This information is for you if you are pregnant and have had a blood test which shows that you are **D negative.** You will be offered screening for cell free fetal DNA, which can predict your baby's D blood group. Knowing your baby's blood group will form part of the recommended care or treatment for you and your baby.

This leaflet covers the following.

What your blood test results mean

Your blood group (type of blood) will be one of the following four main groups.

- Group O
- Group A
- Group B
- Group AB

Within your blood group, you will either be D positive or D negative. Your blood test shows that you are D negative.

Why is it important to know I am D negative?

Knowing you are D negative means we can offer you a further screening test to find out whether your baby is D negative or D positive. If your baby is D positive and their blood enters your bloodstream, your body may make antibodies. These antibodies could make your baby unwell.

About your blood

Your blood is made up of:

- red blood cells;
- white blood cells; and
- platelets.

Red blood cells have an antigen known as D antigen. Antigens are protein molecules found on the surface of red blood cells. If D antigen is present, your blood group is D positive. If it is not present, your blood group is D negative. Around 15% (15 in 100) of people are D negative.

If your blood group is D negative and your baby's blood group is D positive, you may develop anti-D antibodies. Antibodies are part of your body's natural defence and they fight against anything the body thinks is unfamiliar. They can pass from your bloodstream into your baby's blood and damage it, which can make your baby unwell (they may need to be treated in hospital). Having anti-D antibodies is the most common cause of a rare condition called haemolytic disease of the fetus and newborn (HDFN).

If you choose to have cffDNA screening, your blood sample will be stored during your pregnancy and may be used to check the result following the birth of your baby. It may also be used for quality assurance purposes.

About the cell free fetal DNA (cffDNA) test

As you are D negative, we will offer you a further screening blood test, called cell free fetal DNA. This test will look at small amounts of your baby's DNA in your blood. DNA is the genetic information inside the body's cells. If your baby is found to be D positive, we will offer you anti-D immunoglobulin injections

('anti-D'). This will greatly reduce the risk of haemolytic disease of the fetus and newborn.

What will the cell free fetal DNA test tell me?
The test will tell you one of the following.

- Your baby is D positive. You will be offered anti-D injections.
- Your baby is D negative. We will not recommend anti-D injections.
- The test result is unclear. In this case, you will be offered anti-D injections.

Your midwife will discuss with you when you will be offered the test, and when you will get your results.

What if my baby is found to be D positive?
You will have an appointment with your midwife at around the 28th week of pregnancy. At this appointment, you will have a blood test to check for antibodies and will be offered an anti-D injection. Anti-D will help to stop antibodies being made if any of your baby's blood has entered your bloodstream, and this will reduce the risk of haemolytic disease of the fetus and newborn.

What are anti-D injections?
Anti-D injections are made from plasma, which is the fluid part of blood that carries oxygen and blood cells around your body. The plasma used to make anti-D is collected from blood donors. Anti-D injections do not offer you lifelong protection. You may need anti-D injections in future pregnancies.

How does anti-D work?
Anti-D works by removing any of your baby's blood cells which may have gone into your blood. This stops your body from making its own anti-D antibodies.

Is anti-D safe?
Yes. Anti-D injections can cause some mild pain when they are injected into the muscle. Occasionally anti-D injections can

cause allergic reactions. How anti-D is produced is strictly controlled, so the risk of a known virus being passed on to you from a donor is very low.

Other reasons why you may need an anti-D injection
You will need to contact your midwife or your hospital doctor (obstetrician) as soon as possible if you have a bleed or suffer an injury to your abdomen, such as from a seat belt or a fall. You may need an anti-D injection because there is a chance that your baby's red blood cells may enter your bloodstream.

What if my baby is found to be D negative on the cell free fetal DNA test?
This would suggest that your baby has the same D group as you, and we would not recommend anti-D injections.

How accurate is the cell free fetal DNA test?
The test is 99.9% (999 in 1000) accurate at correctly predicting a baby's D group.

Should I have the cell free fetal DNA screening test?
Taking part in screening is your choice. If you choose not to have the cell free fetal DNA test, we recommend that you have anti-D injections, as 60% (60 in 100) of babies will be D positive. To help you understand this information, speak to your midwife or the hospital doctor (obstetrician) who is responsible for your care.

What if the results are not clear?
Sometimes the test cannot tell your baby's D group. When this happens, we will offer you the anti-D injections to be safe. This will reduce the chance of antibodies developing and making your baby unwell.

What if I am pregnant with more than one baby?
You can have the test if you are pregnant with twins. The test is as accurate as it is for women having one baby. If one or both of your babies are found to be D positive, we will offer you anti-D injections. If both babies are D negative (the same as you), anti-D injections are not recommended. If you are pregnant with more than two babies, we will not offer you the

test. We will recommend you have anti-D injections, as we will not be able to say what D group the babies are.

What happens when my baby is born?
When your baby is born, the midwife will take some blood from you and some from the umbilical cord. This will confirm whether your baby's blood group is D positive or D negative.

What happens if my baby has a different blood group to what was predicted?
In 0.1% of cases (1 in 1000), the test in pregnancy will predict that your baby is D negative, but when the baby is tested once they are born they are found to be D positive. Some women who are D negative and have a D positive baby and did not have anti-D later in pregnancy can become 'sensitised' (where their baby's red blood cells mix with their blood, producing anti-D antibodies). If this happens, you will be offered anti-D after your baby is born. If antibodies are present in your blood in your next pregnancy, you will be closely monitored and may need specialist care.

What if I attend a different hospital?
Hospitals outside of Wales may follow a different policy – you may be offered anti-D injections even if your baby is D negative. Show the hospital staff your test results, which will be in your All Wales Maternity Record.

Where can I get more information?

https://phw.nhs.wales/services-and-teams/screening/antenatal-screening-wales/

https://111.wales.nhs.uk/Rhesusdisease/

Version 1 May 2024