

Physiology presentation



**ASSIGN
BUSTER**

" Physiology" A deep co-relation is present between all the organs of body. Normal functioning is impaired if any one of them is out of order. The present article highlights the co-relation between digestive, circulatory and respiratory systems. Introduction Digestion encompass the intake of food followed by physical and chemical breakdown of food, absorption and transportation to every cell through blood. The physical process of digestion begins with mastication an amalgamation of saliva (ptyalin enzyme) to treat the food chemically, it then reaches cardiac part of stomach through oesophagus. Stomach has hydrochloric acid, it kills the accompanying microbes and acid pH activates protein digesting enzymes for churning of food, chemically altering the food as protein breakdown commences, forming chyme. Chyme travels to small intestine, where the pH is alkaline to activate enzymes for breakdown of proteins, carbohydrates and fats, liver secretes bile for the emulsification of fat, while pancreas secrete insulin and glucagon for controlling blood sugar level converting from chyme to chyle. Numerous microvilli of the small intestine, lined by blood vessels absorbs the food as now it is in simpler forms namely monosaccharide, amino acids, fatty acids and glycerols. The refuse moves to large intestine (water absorption takes place) for expulsion. Respiration is done through nose, pharynx, trachea, bronchia, bronchioles and alveoli. It encompasses exchange of oxygen and carbon-di-oxide in lungs converting the deoxygenated blood collected by veins to oxygenated blood to be circulated back to body tissues through arteries. The exchange of gases mainly takes place in alveoli and in capillaries of numerous tissues. Blood vascular system plays an imperative role in transporting food as well as oxygen to all the body parts and eliminating carbon-di-oxide from each tissue. Oxygen is essential to burn

carbon of the absorbed food to provide energy thereby releasing carbon-dioxide. The exchange of oxygen and food takes place through the numerous capillaries of arteries while the collection of waste cells and carbon-dioxide is performed by capillaries and thereby veins, venous blood is then carried back to the right auricle of the heart, passed to the right ventricle which pumps this blood to pulmonary artery, carrying it to lungs for exchange of carbon-dioxide with oxygen. The oxygenated blood is then carried from lungs by pulmonary vein to the left auricle of the heart, it is passed down to left ventricle and is pumped to all the tissues and cells of the body.

Conclusion The present article concludes the significance of inter-relation between the digestive, respiratory and circulatory systems. It is imperative to understand if at any step, co-relation is hampered, it escorts fatal consequences. It is therefore essential to breathe pure and non-toxicated air, eat healthy food to enable effective digestion as these two together influence the kind of blood being supplied to body tissues for their proliferation and to keep the body healthy. It is essential to stay in a pollution free environment and avoid adulterated food items incorporated with trans-fat and other chemically treated fruits and vegetables to have a perfect food and oxygen supply to the body tissues to prevent untimely apoptosis. **References** Ober, W. C., Garrison, C. W., Silverthorn, A. C., Silverthorn, D. U. (2000). Human Physiology: An Integrated Approach. 2nd Edition. Publication Benjamin-Cummings Publishing Company; Organs of Digestion, Circulation and Respiration. Available at [http://www. oldandsold. com/articles06/strength-4. shtml](http://www.oldandsold.com/articles06/strength-4.shtml) [Accessed on 21st February 2011].