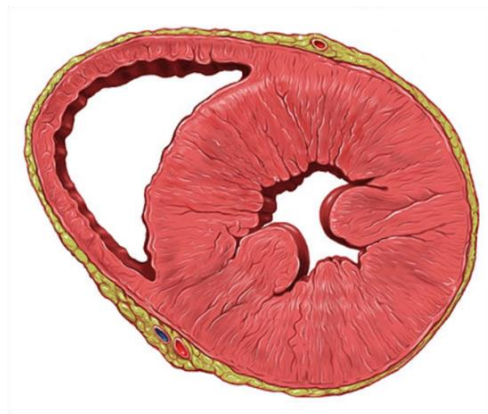


Left ventricular hypertrophy (LVH)

ECG Diagnostic Criteria: (The ECG often shows signs of increased voltage from the heart with LVH). None is perfect, though by using multiple criteria sets, the sensitivity and specificity is increased.

ST segment changes are commonly encountered related to repolarization abnormalities from this hypertrophy.

- Sokolow + Lyon (*Am Heart J, 1949;37:161*)
 - $S V1 + R V5$ or $V6 > 35$ mm (Sen 22% Spec 100%)
 - $R aVL > 9$ mm in women, & > 11 mm in men (Sen 11% Spec 100%)
- Cornell criteria (*Circulation, 1987;3: 565-72*)
 - $S V3 + R aVL > 28$ mm in men (Sen 42% Spec 96%)
 - $S V3 + R aVL > 20$ mm in women
- Other Criteria:
 - $AVL: R > 11$ mm,
 - $R V4-6 > 25$ mm, $S V1-3 > 25$ mm,
 - $S V1$ or $V2 + R V5$ or $V6 > 35$ mm,
 - $R I + S III > 25$ mm
 - Lead 1: $R > 14$ mm
 - Lead AVR: $S > 15$ mm
 - Left atrial enlargement: Pw in V1 with bi-phasic wave, negative component of > 1 mm deep and 40ms wide.



Romhilt-Estes Criteria for LVH

Am Heart J, 1986;75:752-58
 Diagnostic: ≥ 5 points (Sen 33% Spec 94%) ;
 Probable: 4 points (Sen 54% Spec 85%)

| +ECG Criteria | Points |
|--|---------------------|
| Voltage Criteria (any of): R or S in limb leads ≥ 20 mm S in V1 or V2 ≥ 30 mm R in V5 or V6 ≥ 30 mm | 3 points |
| ST-T Abnormalities: Without digitalis With digitalis | 3 points 1 point |
| Left Atrial Enlargement in V1 | 3 points |
| Left axis deviation | 2 points |
| QRS duration 0.09 sec | 1 point |
| Delayed intrinsicoid deflection in V5 or V6 (>0.05 sec) | 1 point |