

# 12 LEAD ECG

## OVERVIEW:

12 lead ECG allows rapid assessment of the cardiac complaint patient. Although 12 lead ECG is relatively accurate, always treat the patient, not the monitor. **Application of 12 lead monitoring leads is a simple task, which can be performed by any provider. However, only those at the Paramedic level may interpret & treat the findings obtained.** The reading of 12 lead ECG's is a complex process and will not be covered in this document.

## INDICATIONS:

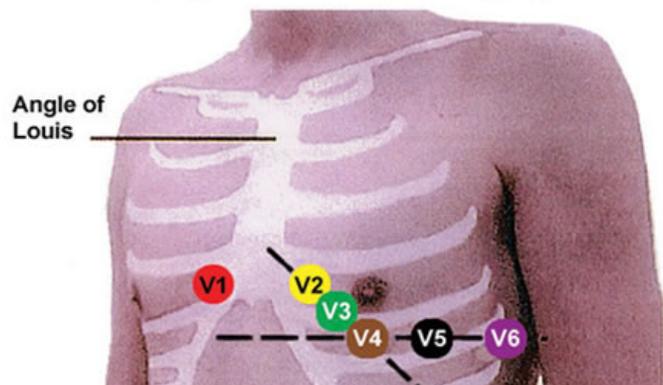
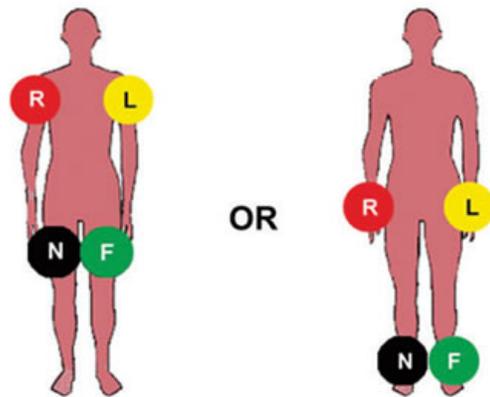
- ❑ Conscious, stable patients with suspected AMI (e.g., chest pain, pressure, or palpitations of presumed cardiac etiology; Shortness of breath with presumed cardiac etiology; CHF patients)
- ❑ As a tool to assist in the assessment of patients without chest pain or discomfort where AMI is suspected.
- ❑ As an additional assessment tool in potentially cardiac clinical situations (e.g., determination of SVT vs. rapid A-Fib; syncope/near syncope of suspected cardiac etiology; sudden onset of profound weakness; epigastric discomfort; hyperglycemia in diabetic patients; diaphoresis inconsistent with environment and etc).

## CONTRAINDICATIONS:

- ❑ None

## PROCEDURE:

- ❑ Place the 4 limb leads on extremities
  - **Right arm/white** - Right mid-clavicular line below clavicle or above wrist
  - **Left arm/black** - Left mid-clavicular line below clavicle or above wrist
  - **Left leg/red** - Left mid-clavicular line between 6<sup>th</sup> and 7<sup>th</sup> intercostal space, or ankle, or thigh
  - **Right leg/green** - Right mid-clavicular line between 6<sup>th</sup> and 7<sup>th</sup> intercostal space, or ankle, or thigh
- ❑ Place the 6 precordial leads
  - **V1** - 4<sup>th</sup> intercostal space to the right of the sternum. To locate, place finger at the manubrium notch move finger slowly down about 1½" until you feel the Angle of Louis, move laterally into the second intercostals space. Move finger down two more intercostal spaces to the 4<sup>th</sup> intercostal space
  - **V2** - 4<sup>th</sup> intercostal space to the left of the sternum
  - **V3** - Midway between V2 and V4
  - **V4** - On the mid-clavicular line at the 5<sup>th</sup> intercostal space
  - **V5** - On the anterior axillary line at the 5<sup>th</sup> intercostal space
  - **V6** - On the mid-axillary line at the 5<sup>th</sup> intercostal space



PARAMEDIC

PARAMEDIC

# 12 LEAD ECG CONT.

## CONSIDERATIONS:

- ❑ Providers below the level of Paramedic should report the 'computer' interpretation to the responding Paramedic resource
- ❑ V1 is the most important lead to place correctly due to it being the reference point for locating the remaining V leads
- ❑ Do not delay transport of critical or unstable patients to perform a 12-Lead
- ❑ On female patients, always place leads V3-V6 under the breast rather than on it
- ❑ A normal ECG does not definitively rule out an AMI
- ❑ Whenever possible attempt to obtain 12-Lead with patient in supine position
- ❑ Shave and clean the skin prior to placing leads if possible
- ❑ Leave the electrodes in place for the hospital staff to verify position and reuse if necessary
- ❑ Approx area of heart by contiguous lead:

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral