

**Tikrit University**

**College of Nursing**

**Basic Nursing Sciences**



**First Year - 2023-2024**

**Anatomy**

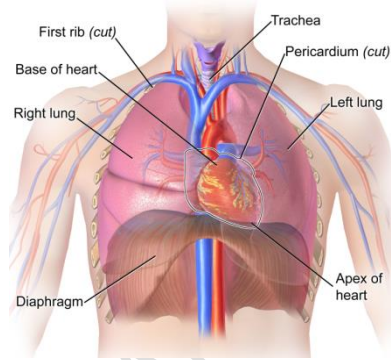
**Heart**

**: Prof.Dr. Abdul-Jabbar Al-Samarrae**

## Heart

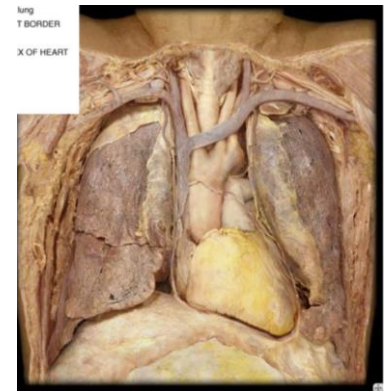
- Function :

- Pumping oxygenated blood to body
- Receiving deoxygenated blood (co2) from the body
- Transfusion deoxygenated blood to the lungs for oxygenation

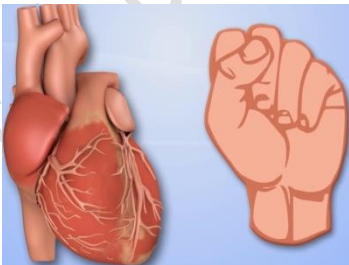


- ❖ Where is the Heart Located?

- In the thorax
- in the middle of thorax( **middle mediastinum**)
- behind the sternum and slightly on the left side of body
- Between the lungs.



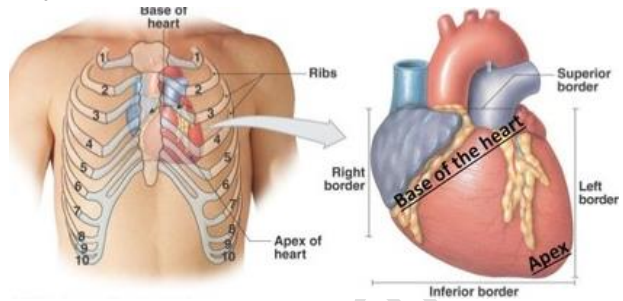
- Size : about the size of a fist



- ❖ External features of the heart

○ The heart has

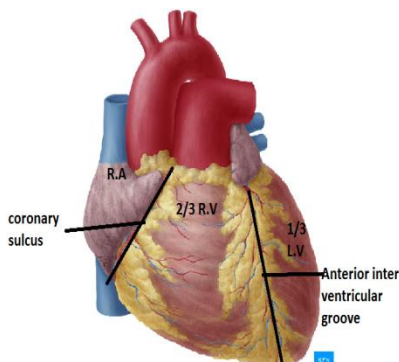
- 1) **Base:** directed posteriorly and to the right
- 2) **Apex:** directed downwards, forwards to the left in the **left 5<sup>th</sup>** intercostal space



3) **Two surfaces :**

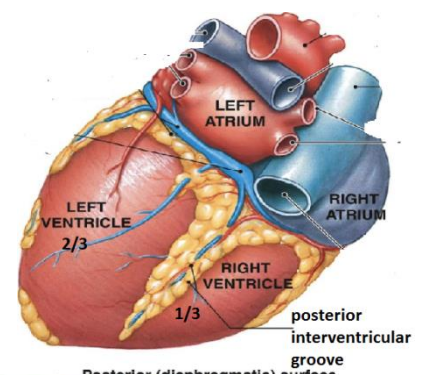
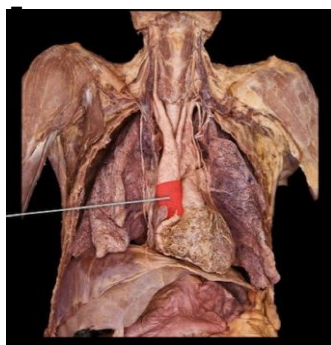
a) **Anterior surface :** (related with sternum and ribs)

- Is formed by **right** atrium
- Formed by **right** ventricle ( **2/3** ) + **left** ventricle ( **1/3** ) they are separated by anterior interventricular groove

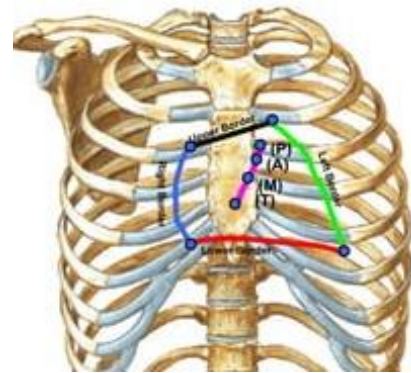


b) **Inferior surface:** (related with diaphragm )

- It rests on central tendon of diaphragm
- Formed by **left** ventricle ( **2/3** ) + **right** ventricle ( **1/3** ) they are separated by posterior interventricular groove



❖ **Borders:** There are four borders



- 1) Superior border
- 2) Inferior border
- 3) Left border
- 4) Right border

### ❖ **Chambers of the heart :**

The heart has four chambers:

#### 1. **Right atrium:**

- ☒ receives oxygen-poor blood from the body by inferior vena cava and superior vena cava and pumps it to the right ventricle through tricuspid valve

#### 2. **Right ventricle**

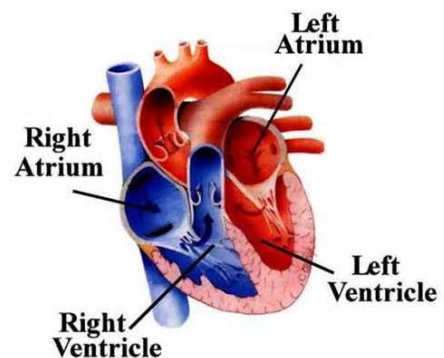
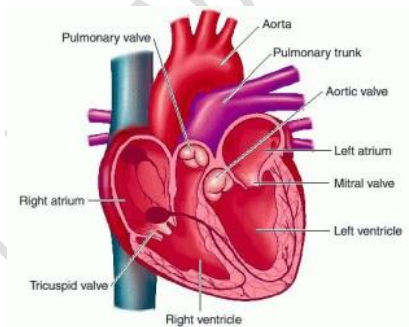
- ☒ :pumps the oxygen-poor blood to the lungs by pulmonary arteries through the pulmonary valve

#### 3. **left atrium**

- ☒ receives oxygen-rich blood from the lungs by 4 pulmonary veins and pumps it to the left ventricle through mitral valve

#### 4. **left ventricle**

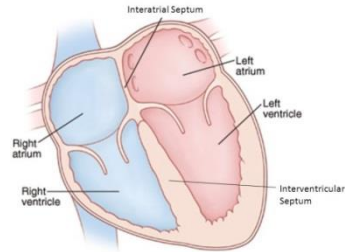
- ☒ pumping oxygenated blood to tissues all over the body by aorta through the aortic valve



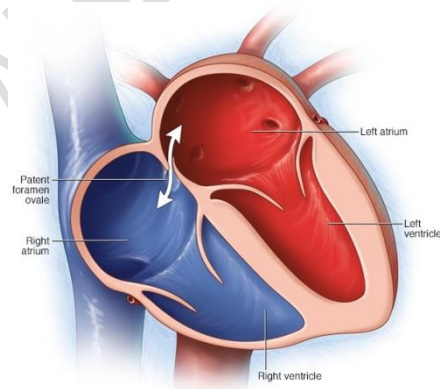
### • **The septum of the heart**

**1. Interatrial septum:**

- Is a septum that lies between the left atrium and right atrium.

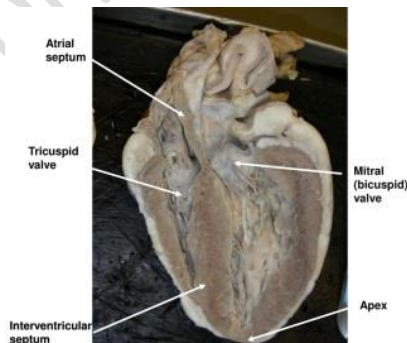


- **Patent foramen ovale (PFO)** :is a hole between the left and right atria ,it fails to close naturally after a baby is born.



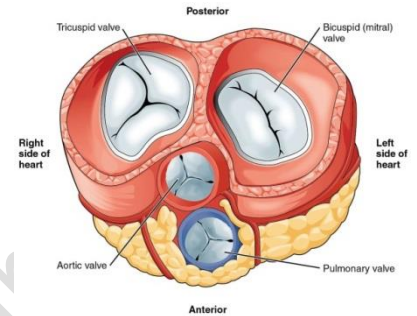
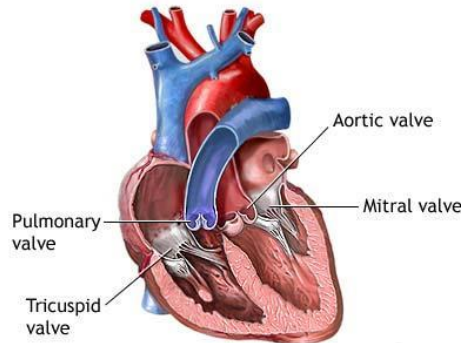
**2-interventricular septum :**

Separates the left and right ventricles



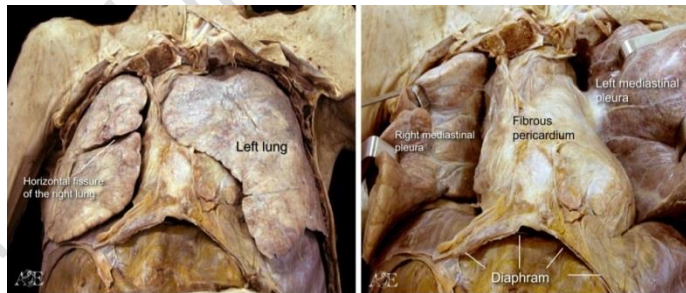
❖ **Vulves of the heart**

- 1) **Tricuspid valve**. between the right atrium and the right ventricle
- 2) **Pulmonary valve**. between right ventricle and pulmonary artery
- 3) **Mitral valve**. between the left atrium and the left ventricle.
- 4) **Aortic valve**. between the left ventricle and the aorta



### ❖ Pericardium

- The pericardium is a sac that surrounds the heart consists of two types.
  1. **Fibrous pericardium** (outer )
    - attached with the diaphragm and sternum
    - It holds the heart in place



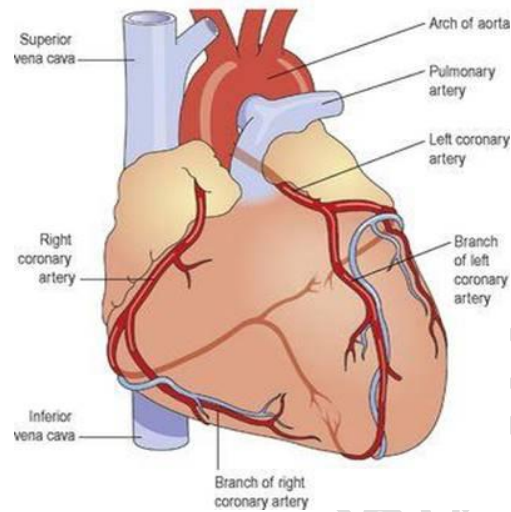
2. **Serous pericardium** (inner ) has two layers

- between the two layers of serous is formed the potential space called **the pericardial cavity**, it contains a small amount of serous fluid that acts to reduce surface tension and lubricate.

### ❖ Blood Supply

- The heart is supplied by two coronary arteries:

- 1) Left coronary artery
- 2) Right coronary artery



❖ Nerves supply :Autonomic nerves



## ❖ The Heart Beat

- The sound of your heart

Beating has two parts

1- **S1 ("lub")** is when the AV

Valves of heart close

And blood is pushed out

Of the heart to the rest of

The body. This is called

**systole**

2- **S2 ("dub")** is when the

Semilunar valves of the

Heart closes and the heart

Fills with blood. This is

Called **diastole.**