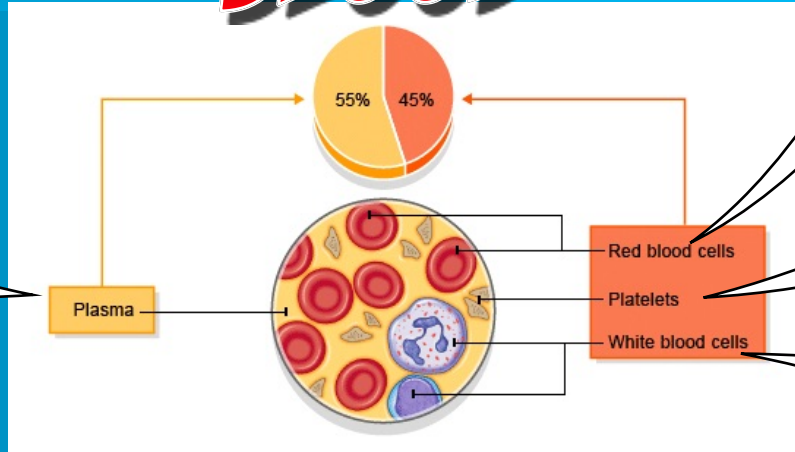


Circulatory System

BLOOD

We are 92% water.
We contain dissolved food and takeaway CO₂
We carry proteins to cells in the body for growth and repair



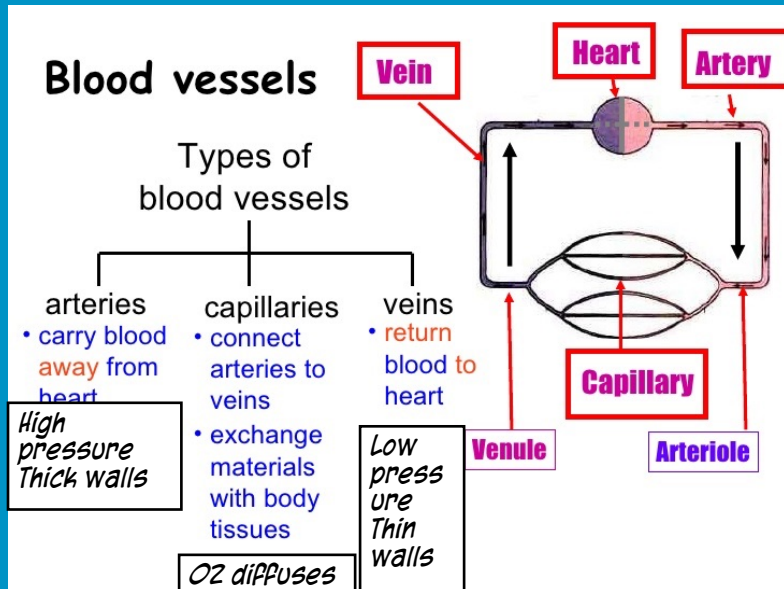
We transport O₂ to muscle cells to allow energy release and movement

We bind together to form clots which prevent bleeding

We protect the body from disease

BLOOD VESSELS

BLOOD PRESSURE



Blood vessels

Types of blood vessels

- arteries**
 - carry blood away from heart
 - High pressure
 - Thick walls
- capillaries**
 - connect arteries to veins
 - exchange materials with body tissues
 - O₂ diffuses from blood into tissues through thin capillary walls. CO₂ diffuses out into the blood 1 cell thick
- veins**
 - return blood to heart
 - Low pressure
 - Thin walls

Force of blood against artery walls
Exercise increases - more O₂ required - Force of blood leaving heart increases

Systolic pressure
When left ventricle contracts

Average young adult BP = 120/80

Diastolic pressure
When left ventricle relaxes

Measured taking the pressure at an artery in the arm



Factors that affect
age
sex
stress
Fitness
exercise intensity

Reduced by
Regular exercise
Sensible diet
Avoid stress
Medication

Heat increases as exercise increases

Blood flow to muscles & skin increases during exercise.
To kidneys & digestive system decreases

Reduce overheating
Sweat formed under the skin
Evaporation cools

Vasodilation
(Widening of capillaries)
Body temp high
Blood diverted to capillaries under skin
Skin reddens
Heat radiates from skin

Vasoconstriction
(Narrowing of capillaries)
Body temp low
Narrowing reduces heat loss by radiation
Muscles shiver to provide heat