The Respiratory System & the Circulatory system



To \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ all the individual \_\_\_\_\_\_\_ throughout your body with the \_\_\_\_\_ around you, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system work together.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the respiratory system is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, while the circulatory system \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ those \_\_\_\_\_\_\_\_ throughout the body. How do the gases pass from one system to the other? Look for the answer where the two systems come into closest contact – among the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_\_\_.

After air \_\_\_\_\_\_\_\_\_\_\_\_ the nose, it \_\_\_\_\_\_\_\_\_\_\_\_ to the lungs through a series of smaller and smaller \_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is about 20 mm in diameter. It divides into a right and left \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, each about 12 mm across. Each bronchus tube branches into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of small, narrow \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, with diameters of 0.5 mm. Finally, the bronchioles divide and end in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of tiny \_\_\_\_ \_\_\_\_\_\_\_\_ called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which have a diameter of only 0.2 mm.



The circulatory system also involves a series of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Like the air tubes of the respiratory system, blood vessels \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into smaller and smaller channels. The three main types of blood vessels are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the \_\_\_\_\_\_, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Each alveolus (alveolus is the singular of alveoli) is surrounded by a \_\_\_\_\_ of capillaries. It is here, between these delicate tubes, that gases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Oxygen and carbon dioxide pass back and forth between the \_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (which are part of the respiratory system) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (which are part of the circulatory system).

We have already learned how substances move into and out of cells by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Diffusion also causes oxygen to pass from the alveoli the capillaries. The air in your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as the air in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which is about 20% oxygen. This is a much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concentration of oxygen than the concentration found in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in your capillaries. The oxygen first dissolves in a thin film of moisture covering the walls of the alveoli. Then it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through the thin \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ walls into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Carbon dioxide diffuses in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ direction. Air normally contains only a very \_\_\_\_\_\_\_ concentration of carbon dioxide, about 0.03 percent. Blood in the capillaries carries all the dissolved carbon dioxide collected from cells throughout the body. (Remember that C02 is a waste product of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.) This gas therefore moves from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When you exhale, you release the carbon dioxide and water vapour into the air.