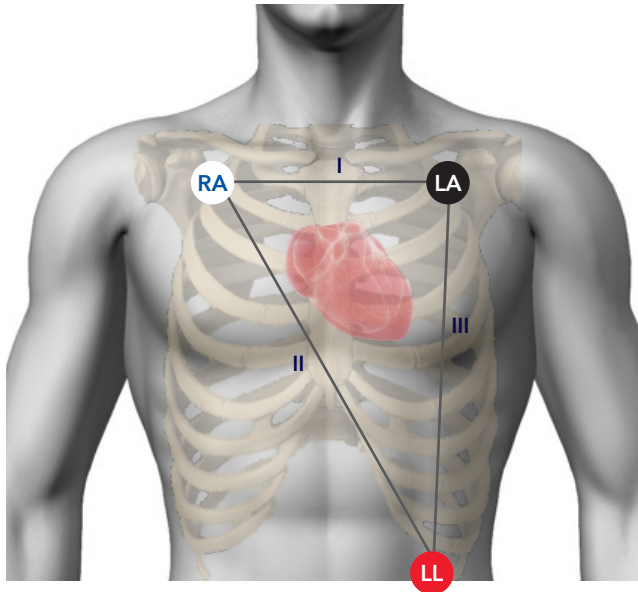


ECG Lead Placement and Reference Guide

This guide serves as a reference for 3- and 5-lead ECG placement and an overview of a normal sinus rhythm (NSR) ECG waveform. Color-coded mnemonics are included to assist in proper lead placement.



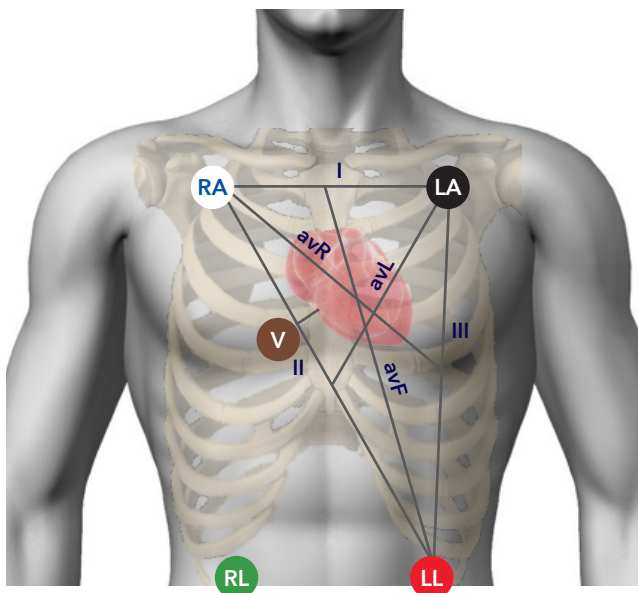
3-lead placement, American standard

Electrode label	Placement	Color
RA	Right arm: Below clavicle near the right shoulder	White
LA	Left arm: Below clavicle near the left shoulder	Black
LL	Left leg: Left of hypogastrium	Red

SMOKE over FIRE

Three lead tracings/waveforms

- I
- II
- III



5-lead placement, American standard

Electrode label	Placement	Color
RA	Right arm: Below clavicle near the right shoulder	White
LA	Left arm: Below clavicle near the left shoulder	Black
LL	Left leg: Left of hypogastrium	Red
RL	Right leg: Right hypogastrium	Green
V	Chest: Position depends on your electrode selection	Brown

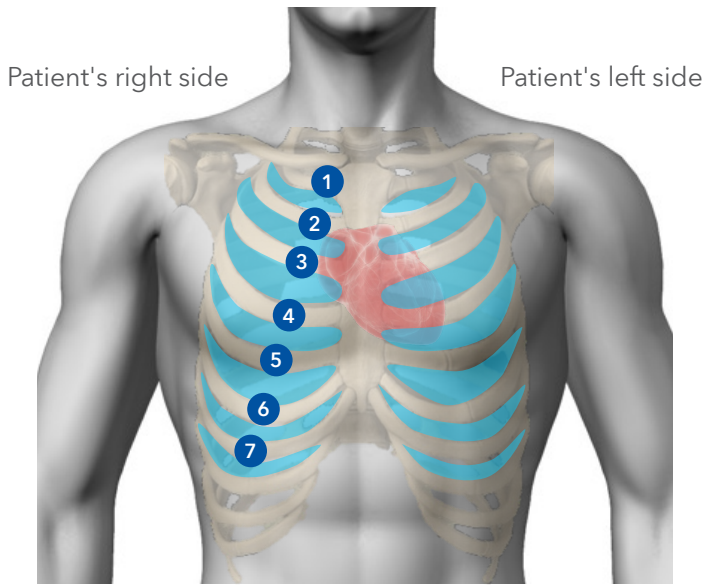
SMOKE over FIRE

SNOW over GRASS

Five lead positions = Seven lead tracings/waveforms

- I
- II
- III
- avR, avL, avF, V

Anatomy of the chest



● Rib number landmarks to help you find the correct ECG electrode placement

■ Intercostal spaces

Normal sinus rhythm (NSR) waveform

Rate	Regular (60-100 adult)
P-P regularity	Regular
R-R regularity	Regular
P wave	Present, normal
P:QRS ratio	1:1, associated
PR interval	Normal <0.20 seconds (5 boxes)
QRS width	Narrow <0.12 seconds (3 boxes)

Terminology

Heart rate:

- Term used to describe the frequency of the cardiac cycle
- Usually calculated as the number of contractions (heartbeats) of the heart in one minute
- Expressed as beats per minute, beats/min, or bpm

Electrocardiogram (ECG) waveform

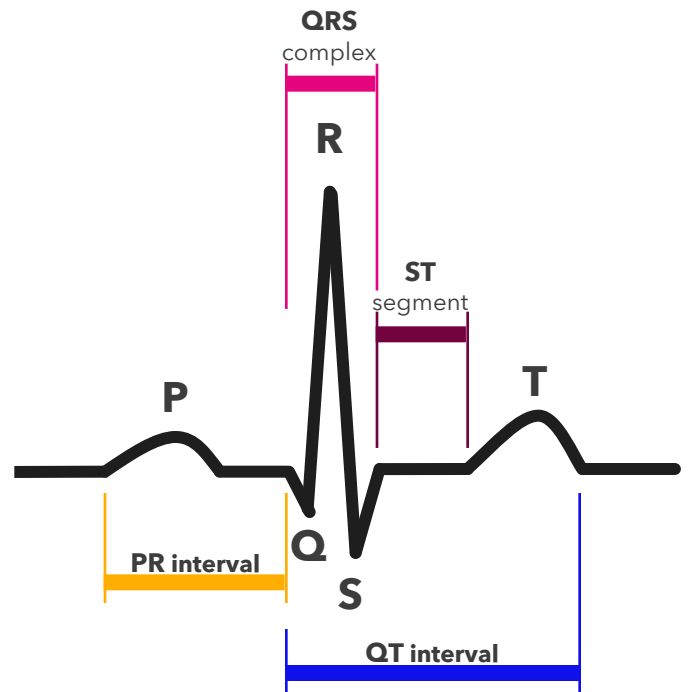
- Represents electrical activity of the heart
- Each segment/part of the waveform represents a certain part of the electrical current in the cardiac cycle

P wave

- Represents atrial depolarization (contraction)

QRS complex

- Represents ventricular depolarization (contraction)



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