

Free respiratory system essay example

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In the process of breathing, a molecule of oxygen has to pass through upper respiratory tract and then lower respiratory tract. The upper respiratory tract consists of air passages of the nose, nasal cavity, pharynx, larynx and upper trachea. The lower respiratory tract includes the parts present within the chest cavity namely lower trachea and lungs. The oxygen (from air) enters the respiratory system through nose. Nose is made of bone and cartilage covered with skin and has two nostrils divided by a bony septum. The nostrils are lined with fine hair which blocks the entry of dust and bacteria into the respiratory system. The nasal mucosa lined with ciliated epithelium having mucus-producing goblet cells. The oxygen is warmed and moistened as it passes through the nasal cavities. At the same time, the bacteria and dust are trapped by the mucus and swept towards the pharynx. Next, the oxygen reaches pharynx, a muscular tube behind nasal and oral cavities. Anatomically, pharynx can be divided into nasopharynx, oropharynx and laryngopharynx. The uppermost nasopharynx is a passageway for air only but the remainder of the pharynx serves as passage for both air and food. When the oxygen passes through laryngopharynx, it enters the larynx. Larynx is made of nine pieces of cartilage connected by ligaments. The cartilages keep the larynx open all the times and prevent its collapse. After larynx, the oxygen passes through trachea and bronchial tree. Trachea is 4-5'' long and has ciliated epithelium lining having goblet cells. It branches into right and left primary bronchi that further divide into secondary bronchi leading to the lobes of each lung. The branching of bronchial tubes is called bronchial tree and the terminal branches are known as bronchioles. After bronchioles, oxygen reaches the lungs located on either side of the heart in

the chest cavity. The functional units of lungs are the air sacs called alveoli. There are millions of alveoli in each lung surrounded by a network of pulmonary capillaries. The walls of both the alveoli and the capillaries are made of simple squamous epithelium; therefore, there are only two cells between the oxygen in the alveoli and the blood (hemoglobin) in the capillaries. Finally, the oxygen dissolves in the thin layer of fluid present in the alveoli and diffuses through the wall (Scanlon and Sanders 342).

Work cited

Scanlon, V. C., and Sanders, T. Essentials of Anatomy and Physiology Fifth Edition. Philadelphia: F. A. Davis Company, 2007. Print.