



Blood Typing (ABO)

Blood transfusions are a lifesaving treatment for many Americans. Blood transfusions are needed for many reasons, including surgery, after accidents, and for patients with chronic illnesses and cancer. Every 2 seconds, someone needs a blood transfusion.

Blood cannot be artificially made, so doctors rely on volunteer donations. To keep the blood supply safe, every donation is tested for blood type and checked for infectious diseases.

What Are the Components of Blood? All blood contains the same basic components:

- red blood cells that deliver oxygen
 - white blood cells that fight infections
 - platelets that help blood clot
 - plasma, the liquid part of blood
- But not everyone has the same blood type.

What Are the Blood Types?

Categorizing blood according to type helps prevent reactions when someone gets a blood transfusion. Red blood cells have markers on their surface that characterize the cell type. These markers (also called antigens) are proteins and sugars that our bodies use to identify the blood cells as belonging in us.

The two main blood groups are ABO and Rh.

The ABO blood system has four main types:

- Type A: This blood type has a marker known as A.
- Type B: This blood type has a marker known as B.
- Type AB: This blood type has both A and B markers.
- Type O: This blood type has neither A nor B markers.

Blood is further classified as being either "Rh positive" (meaning it has Rh factor) or "Rh negative" (without Rh factor). So, there are eight possible blood types:

- **O-**: This blood type doesn't have A or B markers, and it doesn't have Rh factor.
- **O+**: This blood type doesn't have A or B markers, but it does have Rh factor. O positive blood is one of the two most common blood types (the other being A positive).
- **A-**: This blood type has A marker only.
- **A+**: This blood type has A marker and Rh factor, but not B marker. Along with O positive, it's one of the two most common blood types.
- **B-**: This blood type has B marker only.
- **B+**: This blood type has B marker and Rh factor, but not A marker.
- **AB-**: This blood type has A and B markers, but not Rh factor.
- **AB+**: This blood type has all three types of markers — A, B, and Rh factor.



Having any of these markers (or none of them) doesn't make a person's blood any healthier or stronger. It's just a genetic difference, like having green eyes instead of blue or straight hair instead of curly.

Fun ABO Game to play (QR Code to the left):

<https://educationalgames.nobelprize.org/educational/medicine/bloodtypinggame/gamev3/index.html>