

# Virtual ECG by Vizitech

## REFERENCE SHEET

### Controls

To successfully complete this module click on each electrode and move them into proper position on the human figure. Rotate the human figure and/or the electrodes as necessary to place them on the skin surface.



Once all electrodes are placed on the human figure the user may toggle on the electrode indicators by clicking the Electrode button.



To facilitate the placement of electrodes the user may elect to make the skin translucent by clicking the Skin button.



To facilitate the placement of electrodes the user may elect to make the the muscles transparent by clicking the Muscles button.



To facilitate the placement of electrodes the user may elect to make the the skeleton transparent by clicking the Skeleton button.



To facilitate the placement of electrodes the user may slightly rotate the on-screen human figure by pressing the keyboard arrow keys in the necessary direction.



Press the "R" key to reset the position of the on-screen human figure.



Once this exercise has been successfully completed the user may return to the main menu by clicking on the Home icon.



### Electrode Placement

The goal of this module is to click on each electrode and move them into position on the human figure. The correct placement of 12-lead ECG electrodes is critical to the successful diagnosis of heart conditions in prehospital and hospital situations. In this Electrode Placement module the user learns the recommended electrode placement for proper ECG results. To successfully complete this module click on each electrode and move them into proper position on the human figure.

### Instructions

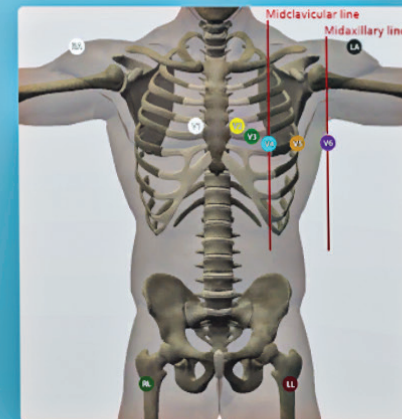
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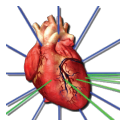
The placement for the 12-lead electrodes are as follows:

- V1 - fourth intercostal space to the right of the sternum
- V2 - fourth intercostal space to the left of the sternum
- V3 - midway between V2 and V4
- V4 - fifth intercostal space at the midclavicular line
- V5 - anterior axillary line at the same level as V4
- V6 - Midaxillary line at the same level as V4 and V5
- RL - right leg anywhere between the torso and ankle
- RA - right arm anywhere between the shoulder and elbow
- LL - left leg anywhere between the torso and ankle
- LA - Left arm anywhere between the shoulder and elbow

Definition: Midclavicular line - middle of the clavicle

Definition: Midaxillary line - middle of the armpit





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To complete this module the user can employ any of the tools listed below to facilitate an understanding of the relationship between electrodes, leads, and the ECG print out.



The user may center-click on the front face of the heart and remove to see the internal heart



The user may right-click the front face to replace to original position.



The user may toggle rotation of the heart clicking the rotate button.



The + and - keys adjust rotation speed.

The user may "lean their head in slowly" toward the heart to view internal chambers.



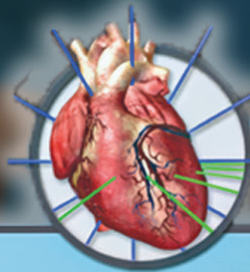
To facilitate the placement of electrodes the user may slightly rotate the on-screen human figure by pressing the keyboard arrow keys in the necessary direction.



Press the "R" key to reset the position of the on-screen human figure.



Once this exercise has been successfully completed the user may return to the main menu by clicking on the Home icon.



### Heart Leads Regions

The goal of this module is to explore and understand the relationship between electrodes, leads, and the ECG printout. The leads indicate a view of the electrical activity of the heart from particular angles. Each lead is vector of electrical measurement that intersects specific regions of the heart depending on the group of electrodes. Doctors read the ECG printout to understand the electrical activity of the heart where a collection of leads intersect.



### Heart Conditions

The goal of this module is to explore and understand the relationship between the leads and an abnormal ECG printout for some, but not all heart conditions. This module will color the region of the heart that is associated with various abnormal conditions. By examining the heart, the leads, and the ECG printout for each abnormal condition, the user can assemble a better understanding of the conditions and indicators.

Lateral wall condition

Inferior wall condition

Septal wall condition

Anterior wall condition

Normal condition