

## Electrocardiograph (ECG)

**SUPERVISOR :**

Asst. Lec. Ahmad Jaber, Eng. Noor

**STUDENT :**

Kadhim, et al.

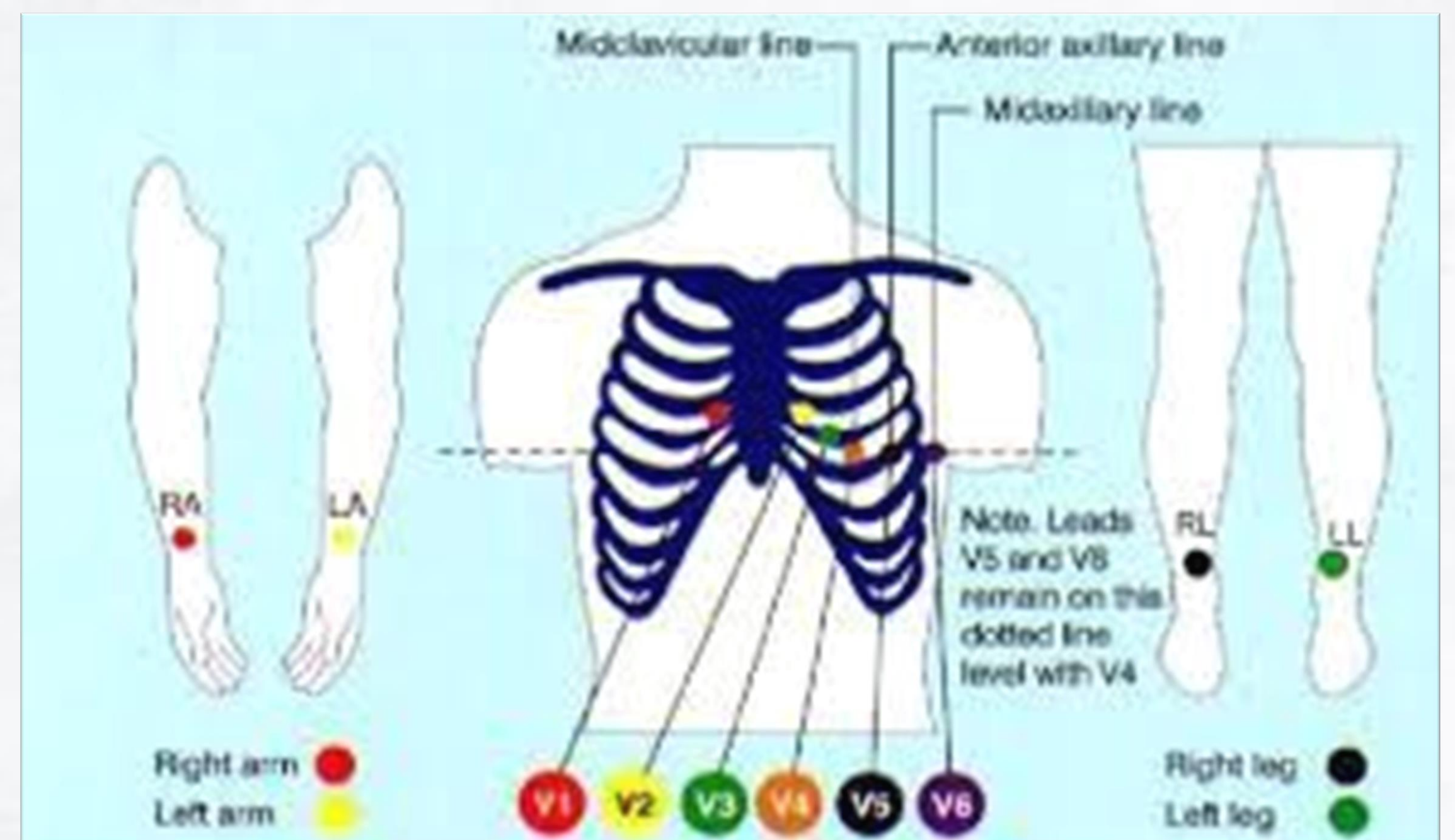
### INTRODUCTION :

The process of creating an electrocardiogram (ECG or EKG), a recording of the heart's electrical activity, is known as electrocardiography. An electrogram of the heart is a graph of the electrical activity of the heart's voltage versus time. electrodes attached to the skin During each cardiac cycle, these electrodes detect the modest electrical changes caused by cardiac muscle depolarization and repolarization (heartbeat).



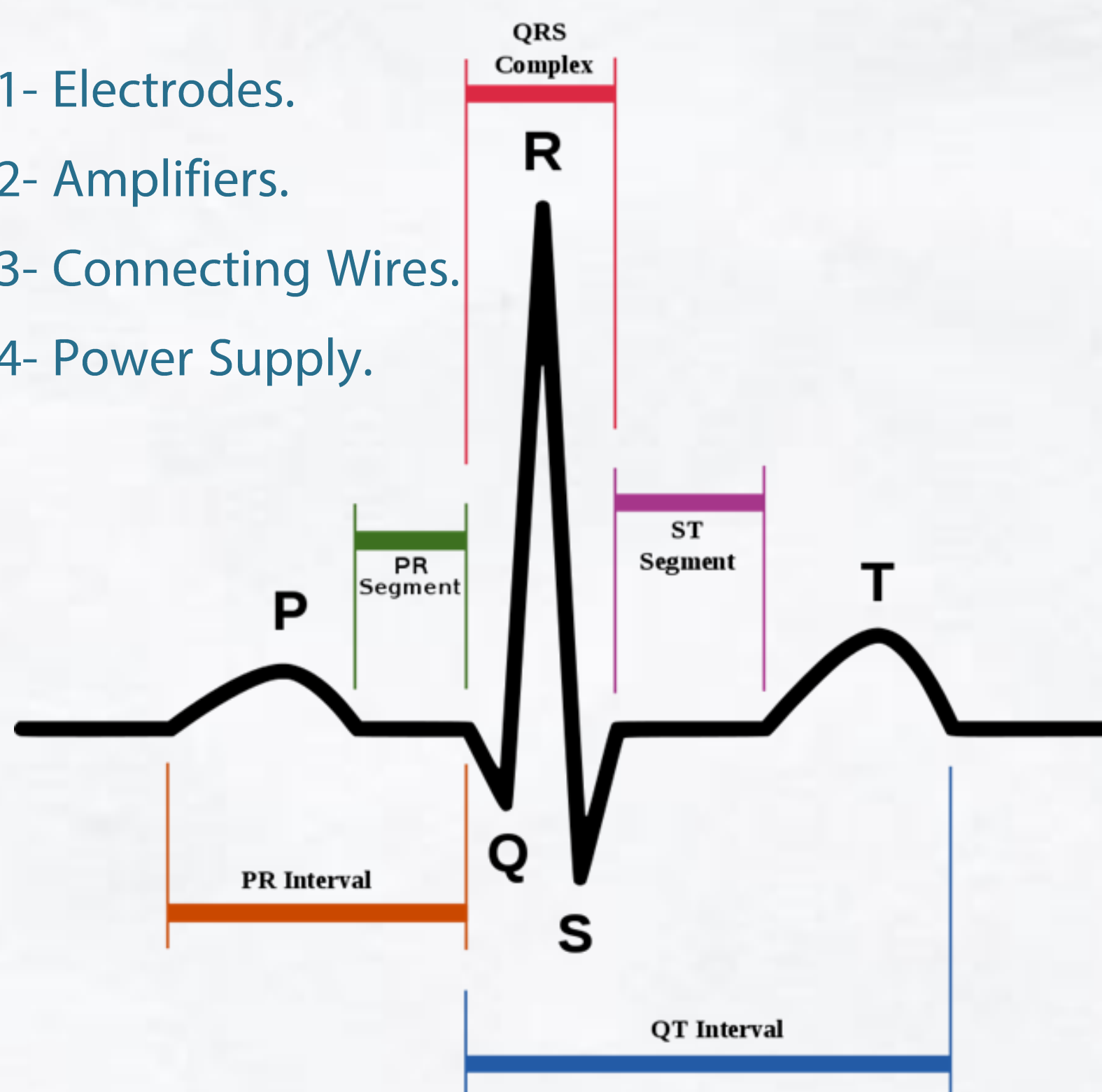
### Operation :

In a conventional 12-lead ECG, ten electrodes are placed on the patient's limbs and the surface of the chest. The overall magnitude of the heart's electrical potential is then measured from twelve different angles ("leads") and is recorded over a period of time (usually ten seconds). In this way, the overall magnitude and direction of the heart's electrical depolarization are captured at each moment throughout the cardiac cycle. There are three main components to an ECG



### Components :

- 1- Electrodes.
- 2- Amplifiers.
- 3- Connecting Wires.
- 4- Power Supply.



### Uses :

- 1- Having chest pain.
- 2- In the event of an irregular heartbeat.
- 3- Shortness of breath.
- 4- Constant fatigue and stress.
- 5- The presence of abnormal heartbeats.
- 6- Diagnosis of some heart diseases.
- 7- Routine cardiac examination if there is a family history.
- 8- Monitor the efficacy of heart medications.

