

Pneumococcal disease

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 over 85 years of age. The rates are highest in Indigenous children, especially in central Australia.

Pneumococcal disease is also an important cause of pneumonia in adults 65 years of age or older; the elderly 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, the elderly and people with impaired immune systems are among the most susceptible.

A range of 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.

People at increased risk

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
- Indigenous children, especially in central Australia
- 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
- Indigenous Australians
- Torres Strait Islanders
- Tobacco smokers.

How it is spread

Most 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-killing medication
- Plenty of fluids
- Rest
- Hospital admission in severe cases – for example, meningitis.

Immunisation

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.

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 six months of age, and for children less than five years of age with certain medical risk factors.

Prevenar 13 supplementary dose

In July 2011, the pneumococcal vaccine (Prevenar) for children was replaced with a new version (Prevenar 13) that protects against more types of the bacteria that cause pneumococcal disease. Children who had all the necessary doses of pneumococcal vaccine before 1 July 2011 would have received the previous version of the vaccine.

To provide added protection, children aged 12 to 35 months (inclusive) are eligible for a one-off free supplementary dose of the new vaccine between 1 October 2011 and 30 September 2012. To receive the free dose, parents must arrange for their eligible child to see their doctor or attend a local council immunisation session between those dates.

Vaccine for adults

The vaccine Pneumovax 23 will protect all other age groups and protects against some of the most virulent strains of the disease in adults. These vaccines are available to all Victorians, but are provided free of charge for some people at increased risk.

Where to get help

- Your doctor
- Your local council immunisation service
- NURSE-ON-CALL Tel. 1300 606 024 – for expert health information and advice (24 hours, 7 days)
- Your local community health centre
- Immunisation Program – Department of Health Victoria Tel. 1300 882 008
- National Immunisation Infoline Tel. 1800 671 811
- The emergency department of your nearest hospital

Things to remember

- Young children, the elderly 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 prevent invasive pneumococcal disease (such as bacteraemia and meningitis).

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

Department of Health - Communicable Disease Prevention and Control Unit

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