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## Haemophilus influenzae type b (Hib)

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### Summary

- Hib is a life-threatening infection that can lead to serious illness, especially in children.
  - Symptoms include severe headache, stiff neck, convulsions or seizures, severe drowsiness, difficulty waking up, loss of consciousness or difficulty with breathing.
  - Seek urgent medical attention if you think your child has any symptoms.
  - Immunisation of children should continue even though the number of serious illnesses from Hib has greatly decreased as a result of the Hib immunisation program.
  - Babies and children under five years of age should receive immunisation against Hib.
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*Haemophilus influenzae* type b (Hib) is a bacterium that causes a life-threatening infection that can lead to serious illness, especially in children. Conditions such as meningitis (inflammation of the membranes covering the brain), epiglottitis (inflammation of the flap and the top of the windpipe) and pneumonia can develop very quickly and may require urgent medical attention.

The disease caused by Hib is spread mainly through coughing or sneezing, or contact with secretions from the nose and throat of an infected person. Despite its name, Hib is a bacterium and is not a form of influenza (flu), which is caused by a virus.

Before the introduction of Hib immunisation in 1993, Hib was a common cause of life-threatening infection in children under five. Routine immunisation has been highly effective in reducing the incidence of this disease in Australia. Children under five years of age and people at increased risk of developing Hib infection should still be immunised.

### Symptoms of Hib infection

Seek urgent medical attention if you suspect your child has symptoms including:

- severe headache
- stiff neck
- convulsions (fits) or seizures
- severe drowsiness
- difficulty waking up
- loss of consciousness
- difficulty with breathing.

### Complications of Hib infection

If your child is not immunised and contracts Hib, they could develop:

- meningitis – an infection of the membrane covering the brain (signs include fever, stiff neck, drowsiness, irritability and refusal of food)
- epiglottitis – inflammation of the flap at the top of the windpipe (epiglottis), which can block a child's breathing (signs include severe breathing difficulties, fever, restlessness and irritability)
- pneumonia – lung inflammation (symptoms include fever, cough, chest pains and breathing problems, such as shortness of breath)
- septic arthritis – joint infection (symptoms include joint pain, swelling and reduced mobility of the joint)
- cellulitis – infection of the tissue under the skin, usually on the face.

These complications can develop quickly and, if left untreated, your child could die in a short period of time.

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## Causes of Hib infection

Hib bacteria live in the nose and throat of most healthy people without causing illness. There are a number of types of Haemophilus influenzae bacteria and infection with the type b (Hib) bacterium can cause a range of conditions in vulnerable people, some of which are medical emergencies.

Disease caused by Hib is spread mainly through person-to-person contact with infected droplets (coughing or sneezing) or secretions from an infected person's nose and throat. The usual time between contact with the bacteria and the development of the illness is around two to four days. The person with Hib is infectious for as long as the bacteria stays in the nose or throat. Generally 24 to 48 hours of appropriate antibiotic treatment is required to clear the infection.

If your child has a Hib infection, they should be kept away from childcare or school until a course of appropriate antibiotics is completed and your doctor has confirmed that they are no longer infectious.

In some circumstances, people who live with a person with Hib infection may require preventative antibiotics. The Department of Health and Human Services will guide healthcare professionals if this is the case.

## Diagnosis of Hib infection

Since other types of bacteria can cause similar infections, it is important to test specifically for the presence of Hib. Diagnosis may include:

- physical examination
- blood test
- test of the fluid around the spine (cerebrospinal fluid) collected using a needle (lumbar puncture)
- tests of other specimens.

An emergency diagnosis of a life-threatening condition is generally made on the basis of rapid onset of symptoms in a child who was previously well.

## Treatment for Hib infection

Depending on the illness, treatment may include:

- admission to hospital
- a course of the appropriate antibiotics.

A child with epiglottitis may be cared for in an intensive care unit and a breathing tube may be inserted to help them breathe.

## Immunisation against Hib

Immunisation is the best protection against Hib infection and is recommended for all infants, young children and adults at high risk.

Protection against Hib is available under the National Immunisation Program Schedule. In Victoria, the Hib vaccine is offered free of charge for:

- all children at two, four, six months – the first three primary doses of Hib vaccine are given as part of a combined vaccine against diphtheria, tetanus, pertussis (whooping cough), hepatitis B, polio and Hib vaccine (six-in-one vaccine)
- all children at 18 months – a fourth booster dose of Hib vaccine is given
- children from 18 months up to 59 months inclusive who have had no previous doses require a single catch-up dose
- children up to and including nine years of age – can receive catch-up doses of the combined vaccine (diphtheria, tetanus, pertussis (whooping cough), hepatitis B, polio and Hib vaccine).

A single dose of Hib vaccine is also recommended for anyone who does not have a spleen or has a poorly functioning spleen and has not been previously immunised for Hib. People who have had a stem cell transplant should also be immunised against Hib and are recommended to receive 3 doses of vaccine.

## **Before Hib immunisation**

Before immunisation, make sure that you tell your doctor or nurse if you (or your child):

- are unwell on the day of immunisation (temperature over 38.5°C)
- have had a serious reaction to any vaccine in the past
- have had a severe allergy to anything
- are pregnant.

## **Pregnancy and Hib immunisation**

Hib vaccine is not recommended for women who are pregnant or breastfeeding, although if you are pregnant and do not have a spleen, you should speak with your doctor.

## **Side effects of Hib vaccine**

Immunisations containing vaccines against diphtheria, tetanus, Hib and other infectious diseases (including the six-in-one, four-in-one, three-in-one and two-in-one vaccines) are effective and safe although all medications can have unwanted side effects.

Side effects from these combined vaccines are uncommon and usually mild, but may include:

- localised pain, redness and swelling at the injection site
- occasionally, an injection-site lump (nodule) that may last many weeks but treatment is not needed
- low-grade temperature (fever)
- children can be unsettled, irritable, tearful, generally unhappy, drowsy and tired.

If a combined immunisation also contains the vaccine against polio (the six-in-one and the four-in-one vaccine), muscle aches may also be experienced.

## **Managing fever after immunisation**

Common adverse events following immunisation are usually mild and temporary (occurring in the first one to two days after vaccination). Specific treatment is not usually required.

There are a number of treatment options that can reduce the side effects of the vaccine including:

- Give extra fluids to drink.
- Do not overdress children or babies if they are hot.
- Although routine use of paracetamol after vaccination is not recommended, if fever is present, paracetamol can be given. Check the label for the correct dose or speak with your pharmacist, especially when giving paracetamol to children.

## **Managing injection site discomfort**

Many vaccine injections may result in soreness, redness, itching, swelling or burning at the injection site for one to two days. Paracetamol might be required to ease the discomfort.

Sometimes, a small, hard lump (nodule) at the injection site may persist for some weeks or months. This should not be of concern and requires no treatment.

## **Concerns about immunisation side effects**

If an adverse event following immunisation is unexpected, persistent or severe, or if you are worried about yourself or your child's condition after immunisation, see your doctor or immunisation nurse as soon as possible, or go directly to a hospital. It is also important to seek medical advice if you (or your child) are unwell, as this may be due to other illness rather than because of the immunisation.

Adverse events that occur following immunisation may be reported to the Victorian Surveillance of Adverse Events Following Vaccination In the Community (SAEFVIC) Line. SAEFVIC is the central reporting service in Victoria for any significant adverse events following immunisations. You can discuss with your immunisation provider how to

report adverse events in other states or territories.

### **Rare immunisation side effects**

There is a very small risk of a serious allergic reaction (anaphylaxis) to any vaccine. This is why you are advised to stay at the clinic or medical surgery for at least 15 minutes following immunisation in case further treatment is required.

If any other reactions are severe and persistent, or if you are worried, contact your doctor for further information.

### **Where to get help**

- Your doctor
- In an emergency, always call triple zero (000)
- Emergency department of your nearest hospital
- Local government immunisation service
- Maternal and Child Health Line (24 hours) Tel. 13 22 29
- NURSE-ON-CALL Tel. 1300 60 60 24 – for expert health information and advice (24 hours, 7 days)
- Immunisation Section, Department of Health and Human Services, Victorian Government Tel. 1300 882 008
- National Immunisation Information Line Tel. 1800 671 811
- Pharmacist
- SAEFVIC Tel. 1300 882 924 – the line is attended between 9 am and 4 pm and you can leave a message at all other times

### **Things to remember**

- Hib is a life-threatening infection that can lead to serious illness, especially in children.
- Symptoms include severe headache, stiff neck, convulsions or seizures, severe drowsiness, difficulty waking up, loss of consciousness or difficulty with breathing.
- Seek urgent medical attention if you think your child has any symptoms.
- Immunisation of children should continue even though the number of serious illnesses from Hib has greatly decreased as a result of the Hib immunisation program.
- Babies and children under five years of age should receive the full course of immunisation against Hib.

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

Department of Health and Human Services - RHP&R - Health Protection - Communicable Disease Prevention and Control Unit

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