

11 Gas exchange and the lungs – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
Gas exchange	气体交换	_____
oxygen	氧气	_____
carbon dioxide	二氧化碳	_____
diffusion	扩散	_____
surface area	表面积	_____
blood supply	血液供应	_____
ventilation	通气	_____
alveoli	肺泡	_____
trachea	气管	_____
bronchi	支气管	_____
bronchioles	细支气管	_____

Recall

Gas exchange 气体交换 is how **oxygen** 氧气 gets into the blood and **carbon dioxide** 二氧化碳 leaves it, by **diffusion** 扩散.

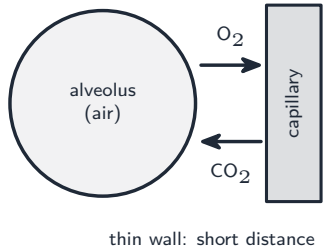
New ideas

Read these first, then do the Practice.

■ 1 A good gas exchange surface

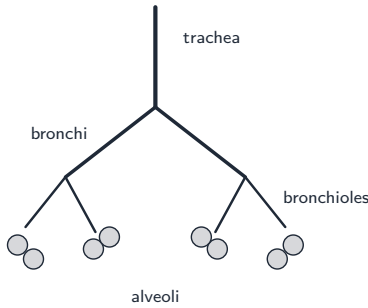
A good surface has: a large **surface area** 表面积, a **thin wall** (short distance), a good **blood supply** 血液供应, and good **ventilation** 通气 with fresh air.

The **alveoli** 肺泡 (tiny air sacs) have all four:



■ 2 The breathing system

Air travels in through these parts:



trachea 气管 (windpipe) → **bronchi** 支气管 → **bronchioles** 细支气管 → **alveoli**.

Watch out: a good gas-exchange surface has a **large surface area**, **thin walls**, a **good blood supply** and good ventilation — the alveoli have all four. Gas exchange is by **diffusion**, not active transport.

Practice

Try these in order.

11.1 What is *gas exchange*? [1]

11.2 Give two features that make the alveoli good for gas exchange. [2]

11.3 In which tiny air sacs does gas exchange happen? [1]

11.4 Put these in order, from the throat to the air sacs: bronchioles, trachea, alveoli, bronchi. [2]

11.5 Which gas diffuses from the alveoli into the blood? [1]

11.6 Challenge. Explain how **two** features of an alveolus make gas exchange fast. [2]