HealthLinkBC

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Immunizations at 2 months of age

Immunization has saved more lives in Canada in the last 50 years than any other health measure. Vaccines are the best way to protect your child against many diseases and their complications. When you get your child immunized, you help protect others as well.

Which vaccines are recommended?

The following vaccines are offered to children at 2 months of age:

- Diphtheria, tetanus, pertussis, hepatitis B, polio and *Haemophilus influenzae* type B (DTaP-HB-IPV-Hib) vaccine
- Meningococcal C conjugate (Men-C) vaccine
- Pneumococcal conjugate (PCV 13) vaccine
- Rotavirus vaccine

The vaccines are approved by Health Canada and are provided free as part of your child's routine immunizations. The diseases these vaccines protect against are rare in B.C. because of routine childhood immunization programs. For more information on the recommended childhood vaccines in B.C., see the B.C. Immunization Schedules at www.healthlinkbc.ca/health-library/vaccinations/bc-immunization-schedule.

It's important to keep a record of all immunizations that your child has received. If your child received any vaccines outside of B.C., you can update their vaccine record at www.immunizationrecord.gov.bc.ca.

What are diphtheria, tetanus, pertussis, hepatitis B, polio and *Haemophilus influenzae* type b?

Diphtheria is a serious infection of the nose and throat caused by diphtheria bacteria. The bacteria are spread through the air by people sneezing or coughing or by direct skin-to-skin contact. The disease can result in severe breathing problems. It can also cause heart failure and paralysis. About one in 10 people who get diphtheria may die.

Tetanus, also known as lockjaw, is caused by bacteria mostly found in the soil. When the bacteria enter the skin through a cut or scrape, they produce a poison that can cause painful tightening of muscles all over the body. It's very serious if the breathing muscles are affected. Up to one in 5 people who get tetanus may die.

Pertussis, also known as whooping cough, is a serious infection of the airways caused by pertussis bacteria. The bacteria are easily spread by coughing, sneezing or close face-to-face contact. Pertussis can cause pneumonia, seizures, brain damage or death. These complications are seen most often in infants. Pertussis can cause severe coughing that often ends with a whooping sound before the next breath. This cough can last several months and occurs more often at night. About one in 170 infants who get pertussis may die.

Hepatitis B is a virus that attacks the liver. It can cause serious disease including permanent liver damage called cirrhosis. Hepatitis B is also one of the main causes of liver cancer, which can be fatal. The hepatitis B virus is spread through contact with blood or body fluids from a person infected with the virus. People who are infected with hepatitis B virus can pass the virus to their newborn babies during delivery. When young children get infected with hepatitis B virus, they often do not have symptoms, but most will stay infected for life. This is why getting protection from the vaccine at a young age is important.

Polio is a disease caused by infection with a virus. While most polio infections show no symptoms, others can result in paralysis of arms or legs, and even death. Paralysis occurs in about one in 200 people infected with the polio virus. Polio can be spread by contact with the bowel movements (stool) of an infected person. This can happen from eating food or drinking water contaminated with stool.

***Haemophilus influenzae* type b** (Hib) are bacteria that most commonly infect children under 5 years of age. Hib can cause serious and life-threatening infections including meningitis (an infection of the lining that covers the brain) and septicemia (an infection of the blood). *Haemophilus influenzae* type b infection is spread by coughing, sneezing or having close face-to-face contact. For every 20 children who get sick, one may die.

The DTaP-HB-IPV-Hib vaccine provides protection against these six diseases. Babies get the vaccine as a series of 3 doses at 2, 4 and 6 months of age. A booster dose of DTaP-IPV-Hib vaccine is given at 18 months of age. This vaccine does not contain the hepatitis B vaccine because children will have completed their hepatitis B vaccine series in infancy.

What is meningococcal C infection?

Meningococcal C infection is caused by bacteria called meningococcal type C. It can cause serious and life-threatening infections including meningitis and septicemia. For every 100 people who get sick, up to 15 will die, even if they receive treatment. Permanent complications of infection include brain damage, deafness and loss of limbs.

Meningococcal infection is spread from person to person by coughing, sneezing or close face-to-face contact. It can also be spread through saliva. Babies and young children can become sick through sharing soothers, bottles or toys used by other children.

The Men-C vaccine protects against infection from meningococcal bacteria, type C. Babies get the vaccine as a series of 2 doses at 2 and 12 months of age.

What is pneumococcal infection?

Pneumococcal infection is caused by *Streptococcus pneumoniae* bacteria. The bacteria can cause serious and life-threatening infections such as meningitis, septicemia and pneumonia (an infection of the lungs). Permanent complications of meningitis include brain damage and deafness. For every 4 children who get sick with pneumococcal meningitis, one may die.

Pneumococcal infection is spread from one person to another by coughing, sneezing or close face-to-face contact. It can also be spread through saliva when people share food or drinks. Babies and young children can become sick through sharing soothers, bottles or toys used by other children.

The PCV 13 vaccine protects against 13 types of pneumococcal bacteria. Babies get the vaccine as a series of 3 doses at 2, 4 and 12 months of age. Babies with certain health conditions should receive an extra dose at 6 months of age.

What is rotavirus?

Rotavirus is a virus that causes gastroenteritis, sometimes called the stomach flu. Rotavirus is the most common cause of diarrhea and hospitalization for diarrhea in children under 5 years of age. Almost all unimmunized children will have at least one rotavirus infection before they are 5 years of age. The first symptoms of rotavirus infection are often fever and vomiting, followed by diarrhea and stomach pain. These symptoms appear one to 3 days after a person has been infected with the virus. Diarrhea can last from 4 to 8 days. Young children can become dehydrated if the diarrhea or vomiting is severe and happens often. If this is not treated, the child may die.

Rotavirus is easily spread through touching the stools of an infected child. This can happen when handling diapers. Washing your hands often with soap and water is the best way to prevent the spread of rotavirus. A child who is sick with diarrhea or vomiting should not go to day care or have contact with other children until 48 hours after the diarrhea or vomiting has stopped. For tips on hand washing, please visit HealthLinkBC File #85 Hand washing: Help stop the spread of germs.

The rotavirus vaccine helps protect babies against diarrhea and vomiting caused by rotavirus. It does not protect against diarrhea and vomiting caused by other viruses. The vaccine contains a weakened form of rotavirus that does not cause disease. Babies get the vaccine as a series of 2 doses at 2 and 4 months of age.

What are the possible reactions after these vaccines?

Vaccines are very safe. It's much safer to get the vaccines than to get the diseases. Common reactions to the vaccines may include soreness, redness and swelling where the vaccine was given. Some children may have a fever or experience

crankiness, restlessness, vomiting, diarrhea, persistent crying or a loss of appetite. These reactions are mild and usually last one to 2 days.

Most babies do not have any reactions after they get the rotavirus vaccine. Some may have diarrhea, crankiness, stomach pain, gas or an itchy rash after immunization. In some countries outside of Canada, a very rare risk of intussusception (a blockage of the intestine) has been seen in the week after the first dose of rotavirus vaccine. The risk of intussusception is about one to 2 cases for every 100,000 babies that get the vaccine. At most, this could affect one baby a year in B.C. By comparison, each year in B.C. about one in 4,000 children under the age of one get intussusception without having received the vaccine. Signs of intussusception may include a swollen abdomen, frequent vomiting and bloody stools. Your baby could seem weak and irritable and have several bouts of intense crying. If your baby shows these signs, you should take your baby to the nearest emergency department.

Acetaminophen (e.g. Tylenol®) or ibuprofen* (e.g. Advil®) can be given for fever or soreness. ASA (e.g. Aspirin®) should not be given to anyone under 18 years of age due to the risk of Reye syndrome.

*Ibuprofen should not be given to children under 6 months of age without first speaking to your health care provider.

For more information on Reye syndrome, please visit HealthLinkBC File #84 Reye syndrome.

It's important to stay in the clinic for 15 minutes after getting any vaccine. There is an extremely rare possibility of a life-threatening allergic reaction called anaphylaxis. This happens in less than one in a million people who get the vaccine. Symptoms may include hives, difficulty breathing, or swelling of the throat, tongue or lips. If this reaction occurs, your health care provider is prepared to treat it. Emergency treatment includes administration of epinephrine (adrenaline) and transfer by ambulance to the nearest emergency department. If symptoms develop after you leave the clinic, call **9-1-1** or the local emergency number.

Always report serious or unexpected reactions to your health care provider.

Who should not get a vaccine?

Speak with your health care provider if your baby has had a life-threatening reaction to a previous dose or any part of these vaccines.

The DTaP-HB-IPV-Hib vaccine should not be given to children who developed Guillain-Barré Syndrome (GBS) within 8 weeks of getting a tetanus vaccine, without another cause being identified. GBS is a rare condition that can result in weakness and paralysis of the body's muscles. It most commonly occurs after infections, but in rare cases can also occur after some vaccines.

For the rotavirus vaccine, speak with your health care provider if your baby:

- Has an immune system weakened by disease or medical treatment
- There is a family history of weakened immune systems
- Had intussusception or has an intestinal disorder that may result in intussusception

There is no need to delay getting immunized because of a cold or other mild illness. However, if you have concerns, speak with your health care provider.

For vaccine specific information, please visit the following:

- HealthLinkBC File #105 Diphtheria, tetanus, pertussis, hepatitis B, polio and *Haemophilus influenzae* type b (DTaP-HB-IPV-Hib) vaccine
- HealthLinkBC File #62a Pneumococcal conjugate (PCV 13) vaccine
- HealthLinkBC File #23a Meningococcal C conjugate (Men-C) vaccine
- HealthLinkBC File #104a Rotavirus vaccine (Rotarix®)