

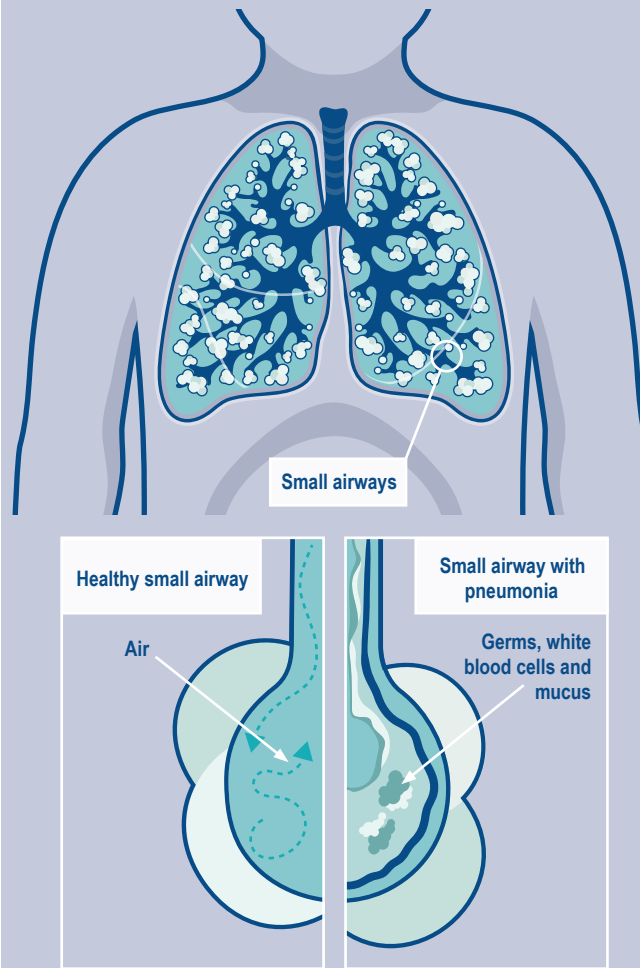
COMMUNITY-ACQUIRED BACTERIAL PNEUMONIA



WHAT IS PNEUMONIA AND CABP?

- ✦ Pneumonia is a serious infection of the lung that can cause fever, coughing, and trouble breathing
- ✦ The most common causes of pneumonia are bacteria and/or viruses
- ✦ Bacteria and viruses living in your nose, sinuses, or mouth may spread to your lungs. The infection causes your lung tissue to swell and fill up with fluid or pus [see central image]. This makes it harder for you to breathe, and usually causes coughing and other symptoms that sap your energy and appetite
- ✦ Community-acquired bacterial pneumonia, shortened to CABP, is a type of pneumonia caused by a bacterial infection of the lung
- ✦ It is called 'community acquired' because it is acquired from the local community, not from within a hospital
- ✦ The severity of pneumonia can range from mild cases managed at home, to severe, life-threatening infections requiring hospitalization

HOW BACTERIAL PNEUMONIA DEVELOPS



COMMON COMPLAINTS OR SYMPTOMS OF CABP INCLUDE:



Cough, associated with coughing up phlegm/mucus ("wet cough")



Pains in the chest, especially when taking a deep breath or coughing



Fever



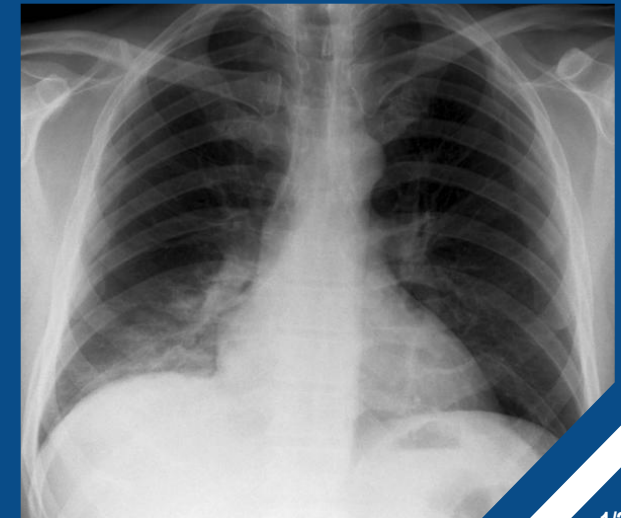
A fast heartbeat



Shaking chills

DIAGNOSIS

- ✦ Diagnosis of pneumonia is considered when complaints (symptoms) are associated with sounds heard on examination of the chest with a stethoscope
- ✦ The suspected diagnosis of pneumonia may be confirmed by a chest X-ray (see image below)
- ✦ The need for further testing depends upon the severity of the illness and the person's risk of complications
- ✦ In some cases, the cause of pneumonia may be identified by sending a sample of sputum, also known as phlegm, to a laboratory for testing. Blood samples may also be sent to the laboratory in more severe cases



RISK FACTORS

- ✦ Age, and certain habits or other medical conditions increase the risk of developing pneumonia:



Age:
65 years or older, or younger than 2 years



Smoking



Underlying health conditions: chronic lung diseases, such as asthma, COPD (chronic obstructive pulmonary disease), chronic heart diseases, diabetes



Weakened immune system

CAUSES

- ★ In the United States, the most common type of bacteria to cause CABP is *Streptococcus pneumoniae*, also known as pneumococcus
- ★ Other bacteria that commonly cause pneumonia are *Haemophilus influenzae*, *Chlamydia pneumoniae*, *Mycoplasma pneumoniae* and *Legionella species*
- ★ Common viruses, such as influenza, and most recently SARS-CoV-2 (which causes COVID-19), can also cause pneumonia

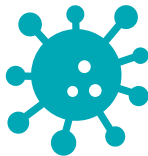


ANTIBIOTIC RESISTANT BACTERIA IN CABP: STREPTOCOCCUS PNEUMONIAE

Pneumonia caused by *Streptococcus pneumoniae* is responsible for an estimated **150,000** hospitalizations each year in the United States



The common antibiotics used to treat *Streptococcus pneumoniae* are becoming less effective as bacteria adapt over time. This phenomenon, known as antibiotic resistance, can lead to treatment failure

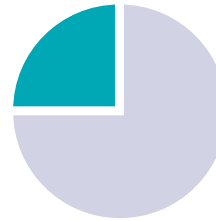


ANTIBIOTIC RESISTANT BACTERIA IN CABP: STREPTOCOCCUS PNEUMONIAE

Resistance to macrolides such as azithromycin is

25%

or higher in most regions of the US



Resistance to three different classes of antibiotics is of particular concern: **macrolides, tetracyclines, and penicillins**

In more than **30%** of infections, the bacteria are resistant to one or more antibiotics



Based on the current levels of antibiotic resistance, the CDC has classified drug-resistant *Streptococcus pneumoniae* a serious public health threat



TREATMENT

- ★ Initial treatment of CABP with antibiotics is targeted to treat the most common types of bacteria likely to cause pneumonia (called “empiric” treatment). Most people improve with empiric treatment and the cause of pneumonia is not known
- ★ Most people with CABP are treated at home with antibiotics taken by mouth. People who are seriously ill or are at increased risk of complications may be hospitalized and receive antibiotics in their vein
- ★ Antibiotic therapy
 - The majority of cases resolve through treatment with oral antibiotics, assuming that the infection is associated with the most common pathogen(s)

PREVENTION

- ★ You can also get certain vaccines to help keep you from getting pneumonia again or to prevent initial infection
 - The pneumococcal vaccine is one of the most effective ways to prevent pneumonia
 - The influenza (or “flu”) vaccine is important not only for preventing influenza but also for preventing potential complications, including pneumonia
- ★ Avoid germs, you can wash your hands often with soap and water, or use alcohol hand rubs
- ★ Avoid smoking and vaping

ASK YOUR DOCTOR ABOUT:

Is my infection bacterial or viral? Can you test for that?

Are there vaccinations that can protect me from bacterial or viral infections?

Are you aware of the local patterns of antibiotic resistance?

What are the side effects of the treatment that I am being prescribed?

ADDITIONAL RESOURCES



Merck Manual

<https://www.merckmanuals.com/home/lung-and-airway-disorders/pneumonia/overview-of-pneumonia>

Uptodate

https://www.uptodate.com/contents/pneumonia-in-adults-beyond-the-basics?topicRef=15374&source=see_link



CDC

<https://www.cdc.gov/pneumonia/index.html>