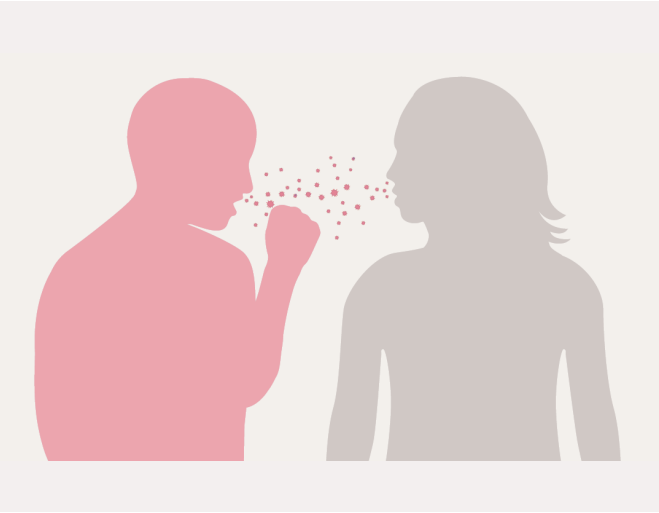
Factsheet Pneumococcal disease

Key points

- Pneumococcal infections are common in people living with HIV, even with higher CD4 cell counts.
- Vaccination and HIV treatment reduce the risk of invasive pneumococcal disease.
- Pneumococcal disease is treated with antibiotics.



Pneumococcal disease is caused by a bacterium called *Streptococcus pneumoniae* (pneumococcus). The bacteria enter the body through the nose and mouth, directly (when an infected person sneezes or coughs, or through close contact such as kissing) or indirectly (infected fluid is transferred to a hard surface; someone touches that surface, then touches their nose or mouth).

There are more than 90 pneumococcal types that can cause disease in humans. Pneumococcus is a common cause of ill health in the general population, especially in the winter. In most people, it causes relatively minor health problems (called 'non-invasive' infections) such as bronchitis, sinusitis (sinus inflammation) and middle-ear infections.

> *"A low CD4 cell count is a risk factor for developing pneumococcal disease for people living with HIV."*

Serious pneumococcal diseases include septicaemia (blood poisoning), meningitis (inflammation of the brain lining) or severe pneumonia.

Pneumococcal disease and HIV

Pneumococcal infections are common in people living with HIV. Compared to the general population, people living with HIV are more likely to develop severe forms of pneumococcal disease, whatever the health of their immune system. These are often called 'invasive'

pneumococcal disease, as they occur in a major organ or in the blood, and can lead to serious illness.

UK research published in 2011 showed that rates of severe pneumococcal disease were between 25 and 50 times higher in adults living with HIV, depending on age.

A low CD4 cell count is a risk factor for developing pneumococcal disease for people living with HIV, especially for people who are not taking HIV treatment. Other risk factors for pneumococcal disease include: older age; smoking; heavy alcohol use; long-term lung conditions such as asthma; diabetes; and chronic heart, liver, or kidney disease.

Taking HIV treatment reduces the risk of invasive pneumococcal disease, strengthening the immune system and making it better able to fight infections. However, people who are taking HIV treatment, even with a high CD4 cell count, are still at risk. In 2011, UK doctors found that rates of serious disease were still seven times higher in people on HIV treatment and with a CD4 cell count above 500, compared to the general population.

Diagnosing and treating pneumococcal disease

Symptoms of pneumococcal disease include fever, chills and sweats, headache, cough and a general feeling of being unwell. Mild cases of pneumococcal disease are likely to go away after a few days, without the need for any special treatment.

However, because of your HIV status – and especially if you have symptoms that don't improve after a few days – it is wise to seek medical advice. This is particularly important if you:

- have a constant high temperature
- cough up yellow or green mucus, particularly streaked with blood
- have chest pains or are breathing very fast
- become drowsy or confused
- experience breathing difficulties.

(If you experience the possible symptoms of bacterial meningitis, the most serious type of pneumococcal infection, dial 999 and ask for an ambulance. Early symptoms can include a high fever plus a severe headache or a stiff neck. Information on early warning signs is available on the NHS Choices website.)

Generally, your GP (family doctor) or HIV clinic will investigate further and prescribe any necessary treatment. Your doctor will ask you about your symptoms, examine you (including listening to your chest), and may order some tests.

Blood or urine tests are used to look for the presence of pneumococcus. A sputum sample will be examined if pneumococcal pneumonia is suspected; you may also have a chest X-ray. In some cases, a procedure called a lumbar puncture is used to check for infection in the cerebrospinal fluid (the fluid that surrounds the brain and spine).

Non-invasive pneumococcal disease, such as sinusitis, usually gets better without treatment.

Resting, drinking plenty of fluids and taking over-the-counter painkillers will help.

Otherwise, pneumococcal disease is treated with antibiotics. These can cure the infection, and the symptoms usually start to go away 12 to 48 hours after treatment is started. It is important that you take the complete course of treatment. People with more serious disease may be treated with intravenous antibiotics; especially if your symptoms are more severe, you may be admitted to hospital.

Strains of pneumococcus that are resistant to antibiotics are becoming more common. Blood, urine and/or sputum tests will show if there is any drug resistance and help your doctor choose the most effective antibiotic.

It may be recommended you go back to your doctor six weeks after the start of your symptoms to check that the infection hasn't caused long-term damage.

Vaccination

The British HIV Association recommends that people living with HIV should be vaccinated against pneumococcal disease.

There are two types of pneumococcus vaccine: pneumococcal conjugate vaccine (PCV, the type of vaccine used for childhood pneumococcal vaccination) and pneumococcal polysaccharide vaccine (PPV). The BHIVA recommendation is that all people with HIV, whatever their age, CD4 cell count or treatment status, have a single dose of PCV. For people who are aged 65 or over, or who have another health condition (such as heart or kidney disease) that may increase their risk of pneumococcal disease, it is recommended they **also** have a single dose of PPV.

These vaccines are available from your GP surgery. You could ask about having your flu vaccine at the same time. If you do not have a GP, or have not disclosed your HIV status (and are not considered at risk and therefore eligible for the vaccine), talk to your healthcare team at your HIV clinic.

The vaccine is administered via an injection into muscle. This can be uncomfortable, and you may have some pain and swelling around the injection site for a few days. The vaccine can also cause a mild, flu-like illness lasting a few days. Generally, only one dose is needed. (People with chronic kidney disease or who have reduced spleen function may benefit from a 'booster' dose after five years.) The vaccine is about 50 to 70% effective in preventing pneumococcal disease.

Find out more

Diagnosed with HIV at a low CD4 count Simple factsheet

Influenza ('flu') Simple factsheet

GPs and primary care Simple factsheet

nam aidsmap
Sharing knowledge, changing lives
© NAM Publications 2017

Author: Selina Corkery
Last updated December 2017
Due for review December 2020

For other factsheets in this series visit
www.aidsmap.com/factsheets

NAM is grateful to Gilead Sciences, Inc, Janssen-Cilag Ltd, Merck & Co. Inc, ViiV Healthcare Ltd and Wandsworth Oasis for funding the development of our factsheet series. Our funders have not had any editorial control over the content.

The Information Standard Certified Member