

## Data Protection

The National Blood Service (part of the NHS) keeps records of all the tests it performs, and of the advice it offers, in order to run its service effectively and safely. Your data will be held securely, and in accordance with your rights, under the Data Protection Act (1998).

Because of the rarity of this condition, we ask hospitals for a few details about any baby that is affected by it, soon after the baby is born. We need this information to help us improve our knowledge, and so give the best possible care to all mothers and babies.

## Further Information

If you have questions arising from this leaflet or there are things that concern you, please ask your doctor or midwife.

# Platelet Groups and Antibodies in Pregnancy

# Platelet Groups and Antibodies in Pregnancy

This leaflet explains the blood test results that you have been given and what this means to you and your baby. It contains information about the significance of platelet groups and antibodies in a condition known as Neonatal Alloimmune Thrombocytopenia (NAIT)

## What are platelets?

Platelets are the smallest type of cells that circulate in the blood. They are important in preventing and stopping bleeding. Sometimes the blood contains fewer platelets than normal, a condition known as Thrombocytopenia.

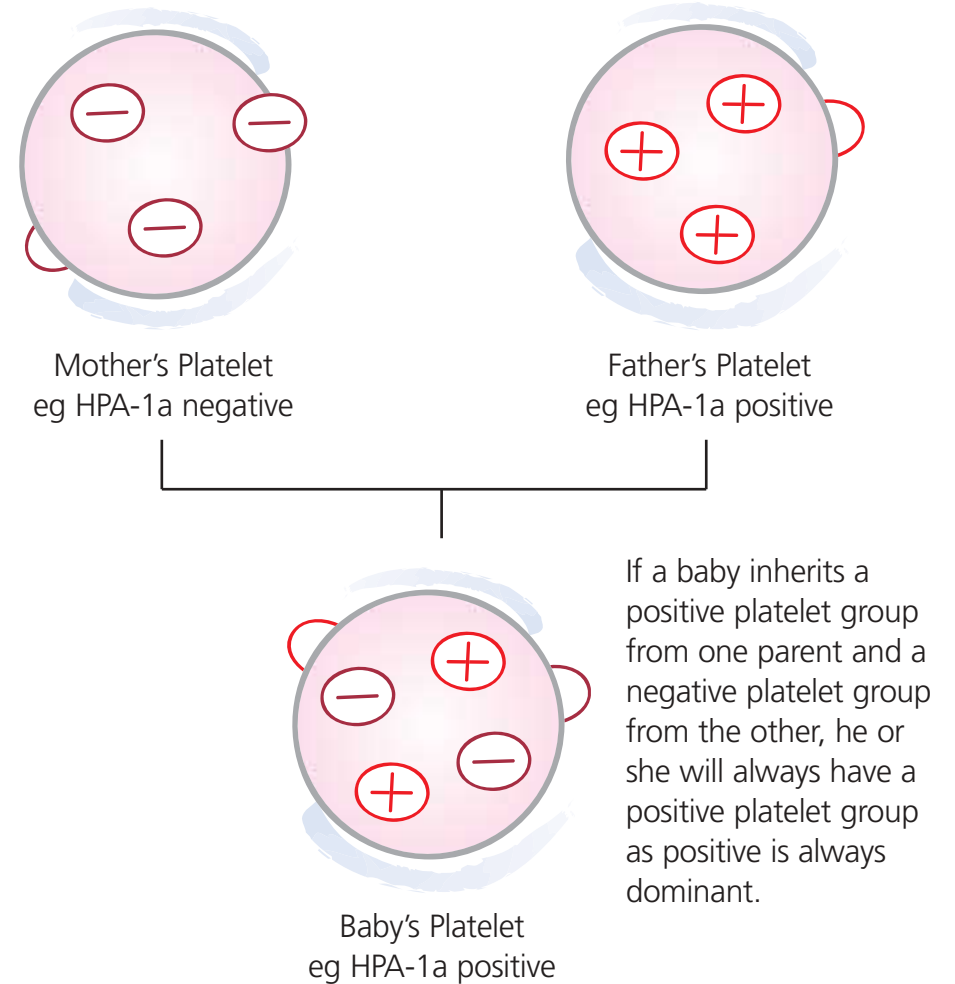
## What is a platelet group?

Every platelet has natural proteins on its surface, known as human platelet antigens, which make up your platelet group. Your platelet group is inherited from both your parents. There are many different types of platelet group and scientists are discovering new types of group all the time. The most common groups amongst mothers are HPA-1a and HPA-5b.

## How Platelet Groups are Inherited

The diagram opposite shows how platelet groups are inherited. The example given shows a mother who is HPA-1a negative and a father who is HPA-1a positive. However, other platelet groups could be inherited in the same way.

## How Platelet Groups are Inherited



**What are antibodies?**

Antibodies are an important part of the body's immune system, which help us fight disease. They are formed when the body's immune system comes into contact with a 'foreign' substance, for example a virus, vaccine or a different blood group.

**How are platelet antibodies formed during pregnancy?**

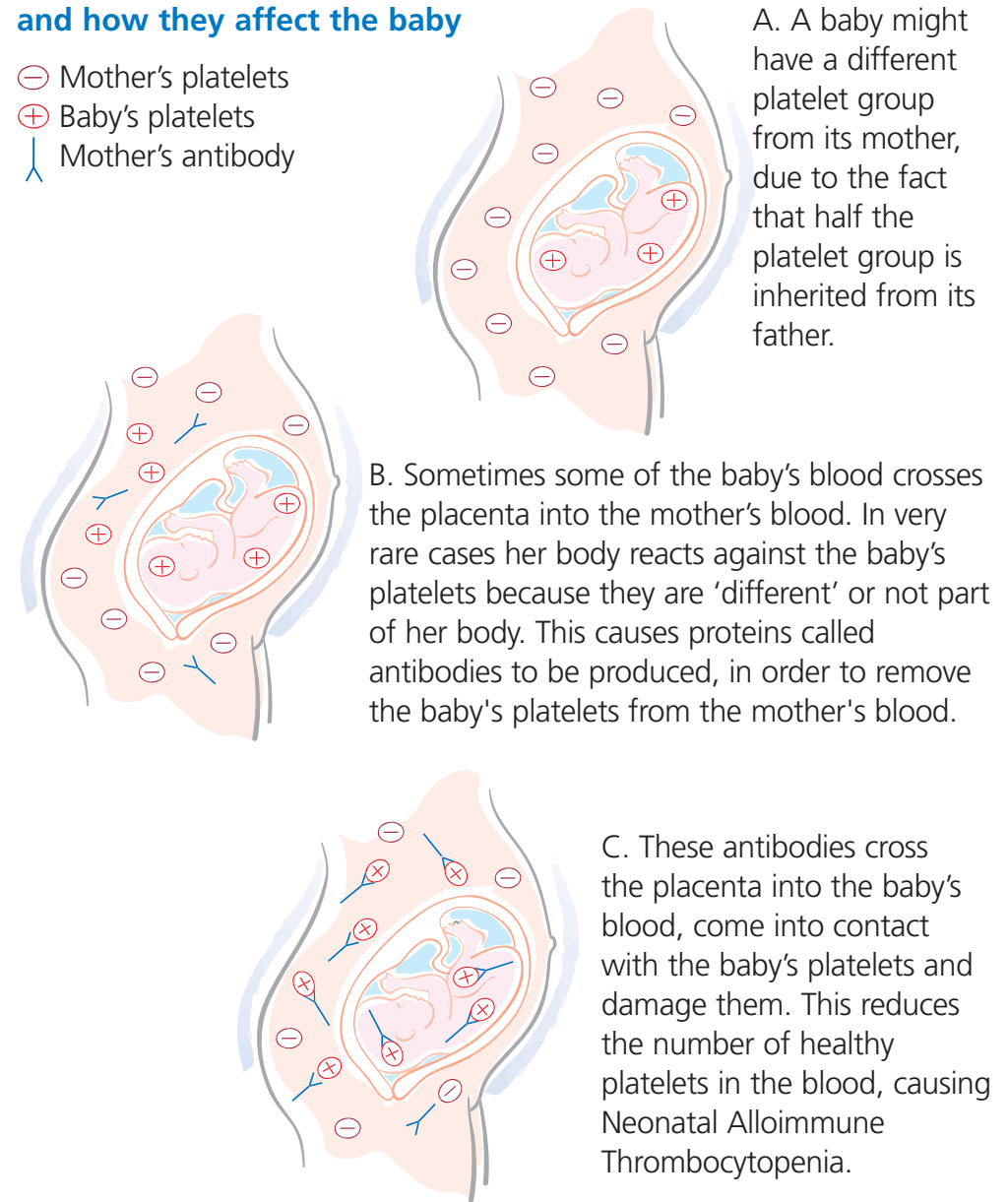
During pregnancy, platelet antibodies are formed if a baby has a different platelet group to that of its mother, and some of the baby's platelets pass into the mother's bloodstream. The mother's body reacts to the presence of the baby's platelet group, and makes antibodies against the baby's platelets.

**How could platelet antibodies affect pregnancy?**

It is possible that these antibodies could pass through the placenta into the baby's bloodstream, come into contact with the baby's platelets and damage them. This causes the number of platelets in the baby's blood (known as the platelet count) to decrease. This condition is known as Neonatal Alloimmune Thrombocytopenia or NAIT, and occurs in approximately 1 in 1000 pregnancies. The diagram opposite explains this process.

**How antibodies form in the mother and how they affect the baby**

- ⊖ Mother's platelets
- ⊕ Baby's platelets
- Y Mother's antibody



A. A baby might have a different platelet group from its mother, due to the fact that half the platelet group is inherited from its father.

B. Sometimes some of the baby's blood crosses the placenta into the mother's blood. In very rare cases her body reacts against the baby's platelets because they are 'different' or not part of her body. This causes proteins called antibodies to be produced, in order to remove the baby's platelets from the mother's blood.

C. These antibodies cross the placenta into the baby's blood, come into contact with the baby's platelets and damage them. This reduces the number of healthy platelets in the blood, causing Neonatal Alloimmune Thrombocytopenia.

### **How does NAIT affect my baby?**

The effect on your baby depends on how many of its platelets are damaged. In mild cases, it might not affect your baby at all. In severe cases the damage to your baby's platelets can cause severe bleeding, which may have serious effects on your baby's health.

### **How are babies with NAIT treated?**

Once the condition is recognised or suspected, your baby can be given a transfusion of platelets that are a similar group to that of your blood (the mother). This is the most effective treatment, as it increases the number of platelets in your baby's blood with platelets that will not be destroyed by your antibodies.

### **What happens afterwards?**

The number of platelets that your baby has will gradually return to normal within a few weeks after birth. After that, your baby's blood will be entirely normal, and he or she should have no future problems.

### **Can platelet antibodies affect my health?**

These antibodies will not affect the platelets in your (the mother's) blood. They need to be taken into account, however, when selecting suitable blood if a blood transfusion is ever needed. This is why you (the mother) receive a card which should be shown to any medical staff who may be treating you.

### **What happens to the antibodies in my blood?**

Once the antibodies are made, they may stay in the mother's blood for a long time, sometimes for life.

### **What about future pregnancies?**

If a mother has had a baby affected by NAIT, future pregnancies will be at risk of NAIT. This means that any further pregnancies should be closely monitored to allow additional treatment of the unborn baby, if necessary.

If you have had a previously affected baby, you can ask your GP or obstetrician to arrange for you to get advice from a fetal medicine unit regarding future treatment.