

# April 29, 2019

- 1) Review Blood
- 2) Blood Types and Blood Disorders

Quiz on Blood and Blood Types next week!!

## Warm - Up

The most common blood type in Canada is O positive (O+), about % of the population has it, which is why we have the greatest need for type O blood.

## What is a Blood Type?



Blood type is a genetic characteristic associated with the presence or absence of certain molecules called antigens, on the surface of red blood cells.

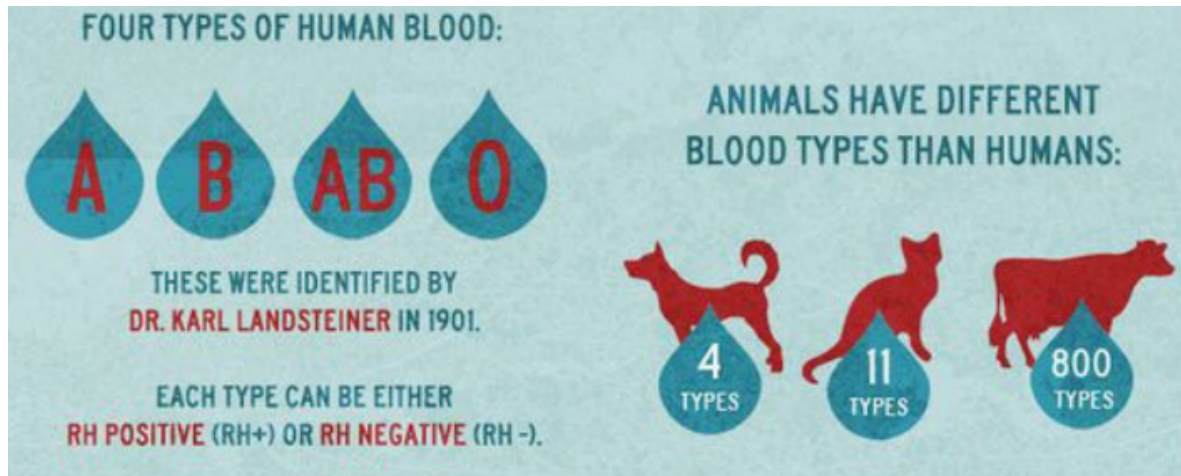
Blood Type is produced based on inherited genes and what proteins your body produces.

Blood type is important for medical reasons. If you need a blood transfusion you need to receive blood that is the same type as yours or it will clot in your bloodstream.






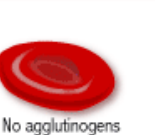



## ABO Blood Typing System

This is the system that is used to determine our blood type (just one of many blood factors). The blood proteins are A and B. The presence or absence of A and B proteins determines your blood type.



# Blood Groups

There are eight types of blood. A (only antigen A), B (only antigen B) , AB (both antigens), and O (no antigens). The protein marker found on the cell membrane identifies blood type. You can also be + or - for the Rh factor for each A,B,AB and O creating 8 blood types.

The ABO Blood System				
Blood Type (genotype)	Type A (AA, AO)	Type B (BB, BO)	Type AB (AB)	Type O (OO)
Red Blood Cell Surface Proteins (phenotype)	 A agglutinogens only	 B agglutinogens only	 A and B agglutinogens	 No agglutinogens
Plasma Antibodies (phenotype)	 b agglutinin only	 a agglutinin only	NONE. No agglutinin	 a and b agglutinin



Type O negative blood is the **universal donor** because they can donate to any other blood type.



Type AB+ blood is the **universal recipient** because they can receive blood from any other blood type.

# BLOOD TYPES



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TYPE	YOU CAN GIVE BLOOD TO	YOU CAN RECEIVE BLOOD FROM
A+	A+ , AB+	A+ , A- , O+ , O-
O+	O+ , A+ , B+ , AB+	O+ , O-
B+	B+ , AB+	B+ , B- , O+ , O-
AB+	AB+	Everyone
A-	A+ , A- , AB+ , AB-	A- , O-
O-	Everyone	O-
B-	B+ , B- , AB+ , AB-	B- , O-
AB-	AB+ , AB-	AB- , A- , B- , O-

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# Donating Blood



You can donate blood, plasma or platelets

must be:

- at least 17 years of age
- in general good health
- feel well on the day of donation
- meet the questionnaire requirements



## Attachments

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Biology 113 blood vessel assignment.doc