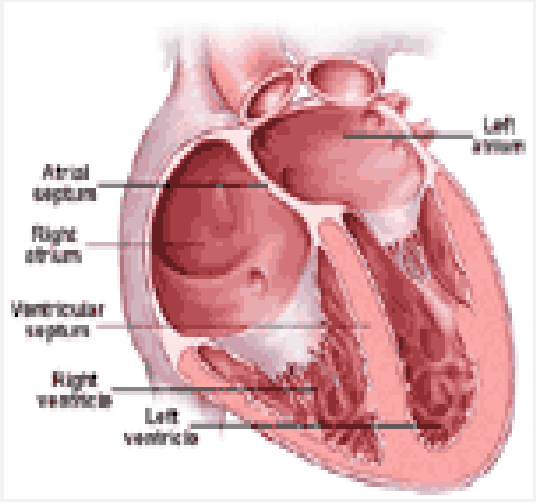
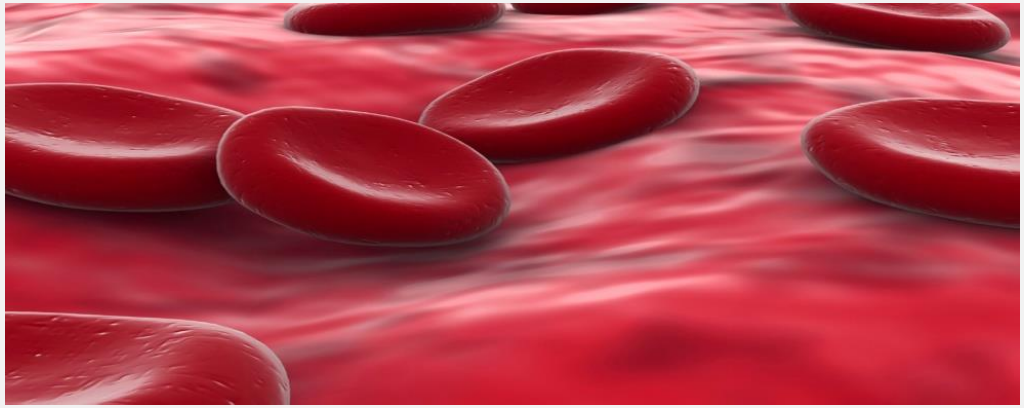
What is the circulatory system?

What is the function of the circulatory system?

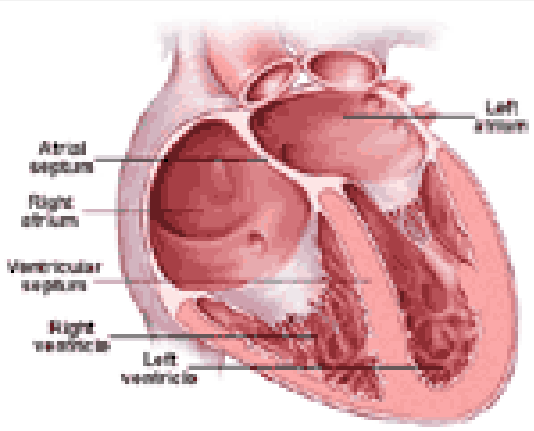
Function: transports materials from the digestive and respiratory systems to the cells of the body



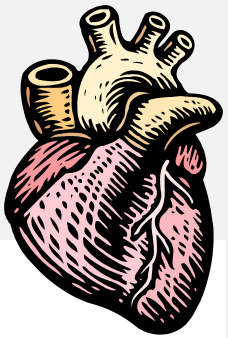


How does the heart work?

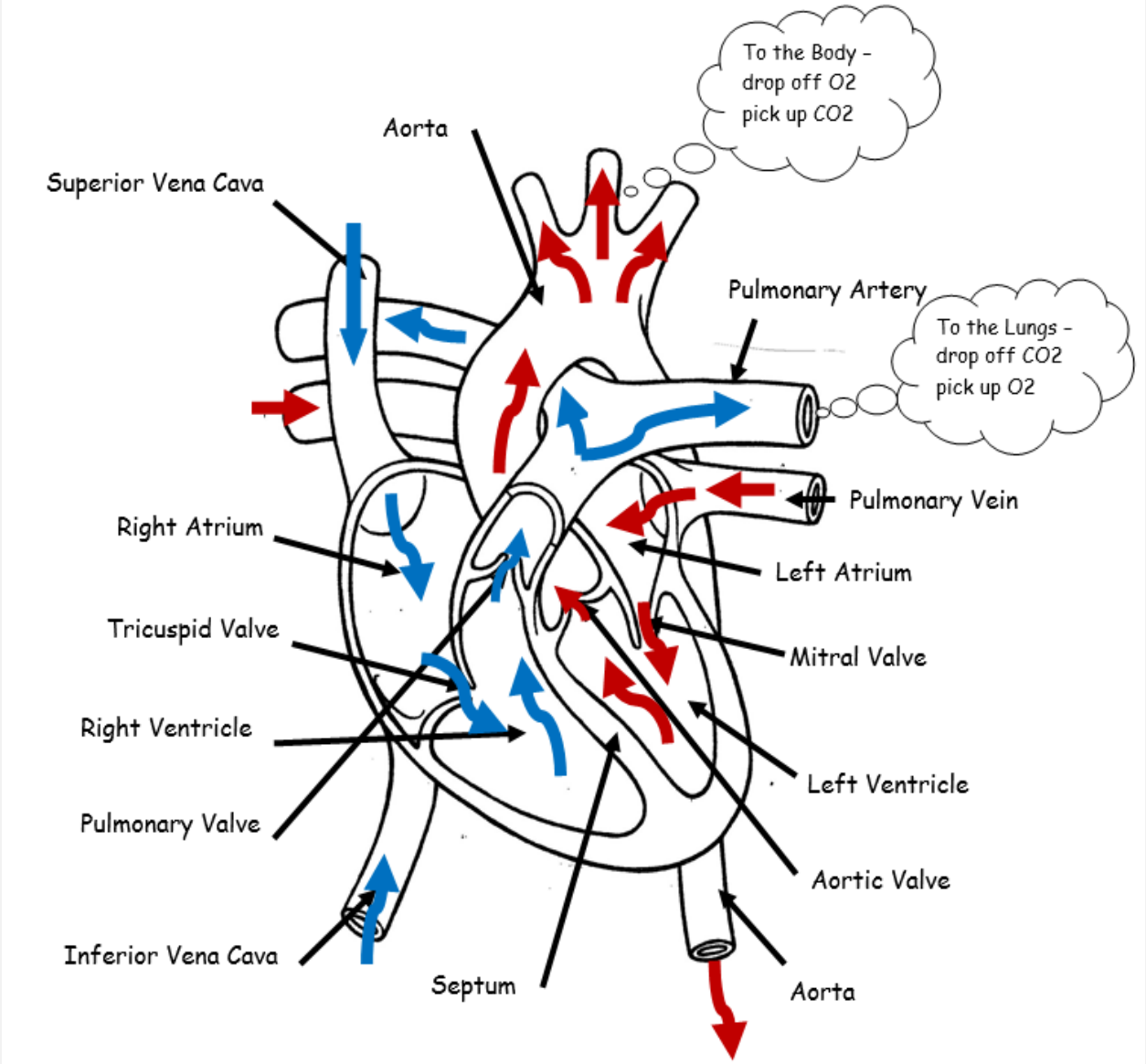
- Heart – pushes blood throughout the body
  - Left side – pumps oxygen-rich blood to entire body
  - Right side - pumps oxygen-poor (used) blood to the lungs to receive oxygen.
- Valves – prevent blood from flowing backwards

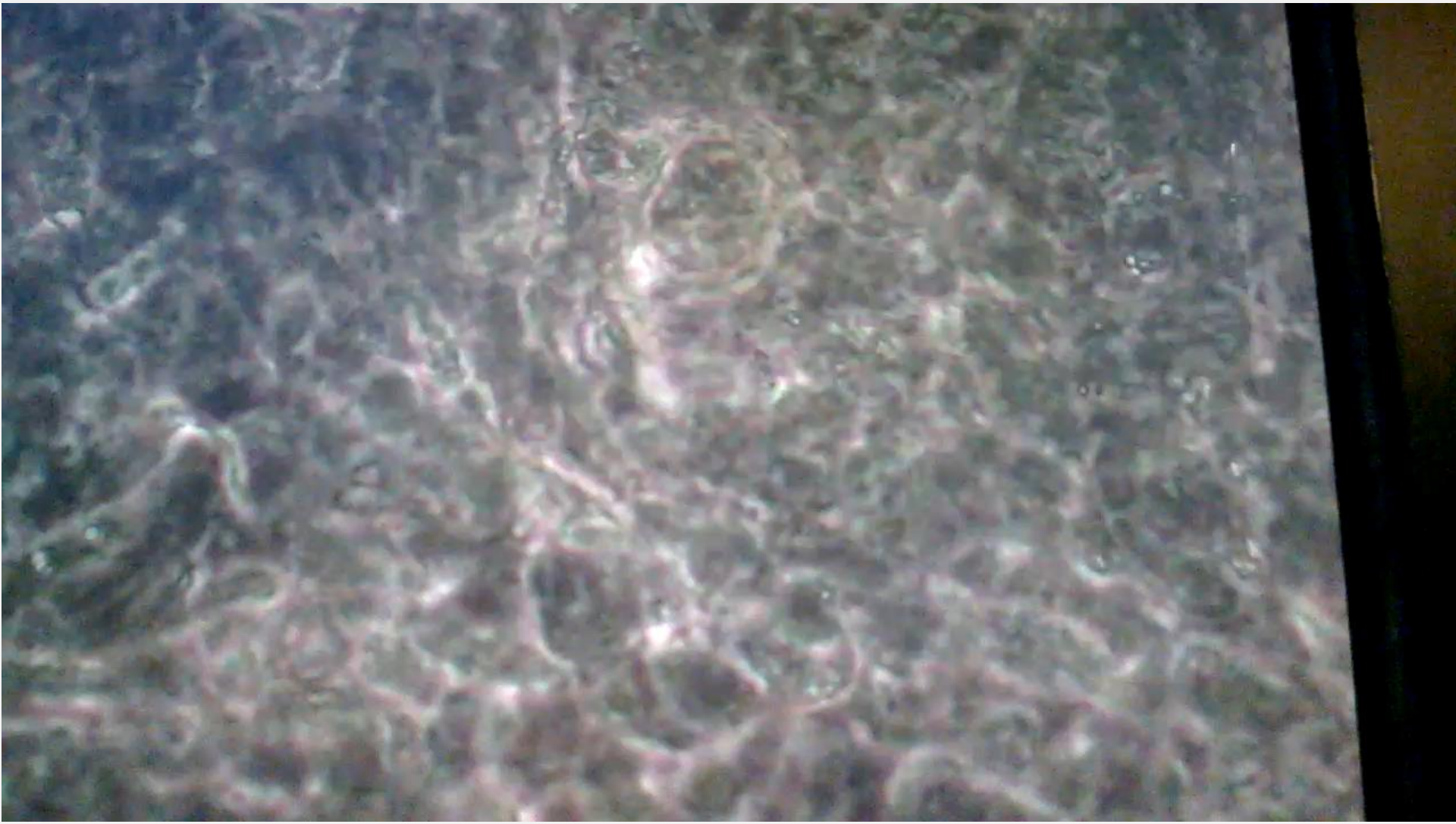


- **Chambers - each side of heart divided into 2 parts – right and left atrium and ventricle**.
  - Right atrium – **receives** oxygen poor blood from all parts of the body.
  - Right ventricle – **pumps** oxygen poor blood to the lungs.
  - Left atrium – **receives** oxygen-rich blood from the lungs.
  - Left ventricle **– pumps** oxygen –rich blood to all parts of the body.



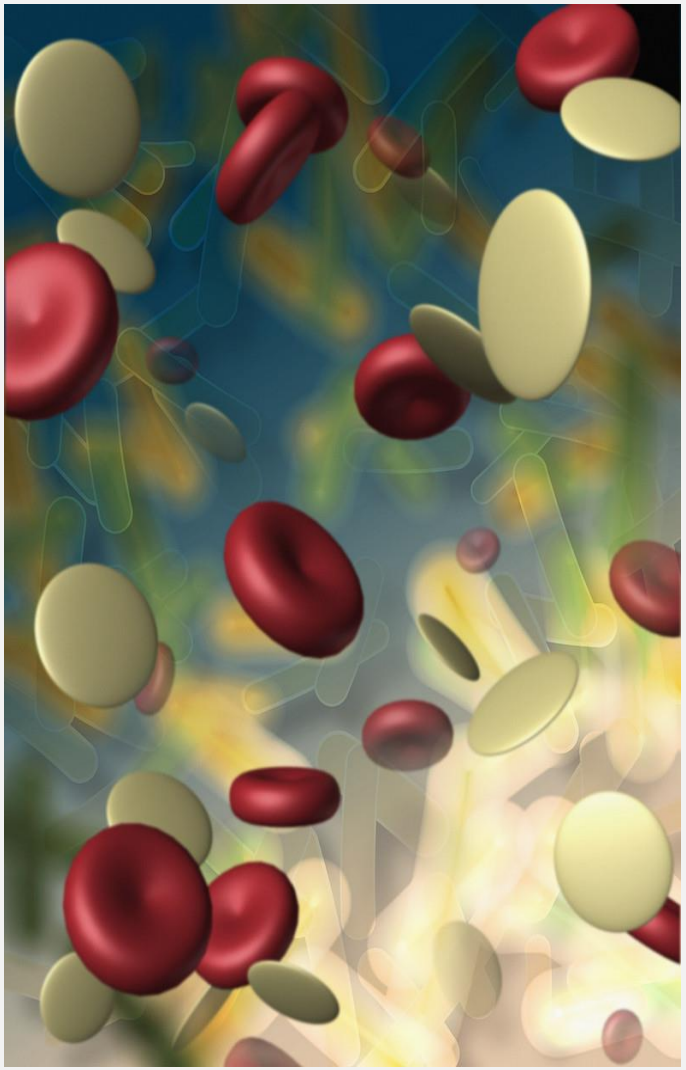
All blood is red, but oxygen rich blood is a much brighter and lighter shade of red. (charts usually show oxygen-poor blood in blue)


To the Body –
drop off O2
pick up CO2
Aorta
Superior Vena Cava
Pulmonary Artery
To the Lungs –
drop off CO2
pick up O2
Pulmonary Vein
Right Atrium
Left Atrium
Tricuspid Valve
Mitral Valve
Right Ventricle
Left Ventricle
Pulmonary Valve
Aortic Valve
Inferior Vena Cava
Septum
Aorta



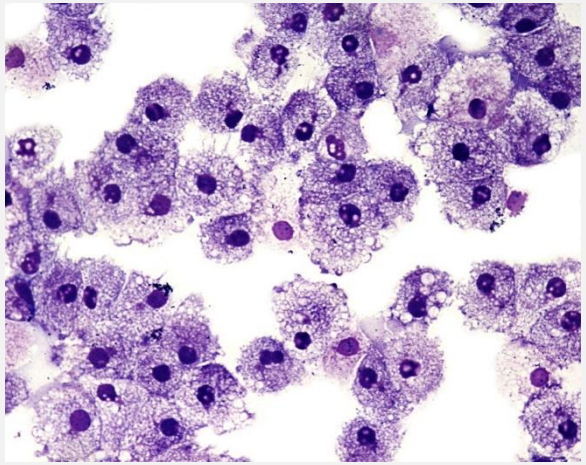
What makes up blood?

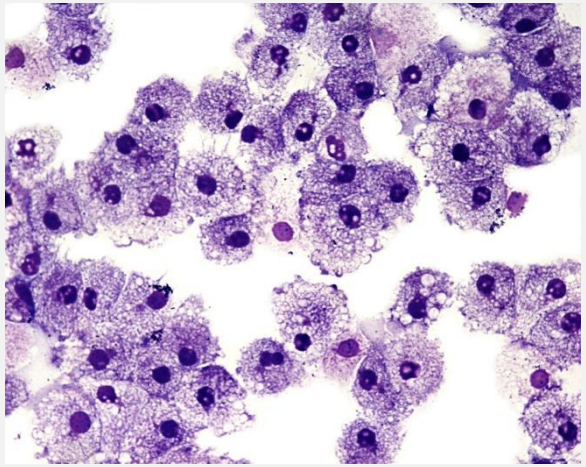
- **Blood -** a fluid that delivers oxygen and nutrients and removes CO2
  - **Plasma –** the fluid that makes up 60% of blood
    (Contains proteins, glucose, hormones, gases, etc. dissolved in water.)
  - **White Blood cells** – helps fight infection
  - **Red blood cells** – transports oxygen throughout body
  - **Platelets** – large cell fragments that help form blood clots



How does the blood travel throughout the body?

- **Blood vessels** – tube-shaped structures that move blood throughout the body
  - **Arteries** – take blood away from heart, strong, thick walls (carries oxygenated blood)
  - **Veins** – carry blood back to the heart, thinner (carries deoxygenated blood)
  - **Capillaries** – narrow and connects arteries with veins





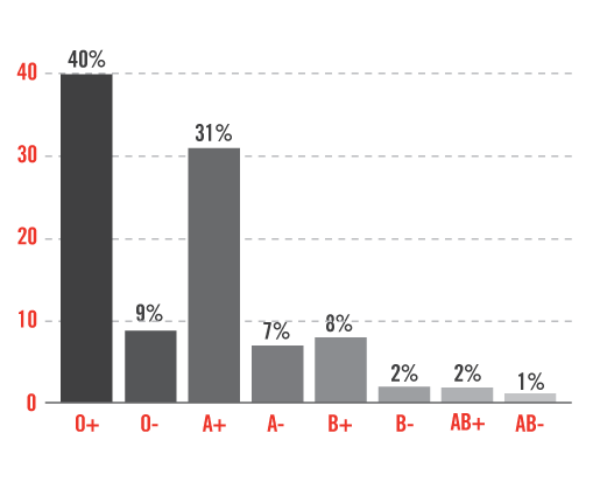
What is blood pressure and blood type?

BLOOD PRESSURE

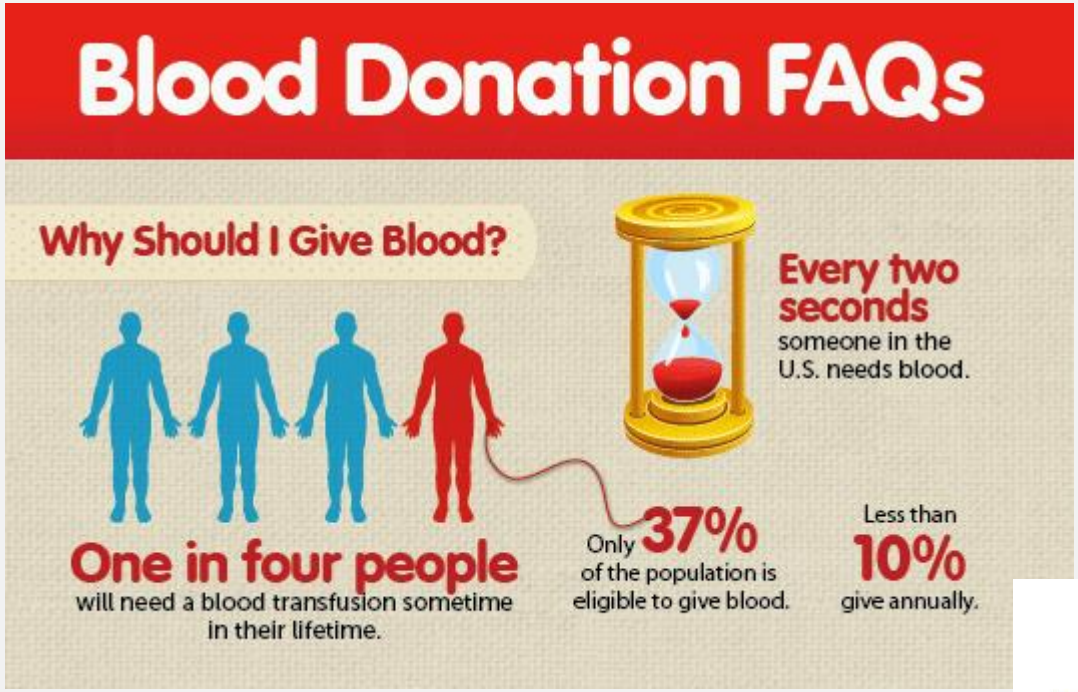
- **Blood Pressure** – the force produced when the heart contracts travels through the body.
  - Must maintain healthy blood pressure to get blood to all parts of body.
  - Too low – some cells will not get oxygen and other materials.
  - Too high – force will weaken the vessels and require the heart to work harder to push the blood through.

BLOOD TYPES

- Each red blood cell has special proteins on it's surface. The group of surface proteins determines blood type.
- There are 2 blood-type proteins – A & B.
- A person with A proteins in blood – Type A
- A person with B proteins in blood – Type B
- Some people have both proteins – Type AB
- Some people have neither proteins – Type O



All this leads to 4 types of blood: A, B, AB, and O



It takes all types.

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-

Video about the Circulatory System