

MASTERING CHEST LEADS

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Chest leads determine the electrical activity of heart along the horizontal plane i.e. anteroposteriorly.

Chest leads are designed in such a way that the exploring electrode is placed on chest wall which determines the electrical potential at the site of the exploring electrode in reference to the indifferent electrode.

The negative electrode is connected to common negative terminal called Wilson Central Terminal which is further connected to right arm, left arm and left leg through resistors. This connection forms a triangle and the potential at the center of triangle is almost zero. Thus Wilson Central Terminal produce a virtual electrode at the center of the heart.

Chest leads are unipolar leads with two electrodes. The position of positive or exploring electrode keeps changing while the position of indifferent electrode is fixed.

The chest lead determines the potential difference between exploring electrode and indifferent electrode.

PLACEMENT OF STANDARD CHEST LEADS

For all the six leads (from V_1 to V_6), the Wilson Central Terminal remains at same position. Only the position of exploring electrode changes.

The position of ribs and intercostal spaces is determined from sternal angle (angle of Louis). Just outer and inferior to the sternal angle is the second intercostal space (between 2nd and 3rd rib)

V_1 – placed at fourth intercostal space just right to the sternum

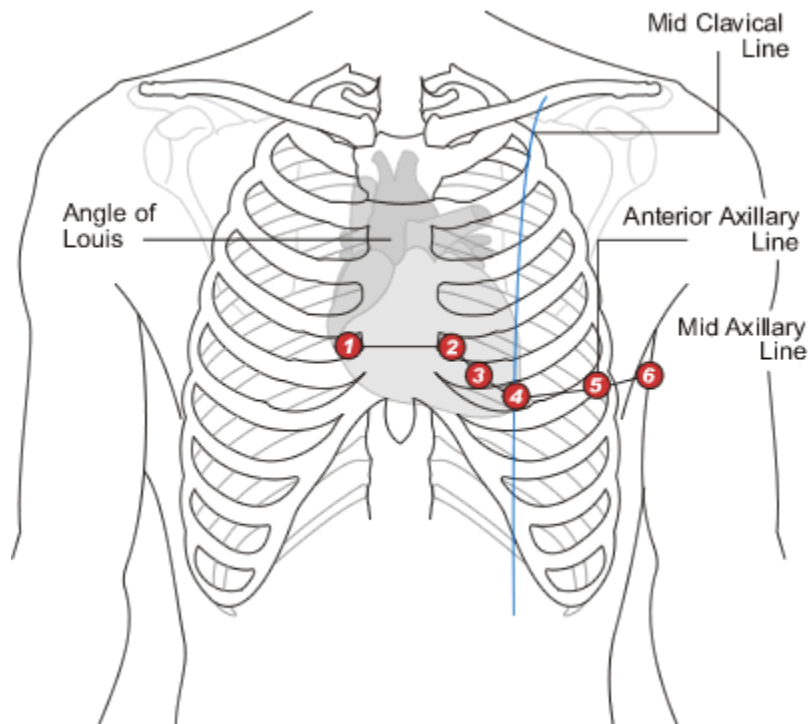
V_2 – fourth intercostal space just to the left of sternum

V_3 – midway between v_2 and v_4

V_4 – fifth intercostal space in midclavicular line

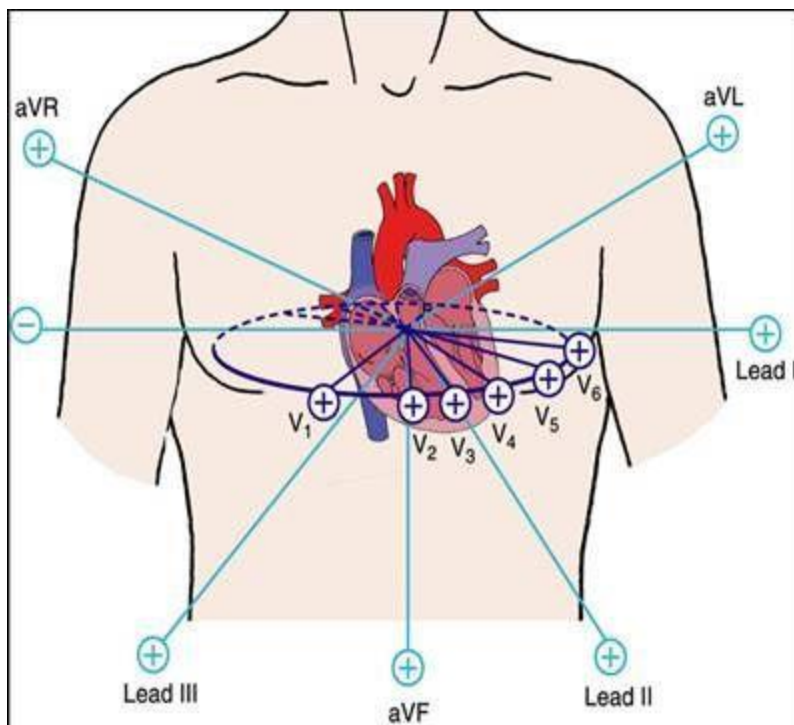
V_5 – fifth intercostal space at anterior axillary line

V_6 – fifth intercostal space at mid axillary line



ORIENTATION OF CHEST LEADS

- V_1 and V_2 are oriented over right side of heart
- V_5 and V_6 oriented over left side of heart
- V_3 and V_4 oriented over interventricular septum



- Functionally V_1 and V_2 are called septal leads
- V_5 and V_6 are called left leads
- V_2 and V_4 are called anterior leads

These are so named to determine the areas of heart affected during Myocardial Infarction. Any defect in ECG pattern of v_1 and v_2 would indicate defect in septum of heart. Defect in pattern of v_5 and v_6 would indicate defect in left side of heart.

ANGLE OF ORIENTATION OF CHEST LEADS

The chest leads are oriented at 30 degrees to each other.

