

Narrator

Having a hectic lifestyle is something many people are used to. A healthy person can normally handle a certain amount of wear and tear even when confronted with infectious agents.

Richard Irwin, MD, University of Massachusetts

"The human body is designed in a way that we actually are able to defend ourselves against assault by bacteria and viruses, fungus and other microbes and the infections that are likely to actually cause us to be very sick and sometimes die."

William Schaffner, MD, Vanderbilt University

"The respiratory system starts with the mouth and the back of the throat. And then we breathe in air and it goes down through our bronchial tubes and then the air goes out to the lungs. And that's where we change, we take in the oxygen and breathe out the carbon dioxide."

Narrator

But each year otherwise healthy people wind up with flu and pneumonia.

Michael S. Niederman, MD, Winthrop University Hospital

"One of the challenges that the body faces is that the lung has to exchange air constantly and is potentially in contact with pathogens on an ongoing basis so that normal immune function of the lung has to contain pathogens from invading."

Narrator

Since the lungs are exposed every moment to whatever it is that might be in the air that we breathe, they have natural barriers in place to protect against infection. The trachea and bronchi are lined with sticky mucus and wave-like cilia, which entrap these unwanted particles and move them upward and out of the lungs.

If bacteria do make it down to the far reaches of the lungs, circulating white blood cells called macrophages travel throughout lung tissue and engulf and destroy the bacteria. If the body's disease-fighting immune system is impaired or an underlying condition exists that makes it easier for bacteria to reach the lung or prevents coughing up mucus... then the risk of infection is greater.

Natural Sound – Doctor: "On my instruction, take a deep breath."

Narrator

If a person's immune system isn't up to par, or the person is coping with a chronic disorder, the ability to naturally fight off infection is greatly reduced.

Barbara King lives in Massachusetts and is a cancer survivor, who received a bone marrow transplant several years ago. She knows what it's like to lose some of her natural immune defenses.

Barbara King, Patient

"It's compromised. And I have about half an immune system, which makes me extremely susceptible to infections. And I have to be extremely careful."

Narrator

Barbara's condition drastically changed her ability to handle infections that might not pose problems for healthy people. Some of the factors that can make a person more susceptible to influenza and pneumonia are:

Narrator Graphic List

Having a chronic disorder, including lung diseases, cardiovascular disease, diabetes or AIDS. Living with a weakening condition, such as stroke or other conditions that don't allow coughing up phlegm. Having sickle cell disease or having the spleen removed.

Narrator

Overall, the respiratory system works well for most people, and coughing plays an important role.

Richard Irwin, MD, University of Massachusetts

"Coughing is the cavalry, if you would, that comes in when the soldiers who I'd say walking by foot get overwhelmed. So it's a secondary defender and it is able to remove an enormous amount of foreign material that shouldn't otherwise be down there."

Narrator

But sometimes coughing isn't enough. Even a healthy individual can be open to infection as a result of stress, fatigue or other temporary situations that weaken the immune system. One of the more common infections is influenza, or flu. So what is influenza, and who's most at-risk for the infection? We'll answer those questions and much more when we return.

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Narrator

It's something that comes around every year, usually in the winter months. It gets a lot of attention... we're talking about flu season.

Anne Schuchat, MD, U.S. Centers for Disease Control and Prevention

"Influenza is a virus that can cause a mild to severe respiratory illness, it can cause infections in the nose, throat, and lungs and can lead to bad complications like Pneumonia."

Narrator

Anne Schuchat is the director of the National Center for Immunization and Respiratory Diseases at the U.S. Centers for Disease Control and Prevention.

Anne Schuchat, MD, U.S. Centers for Disease Control and Prevention

"Influenza is very common, about 15 to 20 percent of people will get influenza in an average year, but it can cause severe disease in just some people."

Narrator

Many people who have never had the flu think it's just a bad cold. But it is far from it. Influenza is frightening illness.

William Schaffner is Chairman of the Department of Preventive Medicine at Vanderbilt University. He's specialized in infectious disease for more than 40 years.

William Schaffner, MD, Vanderbilt University

"And it causes to people's surprise, over 200,000 hospitalizations each year on average a year in and year out and is associated with... get this, 36,000 deaths each year, on average, in the United States."

Narrator

Richard Irwin is past president of the American College of Chest Physicians and professor of medicine and nursing at the University Of Massachusetts Medical School.

Richard Irwin, MD, University of Massachusetts

"You will know that you really had the flu. You will feel well one minute and then seemingly in a matter of moments you will be overwhelmingly ill. You will get a fever. You will have muscle aches and pains. You will feel unbelievably exhausted. You will then, if it's influenza A, which is the one that causes pandemics and causes death, you will have a cough. You will be short of breath. If you have influenza B, which is not as severe an illness, you will be more likely to have gastrointestinal complaints such as nausea, vomiting and diarrhea."

William Schaffner, MD, Vanderbilt University

"The influenza virus is a wily beast. It's not the same each year. Genetically it's what we call plastic. It can mutate, it can change from year to year."

Narrator

This ability to mutate is exactly why it is recommended that people get a flu shot every year. In fact, the CDC has some clear guidelines for who should get a flu shot. Anyone age 50 years old and older, should definitely get an annual flu shot. Children ages 6 months to just shy of 5 years old. Anyone with a chronic condition or a compromised immune system. Healthcare workers and anyone who is a caregiver for others should strongly consider getting their annual influenza vaccine. Pregnant women, or women who expect to be pregnant during flu season and anyone, regardless of age, who wants to prevent flu every year.

For some patients, there's a needle-free option for vaccination.

William Schaffner, MD, Vanderbilt University

"If you're healthy between the ages of five and 50 there's actually a nasal spray vaccine you can get so if you're a little averse to getting an injection you can get a vaccine that just gets sprayed up your nose. I've had that vaccine in the past and it's easy as pie."

Narrator

And one myth to immediately dispel – is a flu shot does not cause the flu. Keep in mind, getting a flu shot doesn't mean you're not going to get a cold or another respiratory illness.

Michael S. Niederman, MD, Winthrop University Hospital

"What some patients expect is that if they get the influenza vaccine they'll never get a viral respiratory illness the entire respiratory season, and that's an unrealistic expectation there are more than 180 respiratory viruses. And every single one of them requires immunity to avoid re-infection."

Narrator

Michael Niederman is Winthrop University hospital department of medicine chair.

Michael S. Niederman, MD, Winthrop University Hospital

"So even if somebody gets an influenza vaccine that protects them against this specific group of viruses that protection doesn't spill over very well to other respiratory viruses."

Narrator

Influenza virus can infect anyone, regardless of age, sex or race. And because it's a virus, antibiotics are not effective. But there are some things patients can do at the first sign of symptoms to get some relief.

Richard Irwin, MD, University of Massachusetts

"So it's very important as soon as you start feeling ill that you let your physician know that because there are medicines that you can take by mouth, you can take by the inhaled route that can significantly shorten the severity of your illness and actually shorten the course, the duration of your illness."

Narrator

These anti-viral medicines are available by prescription only, and work best when taken at the earliest possible time. Physicians will most often suggest bed rest and lots of fluids for flu patients. More serious cases may require hospitalization.

Pneumonia is one of the major complications of influenza. We'll explain what pneumonia is and what can be done to help prevent the disease when we come back.

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*Natural Sound – Dance Class***Narrator**

Meet Ellen Cullivan a successful dance instructor and specialist who is always on the go.

Ellen Cullivan, Patient

"It can range from two lessons to nine lessons and might include maybe a show. It could include driving quite a bit, maybe 20 minutes to four hours in one day."

Narrator

With all of the energy involved in her profession Ellen makes sure to take steps to keep herself healthy.

But a little more than a decade ago, Ellen experienced a bout of what she thought was flu. Ellen was looking forward to spending the holidays with friends and family in Upstate New York. It was during that trip, that her fast-paced life came to a screeching halt.

Ellen Cullivan, Patient

"It was torturous and when I got home I crawled into bed and I remember just lying there. I accepted a few phone calls and when I spoke on the phone I probably spoke for maybe a minute because I could barely speak and I could barely lift the phone up."

Narrator

After visiting her doctor, Ellen found out she had pneumonia. Even though she was normally healthy, her previous illness had progressed to cause the pneumonia, which is something physicians say can be a common problem for patients.

Anne Schuchat, MD, U.S. Centers for Disease Control and Prevention

"The clinical symptoms of influenza and pneumonia can overlap. People can have a cough, high fever, difficulty with breathing sometimes, and general body aching and weakness. Influenza virus can actually increase the risk of a pneumonia complication."

Ellen Cullivan, Patient

"My lungs, they felt like a lead balloon was right on top of it. You know I could barely breathe, and I would get winded."

Narrator

Pneumonia, like flu, can invade the body when the natural defenses are impaired. And contrary to what you may have heard, you can't catch pneumonia by doing certain things.

William Schaffner, MD, Vanderbilt University

"And whether we get a wet head or are exposed to the cold or run through the chilly rain, that really, my mom notwithstanding, has nothing to do with whether we get pneumonia."

Narrator

Some symptoms of pneumonia include: fever, chills, and even the shaking kind of chills, a deep cough, chest pain and green, brown, or bloody sputum.

Doctors diagnose pneumonia after examining patients thoroughly and listening to their breathing. They will often order a chest x-ray to get a picture of what may be going on inside the lungs. This is what Doctor Irwin had to do for Barbara King.

Natural sound – Doctor explaining x-ray "So actually, the lung is up top, and then the fluid has pushed the lung away from the chest wall which is where you see the ribs down in here."

Barbara King, Patient

"The worst part was just the general achiness and I couldn't do anything without getting extremely tired. So I think that was the worst for me personally, I'm used to being quite active. And it was just an extremely difficult time to be totally bedridden."

Narrator

Most pneumonia patients will need to stay in bed for a while, and may not feel up to par for many weeks following the infection. Pneumonia can be caused by viruses or bacteria. Only bacterial pneumonia will respond to antibiotics.

Though some patients with pneumonia will need to stay in the hospital, other patients who are already in the hospital for other reasons may be at increased risk for pneumonia. This kind of pneumonia is called hospital-acquired pneumonia.

William Schaffner, MD, Vanderbilt University

"When patients are admitted to the hospital, they're very sick and the sickest of the sick are cared for in intensive care units. And when we care for patients in intensive care units we often assist with a lot of normal bodily functions especially with the breathing function."

Michael S. Niederman, MD, Winthrop University Hospital

"And in those situations, patients have an endotracheal tube, a plastic tube that goes through their vocal chords directly into their lung, and in that setting bacteria can directly be inoculated into the lung through the endotracheal tube just from say, contamination in the environment, the hands of medical personnel."

Narrator

Patients needing help breathing will often be given medications to keep them from coughing. This, among other reasons, can cause them to aspirate some of the normal secretions from the mouth, or even from some contents of the stomach.

William Schaffner, MD, Vanderbilt University

"Aspiration simply means that those secretions in the back of your throat aren't cleared out but actually are sucked down into your bronchial tubes and that's a set up for pneumonia. Some people who have difficulty coughing aspirate more and it's not good. Also if you drink too much and you're kind of inebriated, you'll aspirate more and you won't cough that up and we know that that can predispose to pneumonia at home."

Narrator

While it's true that a patient on a ventilator has little control over bacteria in the hospital, friends and family can help ensure proper care by simply talking to nurses and doctors about what's going on. There are also many measures hospitals take to protect patients against hospital-acquired pneumonia.

Michael S. Niederman, MD, Winthrop University Hospital

"One current recommendation for patients on ventilators is to keep them semi-erect at of 30° angle so that we can minimize the aspiration of the gastric contents into the oral pharynx."

Narrator

Other pneumonia prevention techniques are: giving patients regular mouth care, including hydrating the mouth and appropriate suctioning for secretions in the mouth, giving medication to alter the environment of the stomach to make it less likely to overgrow bacteria, handling the parts of the ventilator very carefully, to avoid exposing patients to bacteria, and getting patients off the ventilator as soon as they're able to breathe on their own.

One very important idea for patients who are experiencing pneumonia, at risk for pneumonia or who've had lung surgery... is to cough. This helps get the lungs back in shape and gets rid of excess mucus.

Michael S. Niederman, MD, Winthrop University Hospital

"One of the functions of mucus is to trap bacteria and to trap pathogens and if patients can expectorate and spit that out, they're removing those pathogens from the lung where then they won't then be able to lead to infection."

Narrator

To help prevent pneumonia in general, patients can choose to receive a vaccine for the most common form of bacterial pneumonia, known as pneumococcal pneumonia.

Richard Irwin, MD, University of Massachusetts

"The severest form of pneumococcal pneumonia can be prevented with the pneumococcal vaccine and it is recommended that individuals 50 years of age or older should get it and it's also recommended that individuals, the same individuals who should be getting the flu shot because they have underlying chronic illnesses should also get the pneumonia shot."

Narrator

A specific pneumococcal vaccine is designed for adults and for children: Children less than 2 years old and anyone over age 65, and anyone with a chronic condition should consider getting a pneumococcal vaccine.

There's a lot of research going on related to flu and pneumonia. We'll show you what's in the works when we return.

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Narrator

According to the American Lung Association, Influenza and Pneumonia together are ranked among the top ten leading causes of death in the United States. Physicians and researchers are working hard to reduce that statistic.

Michael S. Niederman, MD, Winthrop University Hospital

"There are strategies with the endotracheal tubes themselves that would prevent bacteria from binding to the tubes or that would remove secretions from the tubes more efficiently and more effectively and there's a lot of research now on ways to modify risks particularly surrounding the endotracheal tube."

Narrator

Vaccine research and preparation is one big area of advancement.

William Schaffner, MD, Vanderbilt University

"There are more and more vaccine manufacturers interested in providing influenza vaccine and so we anticipate having more and more flu vaccine each year. And the CDC recommendations are expanding so that more and more Americans should get their influenza vaccine and there's a lot of research currently going on to make a better influenza vaccine and to make a better pneumococcal pneumonia vaccine also."

Narrator

Doctors and scientists are also looking at ways to use existing antibiotics more effectively. And healthcare workers are doing their best to make sure they don't pass infections on. Patients like Barbara King also make it a point to make good hygiene a part of daily life.

Barbara King, Patient

"I definitely wash my hands quite a lot. I'm trying not to be obsessive about it. But it, it's just a case where you have to be very conscious of it. I never eat anything until I've washed my hands."

Narrator

She says it's a positive attitude that helps most when dealing with chronic illnesses that make her susceptible to infections such as influenza and pneumonia.

Along with a positive outlook, Ellen says she's much more aware of her body and takes care to stay healthy. She has this advice:

Ellen Cullivan, Patient

"Just listen to yourself, what's going on. Take a few moments each day and just relax. Make sure you're all right. And if you're not then take precautionary measures to take care of yourself such as extra vitamins, rest, always make sure you get your exercise."

Narrator

The overwhelming message to remember is... flu and pneumonia can be prevented by taking a few simple steps.

William Schaffner, MD, Vanderbilt University

"Get yourself in the best possible health, make sure you get a lot of fluid, exercise on a regular basis. Wash your hands frequently. If you smoke, stop. Don't even think about starting and of course get your influenza vaccine on an annual basis and if you're eligible, ask your doctor about that pneumonia shot, the pneumococcal vaccine."

Narrator

These relatively easy measures can help prevent problems with some of the most serious infections out there, to help people lead longer, healthier lives.

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Special Thanks to:
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For more information on flu or pneumonia please visit the American Lung Association
@

www.lungusa.org

1-800-LUNGUSA

For more information on this or any other health related topic please visit our website
@ www.thepatientchannel.com