



Receiving anti-D Immunoglobulin in Pregnancy

Introduction

This leaflet is designed to explain blood group D and antibodies. It will also help explain their importance in pregnancy and in prevention of a disorder known as Haemolytic Disease of the Fetus and Newborn (HDFN). This is a serious condition, which can cause harm to an unborn or newborn baby and in its most severe form can cause death of the baby.

At your booking visit, you will be asked to have blood tests performed to determine your blood group and whether you have any antibodies present. These tests are repeated around 28 weeks of pregnancy.

Blood groups

The two most important blood group systems in pregnancy are ABO and D (previously referred to as Rh D or Rhesus). If your red cells have the D antigen, your blood type is positive. If you lack the D antigen, your blood type is negative. You have been given this leaflet as you are D negative, and this could have implications for your pregnancy.

Antibodies

Antibodies are part of the body's natural response to antigens that are different to our self, and they are an important part of the defence system. These antibodies can form when red cells from a different blood group enter the bloodstream. This can occur in pregnancy and/or after a blood transfusion.

If your baby's D blood group is different to yours – why is this important in pregnancy?

During pregnancy, the placenta acts as a barrier between your red blood cells and your baby's. Occasionally, small amounts of your baby's blood can cross over into your blood. If you are D negative, and your baby is D positive, you can form anti-D antibodies.

This is known as D sensitisation and although it will not harm you, it can be significant in pregnancy. This does not usually cause a problem during the first pregnancy, but it can in future pregnancies.

If you become pregnant again, with a D positive baby, your blood may cross the placenta and the previously formed anti-D antibodies can affect your baby's red cells. This can cause anaemia in your baby (a reduction in red cells) which can be mild, moderate, or severe and newborn jaundice. This can lead to a more serious condition called Haemolytic Disease of the Fetus and Newborn (HDFN).

What is anti-D immunoglobulin (anti-D Ig) prophylaxis?

Prophylaxis is the word given to a medicine that is used to prevent a harmful condition from developing. Anti-D Ig prophylaxis (also called anti-D immunoglobulin) is a concentrated antibody preparation, made from the clear part of the blood called plasma, collected from blood donors.

All blood donations are screened very carefully for infections including HIV and hepatitis. While there have been no known cases of infection, a small risk cannot be excluded. It is safe to use in pregnancy and it will not harm your baby.

Anti-D Ig removes most or even all of your baby's D positive antigens that may have entered your blood during pregnancy. If the antigens have been removed, you have a much lower chance of producing the anti-D, which can be harmful in future pregnancies.

Anti-D Ig is given as an injection into the muscle of your arm (usually in the upper arm). Rarely, it needs to be given intravenously (into your vein).

Are there any complications or side effects?

Anti-D injections may cause local reactions at the injection site including swelling, soreness, and bruising, which may last for a few days. Sometimes, people may experience a mild fever, headache, or flu-like symptoms. Very occasionally, people may experience an allergic reaction to the injection including low blood

pressure, wheezing and a rash. After your injection, you will be asked to remain for observation for 20-30 minutes.

Please let your healthcare provider know of any medications you are currently taking or recent vaccinations.

When will anti-D Ig be offered?

Routine Antenatal Anti-D Prophylaxis (RAADP)

Your unborn baby's D blood group may not be known during pregnancy unless a test called cell free fetal DNA, (cffDNA*) is available in your hospital. All eligible people who are D negative and pregnant with a baby that could be or is known to be D positive, will be offered a routine, intramuscular injection of anti-D immunoglobulin (RAADP). This can be given as a single dose between 28-30 weeks of pregnancy or be given as two doses at 28 and 34 weeks.

*This test is not currently available in Scotland or Northern Ireland.

Other times when anti-D Ig will be offered:

Anti-D Ig is additionally offered to pregnant individuals that are D negative who experience what health care providers commonly phrase as a "potentially sensitising event" (PSE) during the pregnancy. These times will include:

- any bleeding from the vagina (this will be assessed by your healthcare team)
- if your tummy is bumped or injured e.g., in a road traffic accident or if you fall
- pregnancy loss (complete or partial miscarriage)
- during termination of pregnancy (abortion)
- when an ectopic or molar pregnancy is treated by surgery
- when a needle test is done through your abdomen during pregnancy e.g., amniocentesis, chorionic villus sampling, intrauterine transfusion/surgery/laser
- when turning a breech baby to face head downwards when still inside the womb (External Cephalic Version or ECV)
- An Intrauterine Death (IUD) - at the diagnosis and again following the birth.

Anti-D Ig should be given by a maternity health care provider within **72 hours** of the PSE.

It is, therefore, very important that you contact a member of your local midwifery team for advice if you experience any of the above; or if you are concerned about your wellbeing or the health of your baby. They will explain the possible effects of sensitisation and the benefits and risks linked with anti-D Ig. This will allow you to make an informed decision about whether you would like to accept anti-D Ig. In early pregnancy (less than 12 weeks), anti-D Ig is not always needed: your healthcare team will be able to advise.

It is important that you still attend your appointment for scheduled RAADP, even if you have been given anti-D Ig earlier in your pregnancy for a PSE. It is equally important that you receive anti-D Ig for a PSE even if you have recently had the RAADP injection.

At 20 weeks and above, if you have a PSE, blood samples will be taken to see if you need more anti-D Ig.

The loss of any pregnancy, for whatever reason, is traumatic for you and your family and friends. However, it is still important to receive anti-D Ig, to reduce the risk of sensitisation and problems in future pregnancies, even when it is not possible to determine the baby's blood group.

Post birth anti-D Ig

After birth, you will be asked if a blood sample can be taken to confirm your baby's blood type, which is usually taken from the cord. If it is not possible to obtain a cord blood sample, the health care team may request your consent to take blood directly from your baby instead.

If your baby's blood group is found to be D positive, you will be offered an injection of anti-D Ig. This is known as postnatal anti-D Ig prophylaxis. This is given in the same way that you had anti-D Ig in the antenatal period and should be given within 72 hours of the birth.

Again, blood samples will be taken from you to see if you need more anti-D Ig.

You will not need anti-D Ig if your baby has a D negative blood group like you.

When are anti-D Ig injections not needed?

- if you already have anti-D antibodies (meaning you have been sensitised*)
- if the blood type of your baby is known to be D negative during pregnancy (from cffDNA test)
- if the blood type of your baby is confirmed as D negative post birth

If you decline anti-D Ig injection, you will not receive it. However, you can change your mind at any time.

* In this instance your healthcare team will discuss the care you will receive during your pregnancy

Duty of Candour

Health Services in the UK, with the exception of Northern Ireland, comply with Duty of Candour legislation. This means we will act in an open and transparent manner where an unexpected or unintended event has occurred, which appears to have caused harm or death in direct relation to transfusion. Please ask your healthcare team for further information or access the following link:-

<https://www.gov.uk/government/publications/nhs-screening-programmes-duty-of-candour/duty-of-candour>

Before any health care provider examines or treats you, they must seek your consent or permission. In order to make a decision, you need to have information from health care providers about your care, including the alternatives available to you and whether it carries risks as well as benefits. Please ask your healthcare provider more questions for clarification or further information.

Contact us

We would welcome your feedback and comments on this leaflet.

You can contact us in the following ways:

By post to:

Patient Blood Management
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By email to: PBM.team@nhsbt.nhs.uk

Or by phone: **01865 381010**

This leaflet was prepared by NHS Blood and Transplant in collaboration with the National Blood Transfusion Committee. Further supplies can be obtained by accessing <https://hospital.blood.co.uk/patient-services/patient-blood-management/patient-information-leaflets/>.

Individual copies of this leaflet can be obtained by calling **01865 381010**.

The public can obtain the evidence sources for this leaflet by calling **01865 381010**.

NHS Blood and Transplant (NHSBT) saves and improves lives by providing a safe, reliable and efficient supply of blood and associated services to the NHS in England. We are the organ donor organisation for the UK and are responsible for matching and allocating donated organs. We rely on thousands of members of the public who voluntarily donate their blood, organs, tissues and stem cells.

For more information

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