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THE GOLDEN HEART
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Once I had imagined an automobile without an engine; an airplane without a power plant; a human without a heart. Just like the engine and the power plant are needed to get the machines up and running, so also is the heart priceless in coordinating the entire body, through blood circulation; the fuel of the human body. It is interesting to know that during an average lifetime, the heart will pump nearly 1.5 million gallons of blood—enough to fill 200 train tank cars.

Embryonically, the heart is derived from mesoderm. Shaped like a fist and covered by the pericardium, the human heart lies in the mediastinum, where it is protected from external jerk and shock. In its unique nature, it's divided into four chambers; the left and right atria “entrance hall”, which are the receiving chambers and the left and right ventricles “little belly”, the discharging chambers. The right atrium holds about 3.5 tablespoons of blood. The right ventricle holds slightly more than a quarter cup of blood. The left atrium holds the same amount of blood as the right, but its walls are three times thicker, with the left ventricle thicker than the right ventricle because it pumps blood at a higher pressure needed for circulation. The heart pumps oxygenated blood through the aorta (the largest artery) at about 1 mile (1.6 km) per hour. By the time blood reaches the capillaries, it is moving at around 43 inches (109 cm) per hour. The most important function of the heart is blood circulation. The superior and inferior vena cava supplies the right atrium with deoxygenated blood. Through the pulmonary trunk, the blood is oxygenated in the lungs and returns to the heart through the left atrium. The left ventricle, through the aorta, pumps out the blood to the rest of the body. Blood is actually a tissue. When the body is at rest, it takes only six seconds for the blood to go from the heart to the lungs and back, only eight seconds for it to go to the brain and back, and only 16 seconds for it to reach the toes and travel all the way back to the heart. The heart pumps blood to almost all of the body's 75 trillion cells. Only the corneas receive no blood supply.

The human heart is a very special organ. It is the only organ with a specialised type of muscle fibers; the Cardiac Muscle. In addition to this, it has specialised cells responsible for generating electrical impulses for its rhythmic contraction. Because the heart has its own electrical impulse, it can continue to beat even when separated from the body, as long as it has an adequate supply of oxygen. These cells are found in the Sinoatrial node and the atrioventricular node which transmit the impulse generated to the Purkinje fibers through the bundle of His. The parasympathetic and sympathetic nerve fibers help to either decrease or increase the heart rate respectively.

The heart, just like every organ in the body, is susceptible to a number of pathological conditions. These include; Premature Ventricular Contraction (PVCs) caused by prolonged lack of sleep characterised by irregular jumping heartbeats; Obtrusive Sleep Apnea (OSA) which is observed in heavy snorers; spasm of the arteries, which can lead to a heart attack or stroke is common among people who take cocaine. Hypertension and atherosclerosis play a major role in most heart diseases.

In conclusion, the human heart is indispensable. A human being can live with just one kidney or lung, some segments of the liver can be removed; experimental cases of decerebrated animals have been reported, but no one can survive without the heart. This does not mean that the human body can function with the heart alone. But just like the engine and other components makes a complete automobile, the heart needs the whole organs and the entire body systems to propel the human body.