

# Blood groups and rh factor incompatibility

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Blood Groups Blood Groups The four blood groups i. e. A, B, AB, and O comprise the ABO blood Group system. This classification is based mainly on the presence of different antigens on the surface of red blood cells. These antigens are the antigens A & B. People with antigen A present on the surface of their red blood cells are said to have the blood group A whereas the presence of antigen B on the surface of red blood cells defines the blood group B. When both A & B antigens are found on the surface of blood cells the blood group thus described is AB and the absence of any antigen defines the blood group O. Every antigen also has a specific antibody too which is found in the body. Antibody A would be found in the blood of the people with blood group B whereas antibody B would be found in the people with blood group A. This defines that both the antigen and the antibody of the same type could not be found in one person and this antigen-antibody interaction plays a very important role in blood transfusion reactions.

For blood transfusions the donor has to match the blood group of the recipient, like Blood group A can only give blood to another person with the Blood group A, the transfusion will only work if the recipient of the blood group has a blood group that does not have any antibodies in the blood which are against the donor's blood antigens. However, when the donor's antibodies match with the antigens in recipient's blood the clumping of the RBCs occur, this shows that the blood could not be transfused.

The terms universal donors and universal recipients are described for the two blood groups i. e. O with RH negative and AB with RH positive respectively. The blood of a person with Rh factor present in it could not be transfused to a person with RH negative blood.

“ Rh incompatibility is a condition that develops when a woman is pregnant with a baby who has Rh-positive blood and she herself has Rh-negative blood.”

The transfer of blood cells from zygote to mother occur during pregnancy when blood cells from the zygote pass the placental barrier and enter the mother’s circulatory system. The mother being Rh negative, her immune system would treat the cells like a foreign substance starts producing antibodies against the blood cells of the fetus. When the red blood cells are broken down they cause jaundice. Special immune globulins called RhoGAM, this is no longer a problem for places with good prenatal care.