

Review

- What is the difference between pulmonary and systemic circulation?
- Which blood vessels carry blood to the heart?



Blood & its Components!

What is Blood?

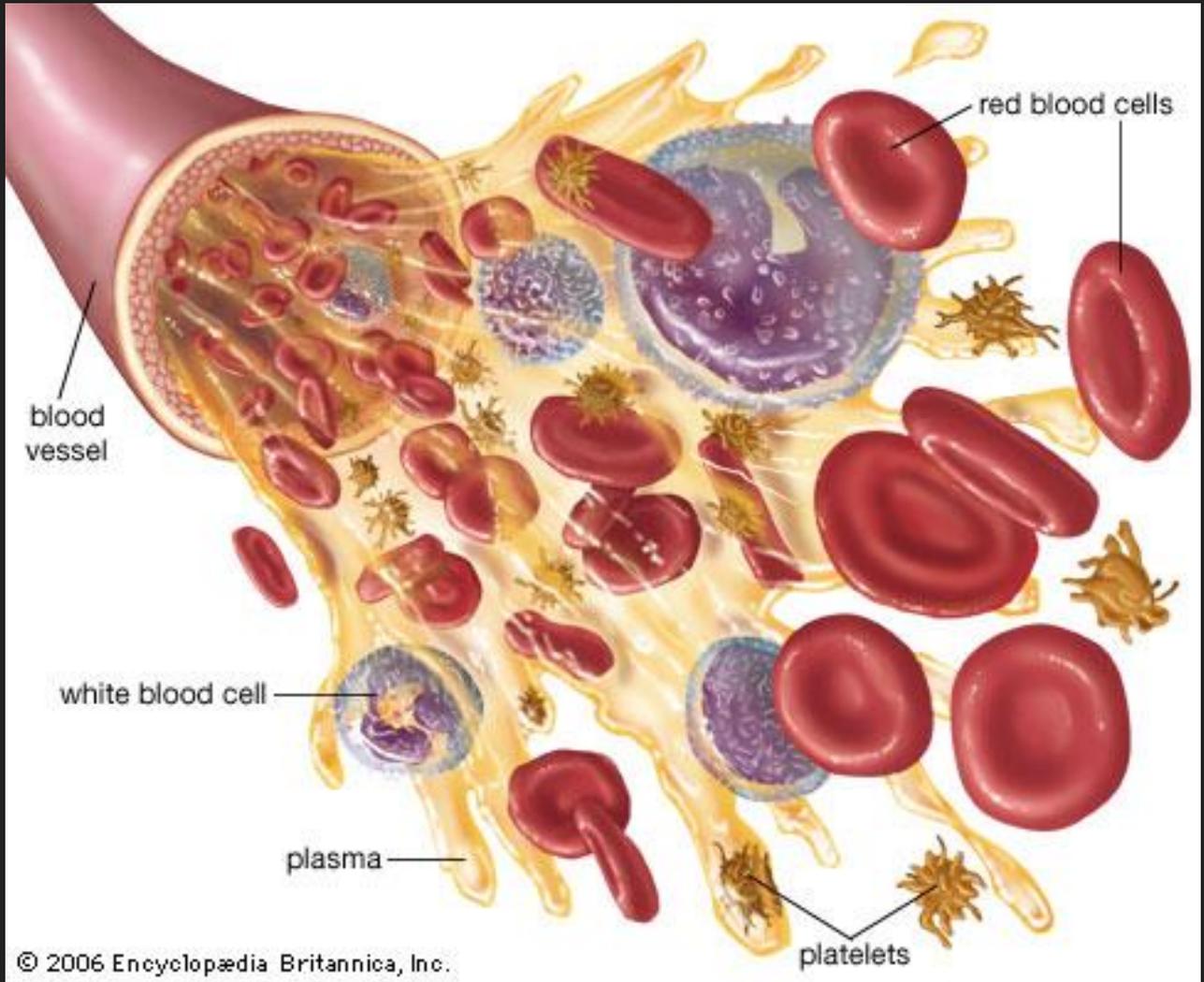
- Blood is a connective tissue
- It connects many different organs and tissues in the body and transports various substances from one to the other

What is Blood?

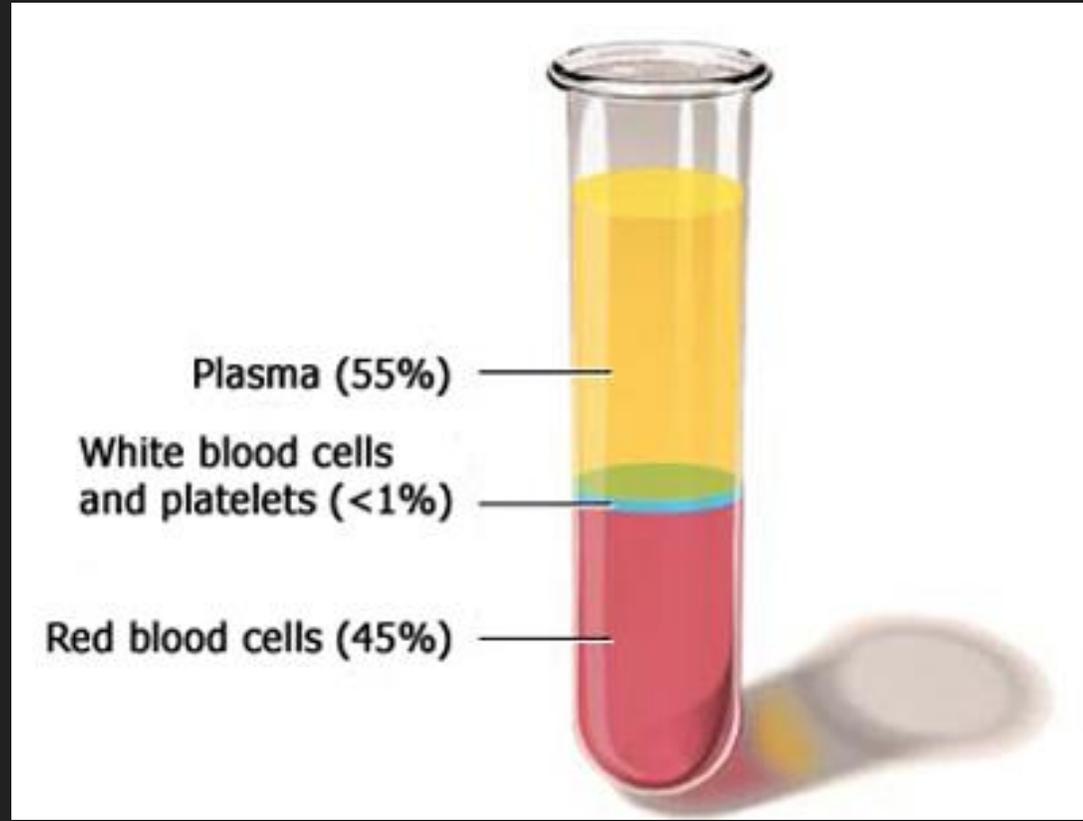
- It carries nutrients from digestive system to body cells.
- It carries oxygen taken up by respiratory system
- It removes wastes produced by cell metabolism.

What is Blood?

- It has a liquid component (plasma) in which formed elements are suspended (blood cells, platelets, etc)
- These formed elements make blood more viscous (thick)
- It is a fluid!



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Constituents of Blood

- Plasma is the liquid component
- Formed elements:
 - Red blood cells
 - White blood cells
 - Platelets

Let's kick it old school!



Constituents of Blood

○ Plasma

○ This is the liquid component of blood

○ Has a slightly yellowish colour

○ Makes up about 55% of total blood volume

Plasma



Constituents of Blood

- Plasma

- Composed of:

- 90% water

- 10% dissolved substances:

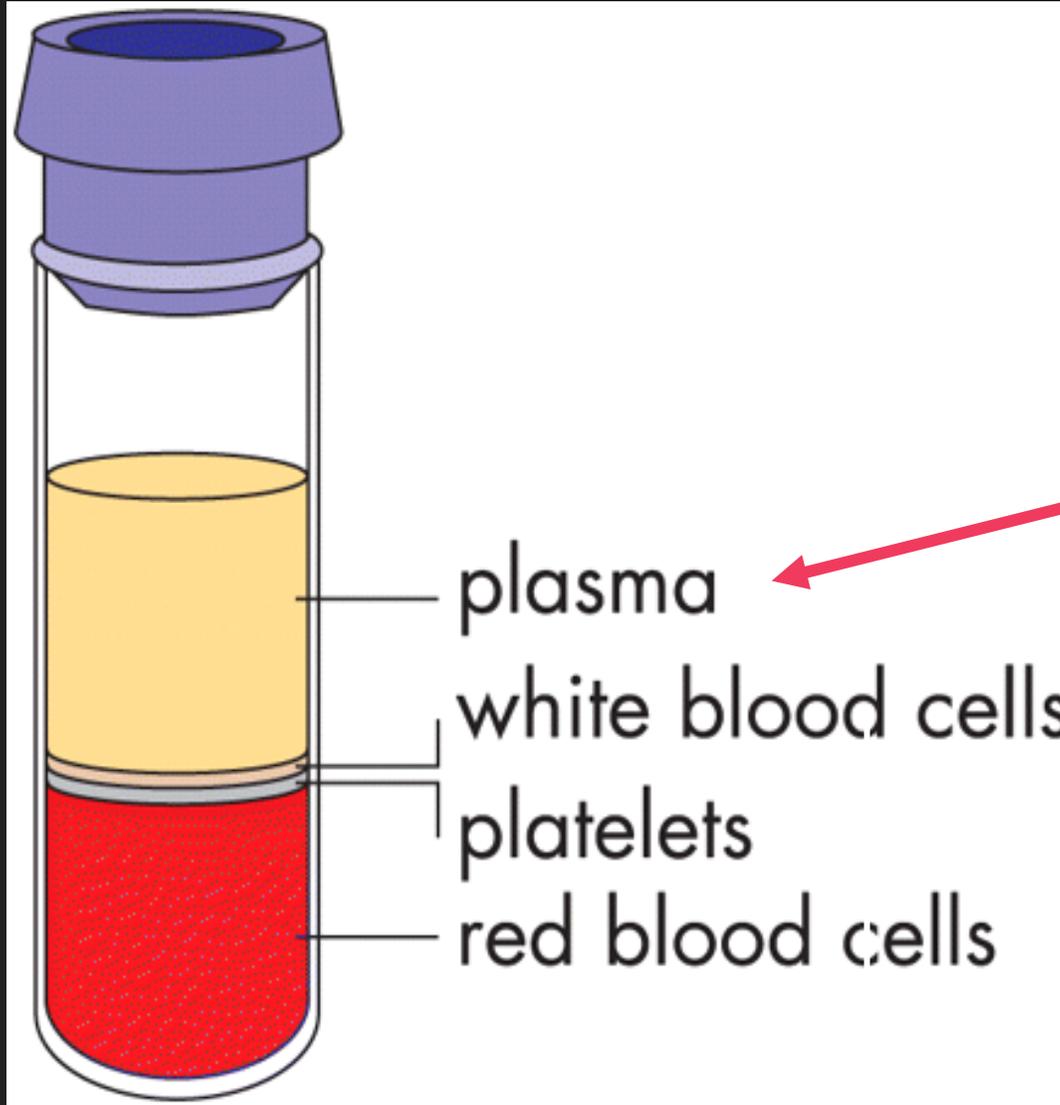
- Nutrients, hormones, antibodies, proteins, wastes, etc

Constituents of Blood

- Plasma

- Function:

- Transport dissolved substances to cells (ex: nutrients) and transport waste to excretory organs (ex: excess water, salts)



Approx. 55%

plasma

white blood cells

platelets

red blood cells

Formed Elements
Approx. 45%

Constituents of Blood

- Red Blood Cells

 - Also called erythrocytes

 - Part of the formed elements in the blood

 - They are the most numerous!

Constituents of Blood

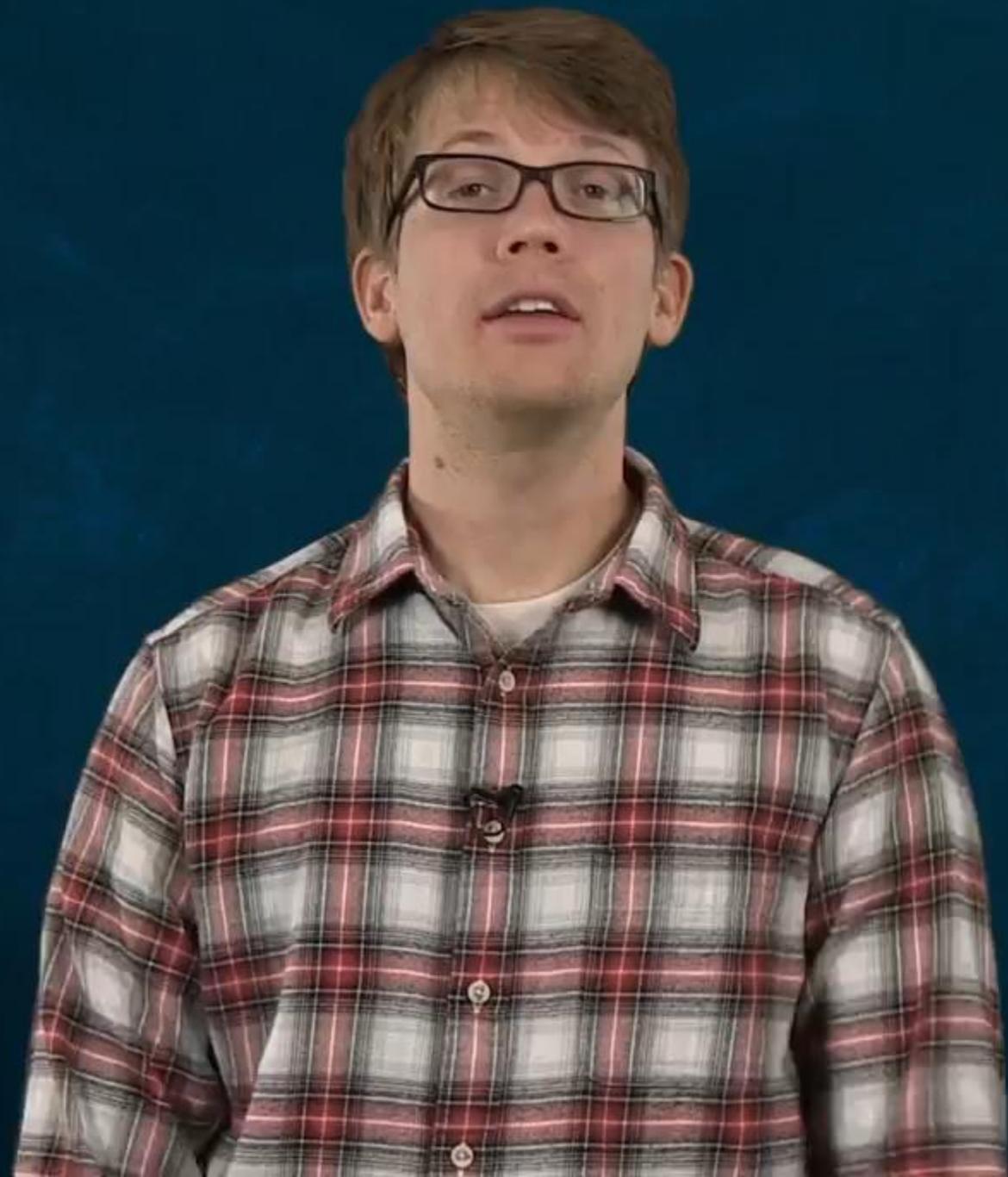
○ Red Blood Cells

○ Their shape is a biconcave disk (a disk with indents on both sides)

○ They don't have a nucleus!

○ Contain hemoglobin

○ The protein that binds to oxygen and carbon dioxide and gives them their red colour



Constituents of Blood

- Red Blood Cells

- Function:

- To transport oxygen and carbon dioxide

What is Blood?

- White Blood Cells
 - Also called leukocytes
 - The least common formed elements in the blood

What is Blood?

○ White Blood Cells

○ Characteristics:

○ Actually transparent as opposed to white

○ Don't have a regular shape; can take on different shapes

○ Have a nucleus

What is Blood?

- White Blood Cells

- Function:

- Provide immunity

- Defend against foreign bodies and disease by creating antibodies

White Blood Cells



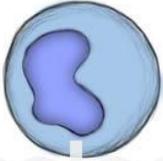
Leukocytes



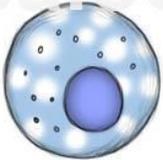
Lymphocytes



Macrophage



Neutrophil



Eosinophil



Basophil

What is Blood?

○ Platelets

○ Also called thrombocytes

○ Characteristics:

○ Cell fragments (little bits of cell)

○ No nucleus

○ Smallest of the formed elements

What is Blood?

- Platelets

- Function:

- Help in coagulation (blood clotting)

- This is important for repairing wounds which helps prevent you from bleeding out!



Kahoot??