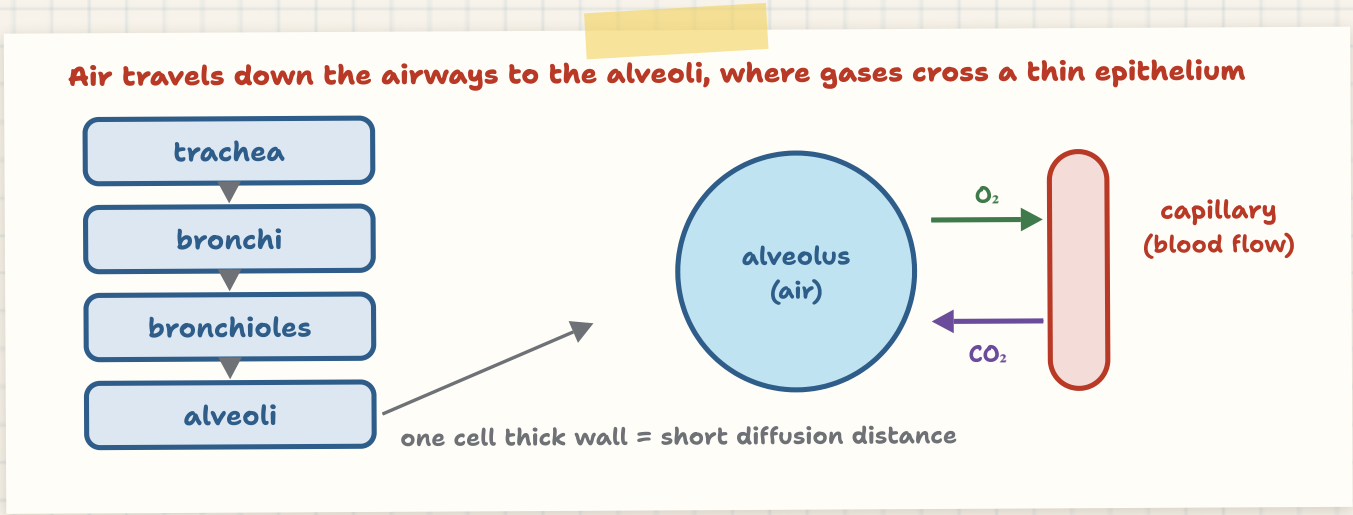
Human Gas Exchange System and Alveoli

Air passes down trachea, bronchi and bronchioles to the alveoli, which are adapted for gas exchange by diffusion.



Key terms

trachea	the windpipe, leading from the mouth and nose to the bronchi.
bronchus (bronchi)	one of two tubes branching from the trachea, one to each lung.
bronchiole	a smaller branch of a bronchus that leads to the alveoli.
alveolus (alveoli)	a tiny air sac at the end of a bronchiole, the site of gas exchange.
alveolar epithelium	a layer of flattened cells, one cell thick, giving a short diffusion distance.
steep concentration gradient	kept by blood flow through the capillaries and by ventilation of the alveoli.

I can...

- [ ] Gross structure of the human gas exchange system: alveoli, bronchioles, bronchi, trachea, lungs
- [ ] Essential features of alveolar epithelium as a gas exchange surface

EXAM TRAP

Learn the order trachea, bronchi, bronchioles, alveoli. For alveoli always give the feature and its effect: thin gives a short distance, many give a large area, blood flow keeps the gradient steep.

4 marks: what earns them

1. Air passes through the trachea, then bronchi, then bronchioles, to the alveoli (correct order)
   Not: wrong order; trachea to lungs to alveoli with no bronchi or bronchioles
2. Alveolar epithelium is very thin / one cell thick (squamous), so short diffusion distance
   Not: one cell thick with no consequence; thin so oxygen can get in
3. Many alveoli give a large surface area
   Not: large lungs; large surface area with no reference to alveoli
4. Dense capillary network / blood flow removes oxygen and brings carbon dioxide, maintaining a steep concentration gradient (breathing also replaces the air)
   Not: capillaries are thin alone; gas moves down a steep gradient with no mechanism

Remember

Trachea, bronchi, bronchioles, alveoli.

Thin wall, short distance.

Blood flow and breathing keep the gradient steep.

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