

WHAT IS THROMBOCYTOPENIA?

Platelets are the smallest cells that normally circulate in the blood stream. They serve a very important role, acting as plugs to stop bleeding. A decrease in the number of circulating platelets is called thrombocytopenia and may result in bleeding.

PREGNANCY AND PLATELETS?

The number of platelets in the baby's blood stream is low in 1 in 1000 pregnancies. If the decrease in the number of platelets is significant it may result in bleeding in the baby. One of the most important causes of low platelets in unborn and newborn babies is neonatal alloimmune thrombocytopenia (NAIT). Sometimes this condition is also referred to as feto-maternal alloimmune thrombocytopenia (FMAIT).



ABOUT THE TRANSFUSION OUTCOMES RESEARCH COLLABORATIVE

The Transfusion Outcomes Research Collaborative is a partnership between the Australian Red Cross Blood Service and Monash University. The aim of this partnership is to explore blood component usage and patient outcomes following transfusion, and so enhance the quality of transfusion practice and help improve clinical care.

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Neonatal Alloimmune Thrombocytopenia:
A guide for patients, family and friends

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 **MONASH University**
Medicine, Nursing and Health Sciences

 **Australian Red Cross**
BLOOD SERVICE



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WHAT CAUSES NAIT?

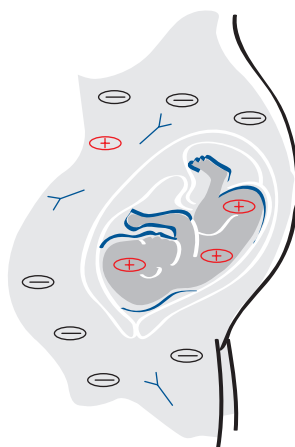
Special markers (also known as antigens) on the surface of platelets determine a person's platelet blood group. A baby inherits these markers from its mother and father, so in some cases a mother and baby can have different platelet groups. In this situation, the mother's immune defence system may perceive the baby's platelets to be "foreign". When this occurs, she may make antibodies, which can cross the placenta into the baby's blood, and damage the baby's platelets, causing a low platelet count. The diagram opposite illustrates this process.

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.

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.

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 (NAIT).

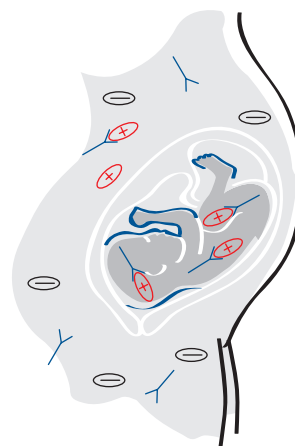
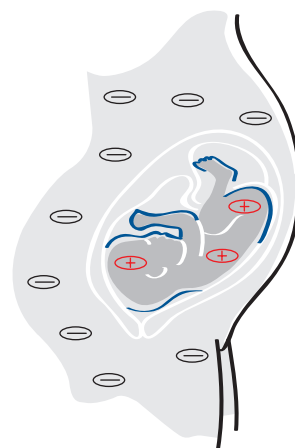
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○ Mother's platelets
⊕ Baby's platelets
Y Mother's antibody



HOW DOES NAIT AFFECT THE BABY?

The effect on the baby depends on how many platelets are damaged. If this is mild then no harm will come to the baby. If the platelet count is very low this could lead to bleeding, even before the baby is born, and sometimes this bleeding can have serious consequences.

HOW DO WE TREAT NAIT?

If NAIT is suspected during pregnancy, treatment may include monitoring the baby's platelet count, and medications for the mother, such as intravenous immunoglobulin (made from plasma donations). Sometimes specially matched platelet transfusions compatible with the mother's platelet type are given to the baby in the womb. After birth, the baby may need additional specialised platelet transfusions to increase the number of platelets in the baby's blood and the baby may also be treated with intravenous immunoglobulin.

Once the baby is born the platelet count will gradually return to normal as the effect of the mother's antibodies wears off.

FUTURE PREGNANCIES?

It is important to seek specialist care if there has been a history of NAIT. Future pregnancies may be at risk of developing NAIT and should be monitored closely.

**FOR FURTHER INFORMATION PLEASE
CONTACT YOUR TREATING DOCTOR.**