Topic: HUMAN **PHYSIOLOGY**

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PHYSIOLOGY

INTRODUCTION TO HUMAN PHYSIOLOGY

Physiology is the study of different organ systems and the functions of the human body. As small children we begin to wonder what enables people to move, how it is possible for them to talk, how they can see the world and feel the objects around them, what happens to the food they eat, how they derive from food the energy needed for exercise and other types of bodily activity, by what process they reproduce so that life goes on. All these and other human activities make up life. Physiology attempts to explain them.

The various organs and systems of the human body

They are the skeletal system, muscular system, nervous system, circulatory system, respiratory system, the gastrointestinal system, excretory system and the reproductive system.

The skeletal system includes the bones of the skull, face, vertebral column, ribs and sternum, shoulder girdle and pelvic girdle.

Muscular system consists of various muscles that are attached to the bones with the tendons. Muscles move the limbs and other parts of the body in directions allowed by the ligaments.

The nervous system is composed of the brain, the spinal cord and the peripheral nerves that extend throughout the body. The nervous system controls many of the bodily activities, especially that of the muscles. The nervous system is composed of two portions ***-the sensory portion and the motor portion.*** The sensory portion relays information to the brain through the senses of sight, hearing, smell, taste and feel. Motor portion relays information from the brain to the muscles to react accordingly.

Circulatory system is composed mainly of the heart and blood vessels. The blood acts as a transport system for carrying substances. The circulatory system carries nutrients to the tissues and carries waste products away from the tissues. A special accessory circulatory system known as the lymphatic system takes care of dead tissues and dead bacteria.

The respiratory system consists of the air passages and the lungs. Air moves in and out of lungs by contraction and relaxation of the respiratory muscles. The exchange of gases namely O2and CO2 takes place via the lungs.

The gastrointestinal system begins from the mouth where food after being swallowed enters the stomach, then the small intestine and the large intestine, finally to be excreted as faeces through the anus. During the passage of food

through the gastrointestinal tract, food is digested and nutrients are absorbed. **Excretory system** comprises of the kidneys which help in removing unwanted substances from the blood. Kidneys also regulate concentrations of ions such as sodium and chloride, potassium, magnesium and many other substances. **The reproductive** systems of the male and female are essential to provide for life's reproduction. The female provides the egg (ovum) which has to be fertilized by a sperm from the male, from which a new human being develops. Thus, it should be obvious that no single part of the human body can live by itself. The human animal is a sensing, thinking and motile organism which can adapt itself to its surroundings. In the framework of the organs and tissues, there are about 75 trillion individual cells, each one of which is a living structure. The next chapter will describe the structure and function of the cell that makes the human body possible.