

Name of the test:

ABO Grouping and Rh Typing.

Alternative name(s) of the test:

None.

What this test is used for:

This test is used to determine ABO blood group and Rh type.

Erythrocytes have antigens on their surface which determines the blood type of the person.

Different types of antigens are A and B. If only A antigen is present on the cell, the blood type is A.

If only B is present, the blood type is B. People with A and B antigens belong to AB group, and those who have neither antigens belong to O blood group.

Another important antigen is Rh (Rhesus) factor. If it is present on erythrocytes, the blood is Rh positive (Rh+), otherwise it is Rh negative (Rh-).

Here is a table which shows different antigens and the corresponding blood types:

ABO antigens and Rh type	Blood type
A antigen – absent, B antigen – absent; Rh factor - present	O positive
A antigen – absent, B antigen - absent; Rh factor - absent	O negative
A antigen - present, B antigen – absent; Rh factor - present	A positive
A antigen - present, B antigen – absent; Rh factor - absent	A negative
A antigen – absent, B antigen – present; Rh factor - present	B positive
A antigen – absent, B antigen – present; Rh factor - absent	B negative
A antigen – present, B antigen – present; Rh factor - present	AB positive
A antigen – present, B antigen – present; Rh factor - absent	AB negative

People do not have antibodies to the antigens of their own erythrocytes. So, for example, if someone is B positive (B antigen and Rh factor are present in his blood), then this person will not have antibodies against B antigen or Rh factor. Same will not be true for A antigen though. This means that this person cannot receive blood of A or AB groups, because A antigen is present in

both of these types.

Transfusing the incompatible type of blood can be fatal, therefore it is absolutely important to determine the blood types of both the donor and the recipient prior to transfusion.

Also, when a pregnant woman is Rh negative and the fetus is Rh positive, antibodies against Rh factor start developing in the body of a mother. These antibodies can cross the barrier of placenta and destroy erythrocytes of the fetus. For this reason, Rh incompatibility between a mother and a fetus should be detected early and the pregnant woman should receive treatment which prevents destruction of the fetus' red blood cells.

When the test is ordered:

The test is performed when blood transfusion is needed – blood donors and recipients have to get tested. It is also ordered in pregnant women in order to detect Rh incompatibility between the mother and fetus.

How this test is performed:

A blood sample is taken from a vein.

How to prepare for the test:

No preparation is needed.

Interpretation of results:

Based on the test results the patient's blood group (O, A, B or AB) and Rh type (positive or negative) can be determined. This, in turn, gives us information which type of blood is safe for the person to receive. It also tells us if there's incompatibility between a pregnant woman and her fetus and if the treatment is required or not.