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### LUNG DISEASES- PNEUMONIA AND EMPHYSEMA

Pneumonia

OVERVIEW:

Pneumonia is an infection in one or both lungs. It is caused by bacteria, viruses, and fungi. Pneumonia is a respiratory infection that causes the air sacs in one or both lungs to become inflamed. Cough with phlegm or pus, fever, chills, and trouble breathing can occur when the air sacs fill with fluid or pus (purulent material). Pneumonia can be caused by a number of organisms, including bacteria, viruses, and fungi. The severity of pneumonia can range from moderate to life-threatening. Infants and young children, people over the age of 65, and individuals with health issues or weakened immune systems are the most vulnerable.

SYMPTOMS

Pneumonia symptoms can range from mild to fatal. They can include the following:

* [coughing](https://www.healthline.com/symptom/cough) that may produce [phlegm](https://www.healthline.com/health/green-phlegm) (mucus)
* [fever](https://www.healthline.com/health/fever-symptoms)
* sweating or [chills](https://www.healthline.com/health/chills)
* [shortness of breath](https://www.healthline.com/symptom/shortness-of-breath) that happens while doing normal activities or even while resting
* [chest pain](https://www.healthline.com/symptom/chest-pain) that’s worse when you breathe or cough
* feelings of tiredness or fatigue
* loss of appetite
* nausea or vomiting
* headaches
* Confusion or changes in mental awareness (in adults age 65 and older)

Other symptoms may differ

Depending on your age and overall health:

* Children under 5 years old may have fast breathing or wheezing.
* Infants may appear to have no symptoms, but sometimes they may vomit, lack energy, or have trouble drinking or eating.
* Older people may have milder symptoms. They can also exhibit confusion or a lower-than-normal body temperature.

CAUSES OF PNEUMONIA

Pneumonia can be caused by many germs. Bacteria and viruses in the air we breathe are the most prevalent. These germs are normally prevented from infecting your lungs by your body. Even though your health is usually excellent, these germs will sometimes overcome your immune system. Pneumonia can be caused by a variety of infectious agents:

Bacteria: Streptococcus pneumoniae is the most common cause of bacterial pneumonia. This type of pneumonia may develop on its own or as a result of a cold or flu. It may affect only one lobe of the lung, which is known as lobar pneumonia.

Bacteria like organisms: Pneumonia may also be caused by Mycoplasma pneumoniae. It usually causes less severe symptoms than other types of pneumonia. Walking pneumonia is a colloquial term for a type of pneumonia that isn't serious enough to necessitate bed rest.

Viruses (i.e COVID-19): Pneumonia can be caused by viruses that cause colds and the flu. Viruses are the leading cause of pneumonia in children under the age of five. In most cases, viral pneumonia is a mild illness However, in other situations, it can be extremely dangerous. Coronavirus 2019 (COVID-19) has the potential to cause pneumonia, which can be life-threatening.

Fungi: People with chronic health issues or weakened immune systems, as well as those who have inhaled large doses of the organisms, are more likely to develop this type of pneumonia. The fungi that cause it can be found in soil or bird droppings, and their symptoms differ depending on where you live.

PNEUMONIA DIAGNOSIS

Your doctor will begin by gathering information about your medical history and performing a physical examination, which will include listening to your lungs with a stethoscope for abnormal bubbling or crackling sounds that may indicate pneumonia.

* Chest X-ray: This aids your doctor in diagnosing pneumonia as well as determining the severity and location of the infection. It cannot, however, tell your doctor whose germ is causing the pneumonia.
* Sputum Test: After a deep cough, a sample of fluid from your lungs (sputum) is taken and analysed to help determine the source of the infection.
* Blood Tests: Blood tests are used to confirm an infection and to try to figure out what kind of organism is causing it. Though It is not always possible to make an accurate identification.
* Pulse Oximetry: This device weighs the level of oxygen in your blood this is Pneumonia will make it difficult for your lungs to get enough oxygen into your bloodstream.

If you're over 65, in the hospital, or have severe symptoms or health problems, your doctor may order extra tests. These may include the following:

* Pleural fluid culture: A fluid sample is collected from the pleural region by inserting a needle between your ribs and examined to determine the type of infection.
* CT scans: Your doctor may recommend a chest CT scan to get a better picture of your lungs if your pneumonia isn't clearing up as quickly as expected.
* Bronchoscopy: A bronchoscopy is a procedure that examines the airways in your lungs. A camera attached to the end of a flexible tube is softly guided down your throat and into your lungs to accomplish this.

PNEUMONIA TREATMENT

If you suspect pneumonia, your doctor may suggest the following tests:

The type of pneumonia you have, how serious it is, and your overall health will determine your treatment.

Prescription medication

To help treat your pneumonia, your doctor may prescribe a medication. The treatment you receive will be determined by the cause of your pneumonia. Most cases of bacterial pneumonia may be treated with oral antibiotics. Even if you start to feel better, always finish your antibiotic course. Failure to do so may prevent the infection from clearing, making treatment more difficult in the future. Antibiotics are ineffective against viruses. Your doctor may prescribe an antiviral in other cases. Many cases of viral pneumonia, on the other hand, clear up on their own with at-home care. Fungal pneumonia is treated with antifungal antibiotics. To clear the infection, you may need to take this drug for several weeks.

At home treatment

As required, your doctor may prescribe over-the-counter (OTC) medication to relieve your pain and fever. These may include the following:

* [aspirin](https://www.healthline.com/health/pain-relief/is-aspirin-nsaid)
* [ibuprofen](https://www.healthline.com/health/pain-relief/ibuprofen-vs-acetaminophen) (Advil, Motrin)
* [acetaminophen](https://www.healthline.com/health/pain-relief/acetaminophen-tylenol-side-effects) (Tylenol)

Your doctor may also prescribe cough medicine to help you rest by calming your cough. You don't want to completely stop coughing because it helps clear fluid from your lungs. Get plenty of rest and drink plenty of fluids to aid your recovery and avoid a recurrence.

PREVENTION

Things to help prevent pneumonia:

* Get vaccinated

Some kinds of pneumonia and the flu can be prevented with vaccines. Make an appointment with your doctor to get these vaccines. Vaccination guidelines have changed over time, so check with your doctor about your vaccination status, even if you remember receiving a pneumonia vaccine earlier.

* Practice Good Hygiene

Wash your hands frequently or use an alcohol-based hand sanitizer to protect yourself against respiratory infections that can lead to pneumonia.

* Keep your immune system strong

Get plenty of rest, exercise regularly, and eat a nutritious/ healthy diet.

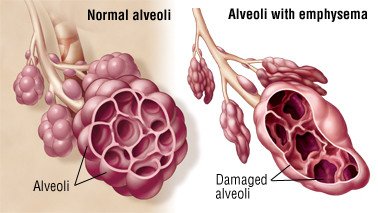
* Make sure children get vaccinated

Children under the age of 2 and children aged 2 to 5 years who are at high risk of pneumococcal disease should get a different pneumonia vaccine, according to doctors. Vaccination is also recommended for children who attend a group day care centre. Children over the age of six months should also have flu vaccines, according to doctors.

* Don’t smoke

The natural defences of your lungs against respiratory infections will be harmed by smoking.

EMPHYSEMA

OVERVIEW

Emphysema is a lung condition that causes shortness of breath. The air sacs in the lungs (alveoli) are damaged in individuals with emphysema. The inner walls of the air sacs weaken and rupture over time, resulting in wider air spaces rather than many small ones. This limits the amount of oxygen that enters your bloodstream by reducing the surface area of your lungs. When you exhale, the damaged alveoli don't operate effectively, trapping old air and preventing fresh, oxygen-rich air from entering. Chronic bronchitis is common in patients with emphysema. Chronic bronchitis is an inflammation of the bronchial tubes, which bring air to the lungs and cause a persistent cough.

SYMPTOMS

Emphysema can go unnoticed for years without any noticeable symptoms. Shortness of breath is the most common symptom of emphysema, and it normally develops gradually. You may begin to avoid activities that cause you to become short of breath, but really the symptom does not become a problem until it begins to interfere with your everyday activities. Even though you're at rest, emphysema induces shortness of breath.

Other symptoms that gradually become noticeable are: coughing, chest tightness, wheezing and more mucus production.

CAUSES OF EMPHYSEMA

Long-term exposure to airborne irritants, is the primary cause of emphysema, including:

* Marijuana smoke
* Chemical Fumes and dust
* Air pollution
* Tobacco Smoke

Other risk factors that could increase the risk of developing emphysema include:

* Age: Despite the fact that emphysema causes lung damage over time, most people with tobacco-related emphysema start experiencing symptoms between the ages of 40 and 60.
* Exposure to indoor and outdoor pollution: Breathing indoor pollutants, such as heating fuel fumes, as well as outdoor pollutants, such as vehicle exhaust, increases your risk of developing emphysema.
* Exposure to Second Hand smoke: Smoke inhaled unintentionally from another person's cigarette, pipe, or cigar is known as second-hand smoke, also known as passive or environmental tobacco smoke. Being exposed to second-hand smoke increases your chances of developing emphysema.

DIAGNOSIS OF EMPHYSEMA

Your doctor will enquire about your medical history and perform a physical exam to see if you have emphysema. A variety of tests may be suggested by your doctor. Such as:

* Imaging Tests: A chest X-ray could help confirm an advanced emphysema diagnosis and eliminate other causes of shortness of breath. If you have emphysema, though, the chest X-ray will also display normal results.
* Lung Function Tests: These non-invasive tests calculate how much air your lungs can carry as well as how well air flows in and out of them. They will also assess the efficiency with which your lungs carry oxygen to your bloodstream. One of the most common tests involves blowing into a simple instrument called a spirometer.
* Lab Tests: The ability of your lungs to transfer oxygen into and extract carbon dioxide from your bloodstream can be determined using blood drawn from an artery in your wrist.

TREATMENT OF EMPHYSEMA

Emphysema unfortunately cannot be cured but the treatment can help relieve symptoms and slow the progression of the disease.

Medications: Your doctor might suggest the following depending on the severity:

* Antibiotics: Antibiotics are necessary if you have a bacterial infection, such as acute bronchitis or pneumonia.
* Bronchodilators: By relaxing constricted airways, these drugs can help relieve coughing, shortness of breath, and breathing difficulties.
* Inhaled steroids: Inhaled corticosteroid drugs alleviate inflammation and may aid in the relief of shortness of breath.

Therapy: this includes

* Pulmonary rehabilitation: By relaxing constricted airways, these drugs can help relieve coughing, shortness of breath, and breathing difficulties.
* Supplemental oxygen: If you have severe emphysema and low blood oxygen levels, using oxygen at home and while exercising may help you feel better. Many people use oxygen 24 hours a day, It's usually given through a narrow tube inserted into your nostrils.
* Nutrition therapy: You'll also get tips on how to eat properly. Many people with emphysema need to lose weight in the early stages, while those with late-stage emphysema need to gain weight.

Surgery: Depending on the severity of your emphysema, your doctor may recommend one or more surgeries, such as:

* Lung Transplant: If you have serious lung damage and all other options have failed, lung transplantation is the option.
* Lung Volume Reduction If you have serious lung damage and all other options have failed, lung transplantation may be an option. Surgery: Surgeons remove small wedges of damaged lung tissue during this process. The diseased tissue is removed, which allows the remaining lung tissue to expand and work more effectively, improving breathing.

Prevention

Ways to prevent Emphysema is:

* Avoid smoking Cigarette
* Limit your exposure to air pollution
* Wear respirator mask if you’re exposed to harmful chemicals
* Avoid solid perfumes, paint/ varnish, dust, pollen and cleaning products etc.

<https://www.drugs.com/health-guide/emphysema.html>

<https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/emphysema>

<https://www.mayoclinic.org/diseases-conditions/emphysema/diagnosis-treatment/drc-20355561>

<https://www.healthline.com/health/emphysema-stages#symptoms>

<https://www.healthline.com/health/pneumonia#vs.-bronchitis>

<https://www.mayoclinic.org/diseases-conditions/pneumonia/symptoms-causes/syc-20354204>

[Pneumonia - Diagnosis and treatment - Mayo Clinic](https://www.mayoclinic.org/diseases-conditions/pneumonia/diagnosis-treatment/drc-20354210#:~:text=1%20Blood%20tests.%20Blood%20tests%20are%20used%20to,in%20your%20blood.%20...%204%20Sputum%20test.)

[Pneumonia: Diagnostic Techniques | SpringerLink](https://link.springer.com/chapter/10.1007/978-1-4613-9766-3_6)

IMAGES:

<https://th.bing.com/th/id/R54b144e4329416c8026d67ebf4a32efb?rik=ccM503N%2bqM9wlg&riu=http%3a%2f%2fimg.aws.livestrongcdn.com%2fls-article-image-673%2fcpi.studiod.com%2fwww_livestrong_com%2fphotos.demandstudios.com%2fgetty%2farticle%2f99%2f205%2f538125565_XS.jpg&ehk=imLNMVKAV1EogLY7Qw8vetqPIn%2bmCW6ZD%2b6xGysE0OE%3d&risl=&pid=ImgRaw>

<https://www.drugs.com/health-guide/images/b8ce66a4-081e-4681-bcde-04efca8b1491.jpg>