

---

## Pneumococcal disease

---

### Summary

- Young children, older people and people with impaired immune systems are among the most susceptible to pneumococcal disease.
  - *Streptococcus pneumoniae* (pneumococcus) can cause a range of different illnesses including sinusitis, otitis media, pneumonia, bacteraemia, osteomyelitis, septic arthritis and meningitis.
  - Vaccines are available that help prevent invasive pneumococcal disease (such as bacteraemia and meningitis).
- 

Pneumococcal disease refers to a range of illnesses that affect various parts of the body and are caused by infection with the bacterium *Streptococcus pneumoniae*, commonly known as pneumococcus.

Illnesses range from mild infections, such as ear infection, to pneumonia and life-threatening infections of the bloodstream and central nervous system, such as meningitis. Immunisation can substantially reduce the risk of infection, especially in young children.

### Pneumococcal disease is deadly

Pneumococcal disease is a leading cause of serious illness and death among Australian children under two years of age and persons over 85 years of age. The rates are highest among Aboriginal and Torres Strait Islander children, especially in central Australia. Pneumococcal disease is also an important cause of pneumonia in adults 65 years of age or over. Older people are especially at risk of death from this disease. It is estimated to kill around one million people worldwide every year. While pneumococcal disease can occur at any time, infections seem to be more common during winter and spring. Young children, older people and people with impaired immune systems are among the most susceptible.

### Pneumococcal infections

*Streptococcus pneumoniae* can cause a range of illnesses, depending on which part of the body is infected. These include:

- **sinusitis** – infection of the sinuses (air-filled cavities in the face). Symptoms include aching face, blocked nose, yellow-green nasal mucus and headache
- **otitis media** – middle ear infection. Symptoms include painful ear, hearing loss, high temperature, nausea and vomiting
- **bacteraemia** – bacteria invade the blood. Symptoms include fever, headache and muscular aches and pains. This is a very serious condition
- **septic arthritis** – joint infection. Symptoms include joint pain, swelling and reduced mobility of the joint
- **osteomyelitis** – bone infection. Symptoms include bone pain, reduced mobility of the affected part and fever
- **pneumonia** – lung inflammation. Symptoms include fever, cough, chest pains and breathing problems, such as shortness of breath
- **meningitis** – inflammation of the membranes (meninges) that enclose the brain and spinal cord. Symptoms may include high fever, headache, stiff neck, nausea and vomiting, and sometimes coma. Pneumococcal meningitis is extremely serious and has a high death rate.

### Risk of pneumococcal disease

Certain groups are at increased risk of infection, including:

- children aged under two years
  - children under five years with underlying medical conditions predisposing them to invasive pneumococcal
-

disease

- Aboriginal and Torres Strait Islander children, especially in central Australia
- Aboriginal and Torres Strait Islander people
- people aged 65 years and over
- people with weakened immune systems
- people with chronic diseases such as diabetes, lung disease, cancer or kidney disease
- people who have impaired spleen function or have had their spleen removed
- people who smoke tobacco.

### **Spread of pneumococcal disease**

Many people carry *Streptococcus pneumoniae* bacteria in their nose and throat. The bacteria are transferred to another person through droplets of saliva or mucus, such as when a 'carrier' sneezes, coughs, shares toys or kisses someone.

Most of the time, this doesn't cause any illness. However, vulnerable people may develop pneumococcal disease. The immune system is unable to keep the bacteria in check, which then multiply out of control and spread to other areas of the body.

### **Diagnosis of pneumococcal disease**

Since other types of bacteria can cause similar infections, it is important to test specifically for the presence of *Streptococcus pneumoniae*.

Depending on the symptoms, pneumococcal disease is diagnosed using a number of tests, including:

- physical examination
- chest x-ray
- phlegm test
- blood test
- urine test
- cerebrospinal fluid (CSF) test by lumbar puncture.

### **Treatment for pneumococcal disease**

Treatment options include:

- antibiotics such as penicillin
- pain-relieving medication
- plenty of fluids
- rest
- hospital admission in severe cases – for example, meningitis.

### **Immunisation for pneumococcal disease**

There are currently 90 different recognised strains of *Streptococcus pneumoniae* and no vaccine can protect against all of them. However, two vaccines are available to help prevent infection with the most common strains.

#### **Pneumococcal disease vaccine for children**

The risk of infection in young children, especially those under two years of age, can be substantially reduced with a vaccine called Prevenar 13. Under the National Immunisation Program Schedule, this vaccine is free for all infants at two, four and 12 months of age. Extra pneumococcal vaccine is given to children with certain medical risk factors at six months and four to five years of age.

#### **Pneumococcal disease vaccine for adult**

The vaccine Pneumovax 23 will protect all other age groups against 23 strains of the disease. These vaccines are

available to all Victorians, but are provided free of charge for some people at increased risk.

### Where to get help

- Your **GP (doctor)**
- Your local council immunisation service
- **NURSE-ON-CALL** Tel. **1300 60 60 24** – for expert health information and advice (24 hours, 7 days)
- Your local community health centre
- **Immunisation Program – Department of Health and Human Services**, Victorian Government Tel. **1300 882 008**
- **National Immunisation Hotline** Tel. **1800 671 811** – 8 am to 5 pm
- The emergency department of your nearest hospital

### This page has been produced in consultation with and approved by:

Department of Health and Human Services - RHP&R - Health Protection - Communicable Disease Prevention and Control Unit

Content on this website is provided for information purposes only. Information about a therapy, service, product or treatment does not in any way endorse or support such therapy, service, product or treatment and is not intended to replace advice from your doctor or other registered health professional. The information and materials contained on this website are not intended to constitute a comprehensive guide concerning all aspects of the therapy, product or treatment described on the website. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions and to ascertain whether the particular therapy, service, product or treatment described on the website is suitable in their circumstances. The State of Victoria and the Department of Health & Human Services shall not bear any liability for reliance by any user on the materials contained on this website.

For the latest updates and more information, visit [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

**Copyright © 1999/2020** State of Victoria. Reproduced from the Better Health Channel ([www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.