

12 Lead EKG

Understanding Lead Placement

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Bipolar Leads

Each lead has two poles:
One positive & one negative

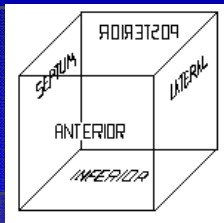
I, II, III

Unipolar Leads

Only one lead is physically positive.
Negative lead is not a specific site on the body

AVR, AVL, AVF, V1-V6

Cube Concept of Left Ventricle



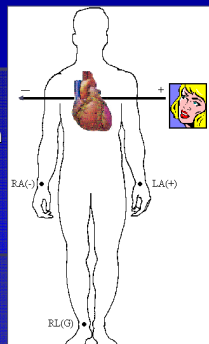
Each face of the cube represents a different part of the left ventricle

Limb Leads

- ♥ Also referred to as extremity leads due to placement on the body
- ♥ Record electrical forces two points equidistant from the heart.
- ♥ Views the Heart from the positive lead
- ♥ EKG machine READS from Positive to Negative

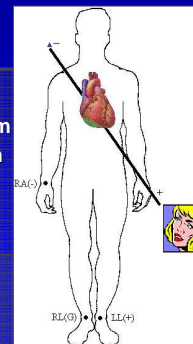
Lead I

Views the heart from left arm to right arm
Area: Lateral
Artery: Circumflex



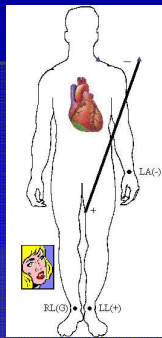
Lead II

Views the heart from left leg to right arm
Area: Inferior
Artery: RCA



Lead III

Views the heart from
left leg to left arm
Area: Inferior
Artery: RCA



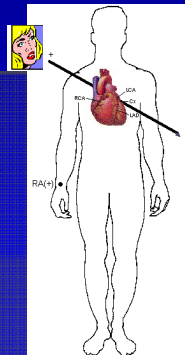
Augmented Limb Leads

- ♥ Records electrical activity between the center of the heart and an extremity
- ♥ Since these leads are low voltage they are artificially augmented

AVR

Augmented Voltage Right

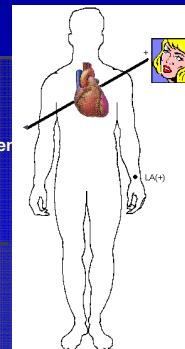
- Views electrical activity directed rightward.
- Very minimal rightward electrical activity occurs.
- Looks at great vessels not myocardium
- Configuration should be negative



AVL

Augmented Voltage Left

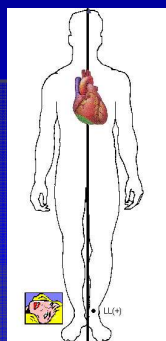
Views the heart from the
left arm to the mid-point between
right arm & right leg
Area: Lateral
Artery: Circumflex



AVF

Augmented Voltage Left

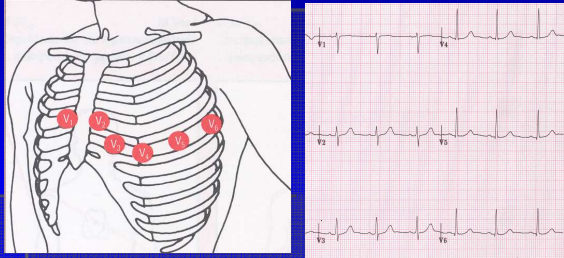
Views the heart from the
feet to the chin
Area: Inferior
Artery: RCA



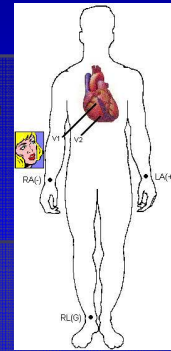
Pericordial Leads

- ♥ Also referred to as Chest leads
- ♥ Records electrical activity of the heart by placing electrodes on the anterior chest wall

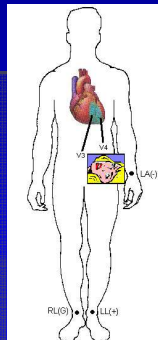
Pericordial Lead Placement



V1 & V2
Views the septum
of the heart
Area: *Septal*
Artery: *LAD*



V3 & V4
Views the anterior area
of the left ventricle
Area: *Anterior*
Artery: *LAD*



V5 & V6
Views the lateral area
of the left ventricle
Area: *Lateral*
Artery: *Circumflex*

