
Haemophilus Influenzae

Frequently Asked Questions

1. **What is *Haemophilus influenzae*?**

Haemophilus influenzae (*H. influenzae*) is a Gram-negative coccobacillus which was first identified in 1892. Some strains of *H. influenzae* have a polysaccharide (carbohydrate) capsule (outer covering). The capsule makes it very hard for the immune system to defend the body against *H. influenzae*. Encapsulated strains of *H. influenzae* cause serious illnesses such as pneumonia, meningitis, bacteraemia, epiglottitis, osteomyelitis, septic arthritis, septicaemia, cellulitis and pericarditis. A particular strain, known as *H. influenzae* serotype b (Hib) is responsible for most cases of serious illness due *H. influenzae*. There are six serotypes named a-f. Strains of *H. influenzae* that do not have a capsule tend to cause non-serious disease such as middle ear infections (otitis media), worsening of asthma or chronic lung disease (chronic obstructive pulmonary disease), community-acquired pneumonia, sinusitis and neonatal and maternal sepsis.

2. **Who can get *Haemophilus influenzae* serotype b (Hib)?**

Children under the age of 5 years who are not vaccinated against Hib, persons who are living with HIV, who are undergoing chemotherapy and who have chronic medical conditions are at a higher risk of being serious illness due to *H. influenzae*. These persons' immune systems are particularly weak at responding to bacteria that have a carbohydrate capsule. Before the introduction of the Hib vaccine, Hib was the leading cause of bacterial meningitis and other invasive bacterial disease among children younger than 5 years of age worldwide. Adults who are not immunocompromised are generally not at risk of severe (invasive) disease due to Hib.

3. **Where does Hib occur in South Africa?**

Infections with Hib occur everywhere in the country. Since the introduction of the Hib vaccine, Hib infection has become uncommon.

4. **How is Hib transmitted?**

Hib bacteria can be spread from person to person by direct contact or through larger respiratory droplets from the mouth or throat e.g. mucus, saliva. The Hib bacteria can also be transmitted through contaminated surfaces. Because the organism first lodges in the throat (pharynx), and because it is transmitted by larger droplets or direct contact, anyone who has had close contact with an infected person is at risk of infection. This means that children in the same household, or same class at school may be at risk

5. **How does Hib affect animals?**

Humans are the only natural host for Hib.

6. **What are the signs and symptoms of Hib?**

Signs and symptoms of illness depend on the clinical syndrome. For pneumonia, symptoms include fever, lower than normal body temperature in older individuals, headache, cough, shortness of breath, chest pains when breathing, sweating, body chills, muscle aches and fatigue. For epiglottitis the symptoms include fever,

sore throat, and difficulty swallowing and breathing. The signs and symptoms of meningitis include fever, headache, stiff neck, nausea, vomiting, sensitivity to light, confusion; infants may experience irritability, loss of focus and loss of appetite. In children abnormal reflexes may be indicative of meningitis. Signs and symptoms of bacteraemia include fever, body chills, fatigue, abdominal pain, nausea, vomiting, diarrhoea, anxiety, shortness of breath and confusion.

7. How is Hib diagnosed?

In the laboratory, Hib infection can be diagnosed by the detection of Hib bacteria from sterile body fluids such as blood or CSF using culture and gram stain. A test called slide agglutination is used to identify the *H. influenzae* serotypes. Polymerase chain reaction (PCR) can be used for detection and confirmation of serotypes.

8. How is Hib treated?

Hib infections can be treated with antibiotics. The type of antibiotics used depends on a number of factors including the syndrome, local hospital practice, age of patient, antibiotic resistance profiles. Intravenously administered ceftriaxone or cefotaxime (3rd generation cephalosporins) may be used to treat meningitis, epiglottitis and severe pneumonia. Corticosteroids can also be given in order to prevent brain damage in patients with meningitis. Non-severe Hib infections may be treated by orally administering amoxicillin, clavulanate, azithromycin, cephalosporins, fluoroquinolones, or clarithromycin. Treatment period ranges from 7 days to 10 days depending on the syndrome and severity of disease. Patients with complications such as endophthalmitis, endocarditis, pericarditis or osteomyelitis require a longer period of treatment, up to 3 to 6 weeks.

9. How is Hib prevented?

Hib infection is vaccine preventable. In South Africa, the Hib vaccine was introduced as part of the National Expanded Program on Immunisation (EPI) schedule in 1999. The vaccine is administered to children at the age of 6, 10 and 14 weeks of life and a booster dose is given at 18 months. Rifampicin prophylaxis is recommended for children and adults who stayed in the same house or who spent four or more hours per day with a case, 5 to 7 days before the case showed signs and symptoms of invasive Hib infection. People who are ill from Hib related syndromes should have minimal contact with other people until they have completed their course of antibiotics. Hib is a notifiable medical condition in South Africa and required by law to be notified. The first health professional that comes across a person who is infected with Hib is responsible for completing the relevant forms and submitting them to the relevant health authorities.

10. Where can I find out more information

For the public:

- **Guidelines and other documents:** NICD website at www.nicd.ac.za under the 'Diseases A-Z' tab.

For Healthcare Workers:

- **Medical/clinical related queries:** NICD Hotline +2782 883 9920 (for use by healthcare professionals only).
- **Laboratory related queries:** Centre for Respiratory Diseases and Meningitis: Linda de Gouveia: +27 11 555 0327, lindad@nicd.ac.za; Mignon du Plessis: +27 11 555 0387, mignond@nicd.ac.za; Nicole Wolter: +27 11 555 0352, nicolew@nicd.ac.za.
- **Results inquiries:** Centre for Respiratory Diseases and Meningitis laboratory (+27 11-555-0315/7/8).