

HEART SOUNDS
MURMUR
&
BLOOD PRESSURE

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1ST STAGE

Heart Sounds

- **Heart sounds** are an audible sounds that occurs when the valves close.
- When the stethoscope is placed on the chest wall over the heart, two sounds are normally heard:
 - a) First heart sounds (S1): is caused by closure of the AV valves when ventricles contract at systole.
 - b) Second heart sound (S2): is caused by closure of the aortic and pulmonary valves in diastole(ventricular relaxation).

Heart Murmurs

➤ Heart murmur is an abnormal heart sound caused by turbulent blood flow that is loud enough to be heard.

➤ Heart murmur could be:

1. **Physiological** like in newborn and pregnancy.

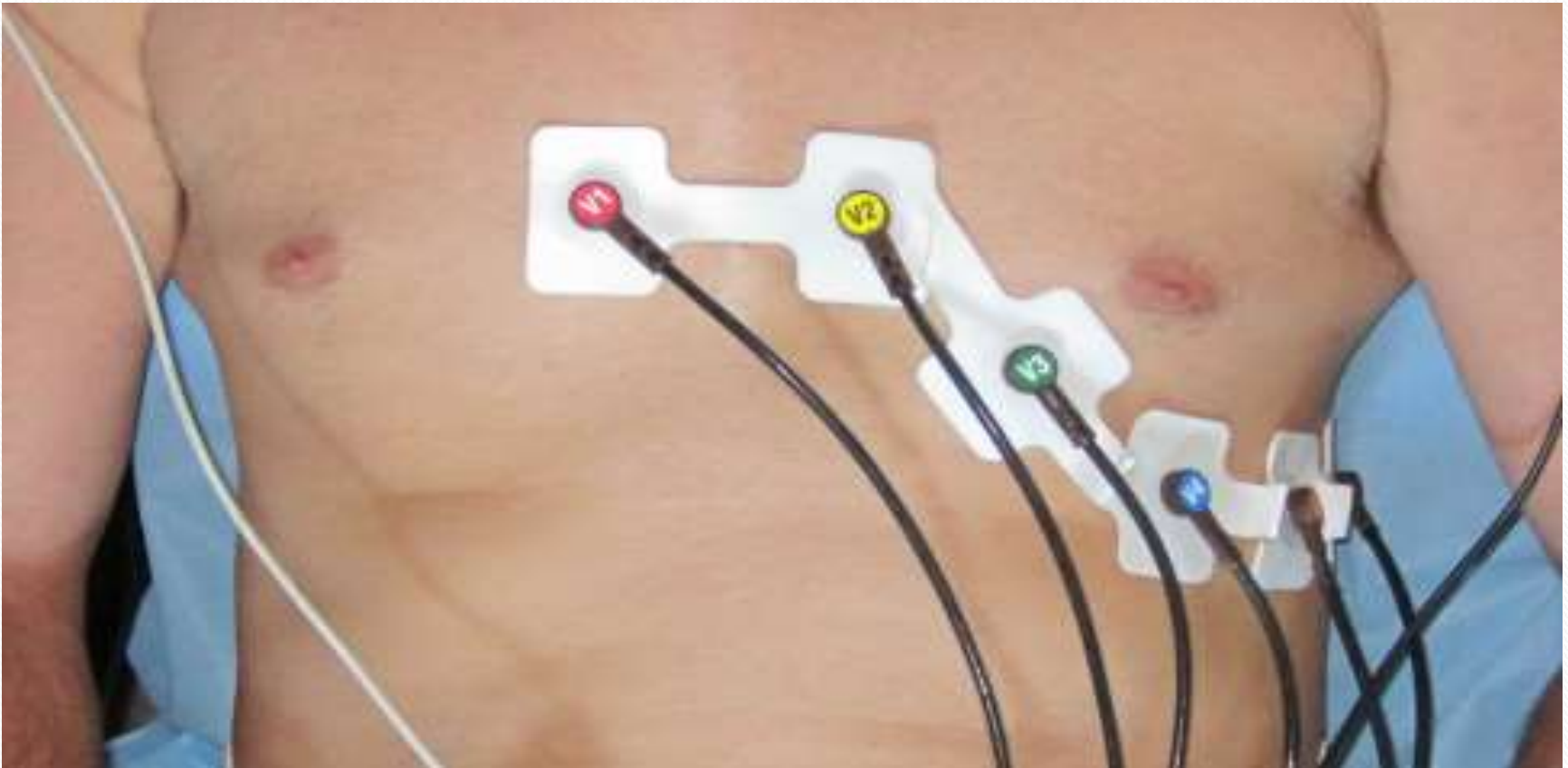
2. **Pathological** that caused by :

a. **Holes in the heart:** like atrial septal defect (ASD).

b. **Heart valve problems** : like aortic valve stenosis , mitral valve prolapse .

Electrocardiogram (ECG)

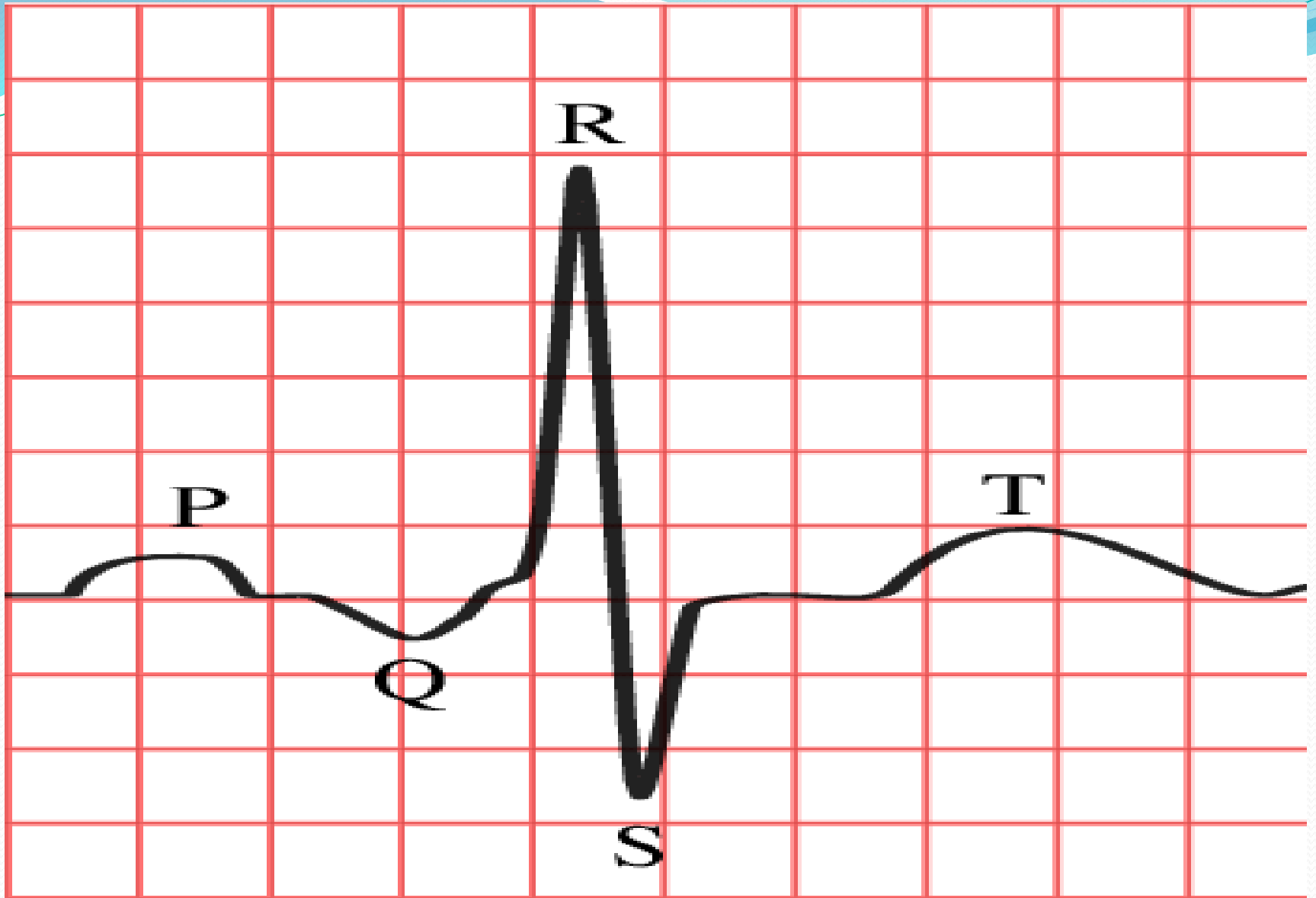
- ECG :a recording of the heart's electrical activity from the surface of the body using electrodes placed on the skin.





- There are three main components to an ECG:

1. **The P wave**, which represents depolarization of the atria which initiate atrial contraction.
2. **The QRS complex**, which represents depolarization of the ventricles, which initiates ventricular contraction.
3. **The T wave**, which represents repolarization of the ventricles at which the ventricles begin to relax.



Electrocardiography(ECG)

Blood Pressure

- Blood Pressure: means the pressure exerted by the circulating blood upon the walls of blood vessels.
- Blood pressure doesn't stay the same all the time ,it change to meet your body needs.
- Blood pressure is usually expressed in terms of the systolic pressure over diastolic pressure.

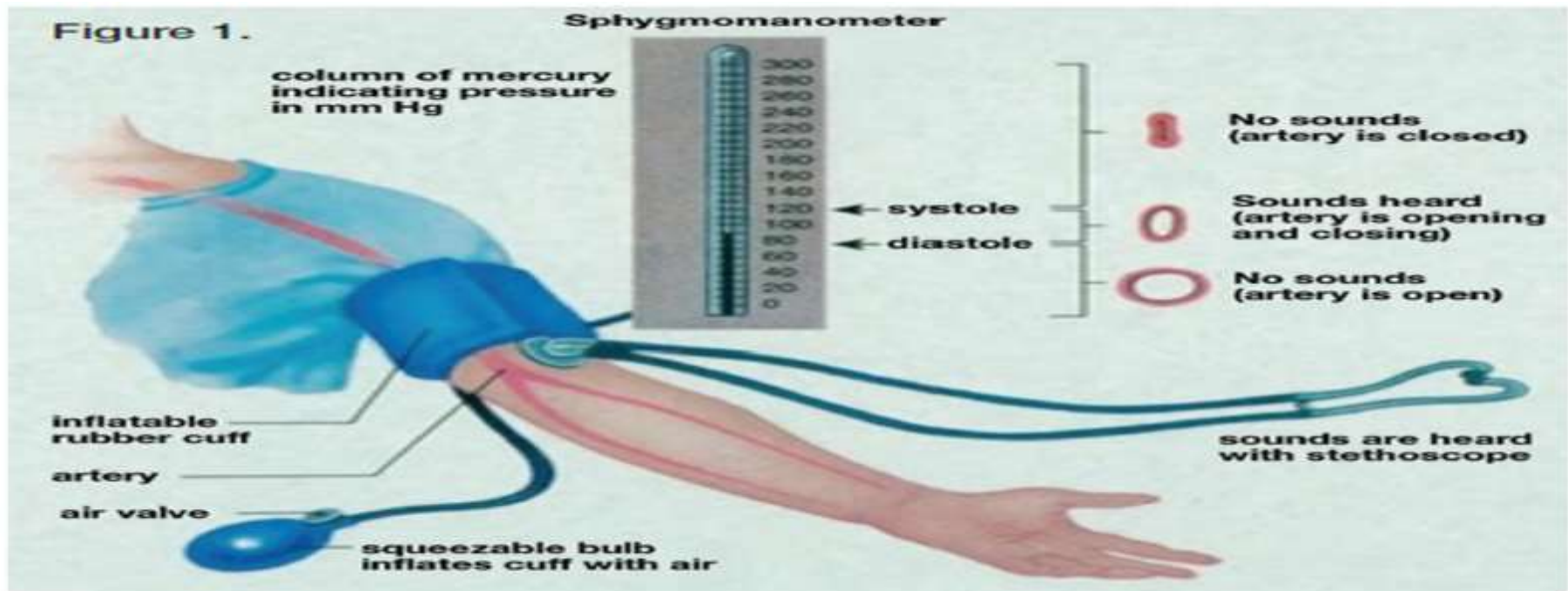
$$Bp = \frac{\textit{systolic Bp}}{\textit{diastolicBp}}$$

• **Types of Blood Pressure:**

- A. Systolic blood pressure:** is the maximum arterial blood pressure during contraction of the heart.
 - ❖ Normal range 110-130mmHg
- A. Diastolic blood pressure :** the lowest pressure within the arterial blood due to relaxation of the heart.
 - ❖ Normal range 60-80mmHg.

Blood Pressure Measurement Methods

- Arterial blood pressure is most commonly measured via a sphygmomanometer, which used the height of a column of mercury to reflect the blood pressure.
- **Blood Pressure can be Measured in Two methods:**
 - 1. Auscultatory Method:** by using stethoscope and sphygmomanometer .



2. Palpitary Method:

It involves the measuring of blood pressure with a sphygmomanometer and palpating the radial pulse. It can only determine systolic blood pressure; diastolic blood pressure cannot be estimated.



Physiological Factors Affecting Blood Pressure

1. Body position
2. Emotional state.
3. Exercise
4. Sleep
5. Breathing