PROCEDURE

# Haemophilus influenzae type b (hib) vaccine - what you need to know

The Hib vaccine is an injection that protects against serious infections caused by Haemophilus influenzae type b bacteria.

**PURPOSE**
Prevent invasive Hib infections such as meningitis and bloodstream infection

**PROCEDURE TYPE**
Therapeutic prevention - intramuscular injection

**WHERE IT IS DONE**
Outpatient clinic, pharmacy, or community vaccination setting

**ANAESTHESIA**
None

**HOW LONG IT TAKES**
About 10 to 30 seconds for the injection

**PREPARATION**
No fasting; bring vaccination records and review allergies

**RECOVERY**
Same day; avoid driving only if faint or dizzy

**MAIN RISKS**
Injection-site pain, fever, fainting, severe allergic reaction

**RESULTS**
Protection develops as the recommended dose series is completed

## Overview

The Haemophilus influenzae type b vaccine, usually called the Hib vaccine, protects against infections caused by Hib bacteria. Despite its name, Hib is not influenza, or "the flu." The seasonal flu vaccine does not protect against Hib.

Hib can cause serious infections, including meningitis, which affects the lining around the brain and spinal cord. It can also cause bloodstream infection, pneumonia, and dangerous swelling in the throat. Young children are especially vulnerable.

The vaccine contains a small part of the bacterium joined to a carrier protein. This helps the immune system learn to recognize Hib. It is not a live vaccine and cannot cause Hib infection.

Hib vaccine is usually given as an injection into a muscle. It may be given on its own or as part of a combination vaccine that protects against several diseases.

## Why the procedure is performed

The Hib vaccine is given to help prevent invasive Hib disease. "Invasive" means that bacteria have entered a normally protected part of the body, such as the blood or fluid around the brain.

Routine vaccination begins in infancy in many countries. More than one dose is needed because a young child's immune response develops over time. A later booster dose helps strengthen protection.

Some older children and adults may also be offered Hib vaccination because a health condition or treatment increases their risk. Examples include not having a working spleen and receiving a blood-forming stem cell transplant.

The exact number and timing of doses are based on age, previous vaccination, medical history, vaccine product, and the schedule used where you live.

## Who should and should not have it

Hib vaccination is routinely recommended for infants and young children. Catch-up vaccination may be offered when a child has missed one or more doses.

Healthy older children and adults do not usually need routine Hib vaccination. It may be recommended for people with specific risk factors, including:

Hib vaccine should not be given to a baby younger than 6 weeks. Giving it too early may not produce the intended immune response.

You should not receive a vaccine product if you have had a severe allergic reaction, called anaphylaxis, to an earlier dose or to one of its ingredients. Combination vaccines may have additional reasons they should not be used.

Vaccination may be delayed during a moderate or severe illness, especially when there is a fever. A minor illness, such as a mild cold, does not usually require delay. Pregnancy is not automatically a reason to avoid Hib vaccine, but vaccination is generally considered only when there is a specific need.

- A missing or poorly functioning spleen
- Certain conditions that affect spleen function, such as sickle cell disease

- A blood-forming stem cell transplant
- An incomplete vaccination history combined with increased medical risk

## How to prepare

Follow the instructions from the treating facility, as its own instructions take priority. Hib vaccination does not usually require fasting or changes to regular medicines.

Before the appointment:

Wear clothing that allows easy access to the upper arm or thigh. If you or your child tends to faint around needles, tell the vaccination team. The injection can often be given while seated or lying down.

Do not use pain medicine before vaccination solely to prevent possible side effects unless your healthcare team has recommended it for another reason.

- Bring any available vaccination record
- Tell the vaccination team about previous serious vaccine reactions
- Mention allergies and current medical conditions
- Explain if the person being vaccinated is unwell or has a fever
- Ask whether the vaccine is a single Hib vaccine or a combination product

## What happens during the procedure

A healthcare professional will confirm the vaccination history, check for reasons to delay or avoid the vaccine, and explain which product is being used. You or the child's parent or guardian will be asked for consent.

The skin may be cleaned before the injection. The vaccine is normally injected into a muscle in the thigh for a baby or young child, or into the upper arm for an older child or adult. The injection itself takes only a few seconds.

A small bandage may be placed over the site. You may be asked to remain nearby for a short observation period. This allows staff to help if fainting or an immediate allergic reaction occurs.

Other routine vaccines can often be given at the same appointment. Each injection is given at a separate site.

## Recovery and what to expect afterward

Pain, redness, warmth, or swelling can develop where the vaccine was given. These effects are usually mild and settle without treatment. A cool cloth may help with soreness. Ask a healthcare professional about suitable pain medicine if it is needed, especially for a baby or young child.

Normal food and drinks can be resumed immediately. Babies can breastfeed or bottle-feed as usual.

Most people can return to normal activity the same day. If the arm or leg is sore, gentler activity may be more comfortable until it improves.

The vaccine itself does not normally prevent driving. If you feel faint or dizzy, sit or lie down and do not drive until you have fully recovered. A child receiving the vaccine can travel home with their caregiver.

Most adults can return to work or school immediately. A short period of rest may be helpful if fever, tiredness, or soreness develops.

## Risks and possible complications

Hib vaccines have been widely used and are generally well tolerated. Possible effects include:

Fainting is more common after injections in adolescents and young adults. Sitting or lying down during vaccination can reduce the chance of injury from a fall.

A severe allergic reaction is possible after any vaccine, but it is uncommon. Vaccination settings keep medicines and equipment available to treat this reaction.

Combination vaccines can cause effects related to their other components. The vaccination team or product information can explain the risks of the specific vaccine being offered.

- Pain, redness, or swelling at the injection site
- Mild fever
- Irritability, sleepiness, or reduced appetite in young children
- Headache or tiredness
- Fainting related to the injection process

## Results and follow up

There is no routine blood test to check the result. Protection develops as the immune system

responds to each dose. Completing the recommended series provides more dependable protection than receiving only part of it.

Keep the updated vaccination record. It may be needed for future healthcare, childcare, school, travel, or assessment before certain medical treatments.

If a dose is late, the series usually does not need to be started again. The next dose and its timing should be based on age, previous doses, medical risk, and the local catch-up schedule.

The vaccine does not treat an infection that is already present. Seek medical assessment if there are concerns about possible illness, even when vaccination is complete.

## Alternatives

A single-antigen Hib vaccine may sometimes be used instead of a combination vaccine. It gives Hib protection without the other vaccine components, but it may mean more separate injections or appointments.

A combination vaccine reduces the number of injections. However, whether it is suitable depends on age, previous doses, and the other vaccines included.

Delaying vaccination is another option, but it leaves the person without the intended protection for longer. Declining vaccination avoids vaccine side effects but leaves a greater risk of Hib infection and its complications.

Other childhood vaccines do not protect against Hib. Breastfeeding, good hygiene, and avoiding sick contacts support general health but do not replace vaccination. Antibiotics like amoxicillin or doxycycline may be used to treat Hib disease or manage certain close-contact exposures, but they do not provide the same lasting prevention as vaccination.

## When to call your healthcare team

Contact your healthcare team during routine hours if an injection-site reaction is getting worse rather than improving, side effects are interfering with eating or normal activity, or you are unsure when the next dose is due.

Seek prompt medical advice for a fever in a baby younger than 3 months or for symptoms that are severe, persistent, or concerning to you.

Call emergency services for:

These symptoms need urgent assessment regardless of whether they appear to be related to the vaccine.

- Trouble breathing, wheezing, or throat tightness
- Swelling of the face, lips, tongue, or throat
- Collapse, severe weakness, or fainting without quick recovery
- A seizure
- Widespread hives accompanied by breathing or circulation problems

## Common questions

Will I be asleep for the Hib vaccine?

No. Anaesthesia and sedation are not needed. The injection takes only a few seconds.

Can I drive home afterward?

Usually, yes. Do not drive if you feel faint, dizzy, or unwell. Wait until you have fully recovered.

How painful is the injection?

You may feel a quick sharp sting. Soreness can continue around the injection site for a short time, but it is usually mild.

When will I know it has worked?

There is no immediate result and routine testing is not needed. Protection builds as the recommended doses are completed.

Can the Hib vaccine cause Hib disease?

No. Hib vaccines do not contain live Hib bacteria and cannot cause Hib infection.

What if a Hib dose was missed?

A catch-up dose may be possible, and the series usually does not need to be restarted. The appropriate schedule is based on age, previous doses, health risks, and local recommendations.

## Sources

- Centers for Disease Control and Prevention: Hib Vaccine Recommendations
- Centers for Disease Control and Prevention: Epidemiology and Prevention of Vaccine-Preventable Diseases, Chapter 8 - Haemophilus influenzae
- UK Health Security Agency: Haemophilus influenzae type b, The Green Book, Chapter 16

- Australian Immunisation Handbook: Haemophilus influenzae type b
- World Health Organization. Haemophilus influenzae type b conjugate vaccines: WHO position paper . Weekly Epidemiological Record. 2013;88(39):413-428.