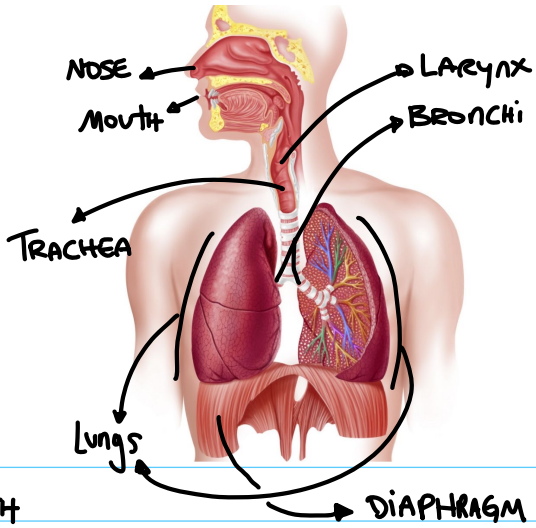
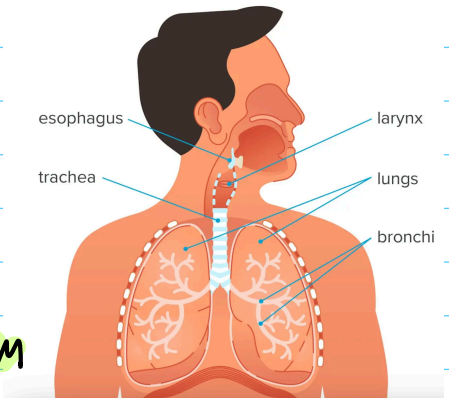
RESPIRATORY SYSTEM

THE RESPIRATORY SYSTEM is RESPONSIBLE for SUPPLYING YOUR BLOOD WITH OXYGEN AND REMOVING CARBON DIOXIDE FROM YOUR BLOOD.



BREATHING...

① AIR ENTERS THROUGH NOSE OR MOUTH
② TRAVELS THROUGH LARYNX (VOICE BOX) TO TRACHEA (AKA WINDPIPE)
③ THEN into YOUR LUNGS.



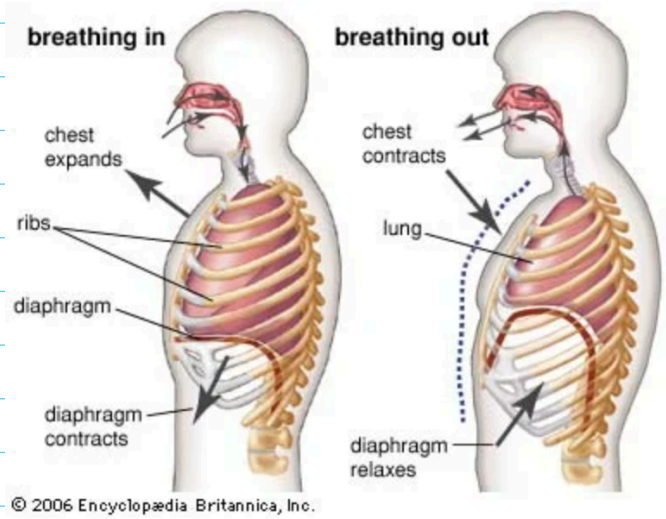
BREATHING is YOU MOVING AIR IN & THEN BACK OUT. (DVH)

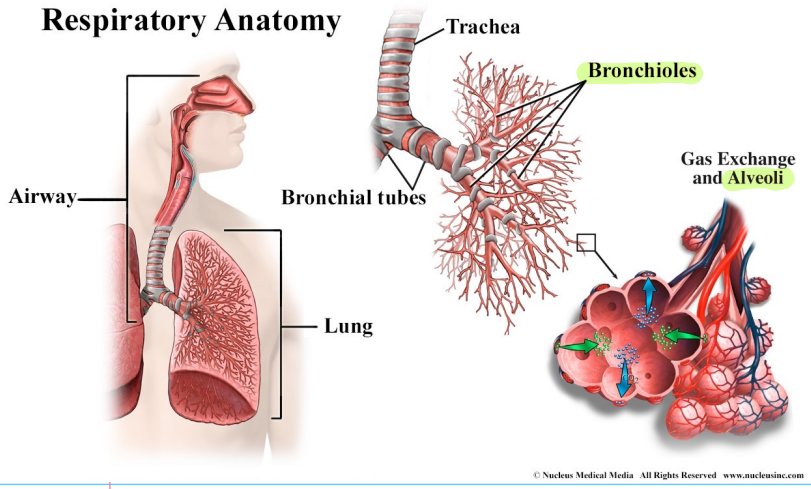
↳ this HAPPENS WHEN YOUR DIAPHRAGM MUSCLES CONTRACT (INHALE) AND RELAX (EXHALE)

- RELAX (EXHALE) → LOWERS PRESSURE in LUNGS
- CONTRACT (INHALE) → RAISES PRESSURE in LUNGS

WHEN YOU INHALE, YOU INCREASE CHEST & LUNG SIZE, PULLING AIR IN (LOW PRESSURE)

WHEN YOU EXHALE, YOUR CHEST & LUNGS SHRINK (MAKING HIGHER PRESSURE) FORCING AIR OUT.





- CELLS NEED O_2 to PROVIDE BODY W/ ENERGY.
  - ALSO NEED to dispose of their WASTE (CO_2)

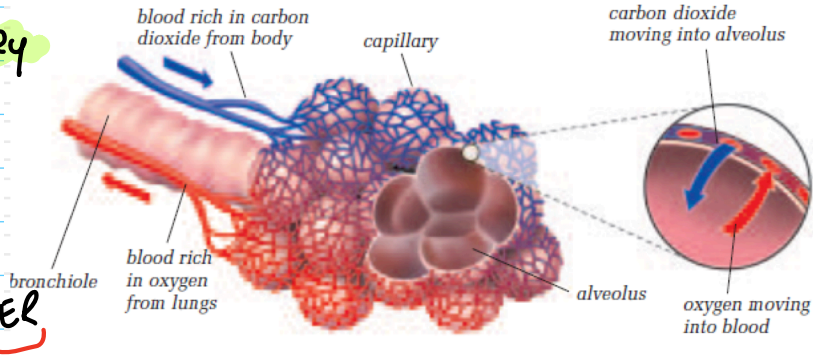
SO...

- YOU BREATHE in O_2 RICH AIR into LUNGS THROUGH TUBE-SHAPED BRONCHI

LINED W/ STRONG CONNECTIVE TISSUE to KEEP WALLS from COLLAPSING.

BRONCHI NARROW to BRONCHIOLES WHICH THEN NARROW to ±600,000,000 tiny, AIR filled SACS called ALVEOLI

ALVEOLI → COVERED in CAPILLARY
- A fine BRANCH of BLOOD VESSELS that CONNECT to BLOODSTREAM.
  - MADE of EPITHELIAL TISSUE → ONE CELL LAYER THICK

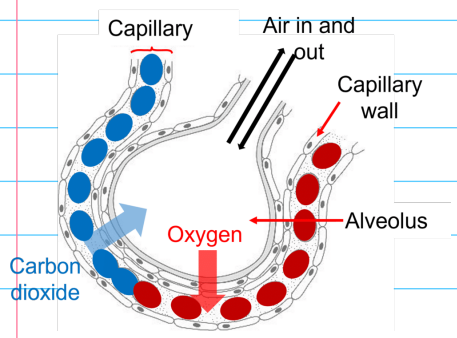


→ SHORTER DISTANCE BETWEEN O_2 RICH AIR & CO_2 RICH BLOOD
AKA → EASIER for DIFFUSION.

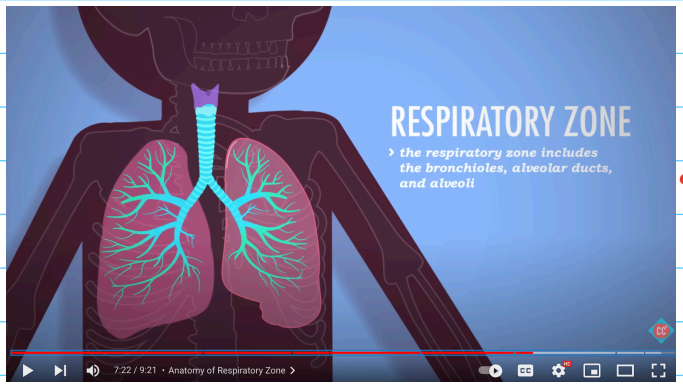
- THE AIR in THE ALVEOLI HAS A HIGH CONCENTRATION OF O_2 AND A LOW CONCENTRATION OF CO_2

- THE BLOOD in the CAPILLARY (SURROUNDING THE ALVEOLI) HAS A LOW CONCENTRATION OF O_2 AND A HIGH CONCENTRATION OF CO_2

SO... THE OXYGEN NATURALLY DIFFUSES INTO BLOOD & CARBON DIOXIDE DOES THE OPPOSITE



ONLY TAKES A FEW SECONDS FOR BLOOD TO TRAVEL THROUGH LUNGS → PICKING UP AS MUCH O_2 AS POSSIBLE, WHILE DUMPING CO_2 AS WASTE.



WANT TO WATCH? CHECK OUT THE CRASH COURSE VIDEO HERE