

WHAT IS HDN?

Haemolytic Disease of the Newborn (HDN) occurs when antibodies made by the mother bring about the destruction of red cells in the fetus and / or neonate.

Different Blood Groups

There are lots of different blood groups on our red cells - half of them inherited from our father and half from our mother. Therefore a fetus will have some blood groups which are the *same* as the mother's and some (inherited from the father) which *could* be *different*.



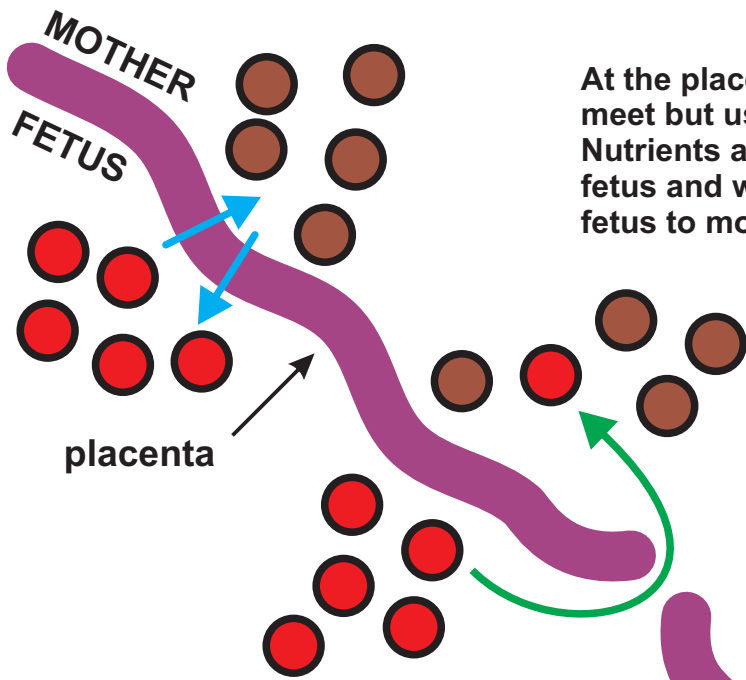
Mother



Father



Baby



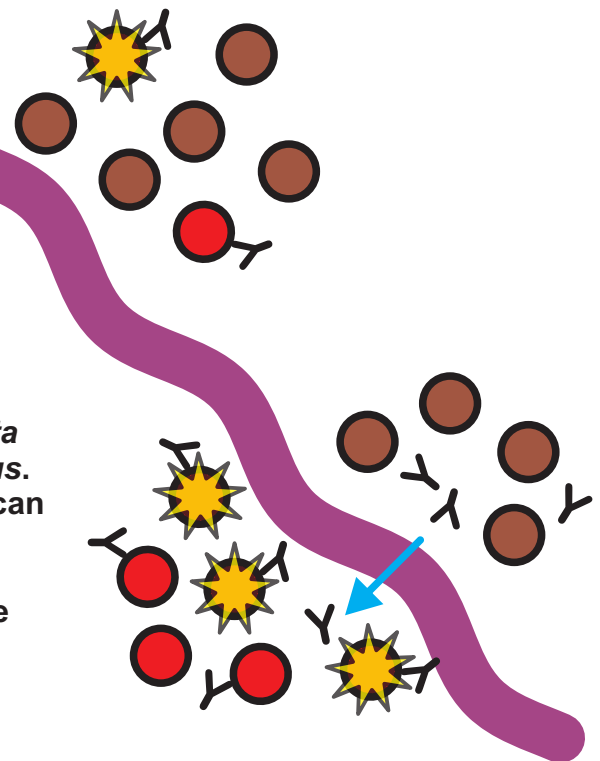
At the placenta the blood supplies from mother and fetus meet but usually **do not mix**. Nutrients and oxygen cross the placenta from mother to fetus and waste products and carbon dioxide pass from the fetus to mother.

Sometimes, red cells from the fetus can enter the circulation of the mother and mix - this is known as a **fetomaternal haemorrhage (FMH)**.

The immune system of the mother may recognise the blood groups on the fetal cells as being "different" and can respond by making antibodies - this is known as **sensitisation** (of the mother).

The antibodies made by the mother can **cross the placenta** and cause breakdown (**haemolysis**) of red cells **in the fetus**. This can result in HDN with anaemia and jaundice which can be mild or severe.

Very severe HDN can cause hydrops and fetal death in the womb or brain damage after birth from kernicterus due to very high bilirubin levels.



HDN AWARENESS

reducing the impact of haemolytic disease of the (fetus and) newborn

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