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Influenza

(Flu)

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The Facts

The flu is a respiratory (i.e., nose, throat, and lung) infection that can be caused by influenza viruses. Many people use the word "flu" when they actually have a cold. Although the common cold is also caused by viruses, the flu and common cold differ in several ways.

In North America, the flu season typically starts between October and December, and usually ends around February – however, it can sometimes last until May. Up to 25% of the population may be infected in an average year. Stronger epidemics (e.g., when more people than expected get the flu in a given area or season) come every 2 or 3 years, infecting about twice as many people as during an "off" year.

Most people who get the flu will recover within 1 to 2 weeks, but some people are at risk of developing complications such as pneumonia. On average, about 3,500 people in Canada die each year from complications of influenza, and about 12,000 people with the flu are hospitalized. Most of these people have other medical conditions, are seniors, or are very young children.

Causes

Influenza is contagious, which means it can be spread easily from person to person. Viruses that cause influenza spread from person to person mainly by droplets of respiratory fluids that are sent through the air when someone infected with the virus coughs or sneezes. Other people inhale the airborne virus and can become infected.

The flu virus can also be spread when someone touches a surface (e.g., doorknobs, countertops, telephones) that has the virus on it and then touches his or her nose, mouth, or eyes. The flu is most easily spread in crowded places such as schools and offices.

There are 3 types of influenza viruses that can infect humans: A, B, and C. Type C more commonly affects ducks, geese, turkeys, and chickens, but it has also been involved in a small percentage of human cases, largely affecting children. Type B mainly affects humans, and usually causes a milder illness. It changes very little from year to year.

Type A influenza poses the most serious problems for humans, and is responsible for the majority of flu epidemics and pandemics. Strains of this type have also been found in birds, horses, pigs, seals, whales, and ferrets. Viruses that affect 2 different species sometimes combine and mix-and-match genetic information to create a new strain that nobody is immune to and for which no vaccine has been prepared.

The flu takes 1 to 4 days to incubate in humans, but infected people become contagious before symptoms appear, often just the day after the virus enters the body. Adults remain infectious (i.e., they can spread the virus to others) for about 5 to 7 days, and young children may remain infectious for up to 10 days.

Symptoms and Complications

Initial flu symptoms include headaches, chills, and a cough. Symptoms such as fever, loss of appetite, and muscle aches are soon to follow. Other symptoms such as nausea, vomiting, and diarrhea are rare in adults but more common in children.

Since many people think they have the flu when it's actually a bad cold, here's a quick guide to help you tell the difference:

Symptom	Cold	Flu
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Fever	Uncommon	Usually present, high (38°C to 40°C or 100°F to 104°F); lasts 3 to 4 days
Headache	Uncommon	Very common
Aches and pains	Slight	Common and often severe
Fatigue and weakness	Mild	Can last 2 to 3 weeks
Extreme exhaustion	Never	Very common at the start
Stuffy nose	Common	Sometimes
Sneezing	Common	Sometimes
Sore throat	Common	Sometimes
Chest discomfort and cough	Mild to moderate, hacking cough	Common

For most people, the flu lasts 1 to 2 weeks, but it can last for up to a month. The main complications are secondary bacterial infections of the sinuses or lungs (pneumonia). Symptoms include fever, chills, body aches, cough, and sputum production (also called phlegm; usually brown, green, or yellow in colour). Children are prone to ear infections like otitis media.

People in nursing homes are at a higher risk of complications from flu because they may have weak immune systems and often have other medical problems. People with asthma, chronic obstructive pulmonary disease, or congestive heart failure are also at a higher risk of developing bacterial infections like pneumonia. Additionally, people with diabetes and people in the second or third trimester of pregnancy are at an increased risk of complications from the flu.

Knowing how to recognize the signs of flu sickness that require immediate attention is important. Here is a simple list of key emergency warning signs to watch for:

Children:

- fast breathing or trouble breathing
- bluish skin colour
- not drinking enough fluids
- not waking up or interacting
- fever with rash
- flu-like symptoms improving then returning with fever and worsened cough

Adults:

- difficulty breathing
- pain or pressure in chest or abdomen
- sudden dizziness
- confusion
- severe or persistent vomiting
- flu-like symptoms improving then returning with fever and worsened cough

Making the Diagnosis

Since the symptoms of an influenza infection can vary from the common cold, a diagnosis can be made fairly quickly. Your doctor will be able to tell that you have the flu if you have at least some or most of these symptoms:

- aches and pains everywhere, especially in the back and legs
- bad headache
- burning sensation in the chest
- dry cough at first, then bringing up sputum
- high fever
- nauseous feeling and possible vomiting
- sore throat
- runny or stuffy nose

- o extreme tiredness

If there is any doubt, your doctor can make sure that it's the flu by taking a nasal or pharyngeal (throat) swab and testing it for the virus. This is rarely needed.

Treatment and Prevention

The normal treatment for flu is rest and plenty of liquids.

Treatment also includes ways to prevent spreading the flu virus, such as proper handwashing, keeping common surfaces clean, and coughing or sneezing into your arm or sleeve.

Medications for specific symptoms can help. Cough suppressants can be used for cough. Acetylsalicylic acid* (ASA), ibuprofen, or acetaminophen can be used to treat symptoms of the flu, such as aches and fever.

Children and teenagers with flu shouldn't take ASA or other salicylates. The combination of influenza and ASA is linked to Reye's syndrome, a rare but serious condition affecting the brain and liver. Many over-the-counter cold medications contain ASA or other salicylates. Ask your doctor or pharmacist about this.

Antibiotics are not effective against viral infections like flu and the cold, but they may be prescribed for complications, such as pneumonia or other bacterial infections.

Antiviral medications like oseltamivir and zanamivir are sometimes used to treat the flu. These medications can help shorten the duration of the flu and reduce symptoms if they are taken **within 2 days** of the start of symptoms. Antiviral medications are also recommended to prevent flu infection for some people. Antivirals can be used to prevent flu in children and adults after they come into close contact with a person who has the flu, such as flu-infected people who live in the same household. Generally, this is not recommended for most people; however, antivirals may be recommended for people at risk for flu complications. In these situations, antiviral medications should be started as soon as possible after becoming exposed to the person with the flu. Your doctor can decide whether you should start antiviral medications.

Zanamivir and oseltamivir are antiviral medications that can be used to treat and prevent influenza A. They prevent newly formed viruses from escaping the infected cells that produced them. This limits further spread of the virus in the body. Zanamivir is an inhaled spray, whereas oseltamivir is a pill. Taken within 24 to 48 hours after the onset of illness, these medications reduce the duration of symptoms by up to 1 day.

Flu antibodies can prevent flu. The only ways to generate antibodies are to be infected or to get vaccinated. Because the flu viruses can change from year to year, vaccination needs to be repeated every year. Keep in mind that all flu vaccines take 2 weeks to start providing the maximum protection against the influenza virus, so it's important to get vaccinated early.

Each spring, a worldwide network of physicians and testing labs decide which flu strains are likely to cause trouble and design that year's vaccine accordingly. There are 2 types of vaccine available: the **trivalent** vaccine protects against **1** type B strain and the **2** type A strains; the **quadrivalent** vaccine protects against **2** type B strains and the **2** type A strains that are expected to predominate in the coming flu season. Those over the age of 65 should receive a **high-dose** or **boosted** vaccine instead.

The effectiveness of the vaccine can vary from season to season, which means there is still a chance that you can get the flu – although your symptoms may be milder. The flu vaccine is recommended for anyone aged 6 months and older.

Certain people are at an increased risk of complications from the flu and should receive the vaccine. High risk groups include:

- people aged 65 years or older
- young children under 5 years of age (especially those under the age of 2)
- people with underlying medical conditions, including people with:
 - a chronic lung condition or disease (e.g., asthma, chronic obstructive pulmonary disease [COPD], cystic fibrosis)
 - diabetes
 - heart disease (e.g., coronary artery disease, congestive heart failure, congenital heart disease)
 - chronic kidney or liver disease
 - a weakened immune system (*immunocompromised*), which can be caused by:
 - HIV/AIDS, an infection that attacks the immune system
 - certain types of cancer (e.g., lung cancer)
 - medications for certain conditions, such as:
 - organ transplants: steroids, used to suppress the immune system to prevent organ rejection (e.g., mycophenolate mofetil, tacrolimus, cyclosporine)
 - cancer: chemotherapies (e.g., methotrexate, 5-fluorouracil, taxane drugs such as paclitaxel or docetaxel)

- certain types of arthritis, such as rheumatoid arthritis: steroids, biological agents (antibodies such as adalimumab or infliximab), immunosuppressants
- Crohn's disease: steroids, biologics, and immunosuppressants
- blood disorders (e.g., any type of anemia)
- neurological or neurodevelopmental conditions that affect their ability to swallow and breathe
- obesity
- residents of nursing homes or other long-term care facilities, regardless of age
- pregnant people (especially if they are in their second or third trimester), up to 2 weeks after delivery
- children receiving long-term therapy with Aspirin or products containing ASA

People who should not receive a flu shot include children less than 6 months of age and people with severe allergies to the flu vaccine or any ingredient in the vaccine.

You can reduce your risk of getting the flu by practicing regular handwashing using soap and warm water or an alcohol-based hand sanitizer. Also, cough or sneeze into a tissue or into your sleeve. Dispose of the tissue right away. If you have flu symptoms, stay home from work or school and avoid contact with people who are at a high risk of flu complications (e.g., seniors, nursing home residents).

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