Influenza

How to Prevent and Treat a Serious Infection

written by Harvard Medical School

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It happens every year. The days grow shorter, the temperature drops, footballs fly—and the flu strikes. Influenza, or the flu, is so common that it's easy to dismiss this seasonal affliction as "just a virus" or "just the flu." It's true that the flu is caused by a virus and that most patients recover without specific therapy. But it's also true that thousands of Americans die from the flu each year and millions are sick enough to miss work or school.

Influenza is a serious infection—but it can be prevented and treated.

For more information about influenza from Harvard Health Publications, go to www.patientedu.org/flu.

Up Close and Personal:
Meet the Flu Bug

A large group of viruses belong to the influenza family. Nearly all human infections are caused by human strains of the influenza A or B viruses. Influenza A is the more serious. It has mastered the nasty trick of disguising itself by changing the proteins on its outer coat. Because of that, people who are immune to an old strain of the flu virus are not protected against new strains. That's why you need to get a new flu shot each year.

Influenza Epidemics

Influenza is a worldwide problem. Because new strains of the virus crop up every year, new outbreaks occur annually. Most years, the new strains turn up first in Asia, and then spread around the world to the United States. Luckily, that gives scientists a chance to spot epidemic strains and produce new vaccines before the flu bugs hit home.

In the U.S., the flu season runs roughly from Thanksgiving to Easter, with most cases occurring in the dead of winter. In a typical year, up to 10% of us get the flu, over 200,000 people are sick enough to require hospitalization, and over 20,000 Americans die from the infection. Even worse, the toll can double during epidemics, which occur about every 10 to 15 years.

"*Just the flu?*"

Spreading Problems

Influenza is highly contagious. As a respiratory virus, it spreads on tiny droplets of mucus that spew into the air when you cough, sneeze, or simply exhale. People close to you are the most likely to catch the flu, which is why the infection spreads so quickly through families, health care facilities, and other places where people live close to each other. The virus can also be spread by hand-to-hand contact.

Symptoms

Influenza hits fast. After an incubation period of just 1 to 2 days, the symptoms start abruptly. Most patients are feverish, and high temperatures in the 103˚ to 104˚ range are common. Nearly everyone suffers a runny nose and sore throat, but unlike ordinary colds, the flu also produces a hacking, dry cough. Muscle and joint aches are common and can be severe. Headache, burning eyes, weakness, and extreme fatigue add to the misery.

In most cases, the high fever and severe distress settle down in 2 to 5 days, but the cough can linger for a week or two and the fatigue even longer.

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Complications

The most serious—and deadly—complication of the flu is pneumonia. Young children, senior citizens, and people with chronic illnesses are at highest risk. These patients have the greatest need for preventive vaccinations and medical treatments.

In some cases, pneumonia is caused by the flu virus itself. It's a particularly deadly problem that begins early in the infection and progresses rapidly, with a severe dry cough and shortness of breath. Bacterial pneumonia is more common but more treatable. It starts later, after patients seem to be on the mend. The fever returns, the cough increases, and patients raise thick, pussy *sputum* (phlegm).

Other flu complications can include asthma attacks, ear infections, bronchitis, sinusitis, inflammation of the heart or other muscles, and inflammation of the nervous system.

"*Just the flu?*"

Diagnosis

Most cases are diagnosed because the season is right, the virus is going around the community, and the symptoms are typical. But milder cases of the flu can resemble other respiratory infections that also strike in the winter. Use Table 1 (right) to see if your symptoms are likely to be the flu or a less serious problem—and to start thinking about what to do. Always consult your doctor for a personal diagnosis and treatment.

Table 1 **Is it the Flu?**

		Allergy	Cold	Sinusitis	Flu
Symptom	Sneezing	Yes	Yes	No	No
	Itching eyes or throat	Yes	No	No	No
	Nasal discharge	Watery	Watery	Thick, discolored	Thin
	Bad taste or breath	No	No	Yes	No
	Facial pain/ pressure	No	Mild	Yes	No
	Fever	No	Low grade	Low to moderate	High
	Cough	No	Mild	Mild	Severe
	Muscle aches	No	Mild	Mild	Severe
	Headache	No	Mild	Mild	Severe
	Fatigue, weakness	No	Mild	Mild	Severe
Treatment	Fluids	No	Yes	Yes	Yes
	Inhaled steam	No	No	Yes	No
	Antihistamines	Yes	Yes	No	No
	Decongestants	Yes	Yes	Yes	Sometimes
	Antibiotics	No	No	Yes	No
	Antiviral	No	No	No	Sometimes

October and November are the ideal months to get the flu vaccine.

Doctors usually rely on clinical findings to diagnose the flu. But if the symptoms are unusual or very severe, or if the flu has not yet turned up in the community, special tests can confirm the diagnosis. Most often, doctors use a rapid test that can detect proteins from the influenza virus on a patient's nasal swab within minutes. Blood tests, chest x-rays, and other studies may be needed if complications develop.

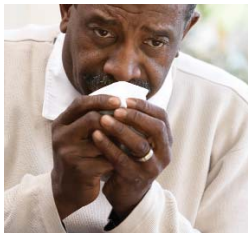
Prevention: *Hygiene*

Whether or not you've had a flu shot this year, a few simple precautions can help protect you and your family:

Wash your hands. Alcohol-based hand rubs and gels are best. Look for one containing 60% to 95% isopropanol or ethanol. Ordinary soap and water will also help, but it's not necessary to use very hot water or "antibacterial" soaps. Antimicrobial towelettes may be useful when you're on the move. Wash carefully after any contact with folks who have flu-like symptoms.

Keep your distance. The flu is most contagious within 3 feet of a patient. If your community is hard-hit this winter, try to minimize the time you spend in crowded places.

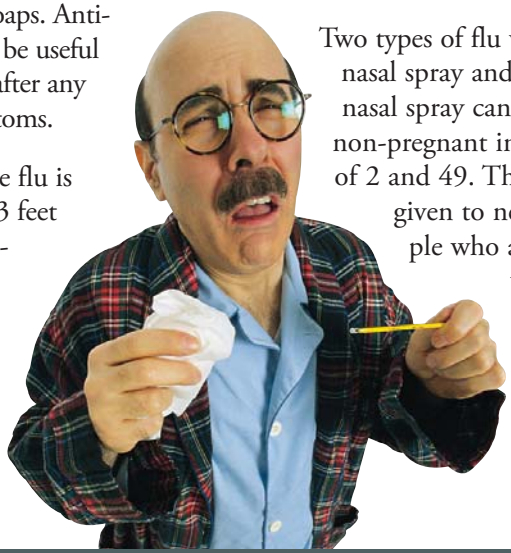
Wear a mask. If you are in a high-risk group and you can't avoid getting up-close and personal with possible flu victims, use a mask. N-95 respirator masks are best. Be sure it fits well, keep it dry and free of saliva, and change it periodically.



Protect others. Don't go to work or school if you have the flu. Use a tissue to cover your mouth when you sneeze or cough, and dispose of it properly. Wear a mask if you have to go out in public, especially in health care facilities.

Prevention: *Vaccination*

New vaccines are produced for every flu season; each protects against the two strains of influenza A and one strain of influenza B that are heading our way in the fall. In the U.S., October and November are the ideal months to get the vaccine. Children aged 6 months to 8 years who have never been immunized need 2 doses, but 1 dose will suffice for all others.



Two types of flu vaccine are available—a nasal spray and an injectable vaccine. The nasal spray can be used only by healthy, non-pregnant individuals between the ages of 2 and 49. The injectable vaccine can be given to nearly everyone, except people who are allergic to eggs or to the vaccine itself. Side effects are mild and uncommon, amounting to a slightly sore arm or a low fever.

Immunization can reduce your risk of catching the flu by up to 80%. That's a big benefit, but nearly half the people who need the most protection don't get it. Here's a list of people who should be immunized each fall:

- All children aged 6 months to 4 years
- All adults aged 50 years and older
- Children and adolescents aged 6 months to 18 years who receive long-term aspirin therapy
- Women who are likely to become pregnant during the flu season
- People who have asthma, diabetes, or chronic diseases of their lungs, heart, blood, kidneys, or liver
- People who have illnesses or take medications that impair the immune system
- Residents of chronic care facilities
- Health care personnel and child care providers
- Caregivers and household contacts of persons with medical conditions that put them at risk
- Everyone else who wishes to avoid the flu (providing there is enough vaccine to go around).

Prevention and Treatment:

Medications

Antibiotics don't work against viruses, including influenza. But while there are no medications for ordinary viruses, special prescription drugs can be used to treat or prevent the flu. Two older drugs, *amantadine* and *rimantadine*, have lost their effectiveness, but two new drugs remain active against most strains of influenza A and B. Both medications target a viral enzyme called *neuraminidase*. Neither will cure the flu, but they can ease and shorten the illness if started within the first 24 to 36 hours of flu symptoms. Both drugs can also be used to prevent influenza in unvaccinated persons who are exposed to the infection.

Zanamivir is administered by inhalation from a nebulizer. It is approved for prevention in people aged 5 years and older and for treatment in people aged 7 years and older. Side effects may include wheezing, nausea, and vomiting.

Oseltamivir is available in tablet form. It is approved for prevention and treatment in patients older than 1 year. Side effects may include nausea and vomiting.

If you get the flu, ask your doctor if these medications are right for you. With or without an antiviral drug, be sure to get lots of rest and drink plenty of fluids. Acetaminophen can help ease fever and aches; aspirin is also effective, but should never be used by flu patients under 18 years of age. And be sure to contact your doctor promptly if you think you're developing pneumonia or other complications that may require antibiotics or hospitalization.

To learn more about influenza, visit the **Pri-Med Patient Education Center** at **www.patientedu.org/flu**.

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PMPEC-PC-FLU-001