

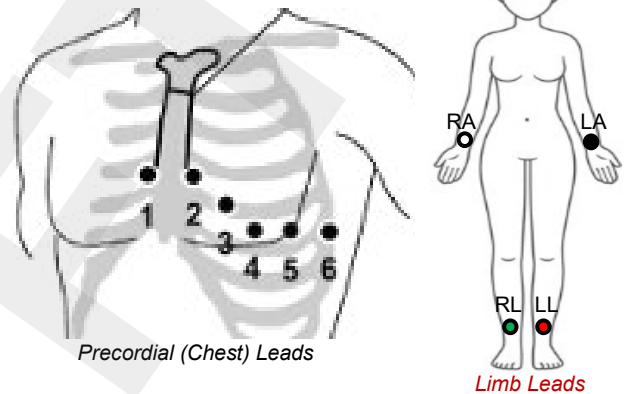
## ECG – 12 Lead

1. **INDICATIONS:** Patients should receive a 12-lead electrocardiogram (ECG) when they present with one or more of the following acute coronary syndrome (ACS) signs or symptoms:

- ▶ Anxiety
- ▶ Chest discomfort
- ▶ Diaphoresis
- ▶ Discomfort or tightness radiating to the jaw, shoulder or arms
- ▶ Dizziness
- ▶ Dyspnea
- ▶ Epigastric discomfort
- ▶ Fatigue
- ▶ General weakness
- ▶ Nausea or vomiting
- ▶ Palpitations
- ▶ Return of spontaneous circulation (ROSC) following a cardiac arrest
- ▶ Syncope, near syncope

2. **PROCEDURE:** Place limb lead electrodes on the wrists and ankles, rather than the torso, whenever possible. When applying the limb leads avoid positioning the electrodes over bony areas. Attach the six precordial (chest) leads directly to the chest wall as described:

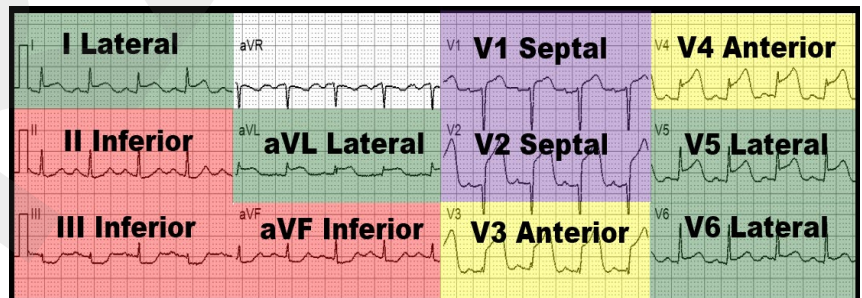
- ▶ V1 4<sup>th</sup> intercostal space to the right of the sternum
- ▶ V2 4<sup>th</sup> intercostal space to the left of the sternum
- ▶ V3 Directly between leads V2 & V4
- ▶ V4 5<sup>th</sup> intercostal space at the midclavicular line
- ▶ V5 Level with V4 at the left anterior axillary line
- ▶ V6 Level with V5 at the left midaxillary line



3. **INTERPRETATION:** ST segment elevation in two or more contiguous leads meets the criteria for a ST elevation myocardial infarction (STEMI). This may be identified by the paramedic or the ECG monitor. When the monitor detects an acute STEMI, the 12-lead ECG interpretation language will be displayed as follows:

- ▶ Stryker/Lifepak Monitor: **\*\*\* MEETS ST ELEVATION MI CRITERIA \*\*\***
- ▶ Zoll Monitor: **\*\*\* STEMI \*\*\***

4. **ECG TRANSMISSION:** The first positive STEMI 12-lead should be immediately transmitted to the STEMI Receiving Center, followed by an early pre-arrival notification. Attach all 12-lead ECG tracings to the electronic health record (EHR).



Contiguous leads in a 12-lead ECG represent the same heart region, as indicated above by the assigned color association.

5. **SPECIAL CONSIDERATIONS:**

- ▶ STEMI can evolve during prehospital care. The 12-lead ECG should not be detached after a 12-lead is negative for STEMI. The monitor will perform serial ECGs if it detects cardiac changes, following the initial 12-lead recorded by that device.
- ▶ For patients with breast tissue, do not place precordial (chest) leads directly over the breast, as the tissue may reduce electrical signal detection, potentially leading to ECG misinterpretation. Ensure electrodes are positioned directly on the chest wall for accurate readings.
- ▶ **Do not perform a Right-Sided 12-lead** after a STEMI has been identified, as the patient's treatment plan will remain unchanged regardless of the findings.