

NAME: UHUNMWANGHO EFOSA GOD'S GIFT

COLLEGE: MEDICINE AND HEALTH SCIENCE

DEPARTMENT: PHYSIOLOGY

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COURSE: ANA 202

## ASSIGNMENT

### 1) The Heart and it's function

The heart is an extraordinary machine that pumps blood into blood vessels throughout the whole body. It is made up of four chambers; two upper chambers called the left atrium and right atrium, and two lower chambers called the left ventricle & right ventricle which contract in a steady rhythm known as heartbeat.

During a normal heartbeat, blood from tissues and lungs flows into the atria, then into the ventricles. Walls inside the heart called the interatrial septum and interventricular septum help keep the blood from the left and right side from mixing.

Two valves sit like doors between the atria and ventricles to prevent blood from flowing backward into your atria. The tricuspid valve opens into the right ventricle, and bicuspid valve or mitral valve opens into the left ventricle. Strong thin tissues called chordae tendineae hold your valves in place during the forceful contractions of the ventricles. Blood leaving the ventricles passes through set of valves called the pulmonary valve between the right ventricle and pulmonary trunk and the aortic valve connecting the left ventricle and aorta.

In order to pump blood more efficiently, the heart muscle called myocardium is arranged in a unique pattern; three layers of myocardium wrapped around the lower part of the heart. They twist and tighten in different directions to push blood through the heart.

When special cells called pacemaker cells, generate electric signals inside heart, the heart muscles called myocytes contract a group.

The heart is divided into right and left half which works together, like a duo pump. On the right side of the heart, deoxygenated blood from the body tissues flows through large veins called the superior vena cava and inferior vena cava into the right atrium. Next, the blood moves into the right ventricle which contracts and sends blood out of the lungs to gather oxygen and get rid of carbon dioxide. On the left side of the heart, oxygen rich blood from the lungs flows through the pulmonary vein to the left atrium, the blood then moves into the left ventricle when it contracts and sends blood out of the heart through the aorta to feed the cells and tissues.

The first branches of the aorta are the coronary artery, which supplies the heart muscles with oxygen and nutrients. At the top of the aorta, arteries branched up, to carry blood to

your head and arms. Arteries that branched from middle supplies blood to the rest of the body. The heart beats an average of 60 – 100 beats per minute.

## 2) The Congenital defects of the heart

- Atrial Septal Defect (ASD) : An ASD is a hole in the wall between the upper chambers, or the right and left atria, of the heart . A hole here allows blood from the left atrium mix with blood in the right atrium.
- Ventricular Septal Defect
- Ventricular Septal Defect (VSD) : An VSD is a hole in the part of your septum that separates your heart's lower chambers, or ventricles. If one has a VSD, blood gets pumped back to one's lungs instead of the body.
- Complete Atrioventricular canal defect: This is the most serious Septal Defect. It's when you have a hole in your heart that affects all four chambers.
- Hole in the heart (Septal Defect) : This means you're born with a hole in the wall, or septum that the left and right sides of the heart. The hole lets blood from the two sides mix.
- Truncus arteriosus: This is when your baby is born with one major artery instead of two that carry blood to the rest of his body. He will need surgery as a infant to repair the defect, and may need more procedures later in life.