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Patient information: Influenza prevention (Beyond the Basics)**Author**

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INTRODUCTION — The most effective way to prevent influenza is by getting the influenza vaccine (the flu shot or flu nasal spray) and using simple infection control measures such as hand washing. Antiviral medicines can also help prevent infection if you are exposed to the flu.

This article will discuss ways to prevent infection with influenza. The symptoms and treatment of influenza are discussed separately. (See "[Patient information: Influenza symptoms and treatment \(Beyond the Basics\)](#)".)

INFLUENZA VACCINE — Getting the influenza vaccine is the most effective way to reduce the chance of becoming infected with the flu. People who get the influenza vaccine have a lower chance of illness and death from influenza compared with people who are not vaccinated. (See "[Seasonal influenza vaccination in adults](#)" and "[Seasonal influenza in children: Prevention with vaccines](#)".)

Timing — Because the influenza virus changes (or "mutates") slightly from year to year, you need a new influenza vaccine before each flu season. People should get the flu vaccine soon after it has become available to get the most benefit.

In the northern hemisphere, the flu season usually occurs between November and April. In the southern hemisphere, the flu season usually occurs between May and October. Flu can occur at any time of year in the tropics.

Effectiveness — People who are vaccinated form antibodies (proteins), which destroy the influenza virus after the person is exposed. It generally takes about two weeks to make these antibodies. The vaccine usually protects 50 to 80 percent of those who are vaccinated from getting the flu.

If you get the flu after being vaccinated, your symptoms are likely to be milder and last for a shorter time compared with people who were not vaccinated.

Vaccine formulations — The flu vaccine is available in three forms in the United States, as an injection into the muscle, as an injection into the skin, and as a nasal spray.

- The injection of the flu vaccine into the muscle (regular flu shot) is approved for adults and children 6 months and older. In older adults, a high-dose version of this vaccine works a little better than the standard-dose version; we prefer the high-dose vaccine for adults ≥65 years of age when it is available.
- The injection of flu vaccine into the skin in what is called an intradermal injection is approved for adults aged 18 to 64 years. The intradermal injection uses a smaller needle and less vaccine but works as well as the regular flu shot. It is especially useful in people who are frightened of needles but who cannot get the nasal spray described below.
- The nasal spray is approved only for healthy children age 2 years and older and healthy adults up to 49 years. In 2014, the Advisory Committee on Immunization Practices recommended the nasal spray instead of the regular flu shot for healthy children 2 to 8 years of age when it is immediately available.

Pregnant women and people who have a weakened immune system or who have chronic medical problems should **not** get the nasal spray since it contains live virus. If you live with a person with a severely weakened immune system, you should **not** get the nasal spray.

Vaccine side effects — People who get the vaccine as an injection (either into muscle or skin) can have reactions at the injection site. Intramuscular injections can cause redness, swelling, and/or soreness at the site. Intradermal injections can cause redness, swelling, and/or itching. The high-dose intramuscular vaccine and the intradermal vaccine are more likely to cause local reactions than the standard-dose intramuscular vaccine.

People with a serious allergy to egg products should not receive the nasal spray because it is grown in eggs and its safety has not been studied in people with egg allergy. The flu vaccine that comes in a shot has been studied and shown to be safe even in people with egg allergy, so most people with an egg allergy can get the shot even though most flu shots are made in eggs. There is now also a flu shot that is not made in eggs (Flucelvax). People with egg allergy can receive this vaccine, but, if it is not available, the egg-based flu shot is safe for most people. (See "[Patient information: Food allergy treatment and avoidance \(Beyond the Basics\)](#)".)

Other possible side effects of these vaccines include body aches, headache, and a low-grade fever (usually less than 100.4°F or 38°C). These problems are usually mild and go away within a day or two.

Many people are concerned about the safety of vaccines. But for most people, the risk of complications from the vaccine is much smaller than the risk of complications from being infected with the flu. While no vaccine is 100 percent safe for everyone, the flu vaccine appears to be low risk. For example:

- The flu vaccine is less likely than the flu itself to increase the risk of a nervous system disorder called Guillain-Barré syndrome.
- There is no evidence that the flu vaccine increases the risk of birth defects or miscarriage.
- Some formulations of the flu vaccine contain a preservative called thimerosal, which is derived from mercury. However, there is no convincing evidence that the small amount of thimerosal in this vaccine will be harmful to children, pregnant women, or adults. (See "[Patient information: Why does my child need vaccines? \(Beyond the Basics\)](#)".)
- Several groups, including the Vaccine Adverse Event Report System (VAERS, <http://vaers.hhs.gov>), monitor the reports of vaccine side effects closely.

WHO SHOULD BE VACCINATED? — The flu vaccine is recommended for nearly all people six months of age and older. The vaccine is especially important for:

- Adults age 50 or older
- People who live in nursing homes and other long-term care facilities
- Adults and children who have chronic lung or heart conditions. This includes children with asthma.
- Adults and children with chronic diseases, such as diabetes or kidney disease
- Adults and children with HIV infection or who have received organ or stem cell transplants
- Children and teenagers age 6 months to 18 years who are taking long-term [aspirin](#) therapy and might be at risk for Reye syndrome
- Women who will be pregnant during the influenza season
- Adults and children who might transmit influenza to high-risk individuals (including people listed above). This includes healthcare workers, workers in nursing homes, home health workers, and people who live with a high-risk individual.

ANTIVIRAL MEDICINES — Antiviral medicines can help to reduce the chances of developing the flu after being exposed to someone who is infected. These medicines can also be used in certain people who are at risk for developing complications from the flu and who cannot receive the flu vaccine.

The "best" medicine depends on the strain of influenza circulating in the community. (See "[Prevention of seasonal influenza with antiviral drugs in adults](#)" and "[Seasonal influenza in children: Prevention and treatment with antiviral drugs](#)".)

INFECTION CONTROL — Infection control measures, like handwashing and covering your mouth when you cough, can help to prevent the spread of influenza [1].

- Frequent handwashing with soap and water can help limit the spread of influenza. You can use alcohol-based hand sanitizers when soap and water are not available. Whether you are infected with the flu or are caring for someone with the flu, you should wash your hands frequently.
- Cover your mouth and nose while coughing or sneezing, and throw away dirty tissues immediately. Sneezing/coughing into the sleeve of your clothing (at the inner elbow) is another means of containing sprays of saliva and secretions and will not contaminate your hands.
- Avoid touching your eyes, nose, and mouth since germs spread this way.
- Avoid close contact with sick people.
- If you are sick with a flu-like illness, you should stay home for at least 24 hours after your fever is gone, except to get medical care or for other necessities. Your fever should be gone without the use of a fever-reducing medicine.
- While sick, limit contact with others as much as possible to keep from infecting them.

More information about preventing the spread of flu is available from the [United States Center for Disease Control and Prevention website](#).

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient information: Flu \(The Basics\)](#)

[Patient information: Vaccines for adults \(The Basics\)](#)

[Patient information: Vaccines and pregnancy \(The Basics\)](#)

[Patient information: Chronic bronchitis \(The Basics\)](#)

[Patient information: Bird flu \(avian influenza\) \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient information: Influenza symptoms and treatment \(Beyond the Basics\)](#)

[Patient information: Food allergy treatment and avoidance \(Beyond the Basics\)](#)

[Patient information: Why does my child need vaccines? \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Avian influenza vaccines](#)

[Clinical manifestations of seasonal influenza in adults](#)

[Epidemiology of influenza](#)

[Pharmacology of antiviral drugs for influenza](#)

[Prevention of seasonal influenza with antiviral drugs in adults](#)

[Seasonal influenza vaccination in adults](#)

[Treatment of seasonal influenza in adults](#)

[Seasonal influenza in children: Prevention with vaccines](#)

[Seasonal influenza in children: Prevention and treatment with antiviral drugs](#)

[Diagnosis of seasonal influenza in adults](#)

The following organizations also provide reliable health information.

- National Library of Medicine (www.nlm.nih.gov/medlineplus/flu.html)
- National Institute of Allergy and Infectious Diseases (www3.niaid.nih.gov/topics/Flu/)
- Centers for Disease Control and Prevention (CDC) (<http://www.cdc.gov/flu/>)

[1-3]

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REFERENCES

1. <http://www.cdc.gov/flu/protect/preventing.htm> (Accessed on February 16, 2011).
2. Centers for Disease Control and Prevention (CDC). Prevention and control of seasonal influenza with vaccines. Recommendations of the Advisory Committee on Immunization Practices--United States, 2013-2014. MMWR Recomm Rep 2013; 62:1.
3. Grohskopf LA, Olsen SJ, Sokolow LZ, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP) -- United States, 2014-15 influenza season. MMWR Morb Mortal Wkly Rep 2014; 63:691.

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