the influenza A virus that is highly contagious among birds but rarely infects humans. Scientists follow H5N1 flu closely because it has the potential to cause a deadly pandemic. So far, the majority of human H5N1 cases have occurred outside of the United States.

Influenza is a yearly concern for health professionals as it is a constantly changing, highly infectious and potentially deadly virus.

Contracting the Flu

The primary way that influenza viruses are transmitted is through **droplet spread**. When people infected with a flu virus cough, sneeze or talk, they produce droplets that can land in the mouth, eyes or noses of people nearby. Less commonly, a person might also get the flu through **indirect contact**: touching a contaminated surface or object and then touching their own mucous membranes (mouth, eyes or nose).

Most healthy adults can infect others beginning one day before symptoms develop and up to five to seven days after becoming sick. Several groups are noted to have a high risk of transmitting influenza viruses, particularly school-age children (ages 5 to 19) and their parents. Healthcare workers, including fire fighters and other first responders, also have significant potential to transmit the virus through multiple patient contacts.

Symptoms

The flu is different from the common cold. Symptoms of the flu usually start suddenly and may include:

- Fever (not everyone with the flu will have a fever)
- Feeling feverish or having chills
- Cough, sore throat and runny or stuffy nose
- Muscle or body aches
- Headaches
- Fatigue (tiredness)
- Vomiting or diarrhea (more common in children)

Although most healthy people recover from the flu within one-week, certain groups are at high risk for serious complications. Elderly people over 65, young children under 5, the immunocompromised, pregnant women and people with chronic conditions are more likely to become seriously ill and possibly die from influenza. Complications from the flu include bacterial pneumonia, ear and sinus infections, and worsening of medical conditions such as congestive heart failure, asthma or diabetes.

The time from when a person is exposed and infected with flu to when symptoms begin to show is about two days, but it can range from one to four days. A person may be able to spread the flu to someone else before becoming symptomatic. People with the flu are most contagious in the first three to four days after illness onset and symptoms present.

Preventing the Flu

Influenza is a vaccine-preventable disease. The flu vaccine has been shown to reduce flu-related illnesses and the risk of serious complications. Ongoing research predicts the strains to be most common in the coming flu season. One influenza A H1N1, one influenza B H3N and one or two Influenza B viruses are included in each season's vaccines. About two weeks after vaccination, antibodies that provide protection against influenza virus infection develop in the body. The CDC and the Advisory Committee on Immunization Practices (ACIP) do not recommend one vaccine form over others.

An annual influenza vaccine is recommended for all fire fighters in NFPA 1582, Fire Department Infection Control Programs. Emergency responders need to be vaccinated with the seasonal flu vaccine every year. Currently, there are two kinds of flu vaccine available in the United States:

- **The flu shot** — an inactivated vaccine (containing killed virus) is approved for use in people older than 6 months, including healthy people and people with high-risk, chronic medical conditions
- **The nasal-spray flu vaccine** — a live vaccine (containing weakened viruses) that does not cause the flu (sometimes called LAIV for live attenuated influenza vaccine or FluMist®). Nasal vaccines are approved for use in healthy, non-pregnant people who are 2 to 49 years of age

Neither vaccine will cause a person to contract the virus; however, some individuals may experience mild flu-like symptoms from the body's immune response.

The flu vaccine effectiveness varies year to year, but can reduce the risk of having to go to the doctor because of the flu by 40-60%. **It is important to note that seasonal flu vaccines do not protect against infection or illness caused by other viruses, such as COVID-19, that can also cause flu-like symptoms.** There are many other viruses besides influenza A or B that can result in influenza-like illness that spread during flu season.

In addition to vaccination, you can help prevent the spread of influenza by:

- Staying home from work and school if you are experiencing flu-like symptoms
- Decontamination
- Practicing decontamination procedures will protect you, your crew and your family from indirect contact. Viruses and bacteria can live for up to two hours or longer on surfaces such as radios, doorknobs and equipment.
- Socially distancing from patients with respiratory symptoms
- Strictly limiting the number of crew members having direct patient contact
- Practicing hand hygiene (wash with soap and water or use hand sanitizer with at least 60% alcohol)
- Use personal protective equipment (PPE) (gloves, gowns, NIOSH-certified respirators that are N95 or higher and goggles that offer mouth, nose and eye protection)
- Providing masks for symptomatic patients

If You Believe You Have Influenza¹⁶

- Stay home from work or school when you are sick
- Contact your healthcare provider to discuss possible testing and treatment.
 - Because many respiratory illnesses — such as the common cold and COVID-19 — have symptoms similar to the flu, it can be difficult to diagnose influenza. If you develop flu-like symptoms and are concerned about your illness, especially if you are at high risk for complications of the flu, it is important to contact your healthcare provider.
 - Tests to diagnose influenza are most effective if performed within the first two or three days of illness.
- Antiviral treatments for influenza work best when started within two days of symptom onset. While most people do not require medication, antiviral therapy can be very important in certain situations (e.g., hospitalized patients, high-risk groups, severe complications).

Additional Information

- CDC: <https://www.cdc.gov/flu/season/index.html>
- OSHA: <https://www.osha.gov/Publications/seasonal-flu-factsheet.pdf>

<https://www.cdc.gov/flu/season/faq-flu-season-2021-2022.htm>

<https://www.cdc.gov/flu/about/burden/faq.htm>

<http://www.niaid.nih.gov/topics/Flu/understandingFlu/Pages/definitionsOverview.aspx>

<http://www.pandemicflu.gov/individualfamily/about/index.html>

<http://www.cdc.gov/flu/avian/gen-info/flu-viruses.htm>

<http://www.cdc.gov/flu/about/disease/spread.htm>

<https://www.iaff.org/influenza/>

Medlock J, Galvani AP. Science. "Optimizing influenza vaccine distribution" 2009 Sep 25;325(5948):1705-8. Epub 2009 Aug 20

<http://www.cdc.gov/flu/keyfacts.htm>

<http://www.niaid.nih.gov/topics/Flu/understandingFlu/Pages/Symptoms.aspx>

<http://www.niaid.nih.gov/topics/Flu/understandingFlu/Pages/seasonalVaccine.aspx>

<https://www.cdc.gov/flu/prevent/misconceptions.htm#:~:text=The%20most%20common%20side%20effects,and%20I%20ast%201%2D2%20days.>

http://www.cdc.gov/germstopper/home_work_school.htm

<http://www.osha.gov/Publications/respirators-vs-surgicalmasks-factsheet.html>

<http://www.osha.gov/Publications/exposure-risk-classification-factsheet.html>

<https://www.cdc.gov/flu/treatment/takingcare.htm>

<http://www.cdc.gov/flu/antivirals/whatyoushould.htm>