# ABO and Rh Blood Grouping

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## ABO Blood Grouping

Blood groups are A, B, AB, O

↳ Grouping is based on type of Antigen (Type of sugars) present on surface of RBC

→ Blood group — Antigen present

A = A

B = B

AB = Both A & B

O = Absent

→ Antibodies of opp. blood group is present in plasma

| Blood group | Antibodies |
|---|---|
| A | Anti B |
| B | Anti A |
| AB | Absent |
| O | Anti A, Anti B |

→ Any Blood cannot be used for Blood transfusion Blood has to be carefully matched to prevent coagulation or clumping (Destruction of RBC)

TABLE 18.1 **Blood Groups and Donor Compatibility**

| Blood Group | Antigens on RBCs | Antibodies in Plasma | Donor's Group |
|---|---|---|---|
| A | A | anti-B | A, O |
| B | B | anti-A | B, O |
| AB | A, B | nil | AB, A, B, O |
| O | nil | anti-A, B | O |

# Universal Recipient = AB

Donor = O

## Rh Blood Grouping

→ Another Antigen Rh antigen is present on surface of RBC

→ This similar Antigen is also present in Rhesus Monkey hence named Rh

→ Those Individuals which have this Rh antigen present are known as Rh positive & those which have this Rh antigen -ve are known as Rh negative

→ Majority humans - Nearly 80 percent are Rh +ve

∴ During Blood transfusion Rh matching should be done

# Special Case of Rh matching = Erythroblastosis Foetalis

• Condition → Mother → Rh-ve child → Rh +ve

During 1st pregnancy → No issue → Normal child

As Blood of foetus (Rh+ve) & mother (Rh-ve) is seperated By placenta

⇒ During 1st delivery → some blood cells of foetus remains in uterus of mother therfore formation of Rh +ve Antibodies takes place inside mother Body

During Subsequent Pregnancy → The formed Antibodies (Rh antibodies) crosses placenta & mixes with foetal Blood ultimately leading to Blood coagulation which is fatal & hence the foetus suffers from severe Anemia & Jaundice ultimately to its death

→ To Avoid this condition Mother is administered with Anti Rh antibodies Immediately after the delivery of 1st child