

UPDAAN



2025

LIFE PROCESSES ✓

Biology

Lecture - 06

By - SAMRIDHI SHARMA Ma'am



Topics to be covered

- 1 Human respiratory system ✓
- 2 Mechanism of human breathing ✓
- 3 Breathing in fishes ✓
- 4 MCQ practice and Homework ✓





Question of the Day



Breathing rate of human beings : Total number of breaths taken per minute

Adults \rightarrow 12-20 breaths per min

1 Breath = 1 Inhalation + 1 Exhalation

QUESTION



Which of the following is not formed during aerobic respiration?

A Carbon dioxide ✓

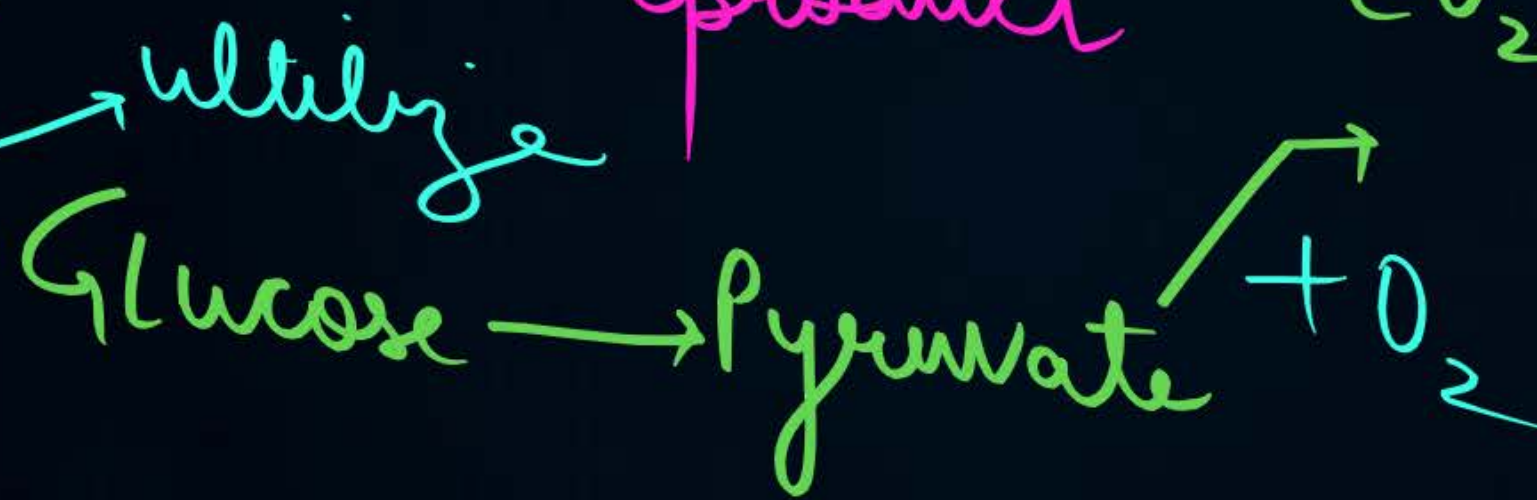
B Water ✓

C Oxygen

D Energy ✓

presence of O_2

product



QUESTION



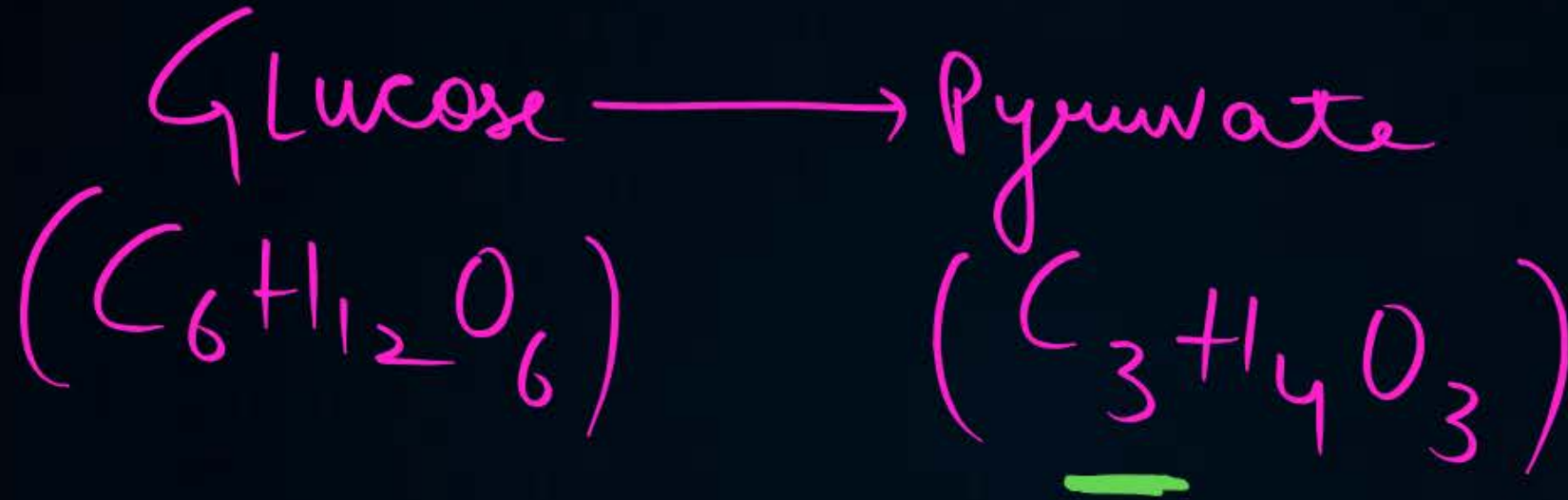
How many carbons are present in pyruvate?

A 2

☒ B 3

C 4

D 6

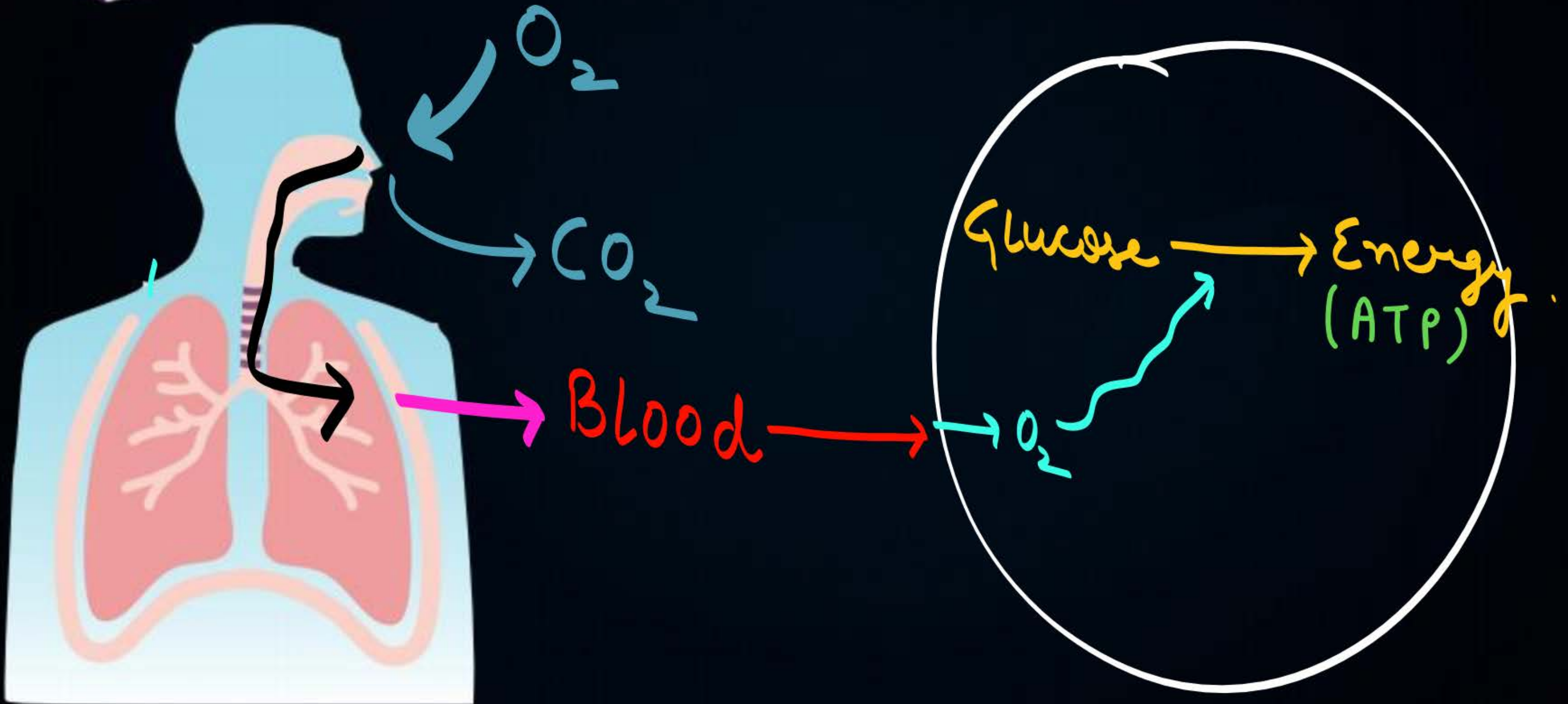




Breathing

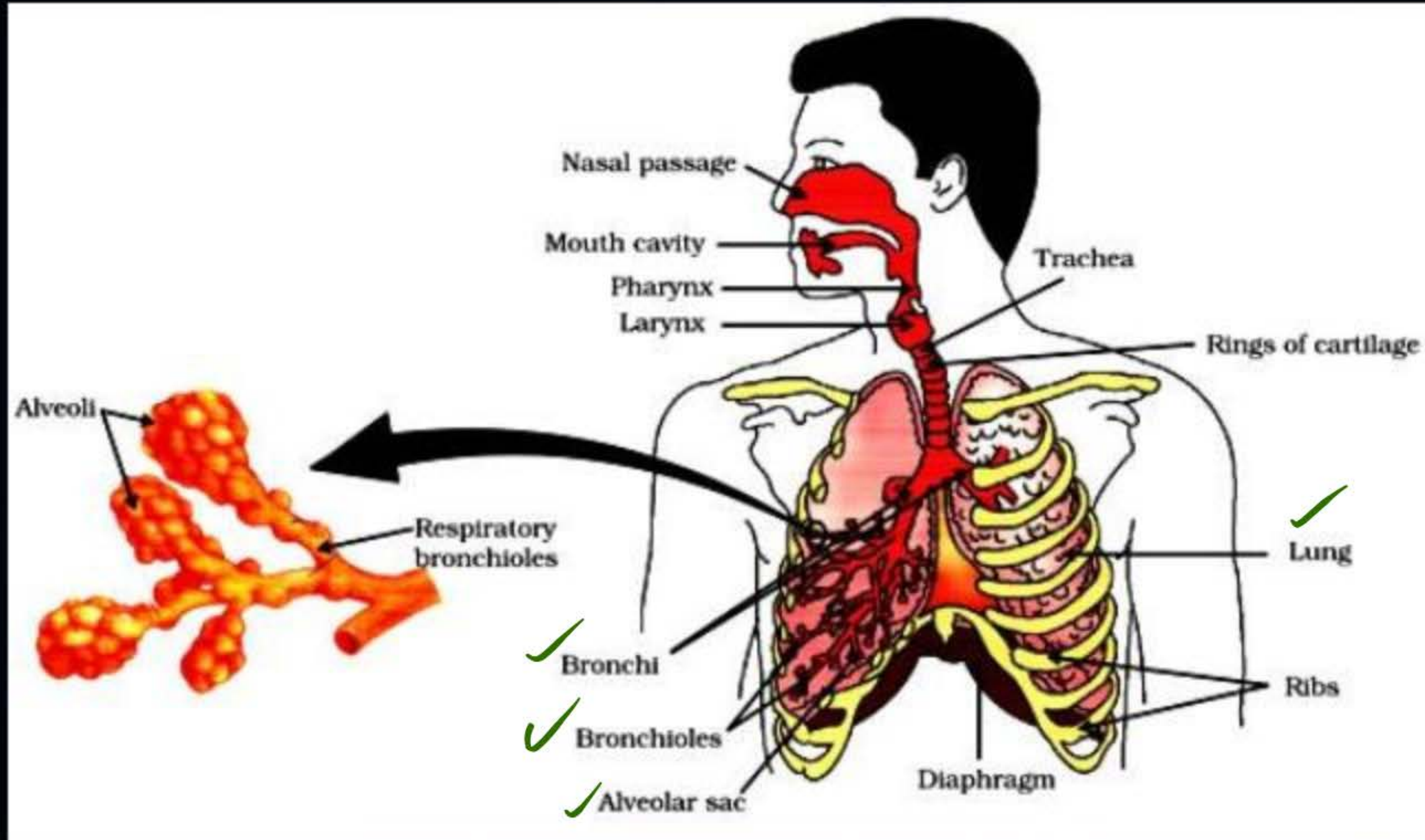
Vs

Respiration

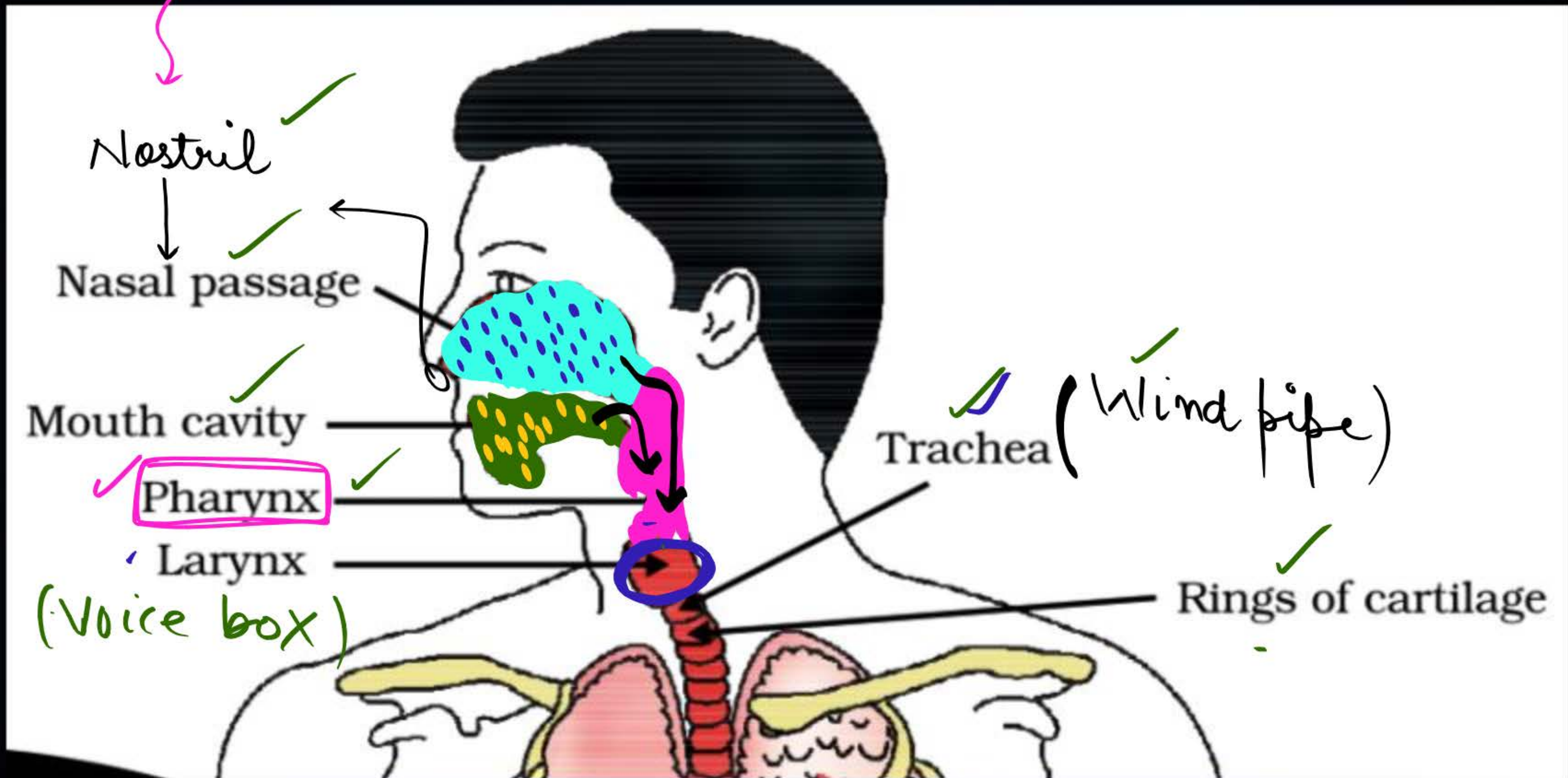


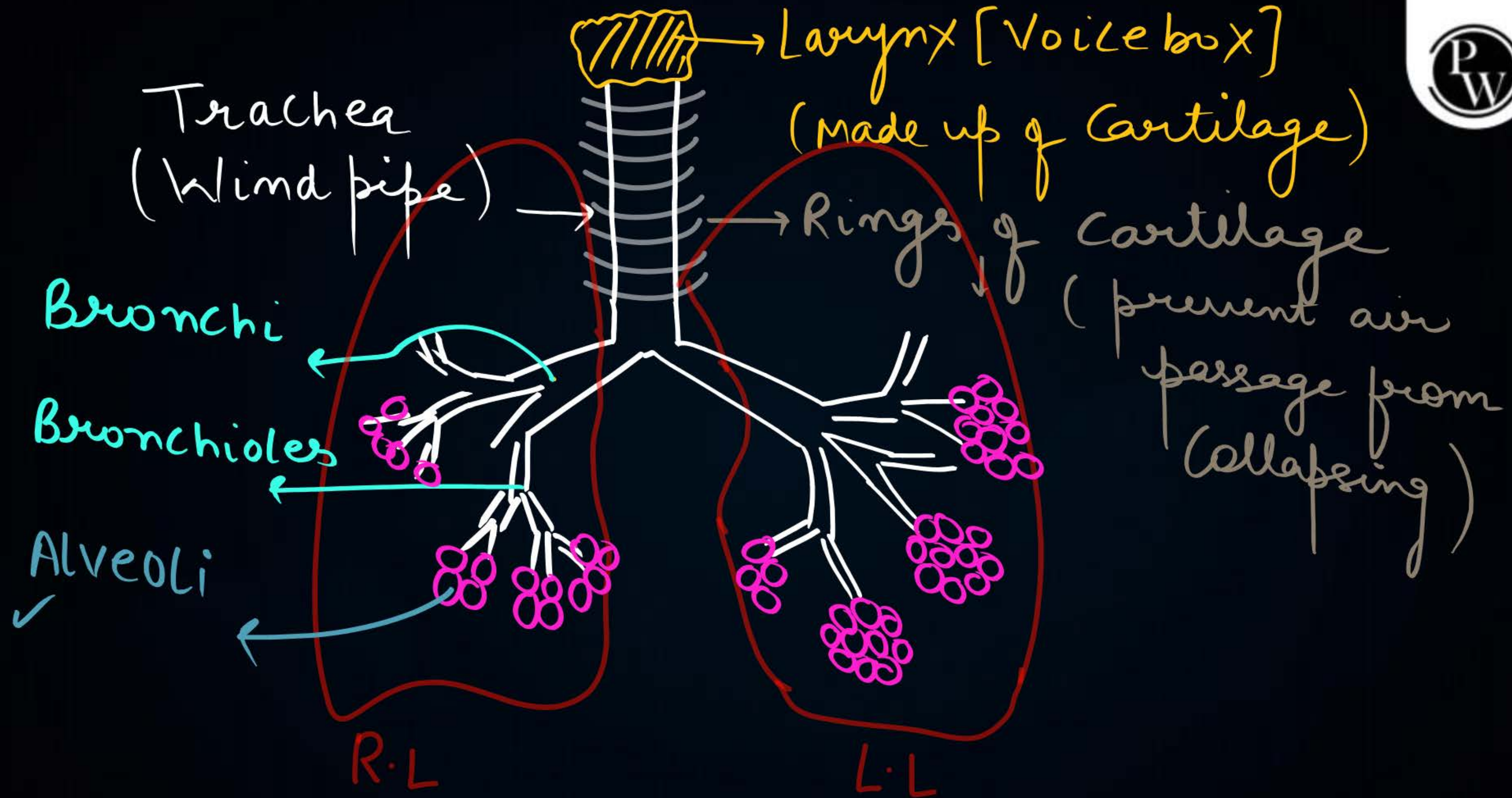


Human Respiratory System

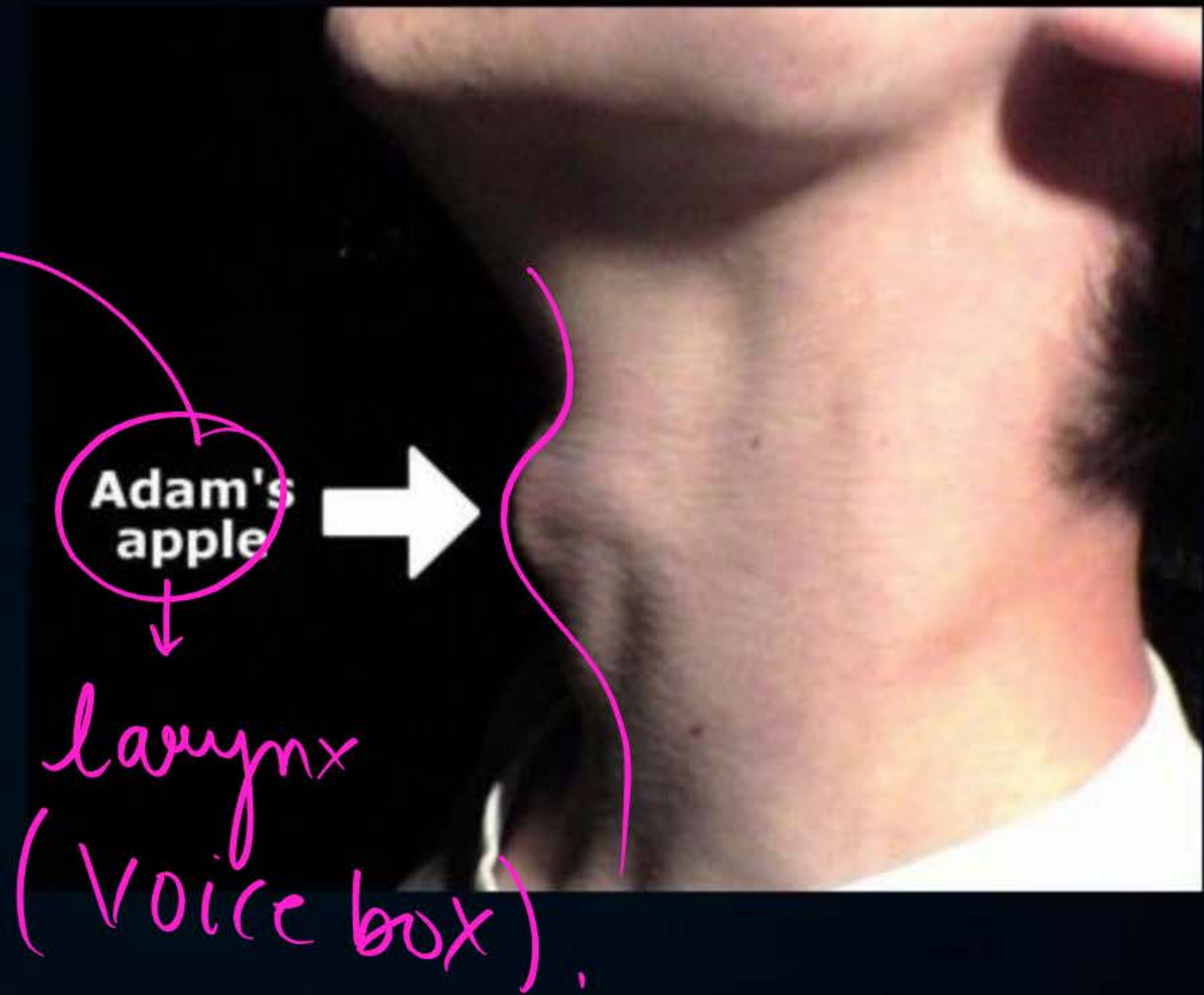


Inhalation





Enlarged larynx
during the time
of puberty.





This is why food doesn't
get into your 



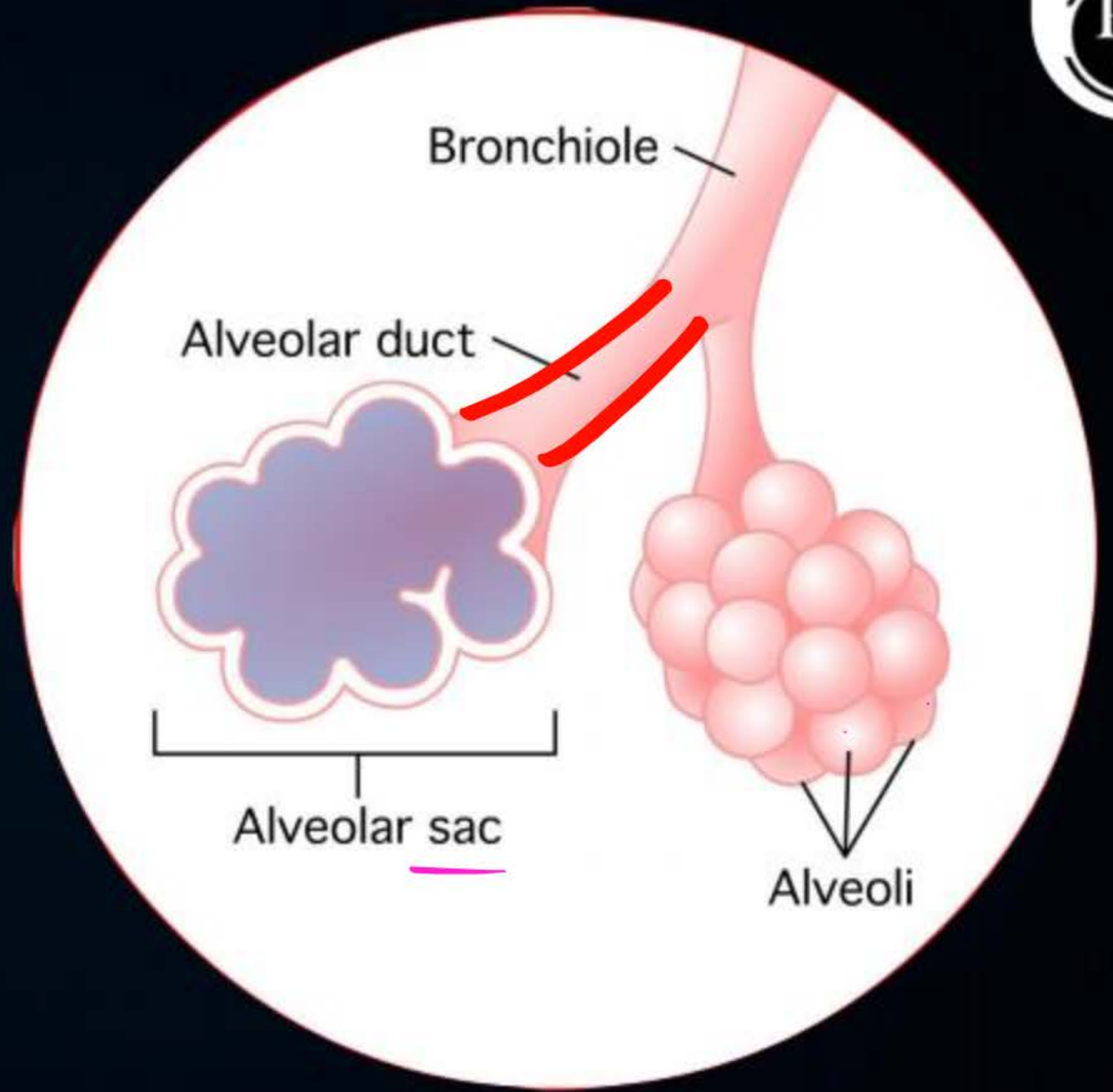
Epiglottis

flexible
* flap-like cartilage structure
which covers our windpipe
while swallowing the food.





Alveolar Sac

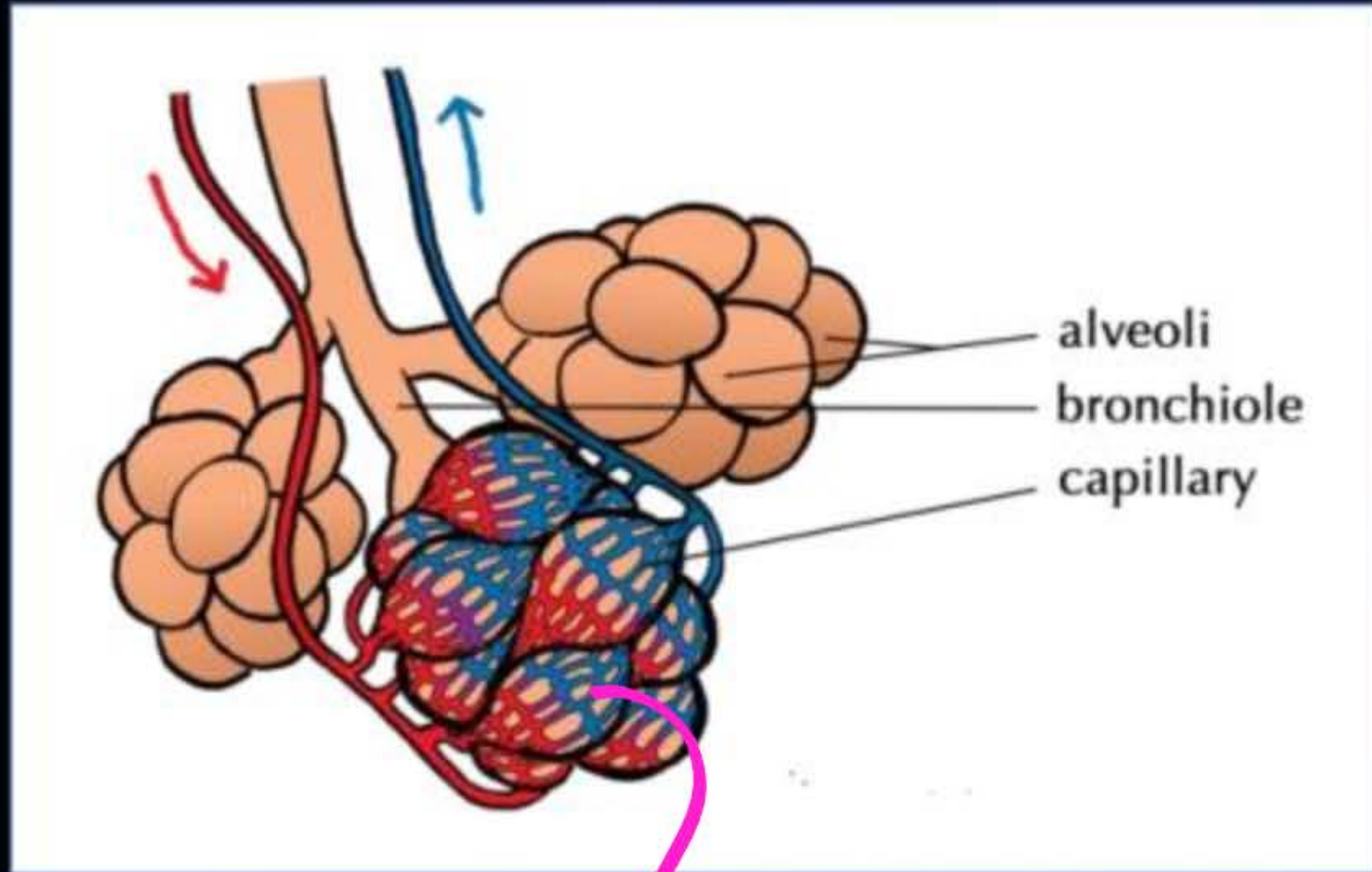




Alveoli : Site of Exchange of Gases



→ millions of alveoli



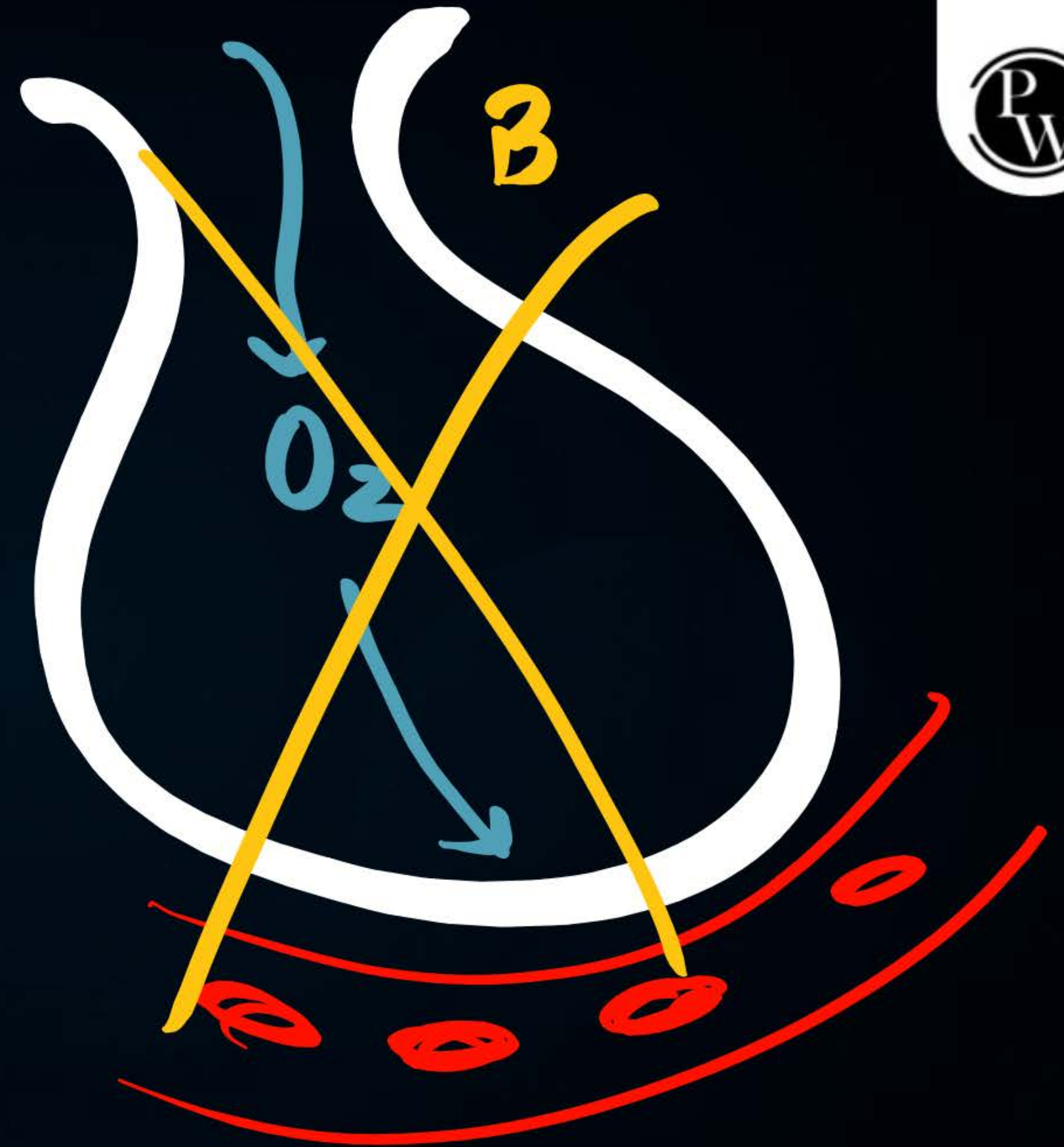
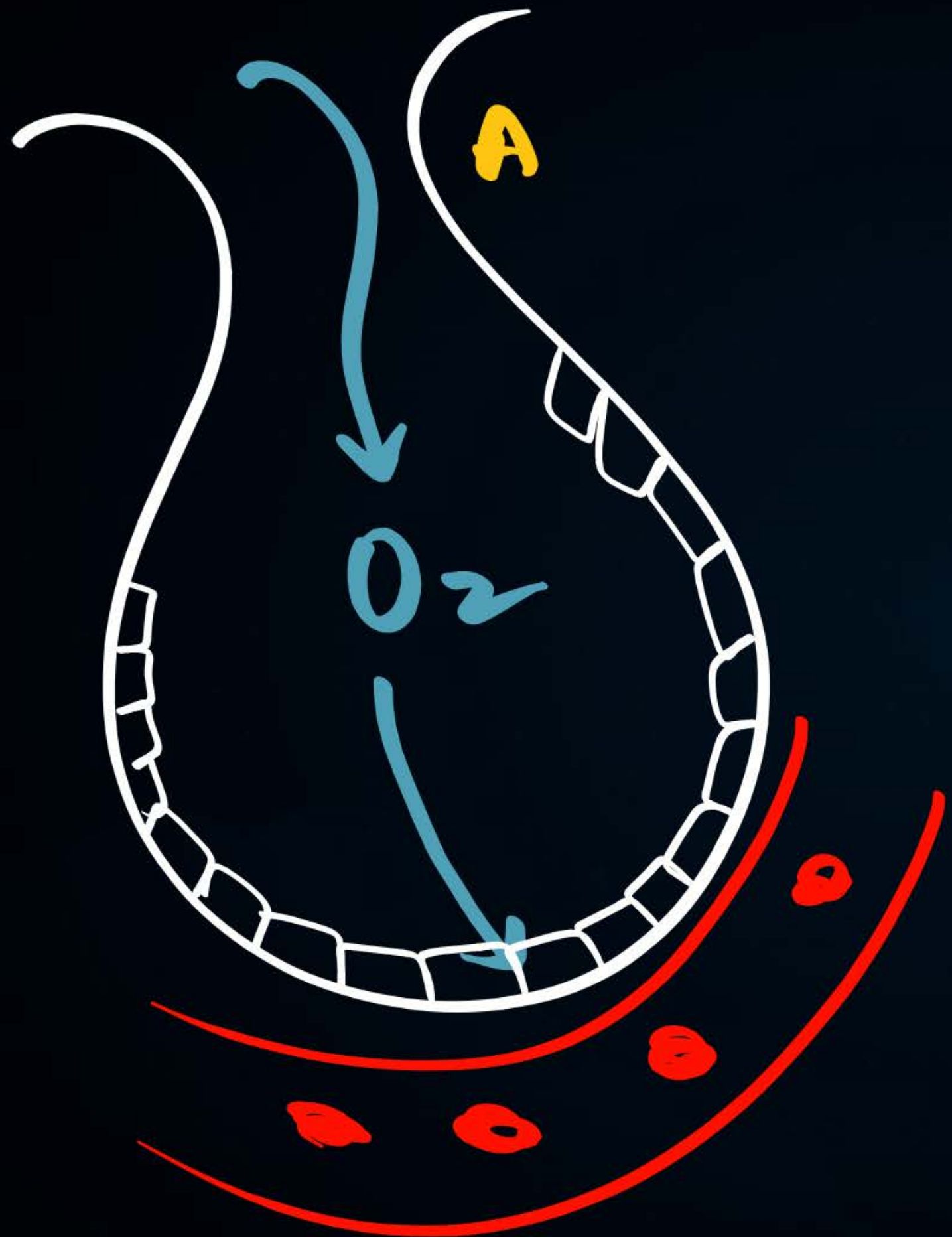
* Balloon-like structure
Expands when air enters.

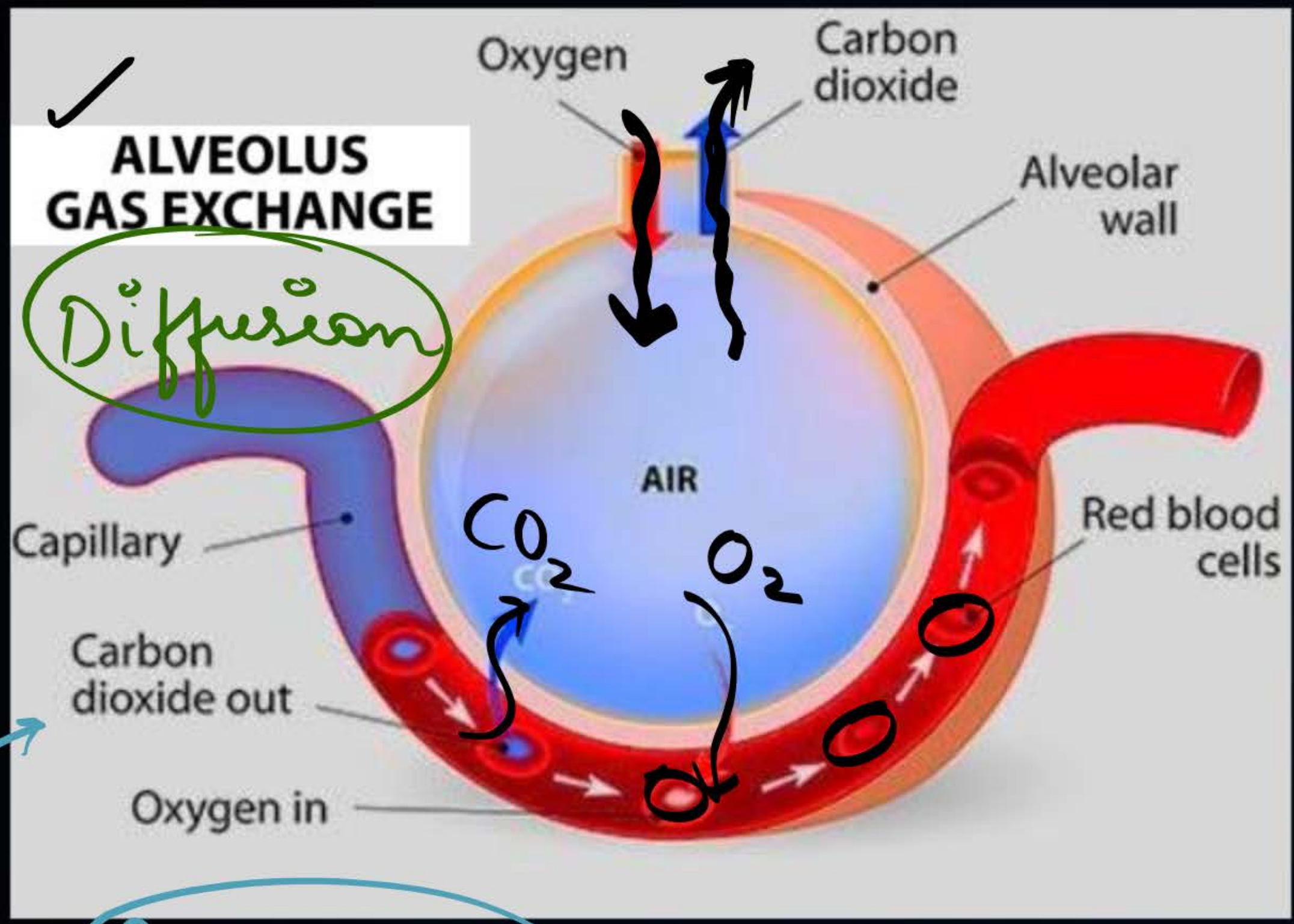
→ Surface area increases

* Walls are very thin (only one cell thick) for the exchange of gases

* Surrounded by blood (all thick) vessels.

→ Blood Vessels





✓
**ALVEOLUS
GAS EXCHANGE**

Diffusion

To all cells
of our body
Transport of O_2

→ Hemoglobin

Respiration

How does exchange of gases occurs in human body?



#notes

Inhalation

O_2



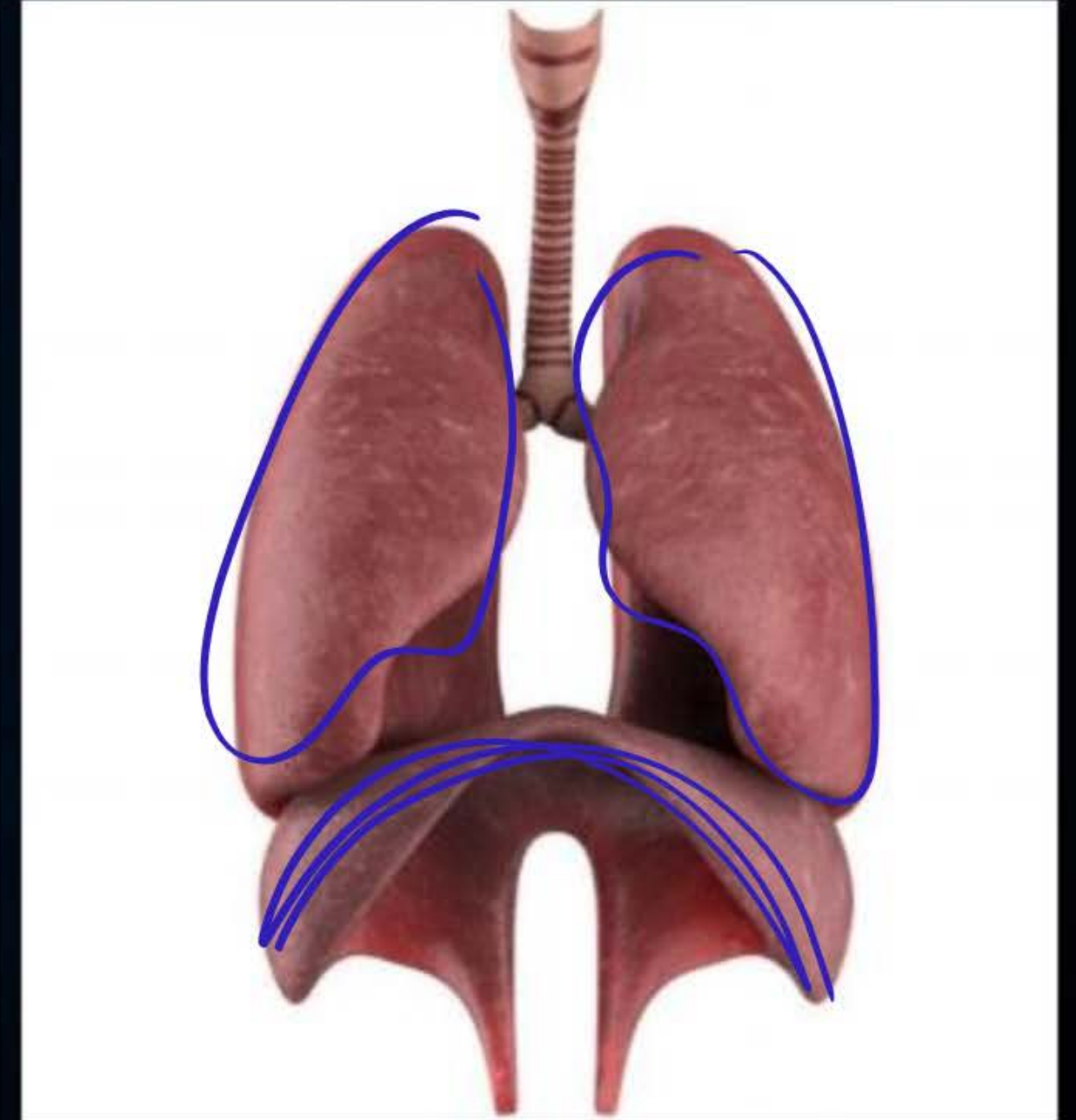
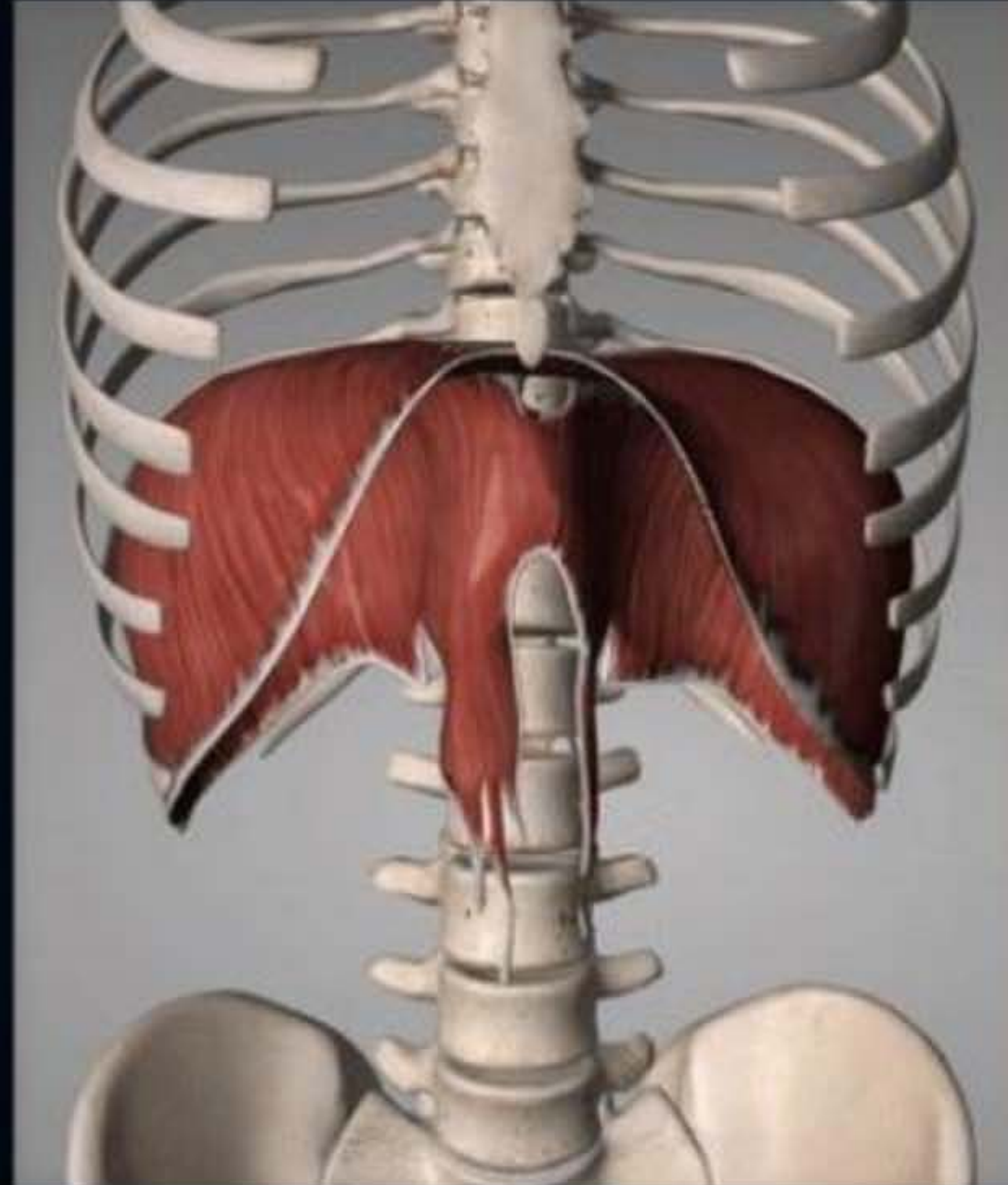
Exhalation

CO_2

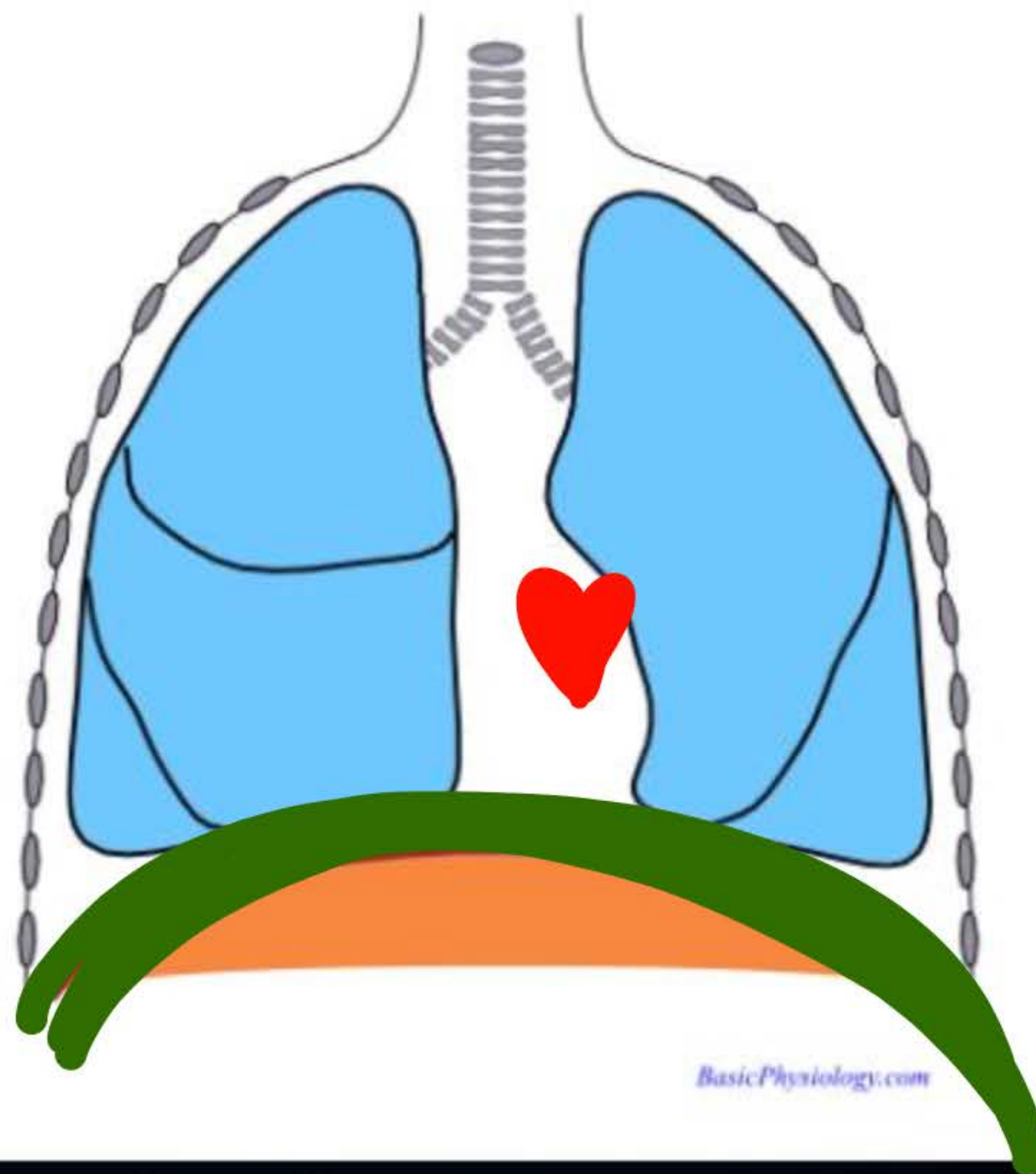
#Ch

CO_2

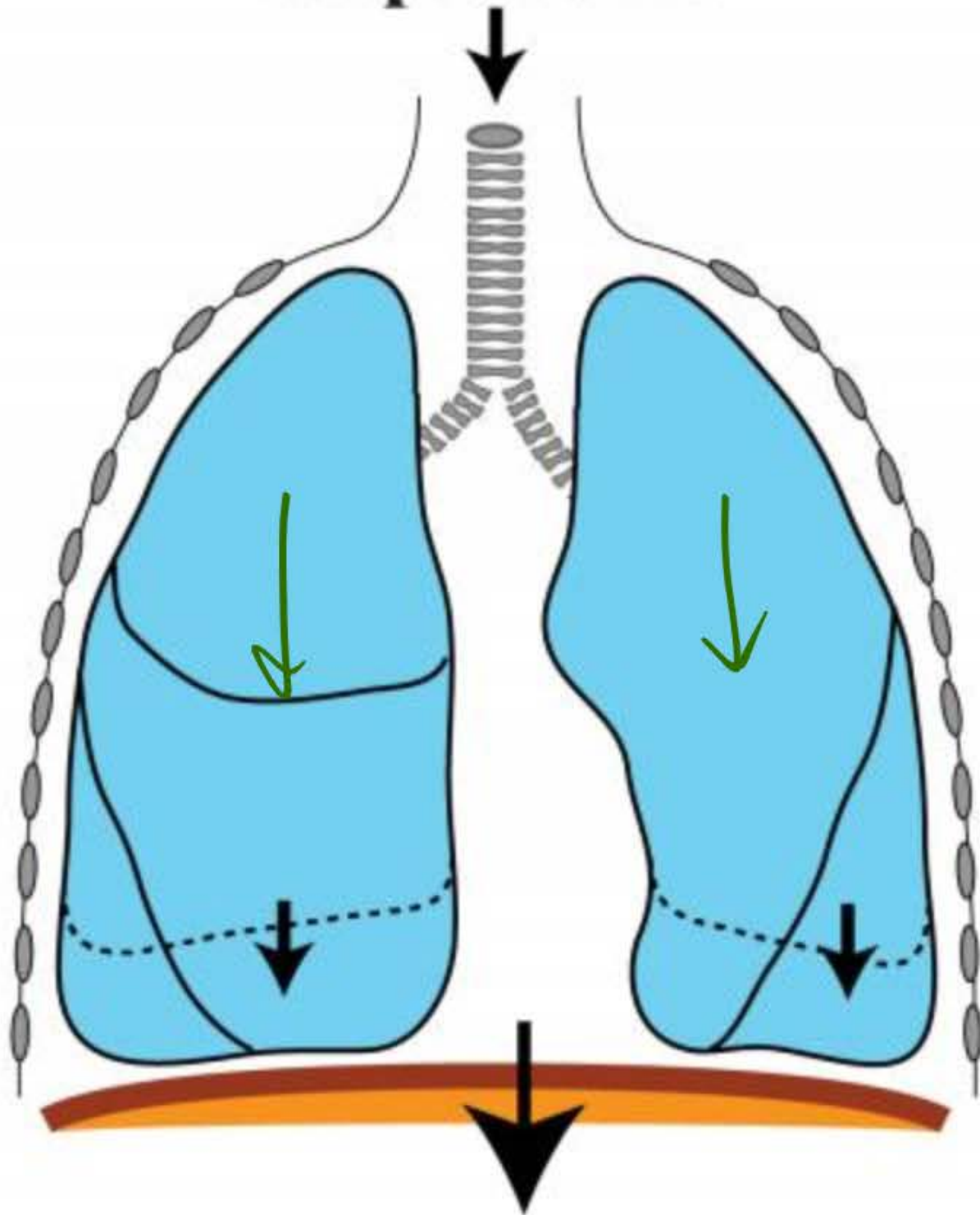
✓
Diaphragm: It is a thin skeletal muscle that sits at the base of the chest and separates the abdomen from the chest.



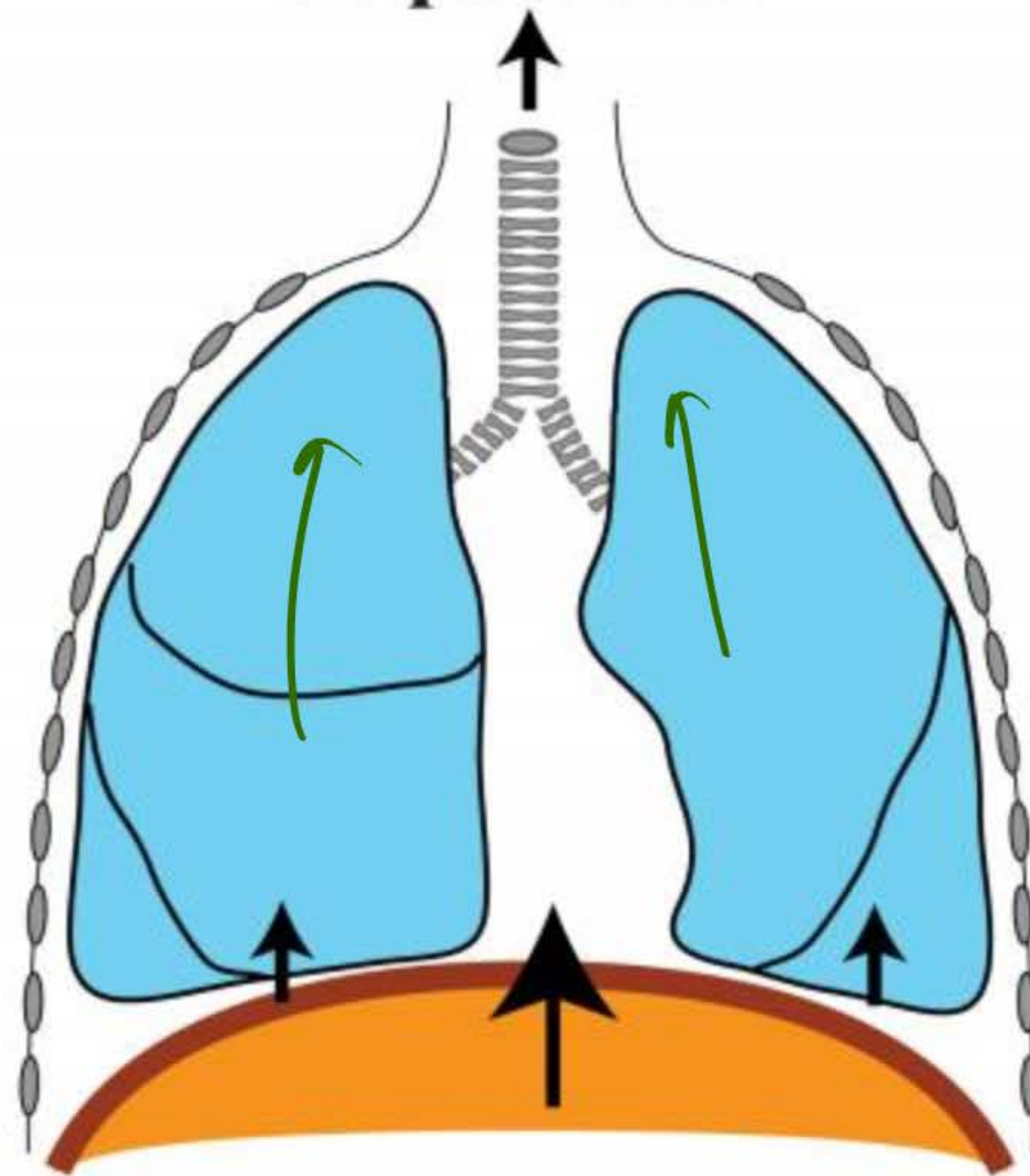
Inspiration



Inspiration



Expiration





Inhalation / Inspiration	Exhalation / Expiration
<ul style="list-style-type: none">The muscles of the diaphragm contract. ✓	<ul style="list-style-type: none">The muscles of the diaphragm relax. ✓
<ul style="list-style-type: none">The diaphragm goes downward and becomes <u>flat</u>. ✓	<ul style="list-style-type: none">The diaphragm goes upward and becomes <u>dome shaped</u>. ✓
<ul style="list-style-type: none">The ribs move upwards and outwards. ✓	<ul style="list-style-type: none">The ribs move downwards and inwards. ✓
<ul style="list-style-type: none">Air enters the lungs through the nose. ✓	<ul style="list-style-type: none">Air goes out the lungs through the nose. ✓



QUESTION



The site of exchange of gases in human lungs is:

A Trachea

B Bronchi

C Alveoli

D Larynx

QUESTION



Which of the following is supported by rings of cartilage?

A Trachea

→ Wind pipe

B Bronchi

C Alveoli

D Larynx

Human Haemoglobin

Red Colour

Hemoglobin

→ O₂ transport

Erythrocyte (RBC) → Red blood Cells

* Iron-Containing protein

* Bind O₂ & helps in its transportation

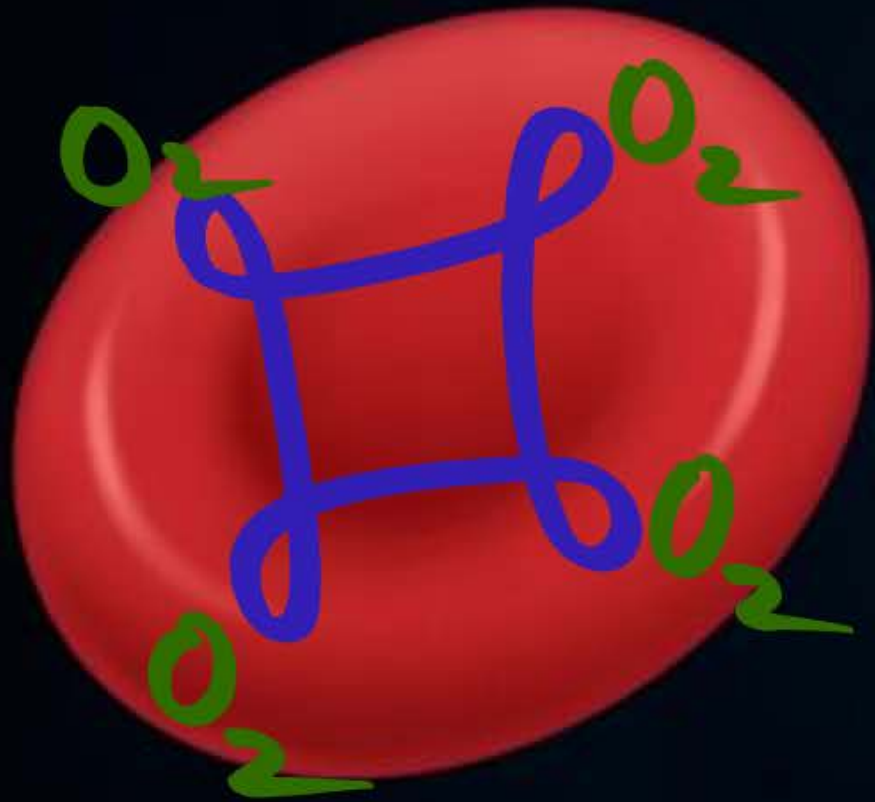
* Known as human respiratory pigment

Soluble gas

↓
dissolved form

Affinity of haemoglobin for various gases

CO > O₂ > CO₂



Lack of haemoglobin will lead to weakness



What
Do You
Think?



QUESTION



Which of the following is respiratory pigment for carrying oxygen in humans?

- A** Chlorophyl
- B** Hemoglobin
- C** Alveoli
- D** White blood cells

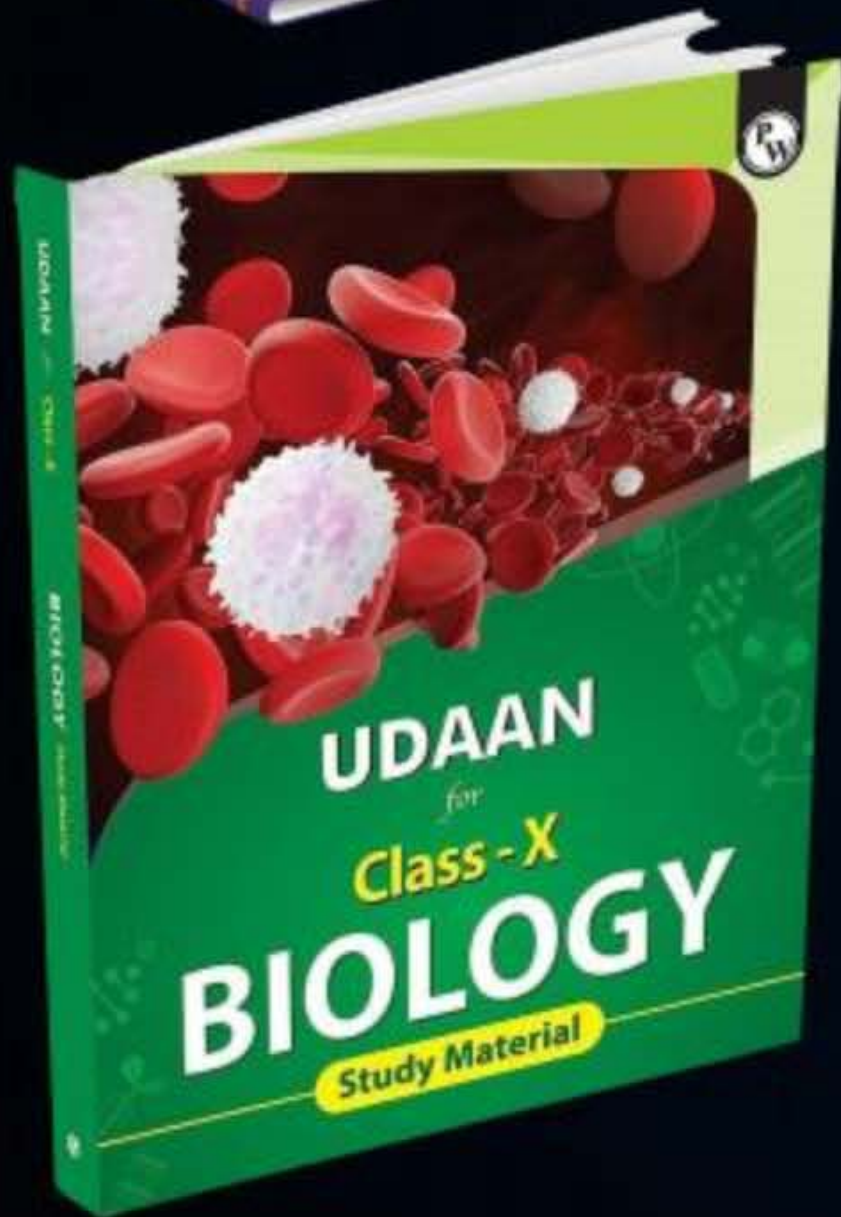


Homework



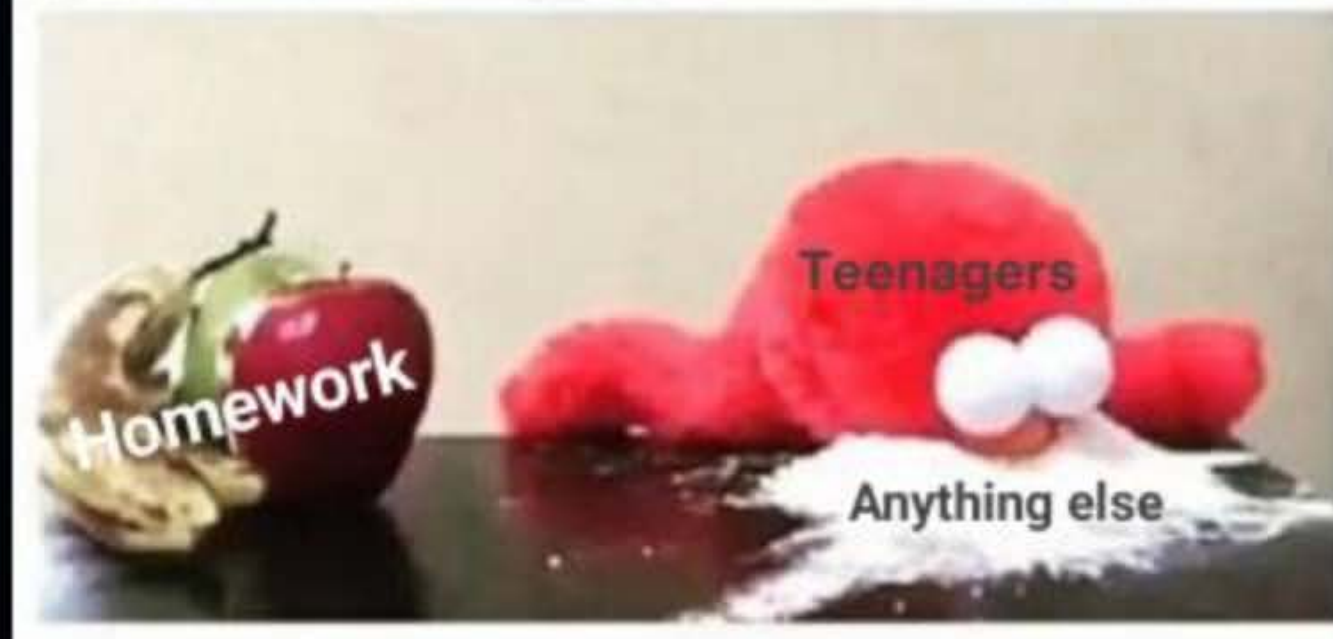
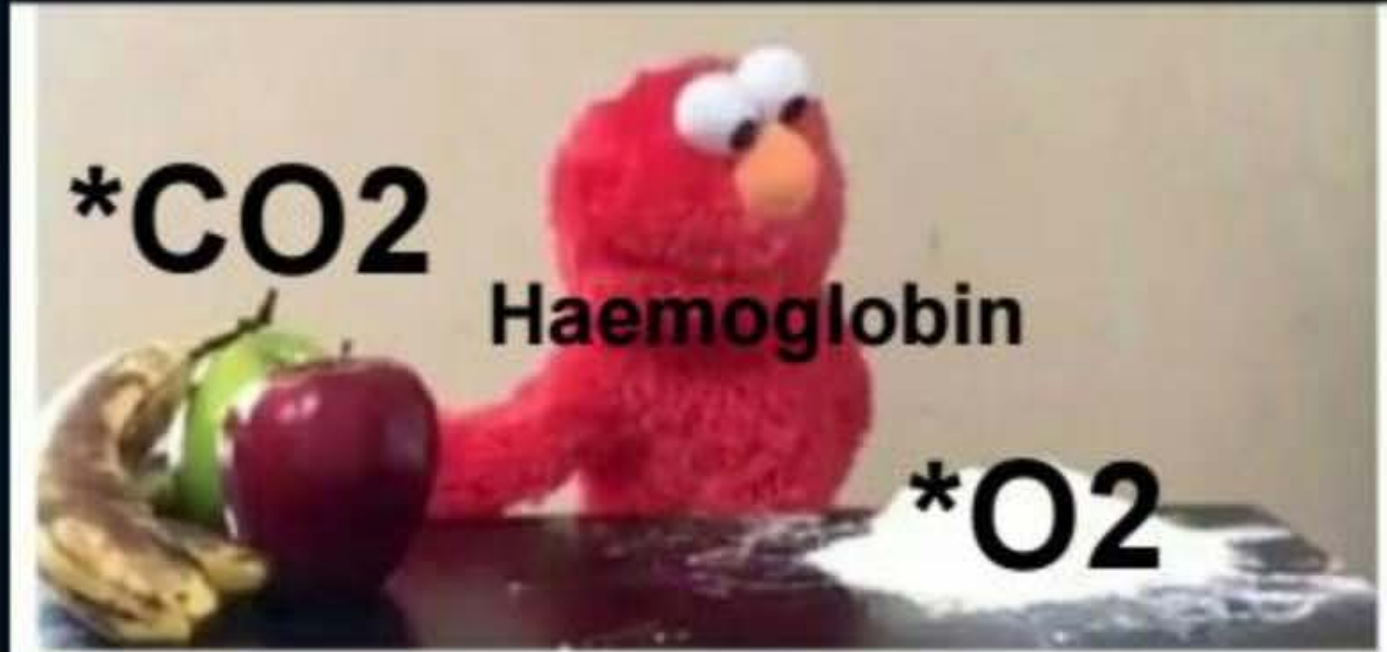
FROM PW MODULE
(Udaan - CLASS 10)

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Joke/Meme of the Day





THANK
YOU

