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What is an invasive *Streptococcus pneumoniae* infection?

Streptococcus pneumoniae are bacteria that are commonly found in the nose and throat of children and adults. *S. pneumoniae* can infect the lungs (pneumonia) or ears (otitis media), but it is considered "invasive" when it is found in the blood, spinal fluid (e.g., meningitis), or other site that normally does not have bacteria present.

Who gets *S. pneumoniae* infections?

Many people carry *S. pneumoniae* without becoming ill. Unvaccinated children, the elderly, and other people with weakened immune systems are the most at risk for invasive infection, but some people get an invasive infection for no apparent reason.

How is *S. pneumoniae* spread?

The bacteria are spread from person to person by the breathing in droplets produced by an infected person during coughing or sneezing.

What are the symptoms of *S. pneumoniae* infection?

Signs and symptoms depend on the part of the body affected. Invasive infection often includes fever, chills, and irritability. Headache, stiff neck, confusion, sleepiness, vomiting, and poor feeding can occur with meningitis.

How soon after exposure do symptoms appear?

The incubation period varies. Signs and symptoms of infection can occur within 1-3 days after exposure, but may occur long after exposure.

How is *S. pneumoniae* diagnosed?

Laboratory tests on blood, pleural fluid, joint fluid, or cerebrospinal fluid (CSF) are needed to confirm the diagnosis of invasive disease.

What is the treatment for *S. pneumoniae* infection?

The main treatment for invasive *S. pneumoniae* infection is antibiotics.

What can be done to prevent the spread of *S. pneumoniae*?

Vaccines can help to prevent invasive *S. pneumoniae* infections. Pneumococcal conjugate vaccine 13-valent (PCV-13) is recommended for all children starting at two months up to 59 months of age.

Pneumococcal polysaccharide vaccine 23-valent (PPSV-23) is used in high-risk individuals two years of age or older. Both PCV-13 and PPSV-23 are recommended for adults; the use of these vaccines is based on lifestyle, health condition, and age. Consult with your doctor or local health department to determine if the vaccine is recommended for you.

Frequent handwashing with soap and water (or, when soap and water are not available, the use of alcohol-based hand rubs or gels) can help stop the spread of many viruses and bacteria. Not sharing food, drinks, or eating utensils with other people can also help to stop the spread of germs.

Preventive treatment (e.g., antibiotics) is not generally needed for exposure to someone with an infection caused by *S. pneumoniae*.

When and for how long is a person able to spread *S. pneumoniae*?

The contagious period varies and may last for as long as the organism is present in the nose and throat. A person can no longer spread *S. pneumoniae* after taking the proper antibiotics for 1-2 days.

Does past infection with *S. pneumoniae* make a person immune?

No. Individuals who have had a *S. pneumoniae* infection can get it again.

How can I learn more about *S. pneumoniae*?

- If you have concerns about *S. pneumoniae* infection, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at the [VDH Local Health Districts page](#).
- Visit the Center for Disease Control and Prevention website at [the CDC page on pneumococcal disease](#).

October 2018

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