

## **Babies born to hepatitis B positive mothers**

Introducing parents to dried blood spot (DBS) testing

## About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

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## Background

Babies born to mothers who are hepatitis B positive are at risk from acquiring the infection themselves. Four hepatitis B vaccinations are usually administered at birth, 1 month, 2 months and 12 months of age.

These vaccines are administered to babies to stop the virus being passed from mother to baby during delivery. Testing your child for hepatitis B infection at the age of 12 months confirms whether the vaccinations have been successful. In cases where vaccination has not prevented the infection in the child, testing allows the infection to be recognised and treated early, reducing the risk of long-term disease. Taking a blood sample from children at this age can be unpleasant for the parent and child and challenging for the community healthcare professional. General practitioners (GP) sometimes refer children of this age to a specialist doctor at the hospital because routine testing involves taking blood from the child's arm. This can lead to delays while waiting for a hospital appointment.

As an alternative, Public Health England (PHE) has developed a new testing service that can be easily undertaken in most GP surgeries by the nurse. It can also be performed at the same time as your child receives the final dose of the hepatitis B vaccine, reducing the need for another clinic appointment.

The dried blood spot or DBS test is similar to the newborn blood spot (also known as Guthrie or heel prick) test that will be familiar to most parents, which takes a few drops of blood from the child's foot. The blood is then applied to a card before being sent to the laboratory.

## What is hepatitis B?

Hepatitis B is a virus that causes infection of the liver and can lead to serious, long-term liver problems if left untreated. Symptoms of hepatitis B can include feeling sick and vomiting, loss of appetite, stomach pain, jaundice (yellowing of the skin and whites of the eyes), fever and aching joints, although young children may not experience any symptoms at all. In most cases, individuals can recover and the immune system is able to clear the virus from the body naturally without the need for treatment. However, a small number of people will not clear the infection naturally and these individuals will become chronic 'carriers' of the virus and will need a referral to a specialist medical team.

## Who can it affect?

Hepatitis B can affect anyone who is not already immune to the virus. The virus is present in blood and bodily fluids and can be passed from one person to another when the exchange of blood or bodily fluids takes place, for example, during pregnancy.

Babies born to mothers who have hepatitis B during pregnancy or to mothers who are carriers of hepatitis B are **most** at risk from the disease.

## How can I reduce the risk of my child getting hepatitis B?

Mothers are tested for hepatitis B during their pregnancy. Babies born to mothers who are found to be hepatitis B positive are immunised once they are born. The baby receives three doses of hepatitis B vaccine before the age of 3 months and a final vaccine at 12 months of age.

## Why does my child need a blood test?

Immunising your child against hepatitis B can help to prevent the transmission of the virus to your child. However, not all children respond well to the vaccine and in some cases the vaccine may not prevent hepatitis B infection. It is therefore important to test your child for hepatitis B at 12 months of age.

Early recognition and prompt treatment of the disease can help reduce the long-term risks and complications of hepatitis B. The test will determine if your child has become infected with the virus and whether he or she requires prompt referral to a specialist medical team.

A negative hepatitis B test result in a child at 12 months of age can also provide parents with reassurance that their child has not been infected.

## What tests are available?

Currently, two tests are available to test your child.

1. Taking blood from your child's arm, which is called **venous blood sampling**.
2. A heel-prick test called **dried blood spot (DBS) testing**.

The most widely used test is venous blood sampling whereby a doctor will take blood from your child's arm. Although this test is common, it is often difficult to do on infants and so, sometimes a GP will refer the child to the local hospital to have the test done.

This often leads to delays while waiting for a hospital appointment. It can also increase the number of visits you and your child make to see a nurse or doctor.

## What is dried blood spot testing and how does it work?

The dried blood spot (DBS) is a simple and quick test that can be undertaken at your local GP surgery and can be taken at the same time that your child receives the final dose of hepatitis B vaccine.

The test uses a small heel-prick device to obtain a few drops of blood from your child's foot. The blood is applied directly to a card, which is then left to air-dry.

Once dried, the card is then placed into an envelope and posted to the specialist reference laboratory for testing.

## What are the advantages of using dried blood spot?

The advantages of using dried blood spot testing are:

- simple and quick test
- just a small amount of blood is taken from the child's heel
- no needles are visible to the child, reducing anxiety and stress
- convenient; the test can be done at the same time as a child receives the final dose of hepatitis B vaccine
- no need for a hospital appointment
- reduces waiting times

- fast reporting of results

## What will the result tell me?

The test will detect the presence of hepatitis B in your child's blood and identify whether your child has the infection or not. It is important to note that the test does not look for antibodies that are produced in response to the hepatitis B vaccinations. It will only look for the infection.

## How long will results take?

The results will usually be available to your GP or hepatitis B co-ordinator within two weeks.

## What will happen if my child's test result is positive?

A positive test result confirms that your child has been infected with hepatitis B virus. Your child's GP will be informed so that a referral to a specialist medical team can be made.

Your GP may request that household members are immunised against hepatitis B, if they have not previously been immunised. Household family members who have been diagnosed with hepatitis B or have been fully immunised against the disease do not require further immunisations.

## Where can I find more information about hepatitis B?

Further information is available from your GP surgery or via the following websites:

**Public Health England** (formerly Health Protection Agency):

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/HepatitisB/GeneralInformationHepatitisB/hepbGeneralInfo/>

**NHS Choices:** <http://www.nhs.uk/conditions/Hepatitis-B/Pages/Introduction.aspx>

**The British Liver Trust:** <http://79.170.44.126/britishlivertrust.org.uk/home-2/liver-information/liver-conditions/hepatitis-b>