Influenza (Flu)

What is influenza (flu)?
Influenza (or flu) is a highly contagious viral respiratory tract infection. An estimated 10 to 20 percent of the population in the US contract influenza each year. Influenza is characterized by the abrupt onset of fever, muscle aches, sore throat, and a nonproductive cough.

Influenza can make people of any age ill. Although most people are ill with influenza for only a few days, some have a much more serious illness and may need to be hospitalized. Influenza can also lead to pneumonia and death.

Influenza viruses are divided into three types, designated as A, B, and C.
- Influenza types A and B are responsible for epidemics of respiratory illness that occur almost every winter and are often associated with increased rates for hospitalization and death. Efforts to control the impact of influenza are focused on types A and B.
- Influenza type C usually causes either a very mild respiratory illness or no symptoms at all. It does not cause epidemics and does not have the severe public health impact that influenza types A and B do.

Influenza viruses continually mutate or change, which enables the virus to evade the immune system of its host. This makes people susceptible to influenza infection throughout their lives. The process works as follows:
1. A person infected with influenza virus develops antibody against that virus.
2. The virus mutates or changes.
3. The "older" antibody no longer recognizes the "newer" virus.
4. Reinfection occurs.

The older antibody can, however, provide partial protection against reinfection. Currently, three different influenza strains circulate worldwide: two type A viruses and one type B. Type A viruses are divided into subtypes based on differences in two viral proteins called hemagglutinin (H) and neuraminidase (N). The current subtypes of influenza A are designated A(H1N1), A(H3N2), and B(Hong Kong/330/2001-like virus strain).

Facts about the flu:
Although each flu season is different, approximately 10 to 20 percent of the population will get the flu each year. Among those who get the flu, one percent will require hospitalization, and nearly 8 percent of those hospitalized will die from the flu or its complications. In fact, the flu kills approximately 36,000 Americans every year.

According to the National Center for Health Statistics (a division of the Centers for Disease Control and Prevention, CDC):
- Ninety-five million cases of flu are reported in the US annually.
- Approximately 192 million days will be spent in bed because of the flu each year in the US.

What causes influenza?
The influenza virus is generally passed from person to person by airborne transmission (i.e., sneezing or coughing). But, the virus can also live for a short time on objects - such as doorknobs, pens, pencils, keyboards, telephone receivers, and eating or drinking utensils. Therefore, it may also be spread by
touching something that has been handled by someone infected with the virus and then touching your own mouth, nose, or eyes.

What are the symptoms of the flu?
The following are the most common symptoms of the flu. However, each individual may experience symptoms differently. Influenza is called a respiratory disease, but the whole body seems to suffer when a person is infected. People usually become acutely ill with several, or all, of the following symptoms:

- high fever
- headache
- clear nose
- sneezing at times
- cough, often becoming severe
- severe aches and pains
- fatigue for several weeks
- sometimes a sore throat
- extreme exhaustion

Fever and body aches usually last for three to five days, but cough and fatigue may last for two weeks or more. Although nausea, vomiting, and diarrhea may accompany the flu, these gastrointestinal symptoms are rarely prominent. "Stomach flu" is an incorrect term sometimes used to describe gastrointestinal illnesses caused by other microorganisms.

The symptoms of the flu may resemble other medical conditions. Always consult your physician for a diagnosis.

Treatment for influenza:
Specific treatment for influenza will be determined by your physician based on:

- your age, overall health, and medical history
- extent and type of influenza, and severity of symptoms
- your tolerance for specific medications, procedures, or therapies
- expectations for the course of the disease
- your opinion or preference

The goal of treatment for influenza is to help prevent or decrease the severity of symptoms. Treatment may include:

- medications to relieve aches and fever (Aspirin should not be given to children with fever without first consulting a physician.)
- medications for congestion and nasal discharge
- bed rest and increased intake of fluids
- antiviral medications - when started within the first two days of treatment, they can reduce the duration of the disease but cannot cure it. Four medications have been approved and include amantadine, rimantadine, zanamivir, and oseltamivir. Some side effects may result from taking these medications, such as nervousness, lightheadedness, or nausea. Individuals with asthma or chronic obstructive pulmonary disease are cautioned about using zanamivir. All of these medications must be prescribed by a physician.

Consult your physician for more information.

How to prevent the flu:
A new influenza vaccine is introduced each September. It is usually recommended for specific groups of people (see below), as well as for persons who want to avoid having the flu. In addition, three antiviral medications (amantadine, rimantadine, and oseltamivir) are approved for use in preventing the flu. All of these medications are available by prescription, and a physician should be consulted before any medication is used for preventing the flu.
A nasal-spray flu vaccine, called FluMist, is currently approved to prevent flu due to influenza A and B viruses in healthy children and adolescents (ages five to 17), and healthy adults (ages 18 to 49). As with other live virus vaccines, FluMist should not be given for any reason to people with immune suppression, including those with immune deficiency diseases, such as AIDS or cancer, and people who are being treated with medications that cause immunosuppression.

Following these precautions may also be helpful:
- When possible, avoid or limit contact with infected persons.
- Frequent handwashing may reduce, but not eliminate, the risk of infection.
- A person who is coughing or sneezing should cover his/her nose and mouth with a handkerchief to limit spread of the virus.

How effective is the flu vaccine?
According to the American Lung Association, an influenza vaccination is about 70 percent effective in preventing influenza, or reducing its severity, and is considered safe.

However, vaccine effectiveness varies from year to year, depending upon the degree of similarity between the influenza virus strains included in the vaccine and the strain or strains that circulate during the influenza season. Vaccine strains must be chosen 9 to 10 months before the influenza season, and sometimes mutations occur in the circulating strains of viruses between the time vaccine strains are chosen and the next influenza season. These mutations sometimes reduce the ability of the vaccine-induced-antibody to inhibit the newly mutated virus, thereby reducing vaccine effectiveness.

Vaccine effectiveness also varies from one person to another, depending on factors such as age and overall health.

What are the side effects of the flu vaccine?
The most serious side effect that can occur after influenza vaccination is an allergic reaction in people who have a severe allergy to eggs. For this reason, people who have an allergy to eggs should not receive the influenza vaccine.

The National Center for Infectious Diseases (a division of the Centers for Disease Control and Prevention, CDC) says that influenza vaccine causes no side effects in most people who are not allergic to eggs. Less than one-third of people who receive the vaccine experience some soreness at the vaccination site, and about 5 to 10 percent experience mild side effects, such as headache or low-grade fever for about a day after receiving the vaccination.

Because these mild side effects mimic some influenza symptoms, some people believe the influenza vaccine causes them to get influenza. However, according to the CDC, "influenza vaccine produced in the United States has never been capable of causing influenza because the only type of influenza vaccine that has been licensed in the United States to the present time is made from killed influenza viruses, which cannot cause infection."

Who should immunize against the flu?
The flu causes complications that may develop into a more serious disease or become dangerous to some groups, such as elderly people and those with chronic medical conditions. For these reasons, the CDC recommends that the following groups immunize themselves each year. Always consult your physician for more information regarding who should receive the flu vaccine:

- persons 50 years old or older (Vaccine effectiveness may be lower for elderly persons, but it can significantly reduce their chances of serious illness or death from influenza.)
- residents of nursing homes and any other chronic care facilities that house persons of any age who have chronic medical conditions
- adults and children who have chronic disorders of the pulmonary or cardiovascular systems, including children with asthma
- adults and children who have the following medical conditions:
chronic metabolic diseases (i.e., diabetes)
renal dysfunction
immunosuppression
hemoglobinopathies

- children and teenagers (aged 6 months to 18 years) receiving long-term aspirin therapy
- women who will be in their second or third trimester of pregnancy during the influenza (fall-winter) season (The flu vaccine may not be appropriate in all cases. Consult your physician for more information.)

In addition, the following groups should be vaccinated:
- healthcare providers
- employees of nursing homes and chronic care facilities who have contact with patients or residents
- providers of home care to persons at high risk
- household members (including children) of persons in high-risk groups
- persons of any age who wish to decrease their chances of influenza infection, excluding persons who are allergic to eggs

In 2000, the CDC added all persons ages 50 to 64 to the list of individuals who should be vaccinated against the flu each year. One-quarter to one-third of individuals in this age group have at least one condition that puts them at higher risk.

When should I get a flu shot?
The Centers for Disease Control and Prevention (CDC) recommends getting the flu shot every year, between September and mid-November, before the flu season hits (usually December to April). The flu shot takes one to two weeks to become effective.
Although there are many new medications designed to treat flu symptoms and even shorten the duration of the illness, the flu vaccine still offers the best protection against the flu.

If I get the flu shot, can I still get the flu?
Every year, the flu shot "cocktail" changes to combat the current strains of influenza affecting the population. The World Health Organization (WHO) monitors flu outbreaks worldwide and recommends appropriate vaccine compositions to be used for the next year. However, sometimes, a strain may appear that was not included in the flu vaccine. People who have had the flu shot tend to have milder symptoms if they contract the flu.

Traveling and exposure to the flu:
Because the flu is a highly contagious infection usually spread by droplets produced by an infected person who is coughing or sneezing, travelers are very susceptible to contracting the flu.
The CDC recommends that travelers have the flu vaccine at least two weeks in advance of planned travel to allow time to develop protective immunity. There are other anti-viral drugs available to help prevent viral infections and complications. Consult your physician for more information.