Unit 4: Anatomy

Part 1: The Respiratory Unit

Why do we need to breathe?

1. Brings oxygen to the cells so that cells can break down glucose to make energy with oxygen present. (38 ATP with oxygen vs 2 ATP without oxygen).

2. Gets rid of waste CO2 from the cells/ bloodstream.

3. Gets rid of extra water vapour.

4. Warms the outside air to 98F or 35C.

5. Removes dust particles with hairs so dust does not go into the lungs.

Parts of the breathing system:

1. Nasal cavity: Fns:

A. filters out dust by nose hairs and mucus.

B. warms incoming air to body temperature by blood vessels in the nose.

C. moistens the air.

2. Pharynx:

It is the back of the throat where nose and mouth join.

Fns:

A. Hairs trap dust.

B. The tonsils are part of the immune system. You get rid of germs with this.

3. Epiglottis – flap of tissue that covers trachea when you swallow so that food goes to stomach and NOT to lungs.

4. Larynx (voice box) – contains a pair of thin elastic ligaments (vocal cords).

- located at the back of the throat, just below the larynx.

- when air is forced up from lungs, through larynx, vocal cords vibrate = SOUND.

- different sounds produced and controlled by adjusting the position and muscular tension of the vocal cards

->Males: larynx increases in size after puberty – vocal cords vibrate at a lower frequency which produces a lower voice

5. Trachea = wind pipe.

- connects throat to lungs.

- 12 cm long.

- is in front of the esophagus.

- rings of cartilage to hold it open all the time.

- lined with cilia (hairs) and mucus – Fn: get mucus and dust out of the lungs.

\* Smoke kills the cilia. Stop smoking = cilia grows back.

6. Bronchi tubes:

- 2 tubes – one goes to the left and one to right chest cavity.

- permanently held open with cartilage rings.

7. Bronchioles:

- (similar to small branches in a bundle of grapes).

- do NOT have cartilage holding them open.

- can contract.

8. Alveoli:

- tiny sacs that are very, very thin.

- where oxygen diffuses INTO the blood stream.

- where carbon dioxide diffuses OUT of the blood stream.

- 300 trillion.

- shaped like little grapes.

- stretchy.