

The Respiratory System

Refer to the textbook pg. 91 - 95

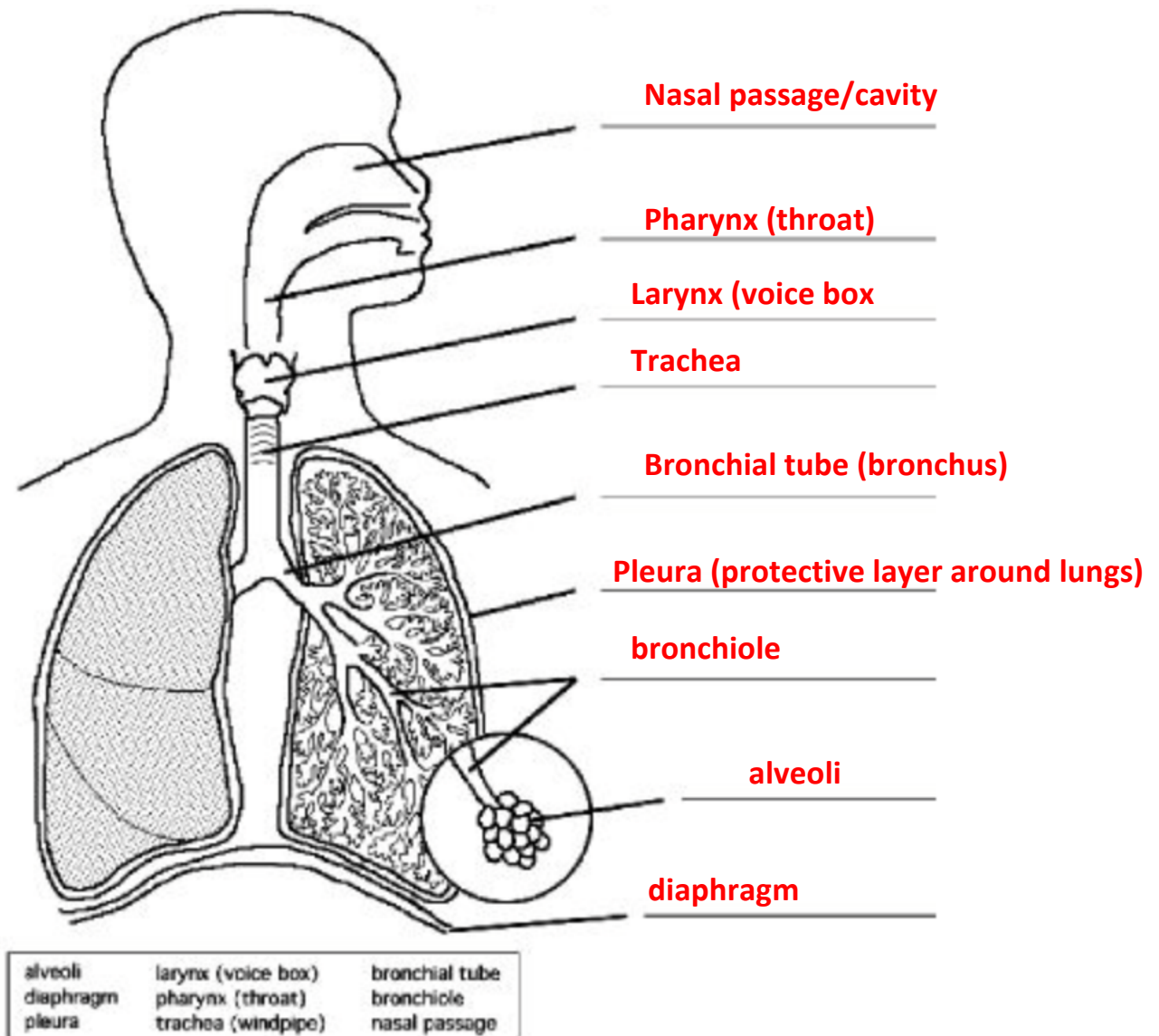
What is the main job of the respiratory system? **Providing oxygen to the body and removing carbon dioxide**

How much air is moved through the lungs each day, on average? **10 000 L**

Describe the passage of air from the atmosphere into the lungs using the following terms:
Mouth, Bronchus, Trachea, Pharynx, Nose, Alveoli

Nose/mouth → Pharynx → trachea → bronchus → alveoli

Label the following diagram of the respiratory system:



How does the body attempt to remove dust and other irritating materials from the respiratory system? **Cilia produce mucus and have cilia (hairlike structures) to filter and move substances out of the system**

How is the trachea supported? **Ring of cartilage**

What happens during gas Exchange? **Oxygen diffuses from the alveoli into the blood capillaries and carbon dioxide diffuses from the alveoli into the blood capillaries**

Alveolus (alveoli) – **tiny sac of air in lungs surrounded by capillaries where gas exchange occurs**

Alveoli and Capillaries have **very thin** walls. This helps make gas exchange possible.

The concentration of oxygen in the blood that flows through the lungs is always **lower** than the concentration of oxygen in the alveoli. Why is this important? **Allows for diffusion which does not require energy**

The process of bringing air into the lungs is called **inhalation** while the process of pushing air out is called **exhalation** The entire process is called **breathing / respiration**

How is air moved into and out of the lungs? (Pg 92) **Muscles of the ribs expand the rib cage & diaphragm pulls down to bring air into the lungs. The rib muscles (intercostal muscles) and diaphragm decrease the volume/space and push air out of the lungs.**

Breathing is an involuntary process controlled by a part of the brain which detects the concentration of **carbon dioxide** in the blood. We can override this for a short period of time. If someone forcefully held their breath, what do you think would happen? (Not in the textbook) **faint – body's way of forcing you to breathe again**

Other animals may have drastically different methods of gas exchange based on their habitat and environmental conditions. How does gas exchange occur in fish? **Gills have many capillaries which are exposed to water, oxygen diffuses directly into capillaries and CO₂ out. Open & close mouth to create flow of water over gills.**

What is Tuberculosis? What are the symptoms? **Infectious disease caused by bacteria that grows in the lungs. Fever, cough, weight loss, tiredness & chest pain**

What forms of cancer can be attributed to smoking? **Mouth, esophagus, larynx, pancreas and bladder**

There was an international epidemic of a disease known as SARS in 2003. What does SARS stand for, and what are its symptoms? COVID is also a form of the SARS virus. **Severe acute respiratory syndrome, fever, shortness breath, dry cough, sore throat, headache, muscle pain & exhaustion.**

Homework: pg. 95 #1-6