THE STUDY VAULT

Clinical Chaos

12-Lead ECG

SKILL SNAPSHOT

Purpose
- Records cardiac electrical activity from 12 standardized views using 10 electrodes for rhythm, conduction, ischemia, and injury

When to use
- Chest/upper-body symptoms, dyspnea, syncope, palpitations, suspected ACS, electrolyte/drug effects, or other ordered indication.

Supplies needed
- ECG machine and cable; 10 electrodes; razor/clippers; skin prep; towel/gown; printer/transmission capability.

PREP + PATIENT SETUP

- Confirm urgency; suspected ACS requires rapid acquisition without delaying treatment.
- Explain procedure; expose chest with privacy and position supine or semi-Fowler.
- Assess skin and anatomic landmarks; remove

VAULT TIP

- Place V1, V2, and V4 first. V3 is found between V2 and V4; V5 and V6 stay level with V4.

STEP-BY-STEP

1. Hand hygiene; identify patient with two identifiers; enter correct name, ID, age, sex, date/time, and clinical information.
2. Prepare skin: clean/dry, gently abrade if needed, and clip—not shave—excess hair.
3. Place limb electrodes on distal limbs when possible and symmetrically; document torso placement if required by emergency/condition.
4. Locate sternal angle/2nd rib, then count to 4th intercostal space.
5. Place V1 at 4th intercostal space, right sternal border.
6. Place V2 at 4th intercostal space, left sternal border.
7. Place V4 at 5th intercostal space, left midclavicular line.
8. Place V3 midway between V2 and V4.
9. Place V5 at left anterior axillary line, horizontally level with V4.
10. Place V6 at left midaxillary line, horizontally level with V4 and V5. For breast tissue, place electrodes beneath, not on, the breast.
11. Connect leads; ask patient to relax, keep still, and avoid talking. Verify baseline is free of artifact.
12. Acquire tracing. Check lead reversal, calibration, patient data, and diagnostic quality; repeat only if needed without delaying provider review.
13. For suspected acute changes, notify/transmit immediately and obtain serial or right/posterior leads when ordered.

SAFETY REMINDERS

- Never delay emergency treatment to obtain a perfect tracing.
- Incorrect V1/V2 height can create false abnormalities.
- Limb and chest placements must be consistent for serial comparison.
- Do not interpret automated statement as definitive.

COMMON MISTAKES

- Placing V1/V2 too high.
- Putting V4 after estimating V3.
- Placing V5/V6 below V4 level.
- Electrodes on breast tissue.

DOCUMENTATION

- Date/time, indication, symptoms.
- Electrode modifications and patient position.
- Quality/artifact and repeat ECGs.
- Provider notification/transmission time.
- Patient response and associated interventions.