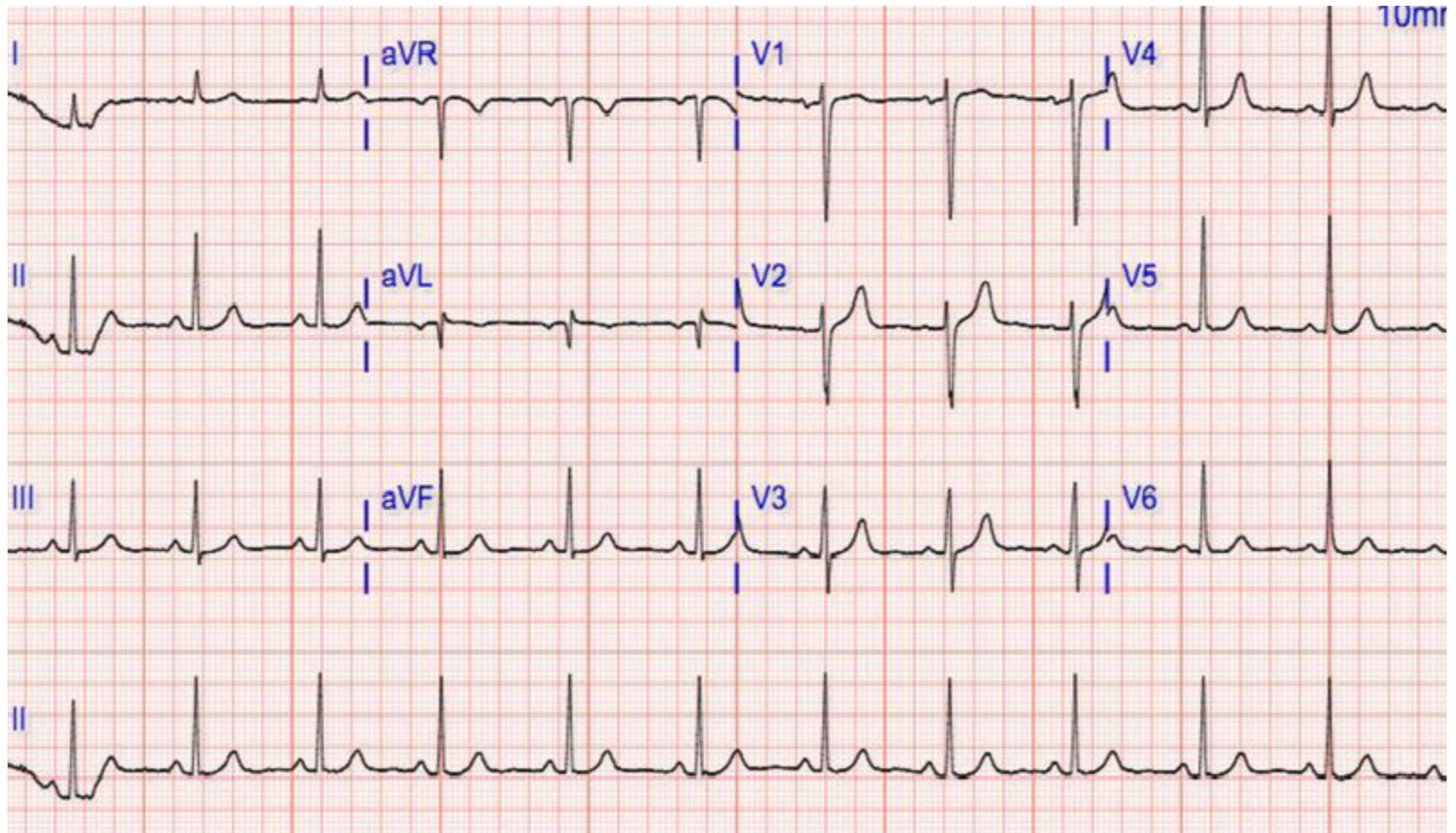


- Normal ECG (No abnormalities of rate, rhythm, axis, or P-QRS-T):



## P Wave

- *Duration*: 80 to 110 msec
- *Axis*: 0 to +75°
- *Morphology*: Upright in I, II, aVF; upright or biphasic in III, aVL, V1, V2. Small notching may be present
- *Amplitude*: Limb leads < 2.5 mm; V1: positive deflection < 1.5 mm and negative deflection < 1 mm

## PR Interval

- *Duration*: 120 to 200 msec
- *PR segment*: Usually isoelectric; may be displaced in a direction opposite to the P wave; elevation is usually < 0.5 mm; depression is typically < 0.8 mm

## QRS Complex

- *Duration*: 60 to 90 msec
- *Axis*: -30° to +90°
- *Transition zone (precordial leads with equal positive and negative deflection)*: V2–V4
- *Q wave*: Small Q waves (duration < 30 msec) are common in most leads, except aVR, V2-V3
- *Onset of intrinsicoid deflection (beginning of QRS to peak of R wave)*: right precordial lead < 35 msec; left precordial (V2–V6) leads < .45 msec

## ST Segment

- Usually isoelectric, but may vary from 0.5 mm below to 1 mm above baseline in limb leads, and up to 3 mm concave upward elevation may be seen in the precordial leads in early repolarization (see Criteria Section).

### T Wave

- *Morphology*: Upright in I, II, V3-V6; inverted in aVR, V1; may be upright, flat, or biphasic in III, aVL, aVF, V1, V2. T wave inversion may be present in V1-V3 in healthy young adults (juvenile T waves, see Section 7)
- *Amplitude*: Usually < 6 mm in limb leads and  $\leq$  10 mm in precordial leads

### QT Interval

Corrected QT (QT interval divided by the square root of the RR interval) = 300 to 470 msec in males and 300 to 480 msec in females; varies inversely with heart rate

### U Wave

- *Morphology*: Upright in all leads except aVR
- *Amplitude*: 5%–25% the height of the T wave (usually < 1.5 mm)