



***Haemophilus influenzae* b meningitis (Hib meningitis)**

What is Hib meningitis?

Hib meningitis is caused by bacteria called *Haemophilus influenzae* type b. Until the introduction of the Hib vaccine in 1992, this was the main form of meningitis in young children in the UK. It mainly affects children under 4 years of age¹. Nowadays, Hib is rare in all age groups. In the UK, cases in adults tend to occur in people at the ages most likely to mix with children, both as parents and as grandparents².

Hib can cause a range of serious illness, most frequently meningitis³. Hib meningitis is an inflammation of the lining of the brain and spinal cord, and it has the same symptoms as other kinds of bacterial meningitis.

- In the early stages, a person usually feels unwell, with fever, headache and vomiting, just like many mild illnesses.
- Typical meningitis symptoms - stiff neck and dislike of bright light normally happen later.
- As the disease gets worse the person affected may become very sleepy and difficult to wake, confused or delirious, and may have seizures (fits).

Babies and young children often do not get a stiff neck or dislike of bright lights.

- They may refuse to feed and be irritable with a high-pitched or moaning cry, especially when you pick them up.
- They may have blotchy, pale or bluish skin.
- Their body may be stiff, with jerky movements or go floppy and lifeless.
- The soft spot on a baby's head may be tense or bulging.

People with Hib meningitis do not normally get a rash. A meningitis rash is more typical of meningococcal infection, which is now the most frequent cause of meningitis in the UK, and often occurs together with septicaemia (blood-poisoning).

Nowadays in the UK, at least 95% of people with Hib meningitis recover⁴, but it can be fatal.

As many as one survivor in eight may be left with disabilities, that may be as severe as deafness, problems with co-ordination and epilepsy⁵. In many cases, after effects are temporary or improve over time. In the early stages of recovery, and especially with young children, it can be difficult to tell if problems will be long-lasting.

Other severe Hib diseases include septicaemia, epiglottitis (inflammation of the back of the throat), pneumonia, cellulitis (inflammation of tissue), osteomyelitis (bone infection), arthritis, and pericarditis (inflammation of the heart lining)⁴.

Hib can also cause milder ailments like ear infections and minor respiratory illness.

How do you get Hib?

Hib bacteria are found only in humans, and live temporarily in the back of the nose and throat⁴.

Hib infection is spread through close contact with mucus or droplets from the throat of someone who carries the bacteria. Hib bacteria are too fragile to live outside the human body. Although we don't know exactly how long they can survive outside, we do know that in general, prolonged close contact is necessary to pick up Hib bacteria. The majority of people who carry Hib do not become ill, which means that we are most likely to meet the bacteria through contact with perfectly healthy carriers. Before Hib vaccine was introduced, young children quite commonly carried Hib bacteria.

The incubation period for Hib is uncertain, however it is generally agreed that when Hib disease occurs, it develops within days of exposure to the bacteria¹.

Who is at risk?

Only a small fraction of the people who acquire Hib bacteria fall ill with the disease and the reasons for this are not entirely understood. People with a deficient immune system, such as those without a spleen, are at higher risk. Although the disease is now rare, doctors report all cases to the Public Health doctor. Depending on their age and whether they have been vaccinated, some household contacts of a case may be more at risk than the general public. The Public Health doctor decides what action to take in these cases.

Is there a Hib vaccine?

A conjugate vaccine (see box 1) against Hib was introduced in the UK in 1992. Since the introduction of the Hib vaccine, meningitis caused by *Haemophilus influenzae* has been reduced by over 90% across the UK⁶.

Introduction of the conjugate Hib vaccine has also dramatically reduced carriage of the bacteria⁷. Before the vaccine was introduced, a large proportion of children under age 5 carried the bacteria. Now that vaccination is routine, carriage of the bacteria is much less common, and

as a result protection is extended to the rest of the population, even those not immunised. This is called 'herd immunity'.

Box 1: Conjugate vaccines

Conjugate vaccines are made by linking a tiny fragment from the bacteria's sugar coat, (which a child's immune system cannot respond to), to a protein (which a child can respond to). In this way, the immune system is able to recognise the bacteria that cause serious diseases like meningitis. These conjugate vaccines are effective in babies as young as 2 months of age and trigger a long-lasting immune response.

Is the vaccine safe?

Millions of doses given to children worldwide over more than a decade have established an excellent safety record⁸. Adverse reactions are no more common than for other vaccines routinely given to babies and children.

Who gets the vaccine?

The Hib vaccine is routinely offered to babies at 2, 3, and 4 months of age as part of the 5-in-1 vaccine that also protects against diphtheria, tetanus, whooping cough and polio. A Hib booster, as combined Hib/MenC vaccine, is then offered at 12 months of age⁴.

In addition, Hib vaccine is recommended for anyone with certain immune deficiencies such as people without a functioning spleen (asplenic and hyposplenic) including people who have sickle cell disorder⁴.

Is Hib still an important cause of meningitis?

The Hib vaccine is very effective¹⁰, but no vaccine is 100% effective. It does not work as well in children with certain immune problems. In addition, a very small proportion of perfectly healthy children do not respond to the vaccine well enough to be protected against Hib meningitis. Illness caused by non-b types of *Haemophilus influenzae* is also being monitored.

Immunisation has dramatically reduced cases of Hib meningitis, but in countries that have not introduced the vaccine, Hib is still a major cause of serious disease in children.

Where can I go for further information and support?

Freephone helpline UK 080 88 00 33 44 Ireland 1800 41 33 444

email helpline@meningitis.org

Visit our website www.meningitis.org

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