

# FINAL EXAM Study Guide Human anatomy Bio 121

## Chapter 24 Respiratory System:

- Know the components of the upper and lower respiratory tract.

- upper: nasal cavity, sphenoidal sinus, pharynx, frontal sinus, nose
- lower: larynx, trachea, bronchus, bronchioles

- Know the functions of the respiratory system.

- provides an area for gas exchange between the air and the blood
- protects the respiratory surfaces from dehydration
- provides protection against invading pathogens
- produces sound involved in verbal communication
- assists in regulation of blood volume, blood pressure, and body fluid pH

- Know which types of cells make up the respiratory epithelium, where the different types are located and what are their functions.

- pseudostratified ciliated columnar cells: more mucus in upward manner so debris can be coughed out (everywhere except pharynx, smaller bronchi and alveoli)

- mucus cells: produce mucus so inhaled debris will get stuck and not enter the lungs

- stratified squamous cells: provide protection against abrasion (pharynx)

- What are vibrissae and what do they do?

- are nasal hairs that block some of the inhaled debris

- Know the pathway of that air takes when it enters the body and know what happens to it as it passes through different regions of the pathway.

- air enters external nares

- passes by nasal vestibule

- enters nasal cavity

- flows in around nasal conchae

- as air swirls in conchae 1) debris gets stuck in the mucus and 2) air warms a bit before entering the trachea

- air enters the internal nares

- air enters the nasopharynx area

- What are the regions of the pharynx?

- nasopharynx

- oropharynx

- laryngopharynx

- What are the cartilaginous and ligamentous components of the larynx, which ligaments are extrinsic and intrinsic, and what is another name for the laryngeal prominence?

- laryngeal prominence: Adam's Apple
- thyrohyoid ligament: extrinsic
- cricothyroid ligament: intrinsic
- cricotracheal ligament: extrinsic
- vestibular ligament: intrinsic

- What features of the vocal cords (vocal folds) affect the pitch of a person's voice, what happens to them during puberty; and what other features (not of the vocal cords) are used to amplify sounds and produce definite sounds?

- diameter, length, and tension of vocal cords affect pitch
- during puberty: become longer and thicker (deeper voice)
- sinus cavities are used to amplify sound
- movement of lips, tongue, and cheeks produce definite sounds

- What are the features of the trachea (cartilage, ligaments, and linings)?

- 2.5cm, "C" shaped rings connected by annular ligaments
- lined with respiratory epithelia, lamina propria, submucosa.

- What are the benefits of having C-shaped cartilages on the trachea when swallowing food?

- can change the diameter so it is easier to swallow food

- Where are the trachealis muscles located, and what do they do?

- used to control diameter of trachea by bringing the ends of the C's together. Important for swallowing food, allowing it to flex and slide bolus down.

- How do the left and right primary bronchi differ?

- right primary bronchi is steeper and larger in diameter than left.

- If someone aspirated a foreign object, where would it most-likely end up?

- Right lung

- What are the lobes and fissures of the left and right lungs?

- Left: superior and inferior lobe, oblique fissure

- Right: superior and inferior lobe, middle lobe, oblique and horizontal fissure

- What structures are located at each hilum on the lungs and what combination of these structures is called the **root**?

- at hilum there is a primary bronchi and exit and entrance for pulmonary blood vessels

-combination of bronchus, artery, and vein is called the root

- What are the branches of the bronchi called, which have rings, plates or lack cartilage?

- primary bronchi have rings of cartilage
- secondary and tertiary have cartilage plates
- bronchiole does NOT have any cartilage

- Which type of bronchi end in a bronchopulmonary segment and how many segments are in the left and right lung?

- tertiary bronchi end up in bronchopulmonary segment
- right: 10                      left: 8 or 9

- What division of the autonomic nervous system controls bronchodilation and bronchoconstriction (parasympathetic or sympathetic)?

- bronchodilation is controlled by sympathetic stimulation
- bronchoconstriction is controlled by parasympathetic stimulation

- What structures/tissues surround each alveolus and what do they do?

- capillaries surround alveoli
  - capillaries drop of CO<sub>2</sub> and pick up O<sub>2</sub>
- elastic tissue surrounds alveolus too
  - maintains the shape and position of each alveolus during inhalation and exhalation

- What are the three cells that are found in the alveoli and what are their functions?

- type I pneumocytes: make up the walls
- type II pneumocytes: secrete surfactant which prevents alveolar collapse
- alveolar macrophages: wander around phagocytizing particulate matter

- What is surfactant, what does it do. Surfactant can be produced artificially and is commonly given to what types of patients?

- surfactant prevents alveolar collapse
- typically given to premature babies since their lungs are not fully developed and helps open alveoli up

- What are the pleural sacs, what does pleural fluid reduce, what is pleurisy and what happens if the pleural sacs are punctured?

- pleural fluid reduces friction when the lungs move upon inhalation and exhalation.
- pleurisy is a condition in which the membranes produce TOO MUCH pleural fluid or the membranes adhere to the thoracic wall thereby resulting in pain upon inhalation and exhalation. If a hole is poked in it the lung will collapse.

- What are the two primary muscles of inhalation?