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DEPARTMENT OF CSE
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ECG

SZT-172

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ECG

COURSE OBJECTIVE

- This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body.
- It is designed for both homeostatic mechanisms.

LEARNING OBJECTIVE

- To understand about the basic anatomy of heart.
- To understand about the working of E.C.G.
- To understand about the normal electrocardiogram.

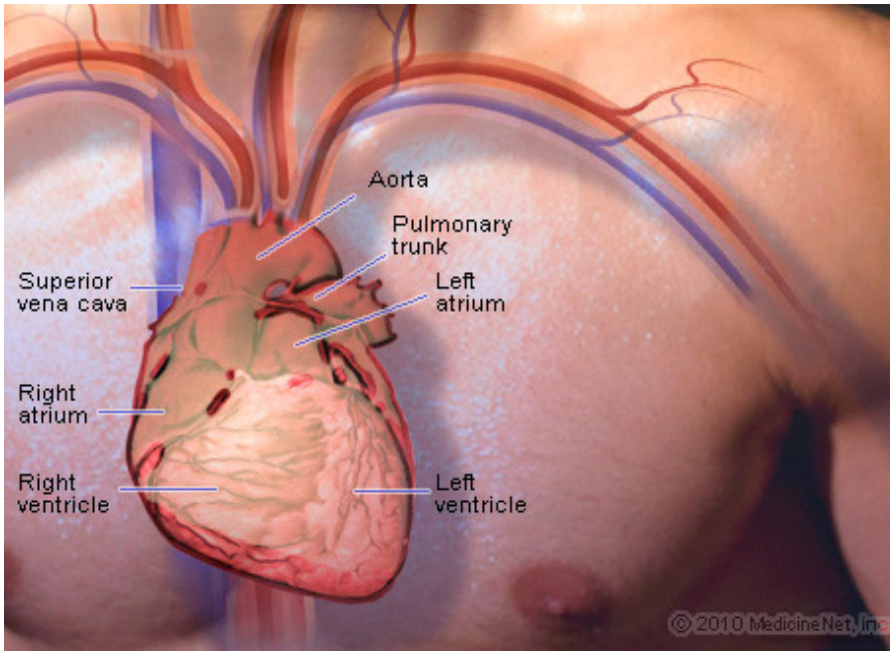
ELECTROCARDIOGRAPHY

- **What Is an Electrocardiogram (ECG, EKG)?**

An ECG is a noninvasive, painless test with quick results. During an ECG, sensors (electrodes) that can detect the electrical activity of your heart are attached to your chest and sometimes your limbs. These sensors are usually left on for just a few minutes.

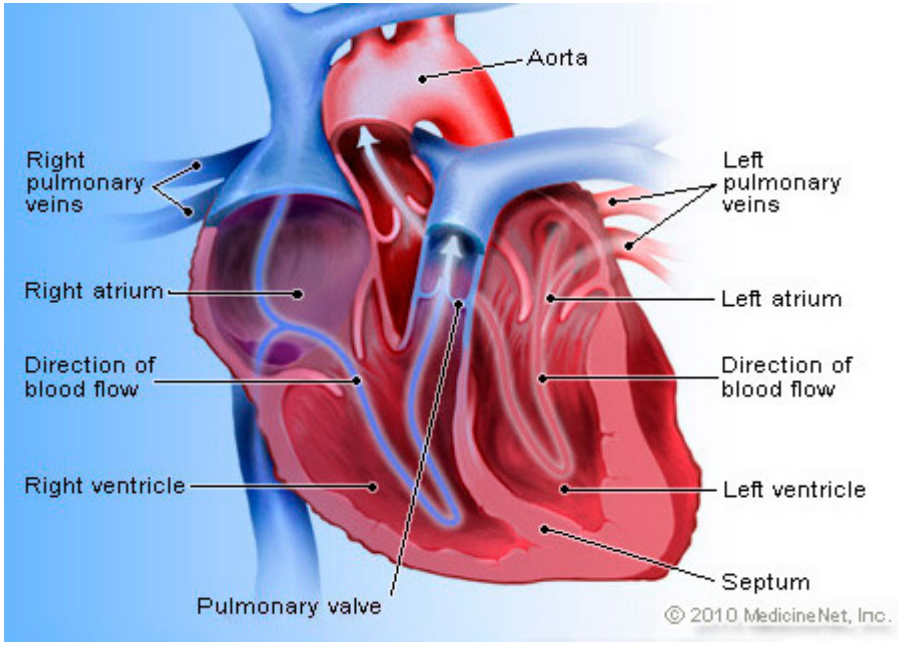
Basic Anatomy of the Heart

- The heart has four chambers – the right and left atrium and the right and left ventricle.



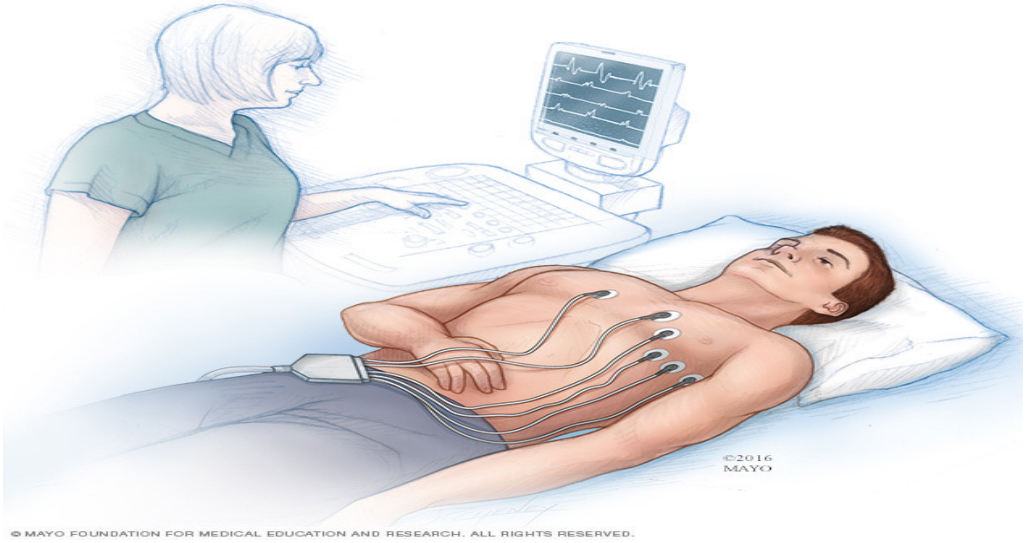
E.C.G

Blood flows through the body in the following way:

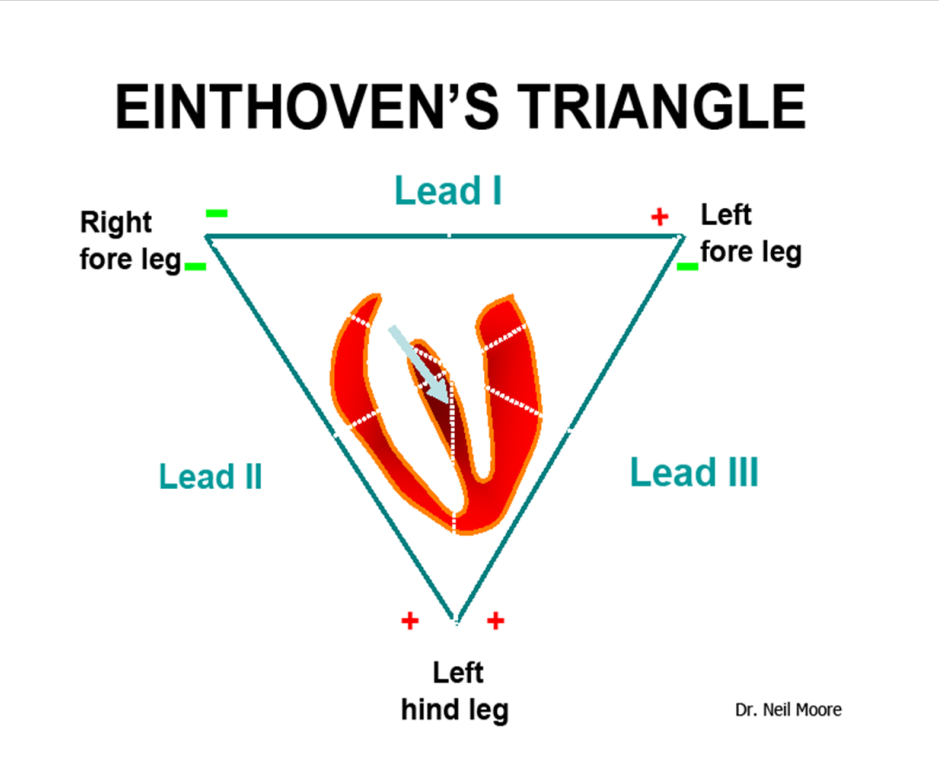


How it works

- Each beat of your heart is triggered by an electrical impulse normally generated from special cells in the upper right chamber of your heart (pacemaker cells).

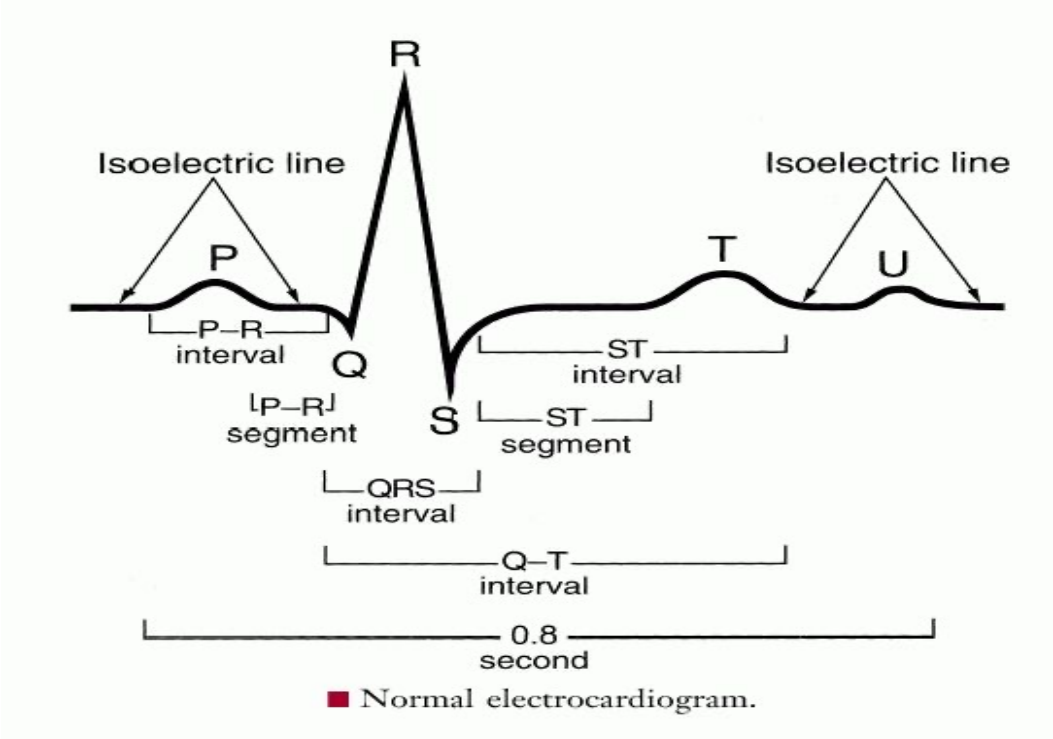


Einthoven's triangle



Normal electrocardiogram

- A standard ECG can record an abnormal heart rhythm only if it happens during the test.



Normal electrocardiogram.

Normal rhythm

- Normal rhythm produces four entities — a P wave, a QRS complex, a T wave, and a U wave — that each have a fairly unique pattern.
- The P wave represents atrial depolarization.
- The QRS complex represents ventricular depolarization.
- The T wave represents ventricular repolarization.
- The U wave represents papillary muscle repolarization.
- However, the U wave is not typically seen and its absence is generally ignored. Changes in the structure of the heart and its surroundings (including blood composition) change the patterns of these four entities.

LEARNING OUTCOME

- Student will be able to understand about how the electrocardiography records the electrical activity of the heart and what the various waves of electrocardiogram indicates.

COURSE OUTCOME

- Analyze the gross morphology, structure and functions of various organs of the human body.
- Evaluate the various homeostatic mechanisms and their imbalances.
- Distinguish the coordinated working pattern of different organs of each system
- Analyze the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body.

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3. John G. Webster 1998. Medical Instrumentation: Applications and Design, 3rd edition, Jon Wiley and Sons, New York.

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For any Query

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