



HAEMOPHILUS INFLUENZAE

ABOUT THIS DISEASE

Haemophilus influenzae (*H. influenzae*) is a type of bacteria that can cause many different kinds of infections. These infections can range from mild ear infections to severe diseases. There are six identifiable types of *H. influenzae* (a through f) and other non-identifiable types (called nontypeable).

When *H. influenzae* bacteria invade parts of the body that are normally free from germs, like spinal fluid or blood, this is known as “invasive disease.” Invasive disease is usually severe and can sometimes result in death. The most common types of invasive disease caused by *H. influenzae* are:

- Pneumonia* (lung infection)
- Bacteremia (blood infection)
- Meningitis (infection of the covering of the brain and spinal cord)
- Epiglottitis (swelling of the windpipe that can cause breathing trouble)
- Cellulitis (skin infection)
- Infectious arthritis (inflammation of the joint)

*Pneumonia is considered invasive when *H. influenzae* also infects the blood or fluid surrounding the lungs.

There is a vaccine that can prevent disease caused by *Haemophilus influenzae* **type b**, also known as **Hib**. The Hib vaccine does not protect against nontypeable or other types of *H. influenzae* bacteria. Before the Hib vaccine was introduced in the United States, type b organisms (Hib) accounted for 95% of all strains that caused invasive disease:

- Was the leading cause of bacterial meningitis (infection of the tissue covering the brain and spinal cord)
- Caused about 20,000 cases of invasive disease each year
- Caused about 1,000 deaths each year.

Due to the use of Hib vaccine, less than 50 cases of Hib disease occur each year in young children in the U.S. Most of these cases are in children who did not get any or all recommended doses of Hib vaccine.

Babies and children younger than 5 years old are most at risk for *H. influenzae* disease. Most children with invasive disease need care in a hospital. Even with treatment, as many as 1 out of 20 children with Hib meningitis dies and as many as 1 out of 5 children who survive will have brain damage or become deaf.

Adults 65 years or older, American Indians, Alaska Natives, and persons with [certain medical conditions](#) are also at increased risk for getting sick with invasive *H. influenzae* disease.

SIGNS AND SYMPTOMS

H. influenzae disease causes different symptoms depending on the part of the body it infects.

Pneumonia (lung infection) symptoms:

- Fever and chills
- Cough
- Shortness of breath or difficulty breathing
- Sweating
- Chest pain
- Headache
- Muscle pain or aches
- Excessive tiredness

Bacteremia (blood infection) symptoms:

- Fever and chills
- Excessive tiredness
- Pain in the belly
- Nausea with or without vomiting
- Diarrhea
- Anxiety
- Shortness of breath or difficulty breathing
- Altered mental status (confusion)

Meningitis (infection of the covering of the brain and spinal cord) symptoms:

- Fever
- Headache
- Stiff neck
- Nausea with or without vomiting
- Increased sensitivity to light (photophobia)
- Altered mental status (confusion)
- Limp, loss of alertness (lethargy)/decreased appetite – in babies

TRANSMISSION

H. influenzae bacteria spread from person-to-person by direct contact, or by contact with droplets when a person who has the bacteria in their nose or throat coughs or sneezes.

H. influenzae can be spread by people who are ill with the disease. However, most of the time, *H. influenzae* are spread by people who have the bacteria in their noses and throats but who are not ill and do not show symptoms (asymptomatic).

Some people in close contact with a patient with invasive Hib disease may need antibiotics (prophylaxis) to prevent additional cases from occurring. A doctor will make recommendations for who should receive antibiotics. Prophylaxis is only recommended for Hib cases because disease among close contacts has not been identified with other types of *H. influenzae*.

DIAGNOSIS

Invasive *H. influenzae* disease is diagnosed by laboratory tests. The most common testing methods use a sample of body fluid, such as blood or spinal fluid.

TREATMENT

H. influenzae disease is treated with antibiotics. Most people with invasive disease require hospitalization.

IMMUNITY

Children younger than 24 months who have recovered from invasive Hib disease can remain at risk for developing a second episode because they may not develop protective levels of antibodies. These children should be considered unprotected regardless of previous Hib vaccination and should receive the Hib vaccine as soon as possible.

RISK IN HAWAII

Summary of Reported Cases of Notifiable Diseases:

<http://health.hawaii.gov/docd/resources/reports/summary-of-reported-cases-of-notifiable-diseases/>

PREVENTION

There is a vaccine that can prevent *Haemophilus influenzae* type b (Hib) disease. This vaccine does not prevent disease caused by other types of *H. influenzae*.

Hib vaccine is recommended for all children younger than 5 years old. Children need a primary series of two or three doses, depending on the brand used, and a booster dose of a Hib vaccine. Doses are recommended at the following ages:

- 2 months
- 4 months
- 6 months (if needed; depends on brand)
- 12 – 15 months

Vaccines that help protect against Hib disease work well, but cannot prevent all cases. Studies show Hib vaccination protects nearly all (between 93 and 100 in 100) children from serious invasive Hib disease. Protection provided by Hib vaccine decreases over time. Children need a dose between 12 and 15 months old to maintain high levels of protection during early childhood.

Older children and adults usually do not need a Hib vaccine. However, some people who are fully vaccinated are at increased risk for invasive Hib disease and need additional doses. Unimmunized older children and adults with [certain medical conditions](#) should also get a Hib vaccine.

ADDITIONAL RESOURCES

- CDC Website: <https://www.cdc.gov/hi-disease/>
- Vaccine Information Statement: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/hib.pdf>

INFORMATION FOR CLINICIANS

CDC Website: <https://www.cdc.gov/hi-disease/clinicians.html>