



Anti-D immunoglobulin and Rhesus (RhD) disease – Information for mothers with RhD negative blood group

Introduction

This leaflet explains Rhesus (RhD) disease – also known as **Haemolytic Disease of the Fetus and Newborn (HDFN)** – and how it can be prevented using **anti-D immunoglobulin**. RhD disease can cause anaemia and jaundice in the baby, and in severe cases may lead to serious complications. Early identification and prevention are very effective.

Blood groups and RhD

The two most important blood group systems in pregnancy are **ABO** and **RhD**. 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. If your red blood cells have the RhD antigen, your blood type is **RhD positive**. If you do not have the RhD antigen, your blood type is **RhD negative**.

During pregnancy, small amounts of your baby's blood can occasionally cross into your circulation. If you are RhD negative and your baby is RhD positive, your body may produce antibodies against RhD-positive red blood cells. This is called **sensitisation**. Sensitisation usually does not affect the current pregnancy but can cause problems in future pregnancies with an RhD positive baby. 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 blood cells. This can cause anaemia in your baby (a reduction in red blood cells) which can be mild, moderate, or severe; it may also cause newborn jaundice. This can lead to a more serious condition called rhesus disease (also known as Haemolytic Disease of the Fetus and Newborn (HDFN)).

Rhesus disease is caused by a specific mix of blood types between a pregnant mother and her unborn baby. It can only occur where all of the following happen:

- Mother has a RhD negative blood type
- Baby has a RhD positive blood type
- Mother has previously been exposed to RhD positive blood and has developed an immune response to it (known as sensitisation).

Preventing RhD disease: Anti-D immunoglobulin

Anti-D immunoglobulin (anti-D Ig) is a concentrated antibody preparation made from donor plasma. It helps remove RhD-positive fetal red cells that may have entered your blood, reducing the chance that your body will make anti-D antibodies. 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 is safe to use in pregnancy and will not harm your baby; it is given as an injection, usually into the upper arm.

Routine antenatal anti-D prophylaxis (RAADP)

Prophylaxis is the word given to a medicine that is used to prevent a harmful condition from developing.

If you are RhD negative and pregnant with a baby that could be or is known to be RhD positive, you will usually be offered a routine injection of anti-D between **28 and 30 weeks** of pregnancy. If **cell-free fetal DNA (cffDNA)** testing in early pregnancy shows your baby is **RhD negative**, **RAADP may not be required**.

Other times anti-D will be offered

Anti-D may also be offered **within 72 hours** of any of the following events (often called **potentially sensitising events (PSE)**):

- Any vaginal bleeding (assessed by your healthcare team)
- Abdominal trauma (e.g., road traffic accident or fall)
- Pregnancy loss (complete or partial miscarriage)
- Termination of pregnancy (abortion)
- Treatment of ectopic or molar pregnancy by surgery
- Invasive procedures (e.g., amniocentesis, chorionic villus sampling, intrauterine transfusion/surgery/laser)
- Turning a breech baby (External Cephalic Version (ECV))
- Intrauterine death (at diagnosis and again after 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.

At **20 weeks and above**, blood tests may be taken after a sensitising event to determine whether **additional anti-D** is needed. In **early pregnancy (before 12 weeks)**, anti-D is not always required; your healthcare team will advise based on your circumstances.

Please contact your **local maternity unit** if any of the situations above occur, or if you have concerns about your wellbeing or your baby's movements.

After birth (postnatal Anti-D)

After birth, **blood samples are taken from the baby (usually from the umbilical cord) and from the mother** to confirm the baby's blood group and to check whether additional anti-D is required. If it is not possible to obtain an umbilical cord blood sample, the health care team may request your consent to take blood directly from your baby instead.

If your baby is **RhD positive**, you will be offered an injection of anti-D **within 72 hours of birth**. If your baby is **RhD negative**, postnatal anti-D is not needed.

When anti-D injections are not needed

- If you already have anti-D antibodies (you are sensitised)
- If cffDNA testing during pregnancy shows your baby is RhD negative
- If postnatal testing confirms your baby is RhD negative

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

Possible side effects and monitoring after injection

Most people experience no problems. Occasionally there may be **swelling, soreness, or bruising** at the injection site lasting a few days. Some may develop a **mild fever, headache, or flu-like symptoms**. Rarely, **allergic reactions** can occur (e.g., wheezing, rash, low blood pressure).

After the injection you will be asked to remain for **observation for about 20–30 minutes**. Please inform your healthcare provider about any medicines you take or recent vaccinations.

If you are already sensitised

If **anti-D antibodies** are present, anti-D injections do **not** help. Your pregnancy will be **monitored more closely**. Depending on your and your baby's condition, care may include:

- Regular blood tests and **ultrasound monitoring** (including **Doppler** ultrasound of blood flow)
- **Fetal blood sampling (FBS)** in specialist units, if necessary
- **Intrauterine transfusion (IUT)** for severe fetal anaemia
- After birth: **phototherapy, red cell transfusions, and/or intravenous immunoglobulin (IVIG)** if indicated

Duty of Candour and Consent

Health services in the UK (except Northern Ireland) comply with **Duty of Candour** legislation. We act in an open and transparent manner if an unexpected or unintended event appears to have caused harm in relation to transfusion.

Before any examination or treatment, your healthcare provider will seek your **consent** and explain the **benefits, risks, and alternatives**.

Department address and contact information

To contact **maternity triage**, speak to a midwife, or get in touch with reception regarding appointments (including antenatal clinic and scans): **0121 424 2729**

Accessibility

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