



# Rhesus D non-invasive prenatal testing (RHD NIPT)

## Patient information

### What is Rhesus D (RhD) negative blood type?

There are two combined blood systems in the body, the ABO system and Rhesus system. Your blood type is a combination of these two systems; for example, your blood group could be O RhD positive, which means your blood type is O and you have the Rhesus antigen, which makes you positive. If you do not have the antigen, then your blood type would be O RhD negative.

In Australia, about 15 percent of women belong to the Rhesus negative blood group. Of these women, **40 percent** will carry a **Rhesus D negative baby**.

### Why is RhD negative blood important in pregnancy?

If you are RhD negative, and your baby is RhD positive, there can be problems if some of your baby's blood cells mix with your blood while you are pregnant. Your body may make antibodies against your baby's blood. These antibodies do not usually cause harm in your first pregnancy.

However, if your next baby is also RhD positive, these antibodies may attack the baby's blood cells. This can make them sick with jaundice and anaemia. This is called haemolytic disease of the fetus and newborn (HDFN) or Rhesus disease. We can prevent your body from making antibodies by giving you an injection called Rhesus D Immunoglobulin (RhD Ig), also known as anti-D.

### What is Rhesus D Immunoglobulin (anti-D)?

RhD Ig or anti-D is made from plasma collected from human blood donors. RhD Ig (anti-D) is given by an intramuscular injection into your arm. If your baby is RhD positive, the anti-D injections prevent your immune system from producing anti-D antibodies that could affect your baby and future babies.

### What blood tests are done if you are RhD negative?

1. In the first trimester, we check your blood group and make sure you do not have any antibodies in your blood.
2. From 20-24 weeks, it is possible to determine your baby's blood group from a blood test taken from you. This blood test can predict if your baby is Rhesus negative or Rhesus positive. It is called Rhesus D non-invasive prenatal test (RHD NIPT).
3. At 28 weeks, you will need to do another blood test to check again for any antibodies, regardless of your baby's blood group.
4. Cord blood from all babies is sent to the laboratory to confirm their blood result.

### What is Rhesus D NIPT (RHD NIPT) ?

This screening blood test looks at some of your baby's DNA that is found in your blood, making it possible to predict whether your baby is Rhesus D (RhD) negative or Rhesus D (RhD) positive. It is more than 99 percent accurate in its prediction. At this stage, it is only available to women attending King Edward Memorial Hospital.

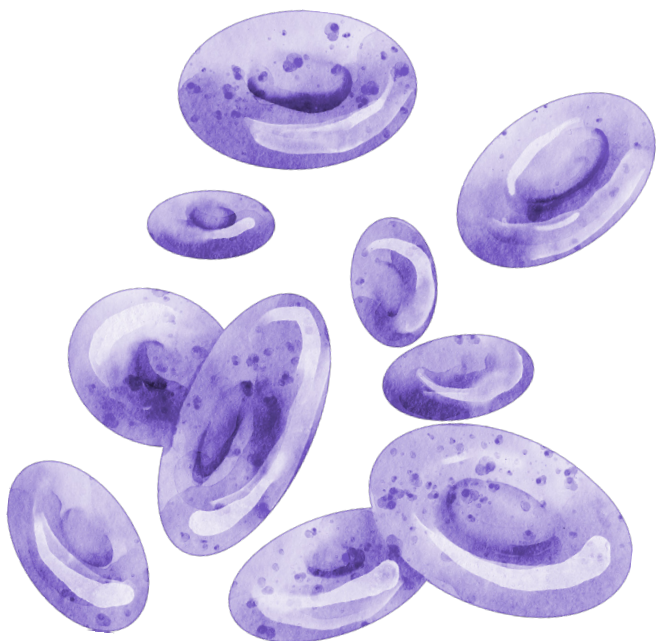


## What happens if my baby is RhD negative?

If your baby is RhD negative, they are at no risk of Rhesus disease, and you will not need RhD Ig (anti-D) injections. This prevents you from having any unnecessary injections. A cord blood sample will be sent to the laboratory after birth to confirm your baby's blood group.

## What happens if my baby is RhD positive?

If your baby is RhD positive, you will receive RhD Ig (anti-D) injections. Midwives will give you this injection at 28-30 weeks and 34-36 weeks, or if you have any bleeding during your pregnancy. This prevents haemolytic disease of the newborn (HFDN) or Rhesus disease in your baby, or in any future babies you may have. A cord blood sample will be sent to the laboratory after birth to confirm the baby's blood group and you will receive another RhD Ig (anti-D) injection.



## What if my RHD NIPT test is inconclusive or I choose not to have the test?

We will treat your baby as if they were RhD positive and you will receive RhD Ig (anti-D) injections as recommended.

## Limitations of the RHD NIPT test

This test is more than 99 percent accurate. In the studies performed at PathWest, the test had 100 percent accuracy in predicting babies who were RhD negative.

If an unexpected result comes back from the cord blood showing your baby is RhD positive, we will recommend that we take a blood test from you and would offer you a RhD Ig (anti-D) injection within 72 hours of the birth.

## Should all pregnant women have RHD NIPT?

It is recommended that all pregnant RhD negative women have the test, even if you are pregnant with more than one baby. If one or more of your babies is RhD positive you will need RhD Ig (anti-D) injections.

The test may also prevent you from having an injection of a blood product you do not need.

The RHD NIPT only predicts if your baby is RhD negative or positive to guide the use of anti-D injections. The test described in this leaflet is different to the NIPT used to screen for genetic disorders.



The information provided is for information purposes only. If you are a patient using this publication, you should seek assistance from a healthcare professional when interpreting these materials and applying them to your individual circumstances.

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