

# iTRANSFUSEFACTSHEET

## all about blood

VOLUME 1, NUMBER 1

## I NEED TO KNOW ABOUT ABO

BEN SAXON

### What are ABO blood groups?

Our red blood cells, like all cells, are covered in protein and sugar (carbohydrate) antigens. A and B are different sugars on the surface of the red cells. O cells don't have either sugar.

### If A and B antigens are sugars, can I change blood type with my diet?

No. The type of sugar on your red cells is genetically determined and you cannot change it.

### Can I be more than one type?

If you have the A sugar, you have "Group A" red cells. It is possible to have both A and B sugars – then your group is AB.

### Why does this matter?

Everyone has antibodies against any missing antigen. If you have B antigens, you will have antibodies which will attack and destroy A red cells. If you give a bag of A blood to a B patient, the patient's anti-A antibodies will attack these cells and the patient could have a severe, or even fatal, reaction. Getting the blood type correct is really important!

### What are antigens?

They are proteins or carbohydrates which our immune system can recognise. Any antigen which is "foreign" to our immune system is destroyed by an antibody.

### What are antibodies?

These are attack molecules our system makes to protect ourselves against foreign things such as bacteria and viruses.

	Group A	Group B	Group AB	Group O
Red blood cell type				
Antibodies present in plasma	 Anti-B	 Anti-A	None	 Anti-A and Anti-B
Antigens present on red cells	 A antigen	 B antigen	 A and B antigens	No antigens

### How can an O negative donor be a "universal donor"?

Good pick up. People who are group O have antibodies to A and B called Anti-A and Anti-B. These antibodies are in the plasma, the water and protein part of our blood. We can give O negative Red Cells to anyone, but we cannot give O negative plasma to everyone (due to the antibodies). When we refer to "universal donor" we really mean "universal red cell donor" – the red cells are safe to give to everyone. The plasma from group O donors has both anti-A and anti-B and should only be given to group O patients.

### PACKFACT

The anti-A and B antibodies are said to be "naturally occurring." They actually form after birth in response to bacteria in the gut.

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