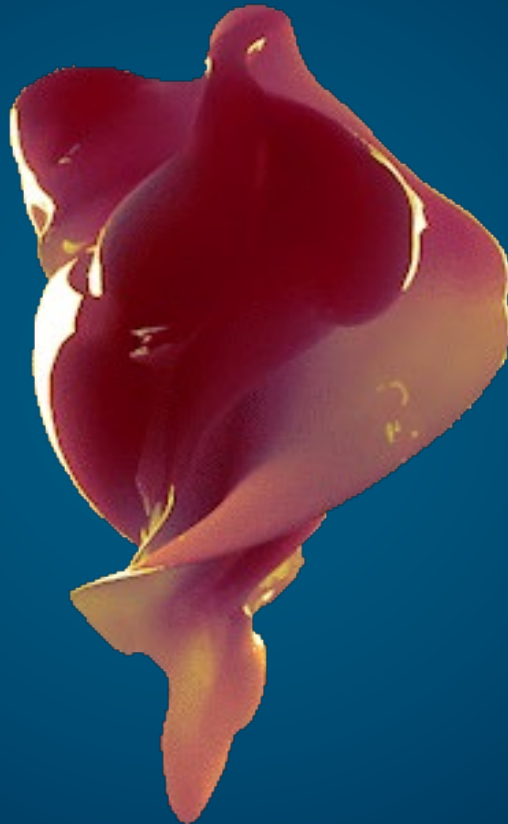
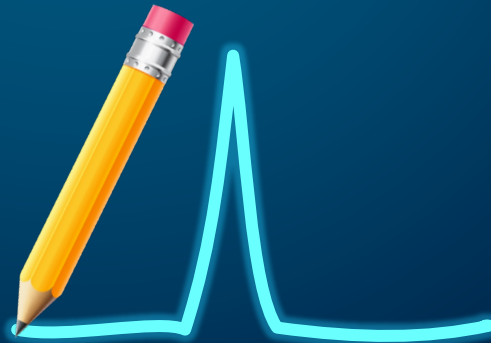
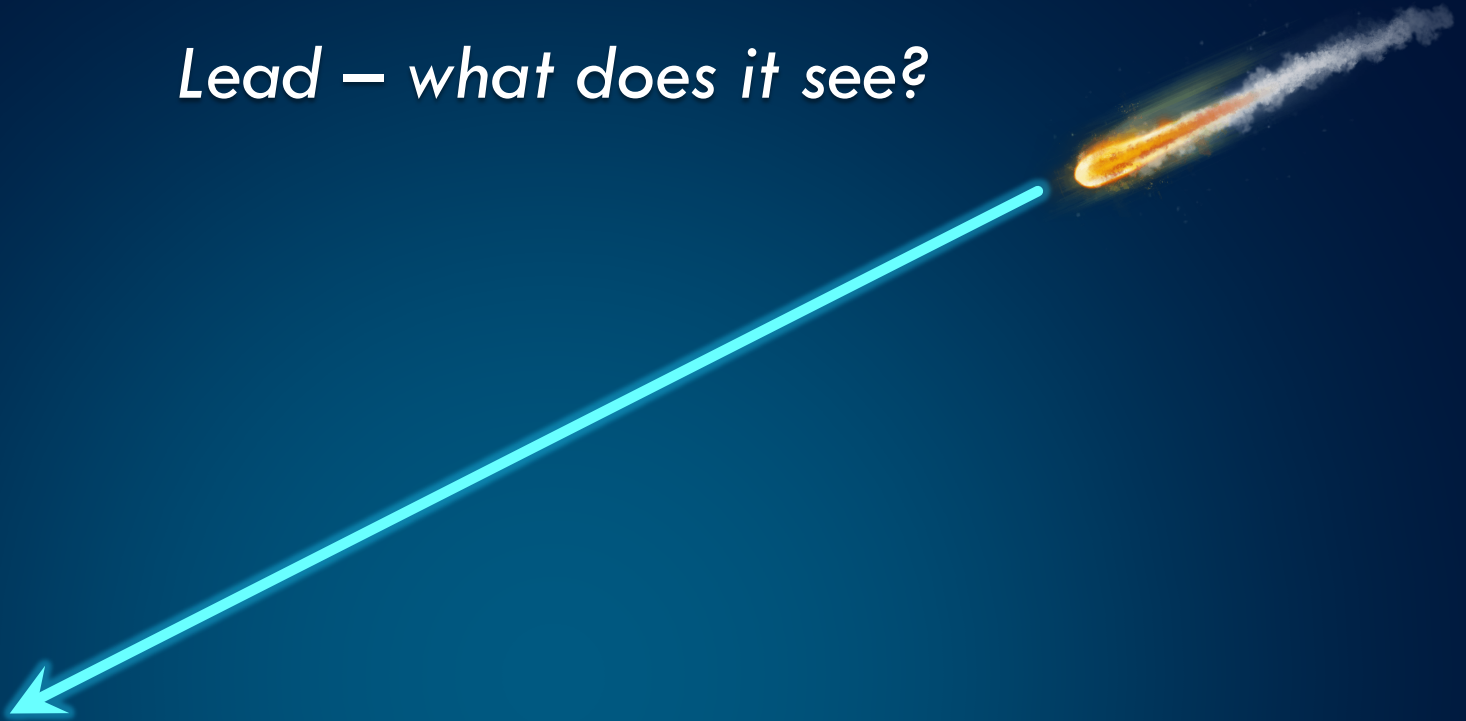


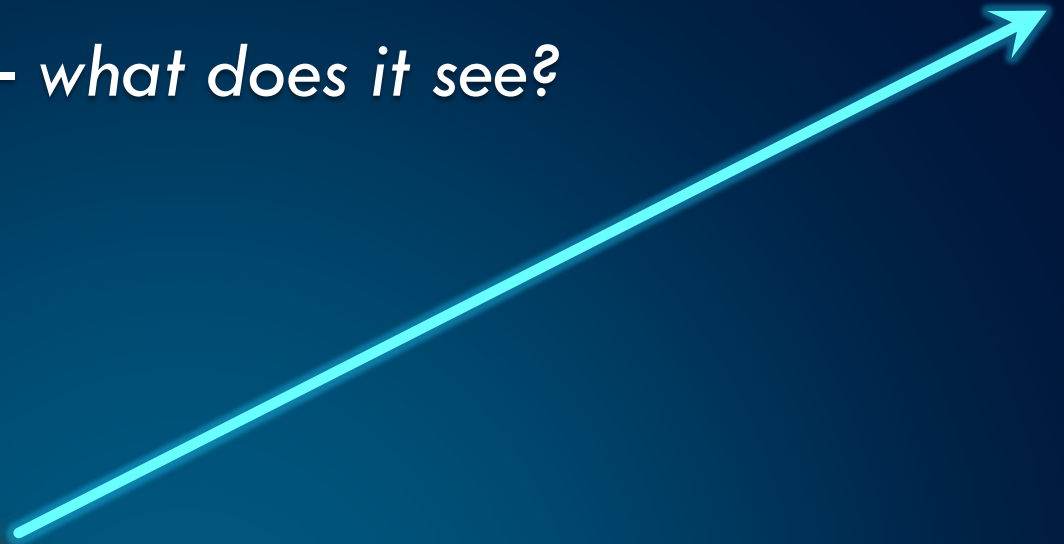
ECG – normal cases

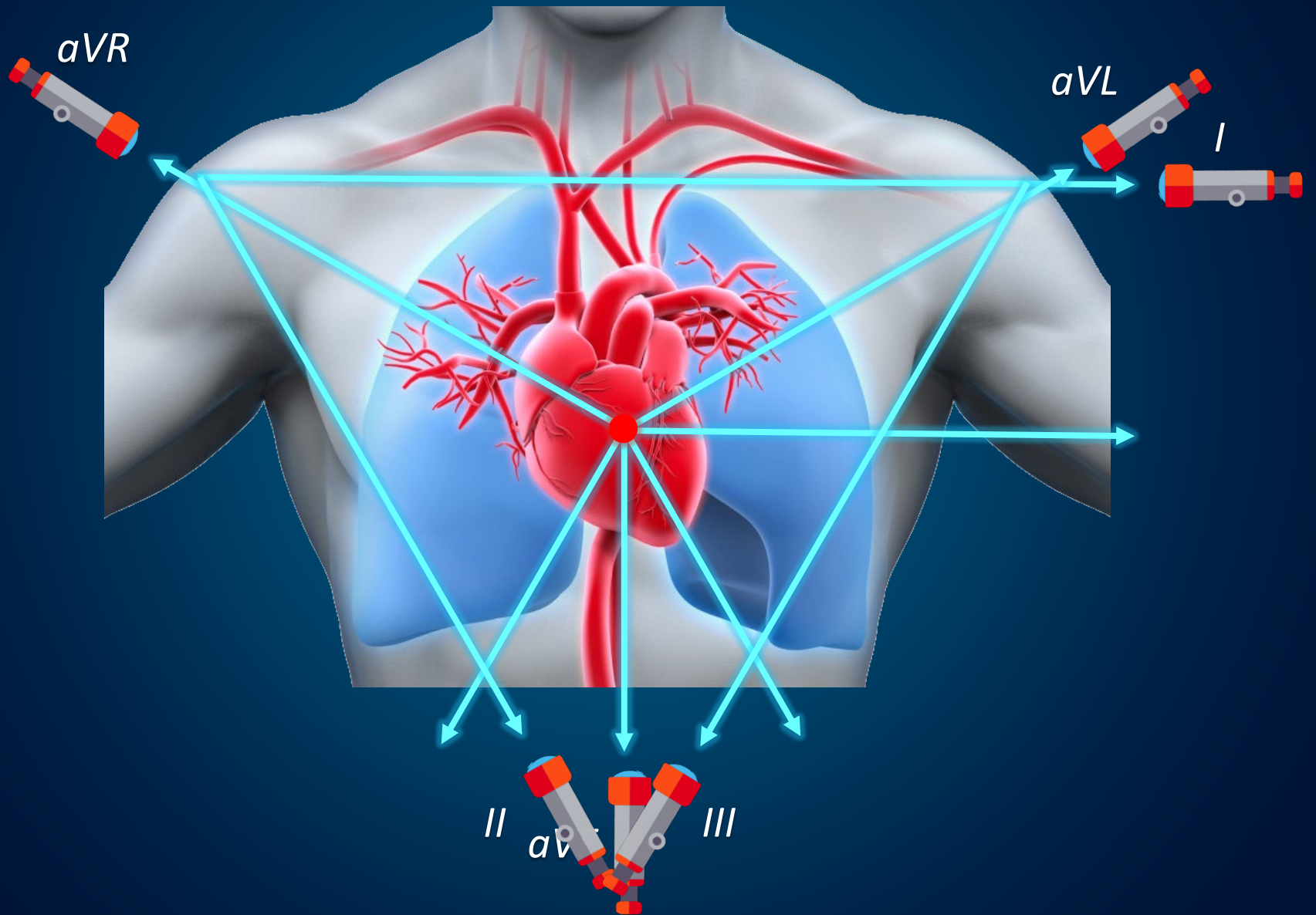


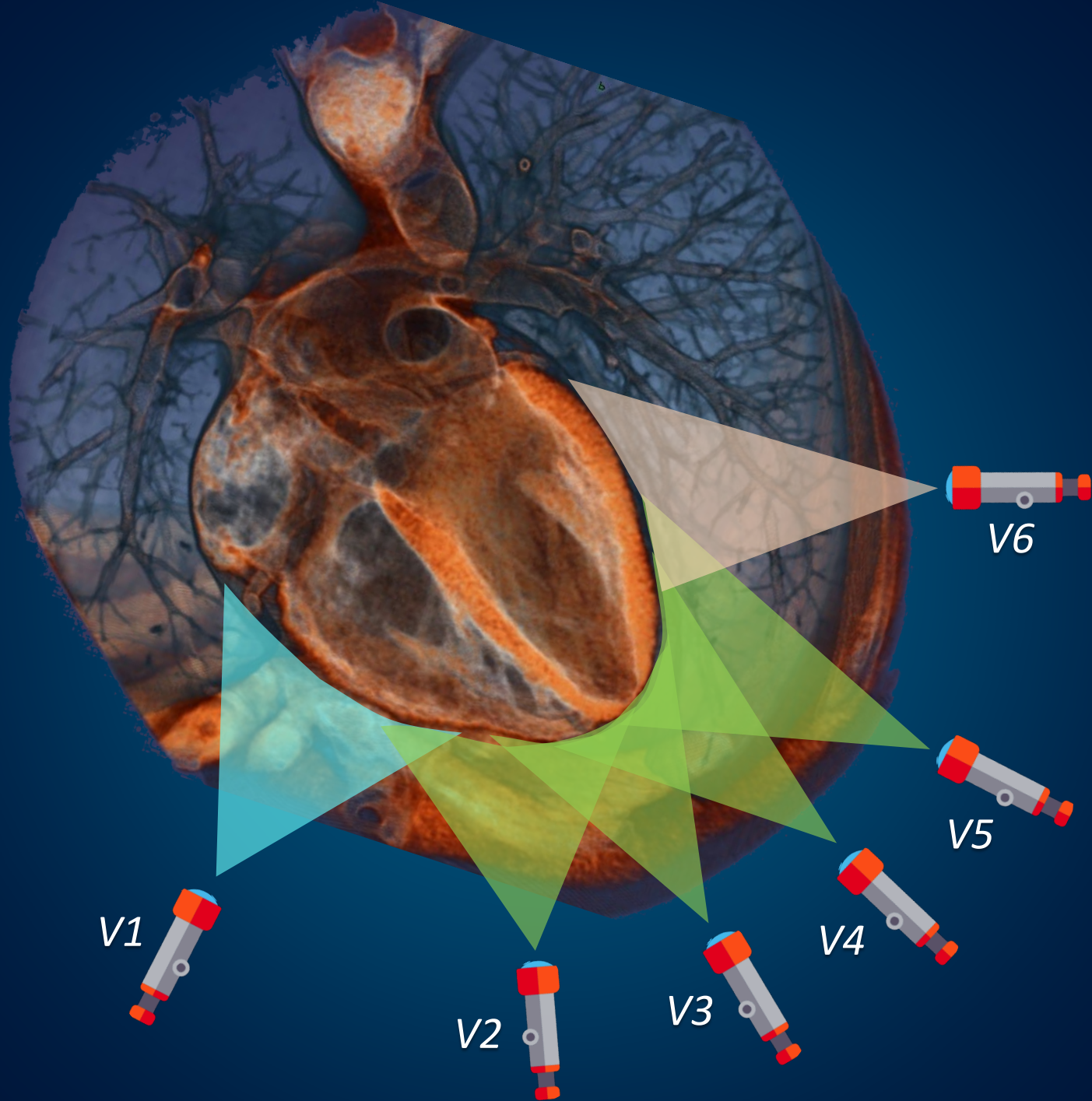
Lead – what does it see?

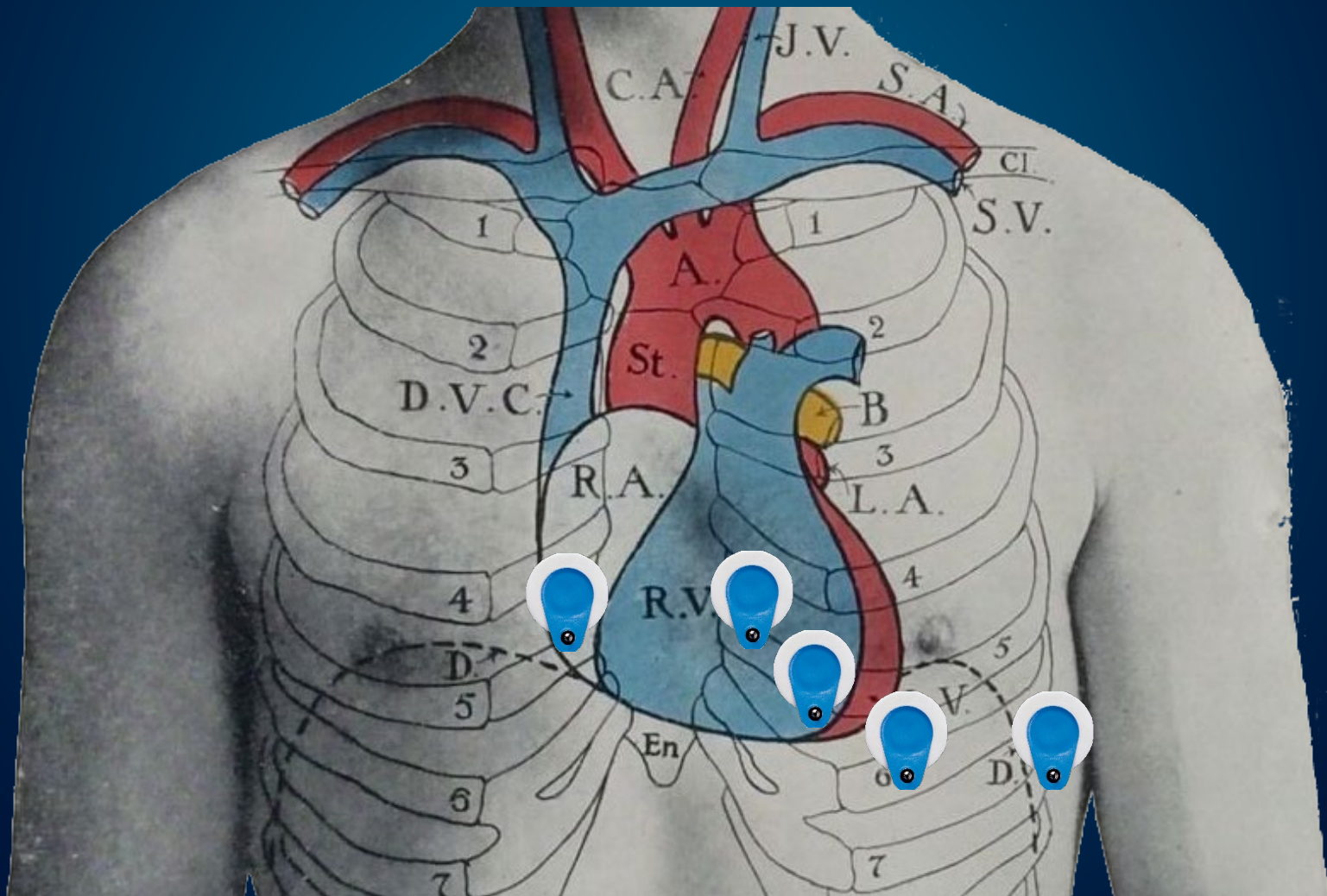


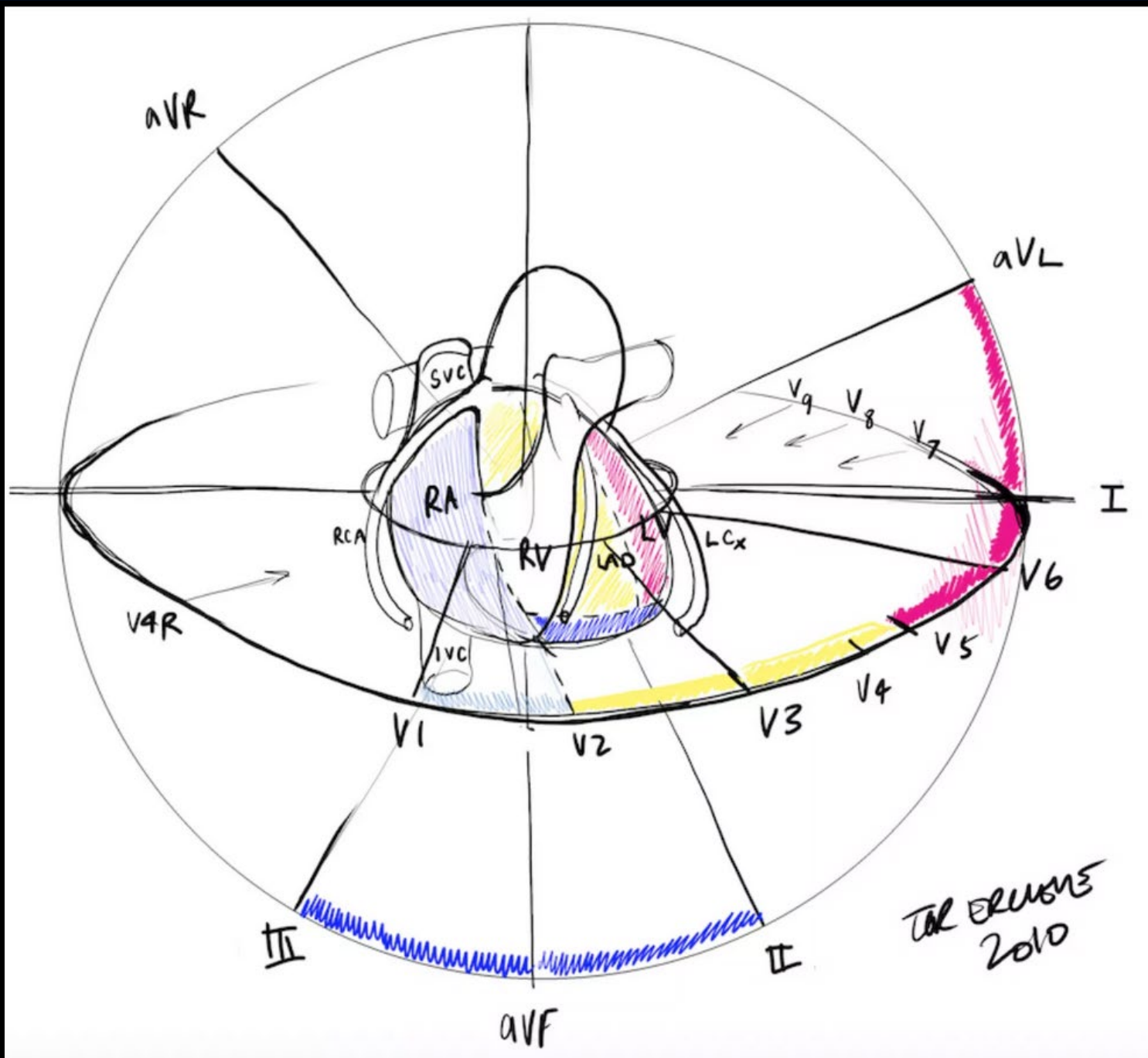
Lead – what does it see?











Steps in ECG reading

1. Rythm

2. Axis

3. P wave morphology – not today

4. PR (PQ) interval

5. QRS width

6. QRS amplitude

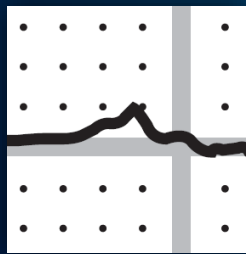
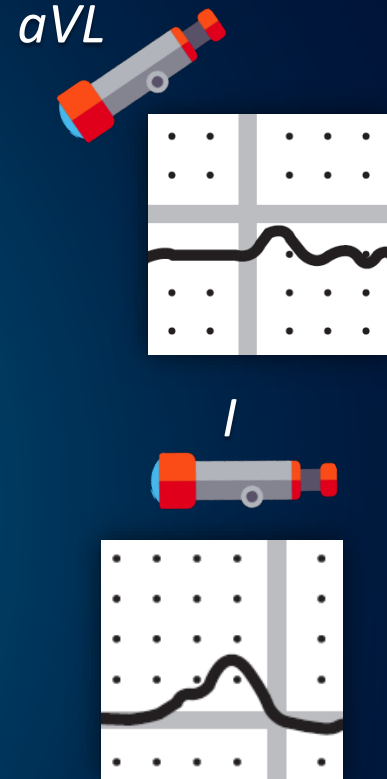
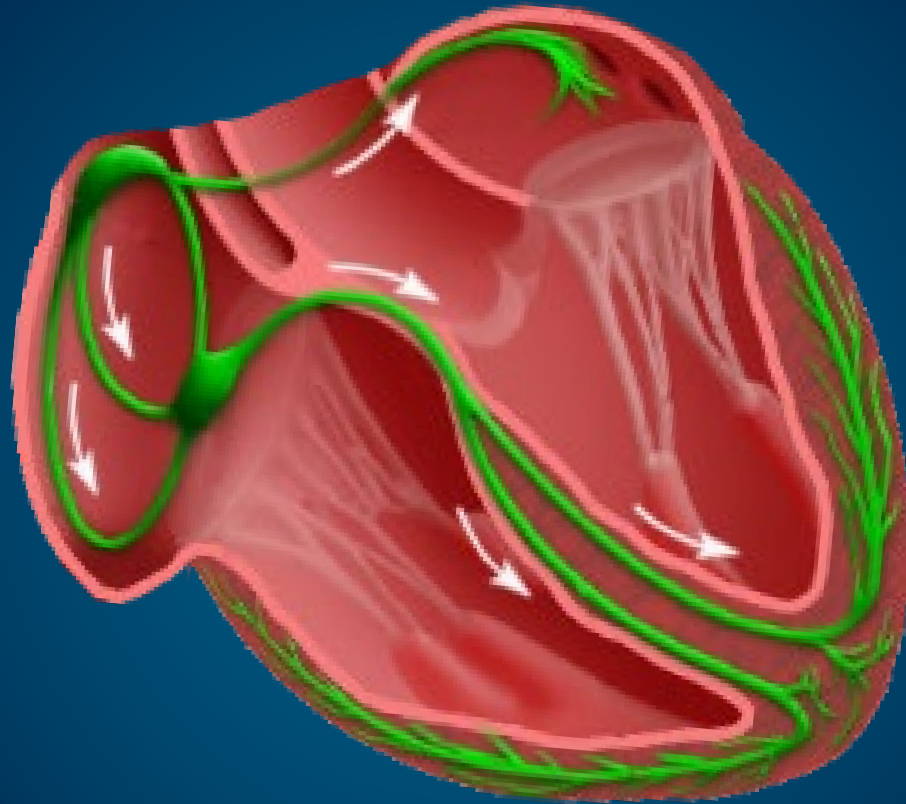
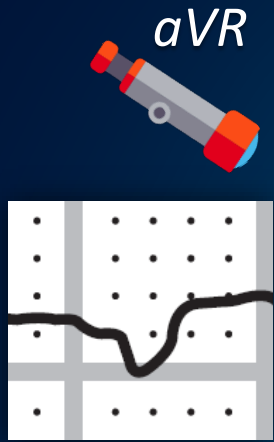
7. Signs of necrosis (Q waves)

8. ST segment

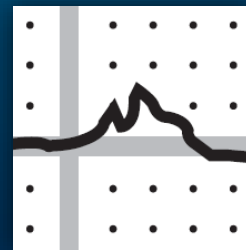
9. T wave and QT interval

10. Pacemakers – not today

1. Sinus rhythm



aVF

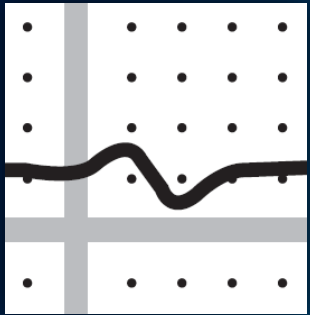


II

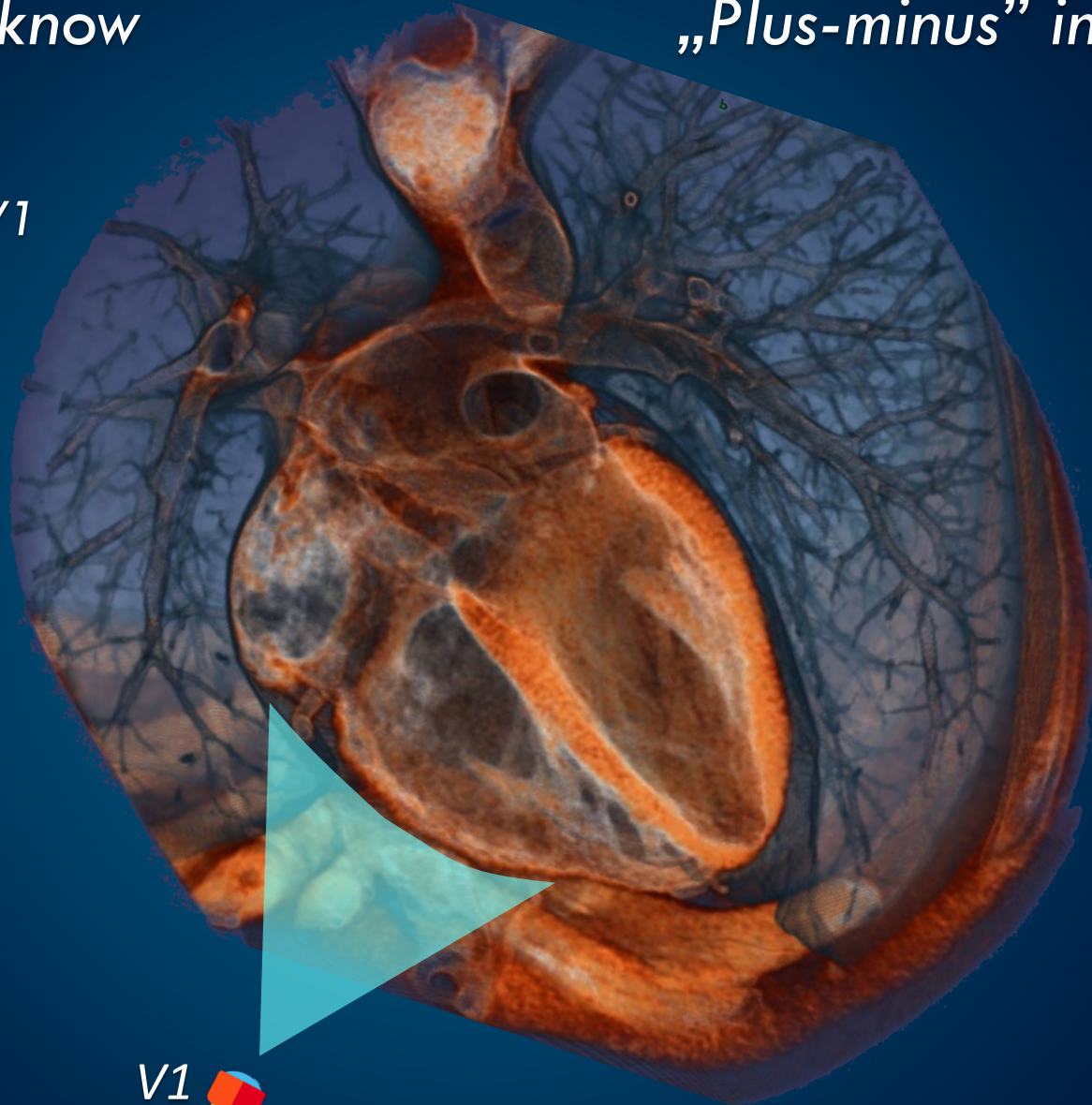


Good to know

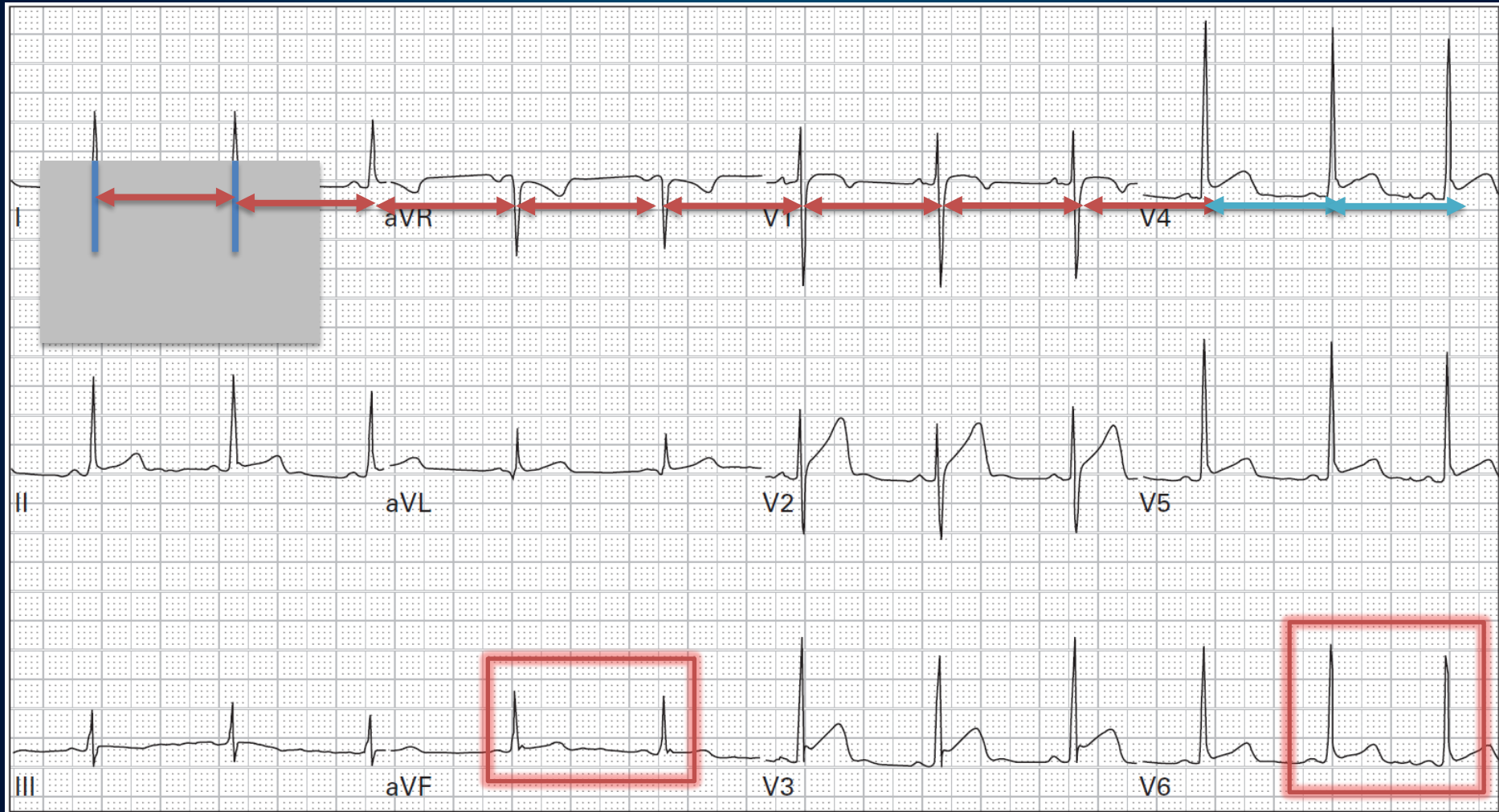
„Plus-minus“ in V1



V1

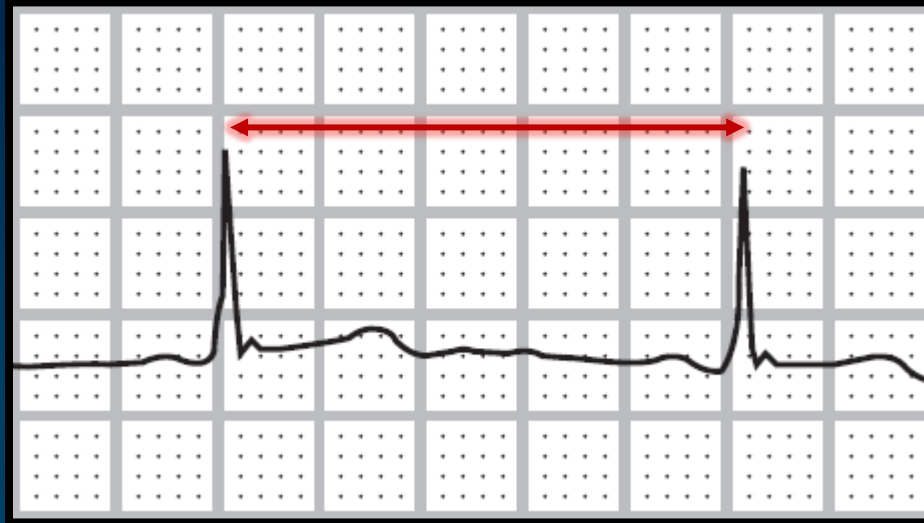


Regularity



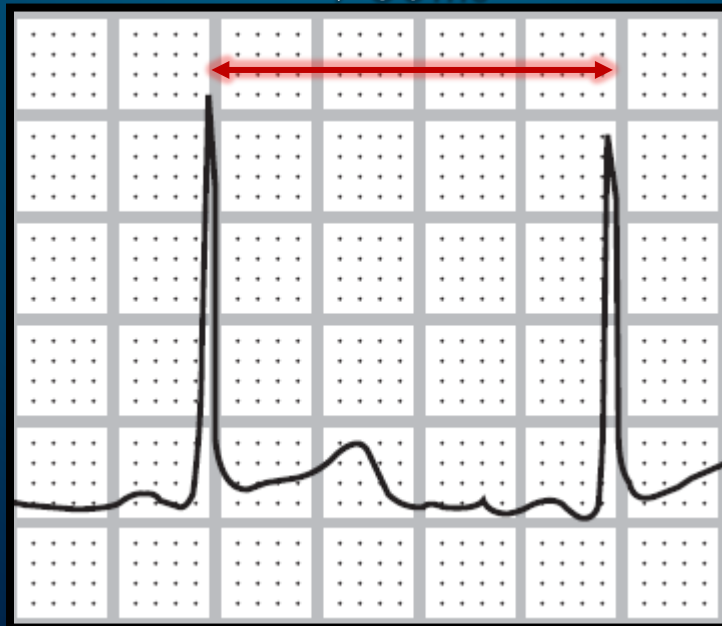
1020ms

1.

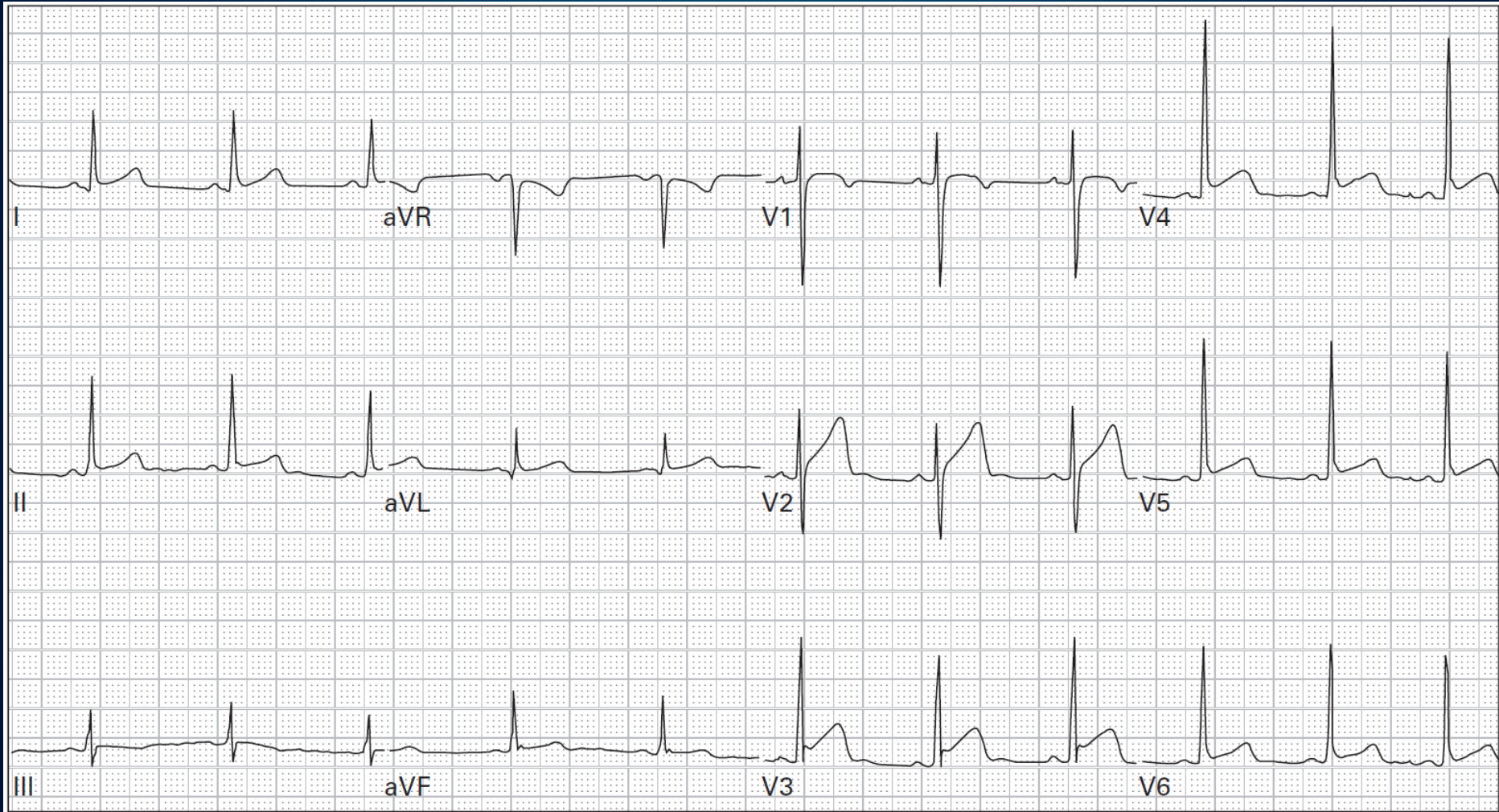


780ms

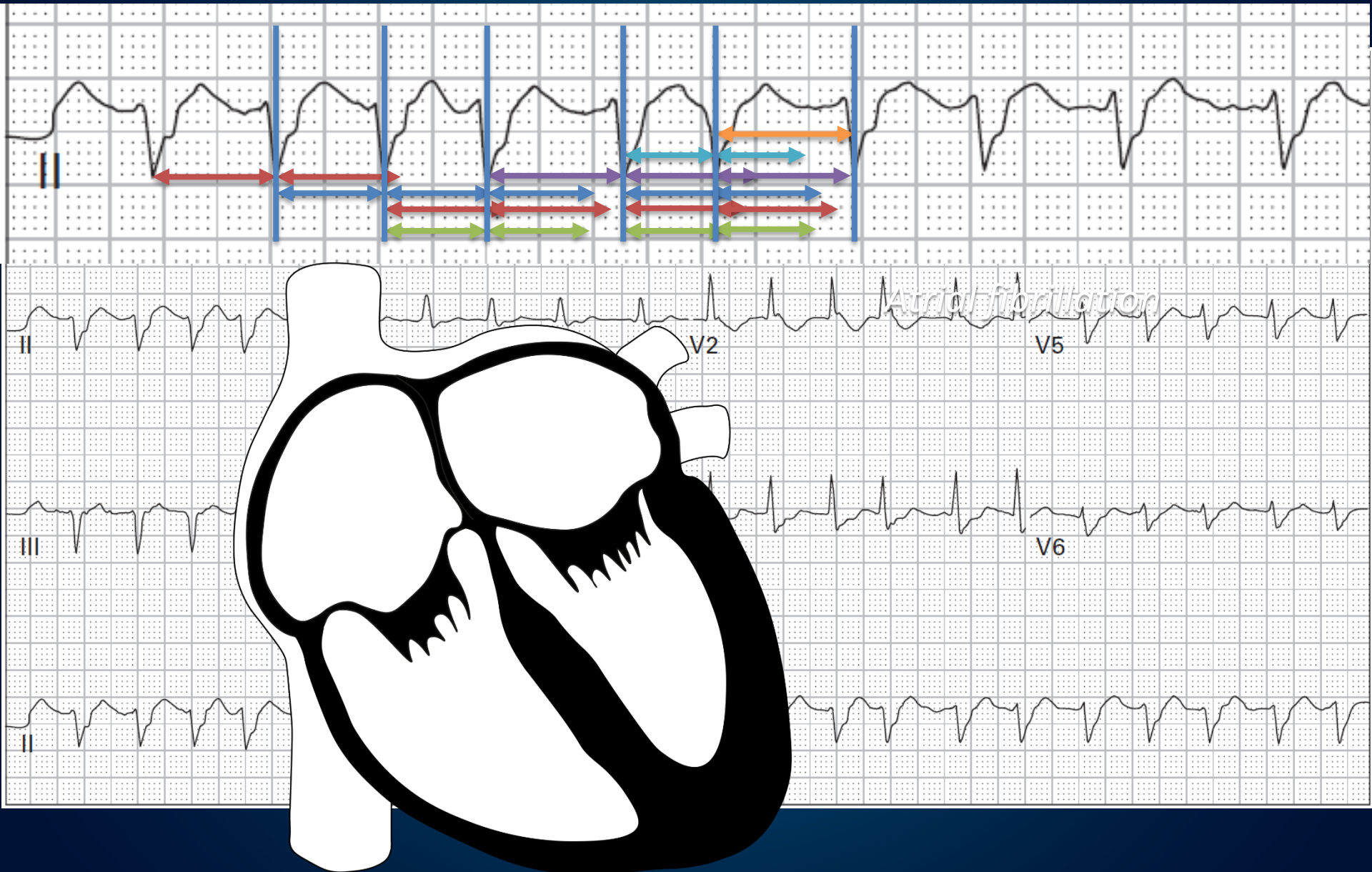
$\Delta P-P > 160ms$



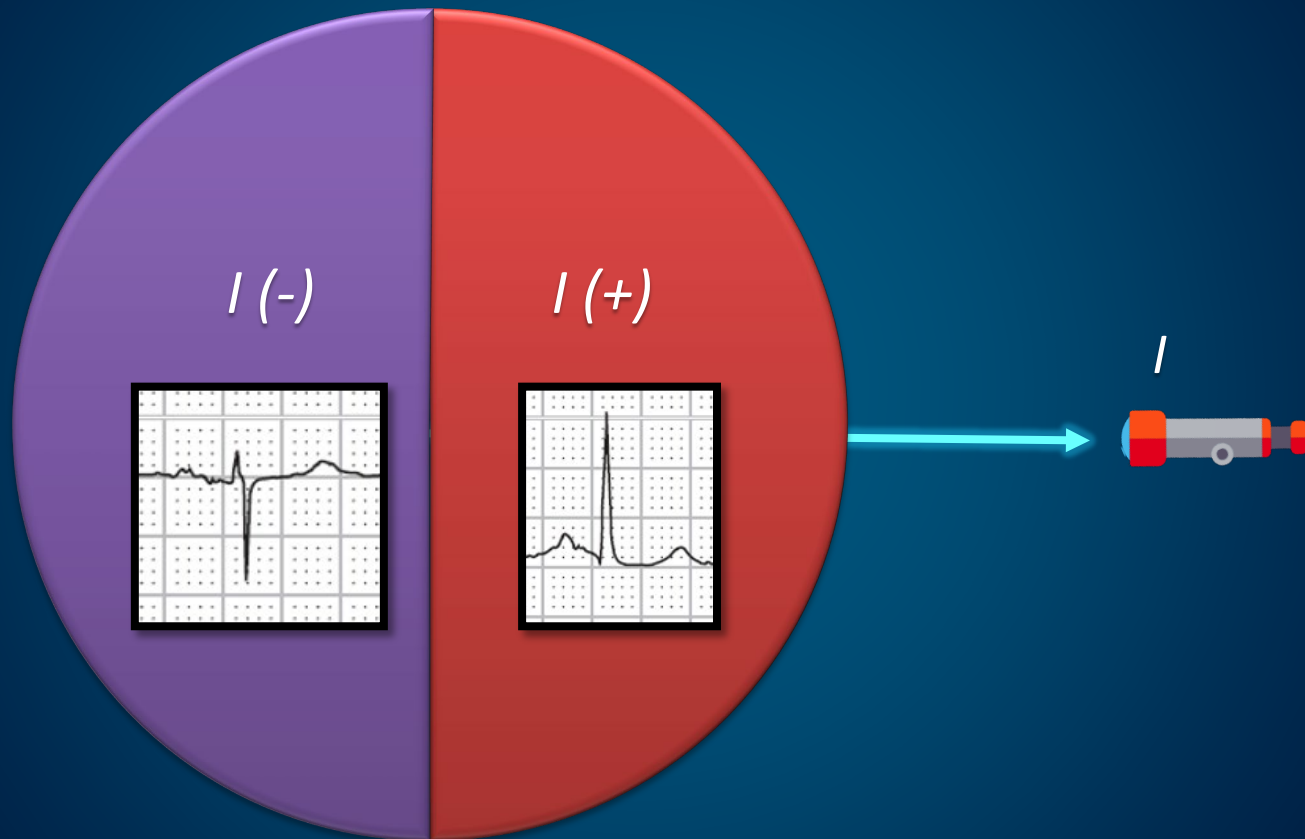
Sinus arrhythmia

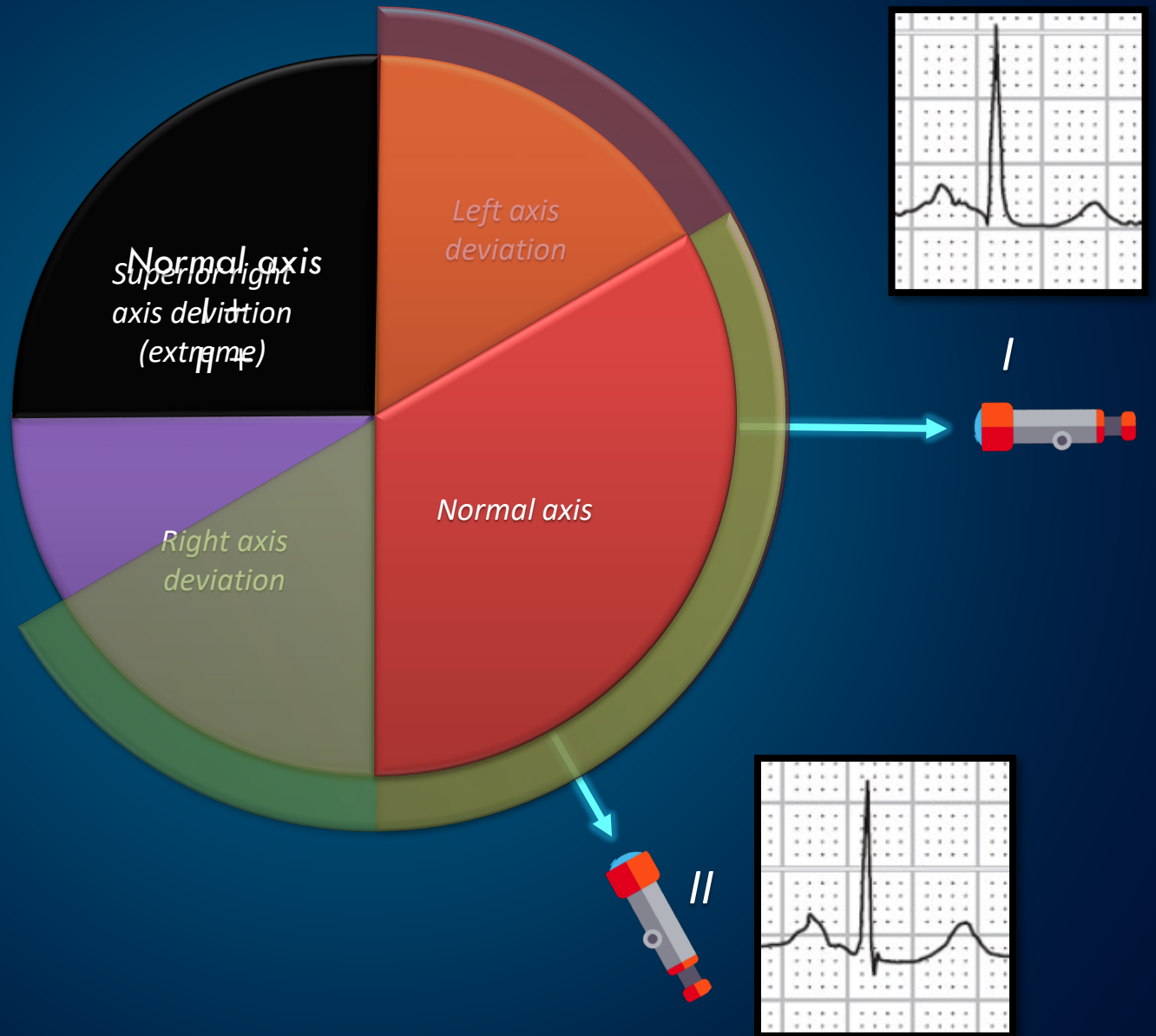


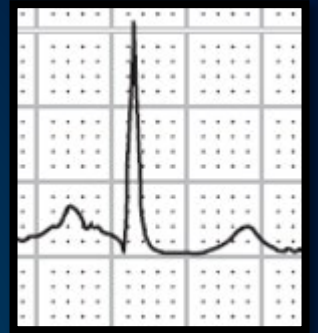
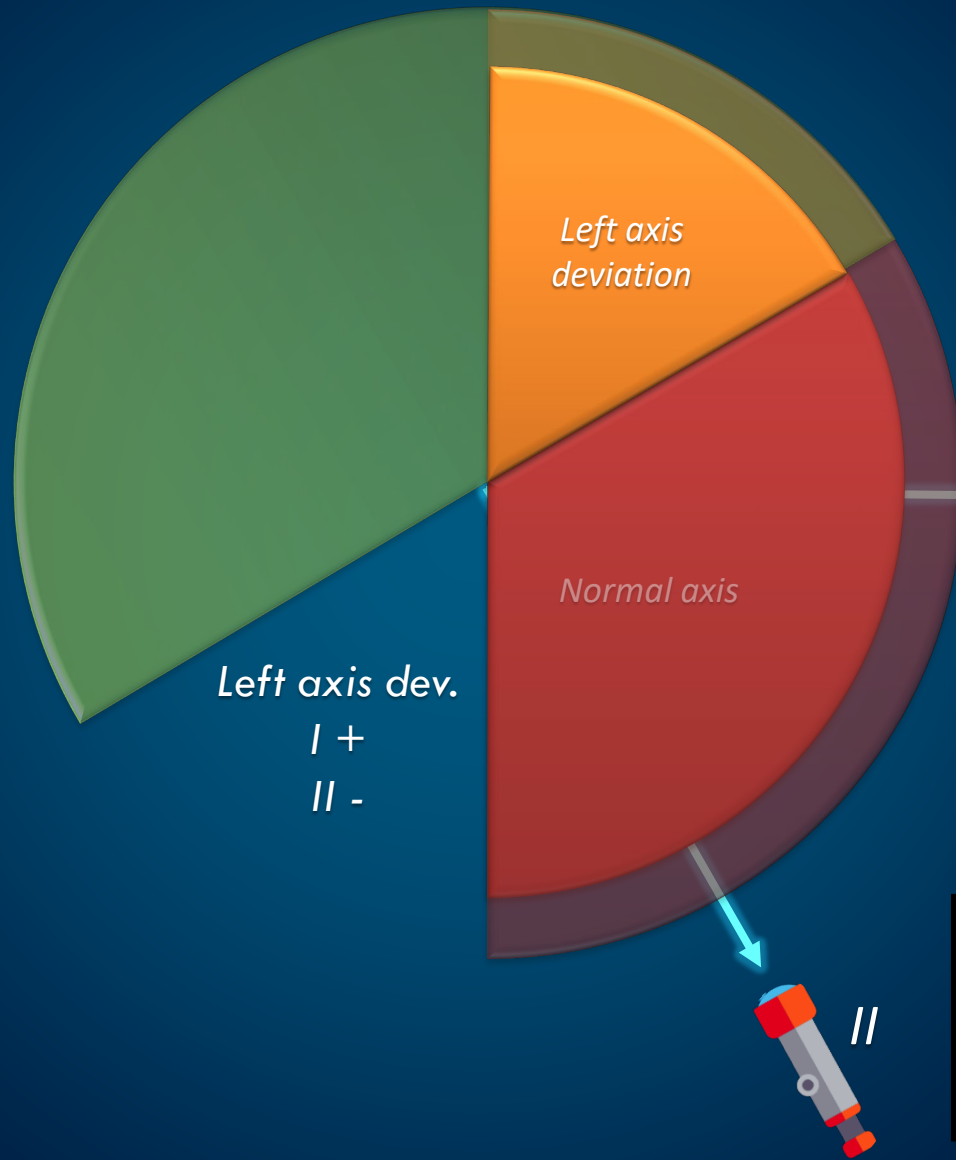
Irregularly irregular



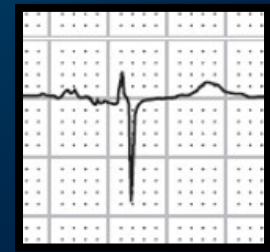
2. Axis – how to determine it?



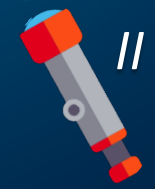


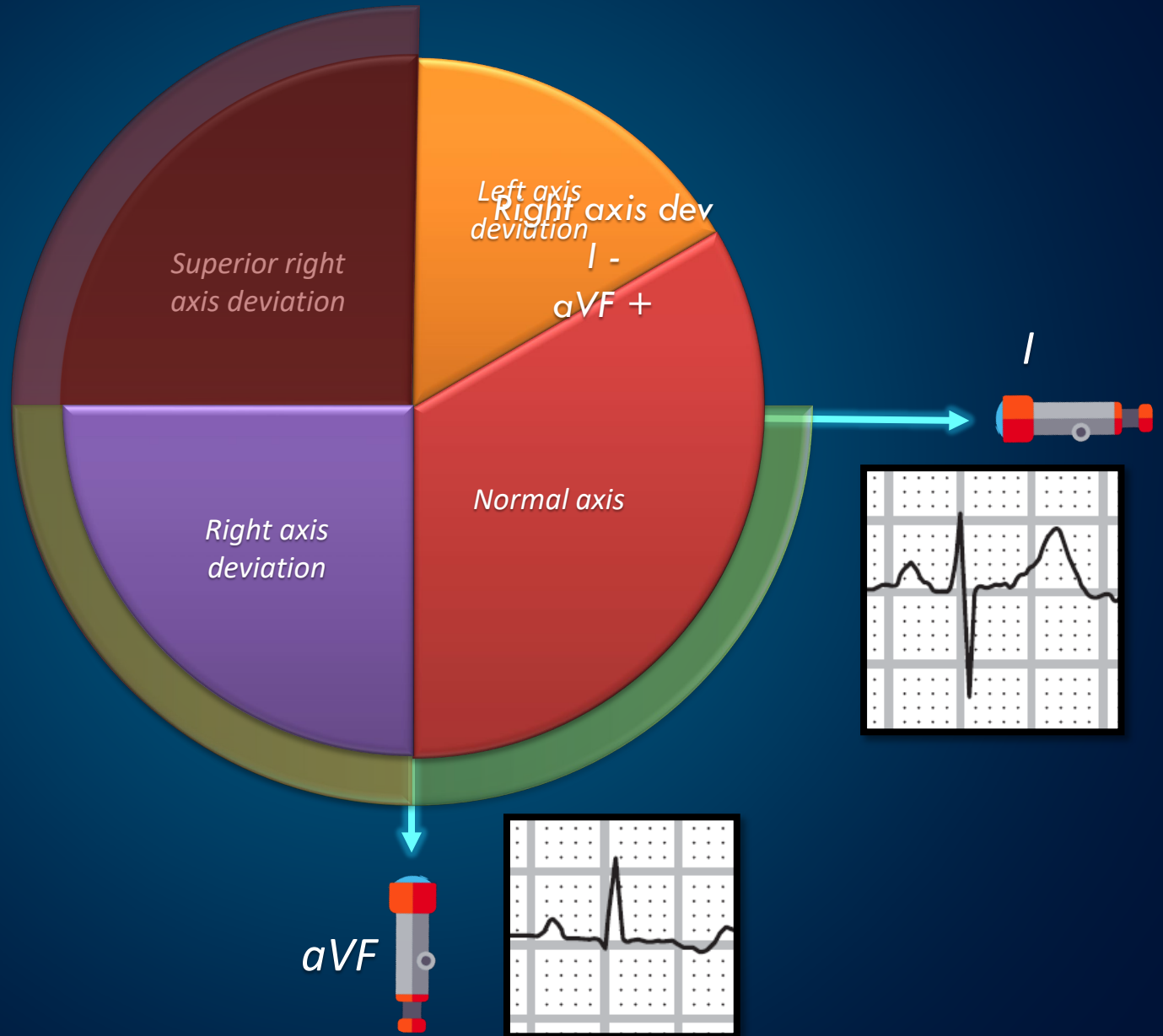


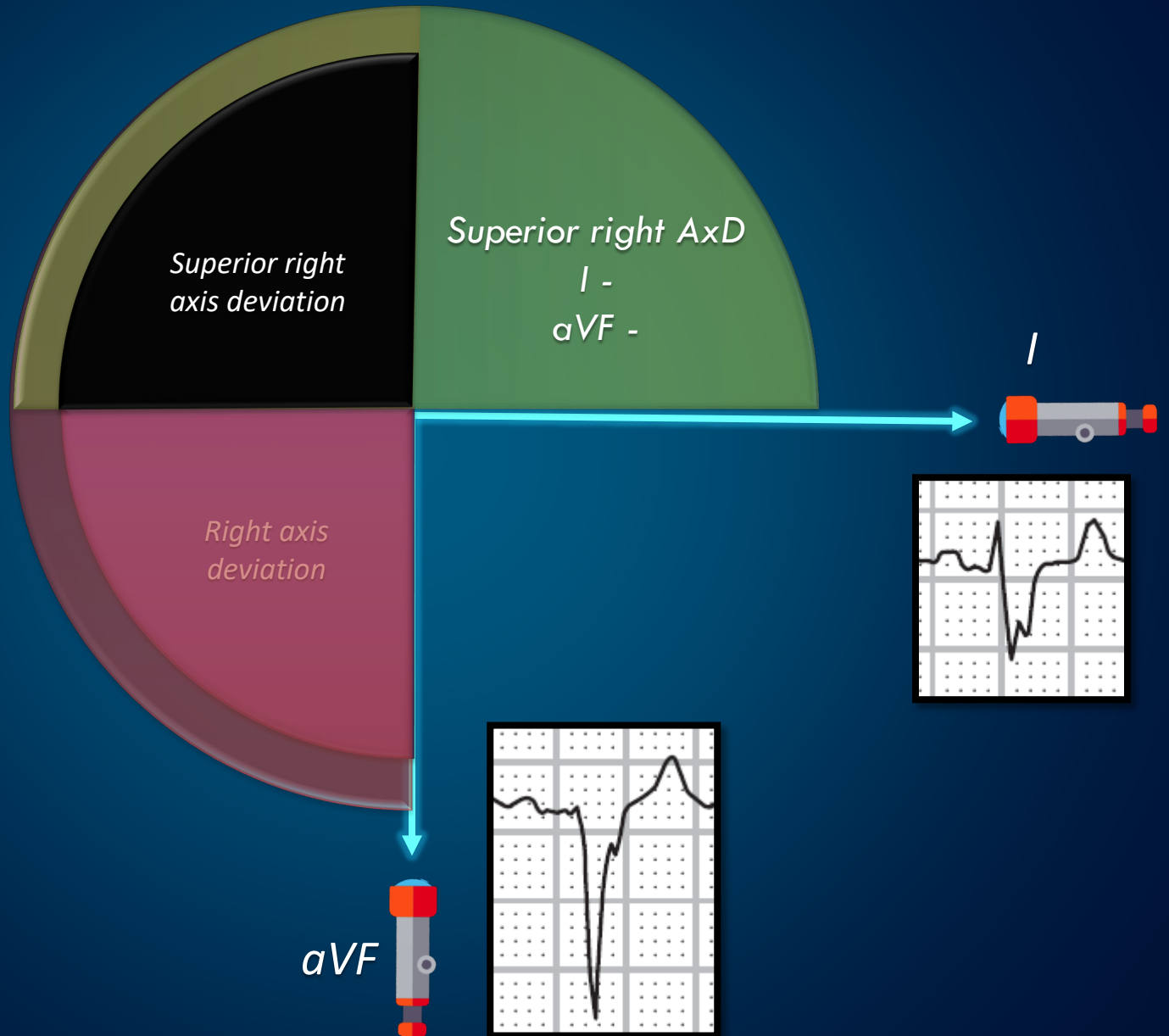
I



II







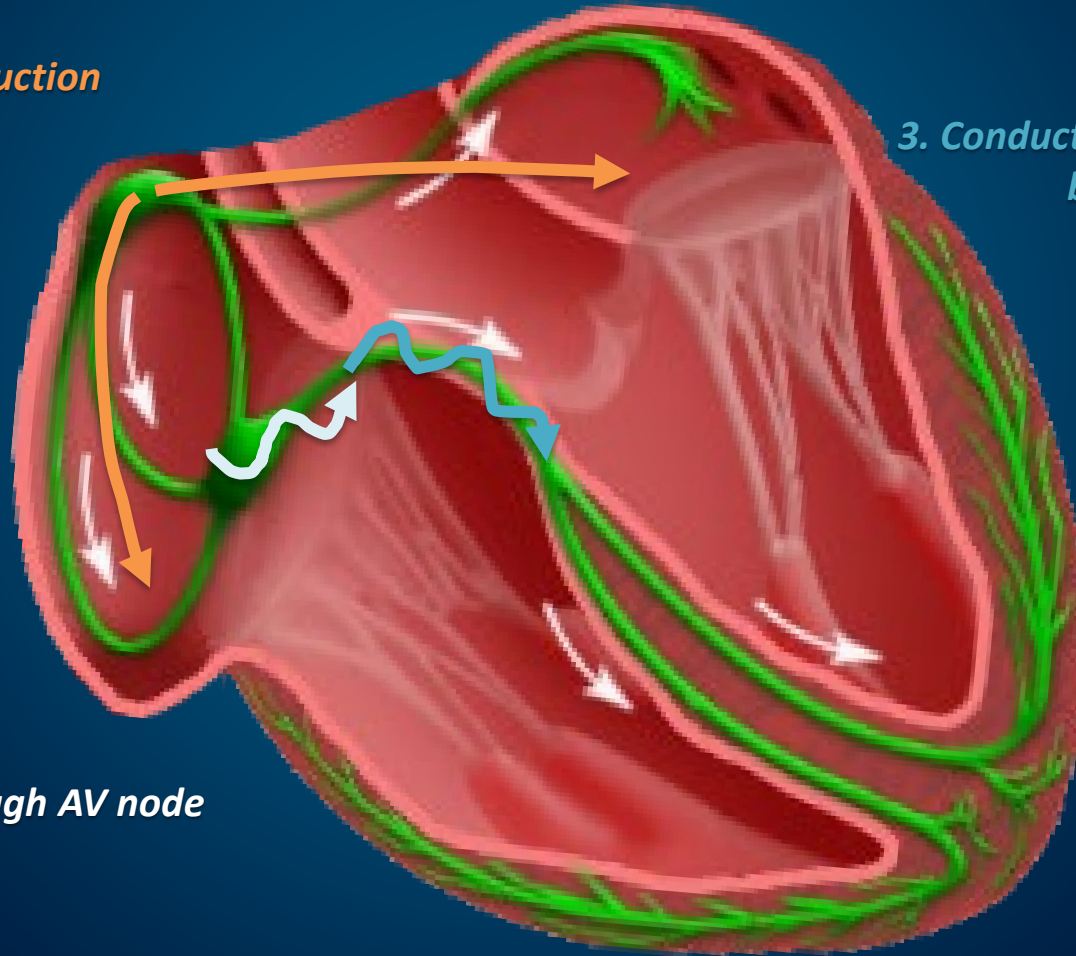
4. PQ –what is in it?

P wave + PQ segment

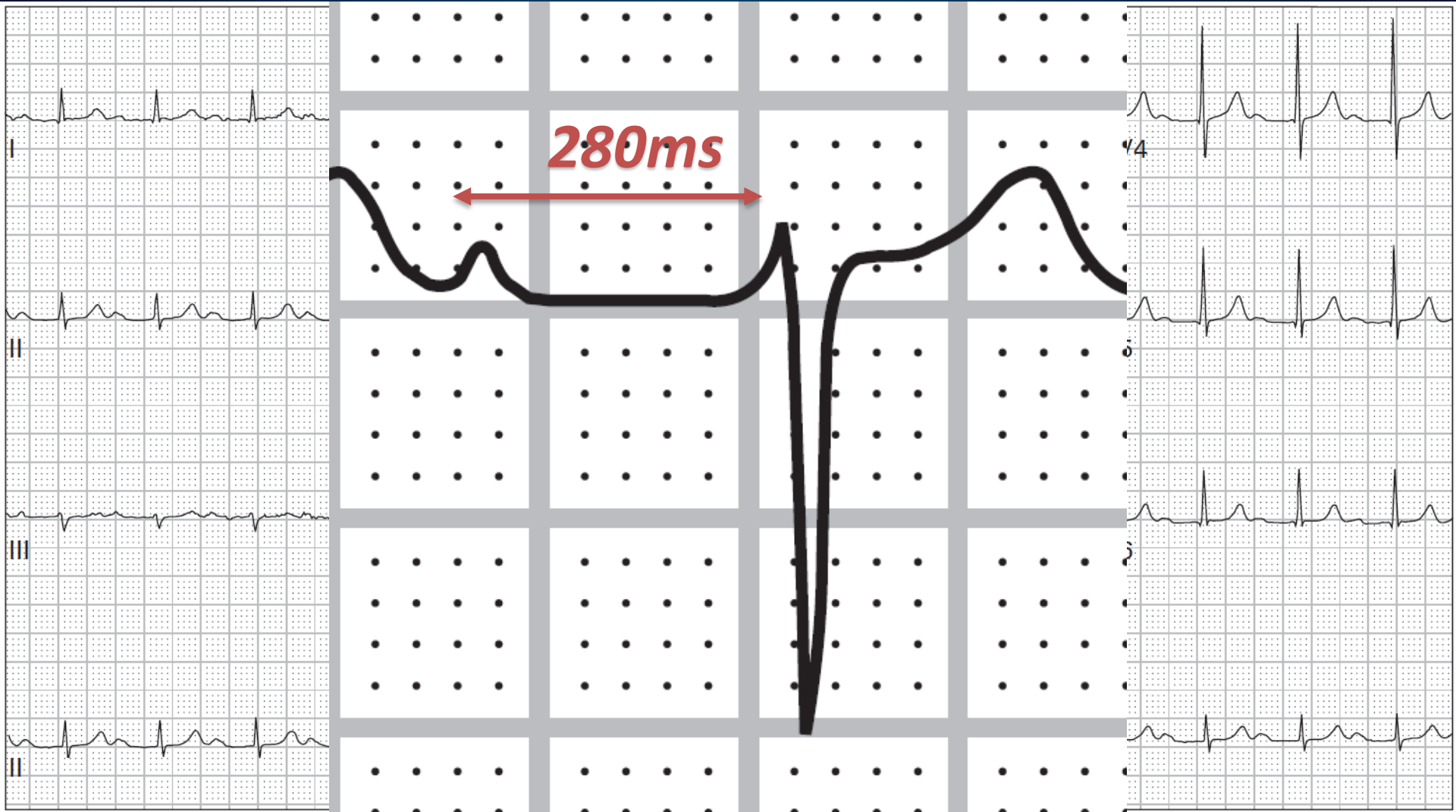
1. Intraatrial conduction

3. Conduction through His bundle

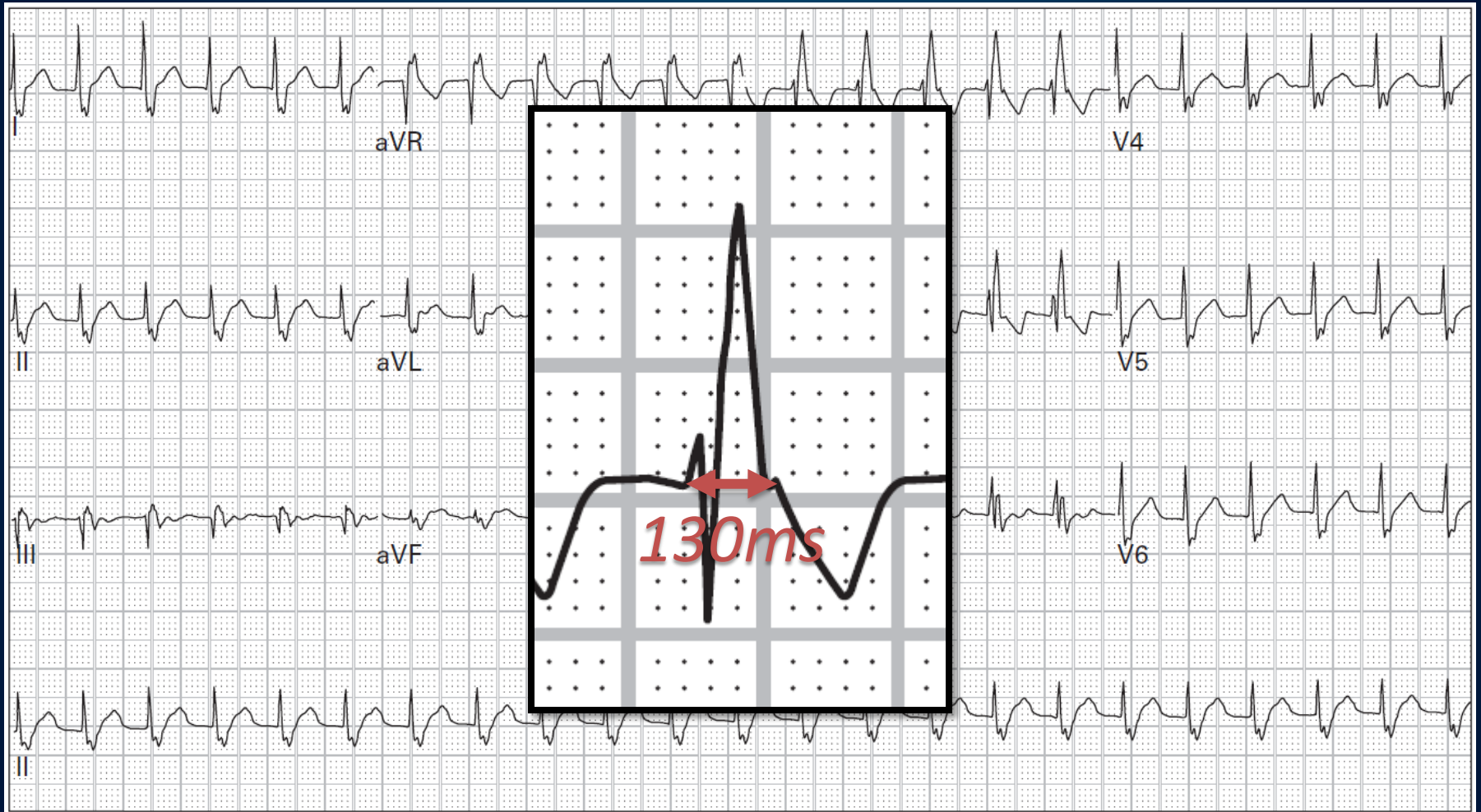
2. Conduction through AV node



Normal PQ (PR) – 120ms-200ms



5. QRS width



Normal - $<120\text{ms}$

5. QRS amplitude



V1



V2



V3



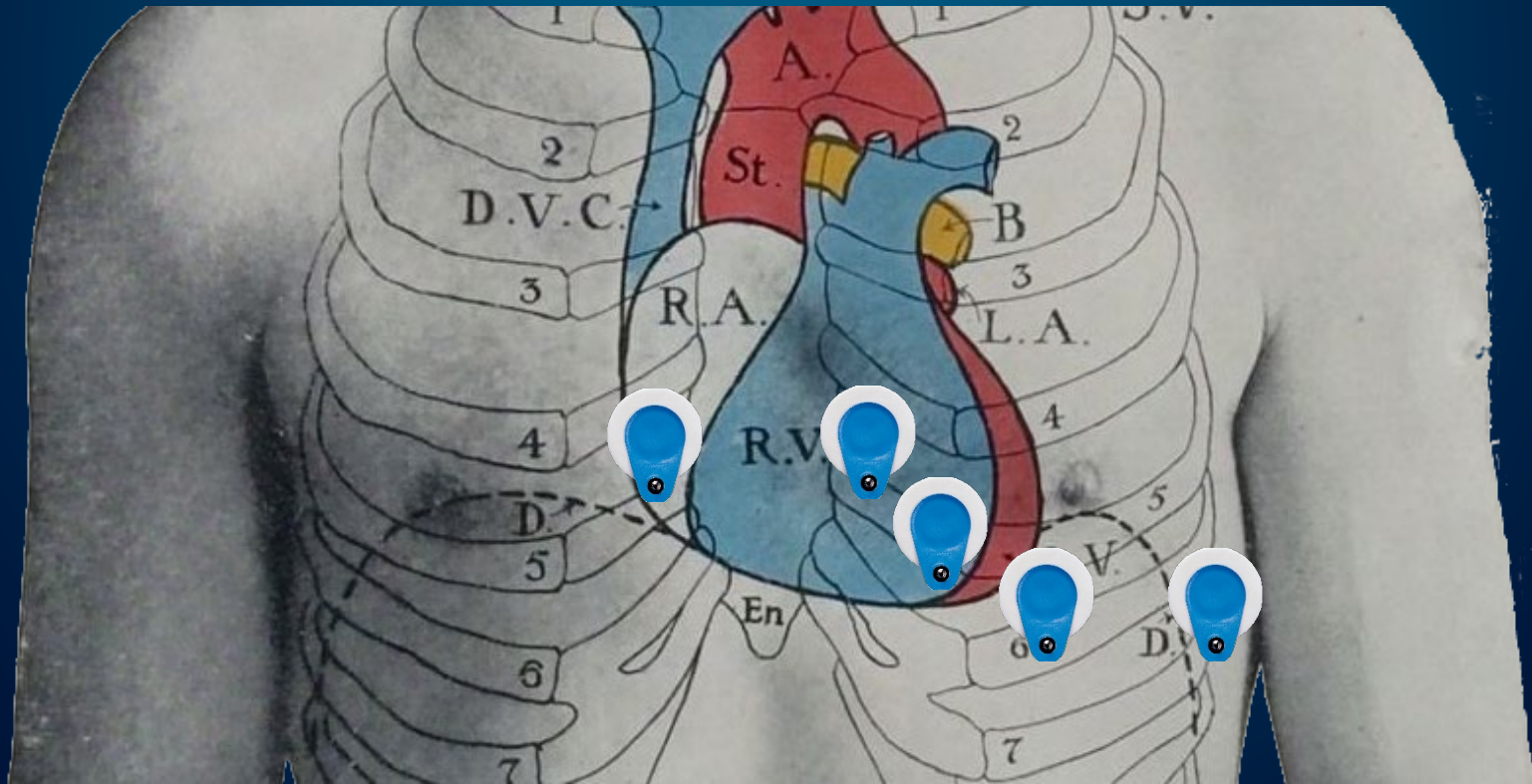
V4



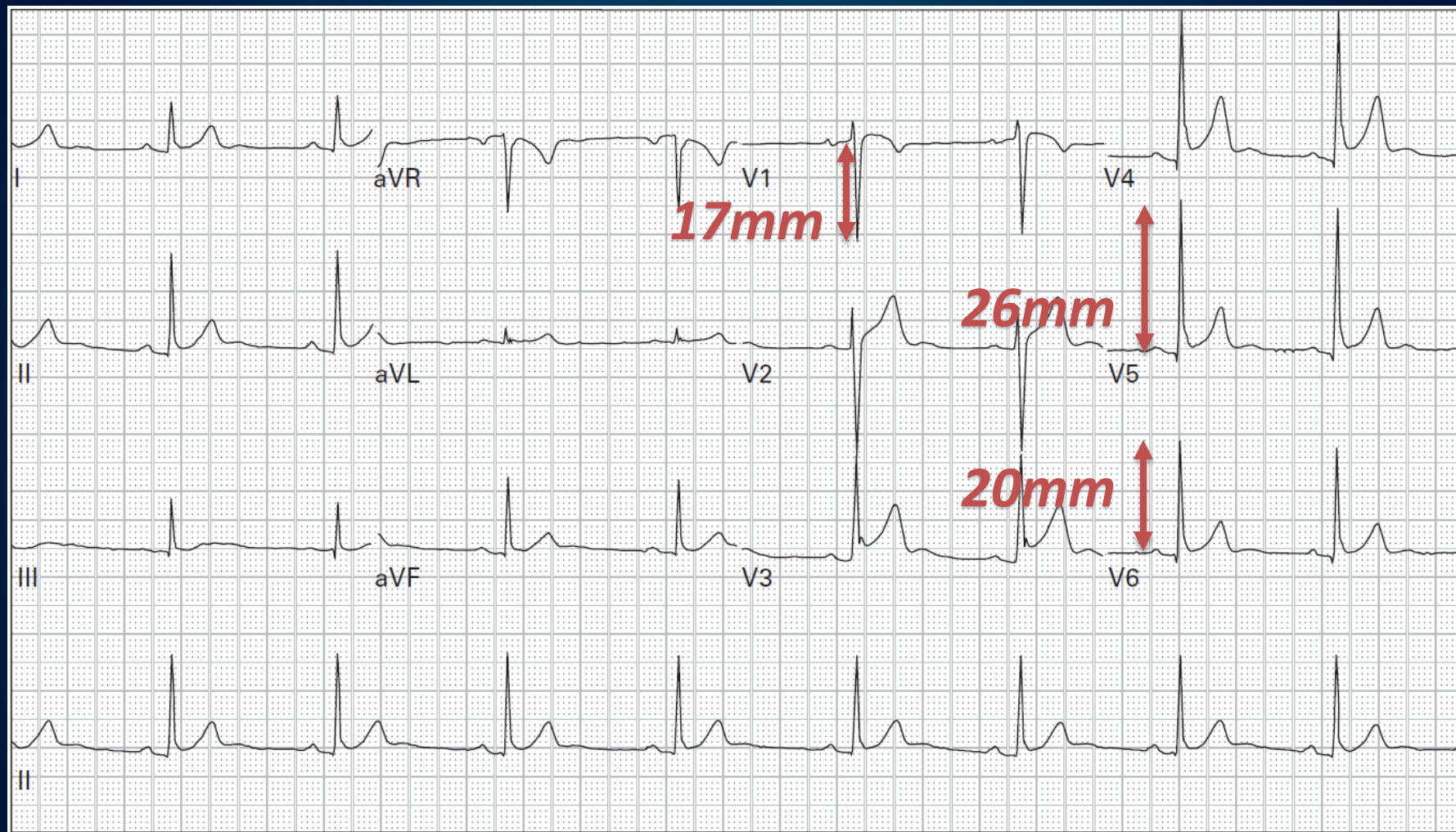
V5



V6

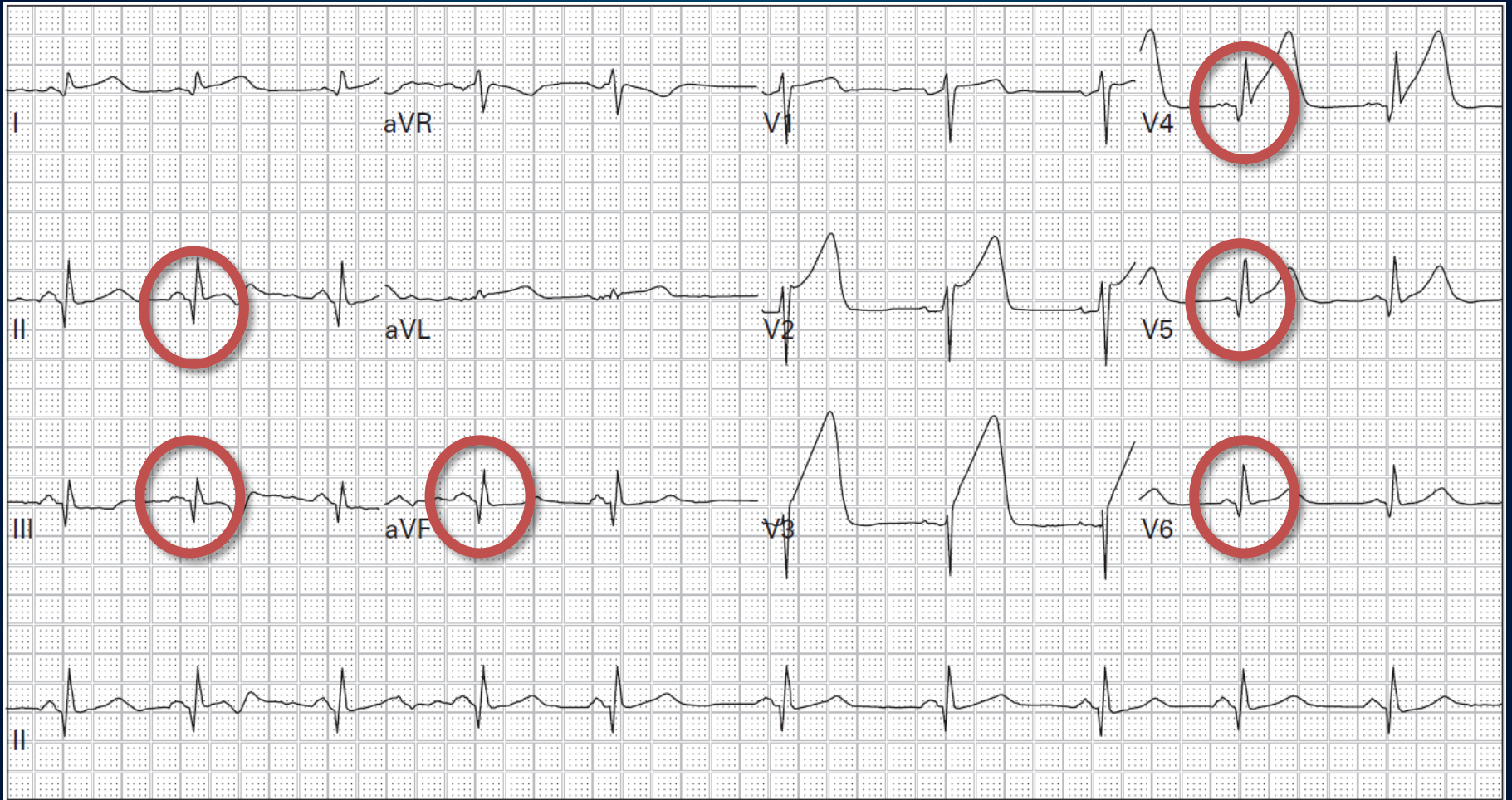


Sokolow-Lyon voltage criterion - LVH



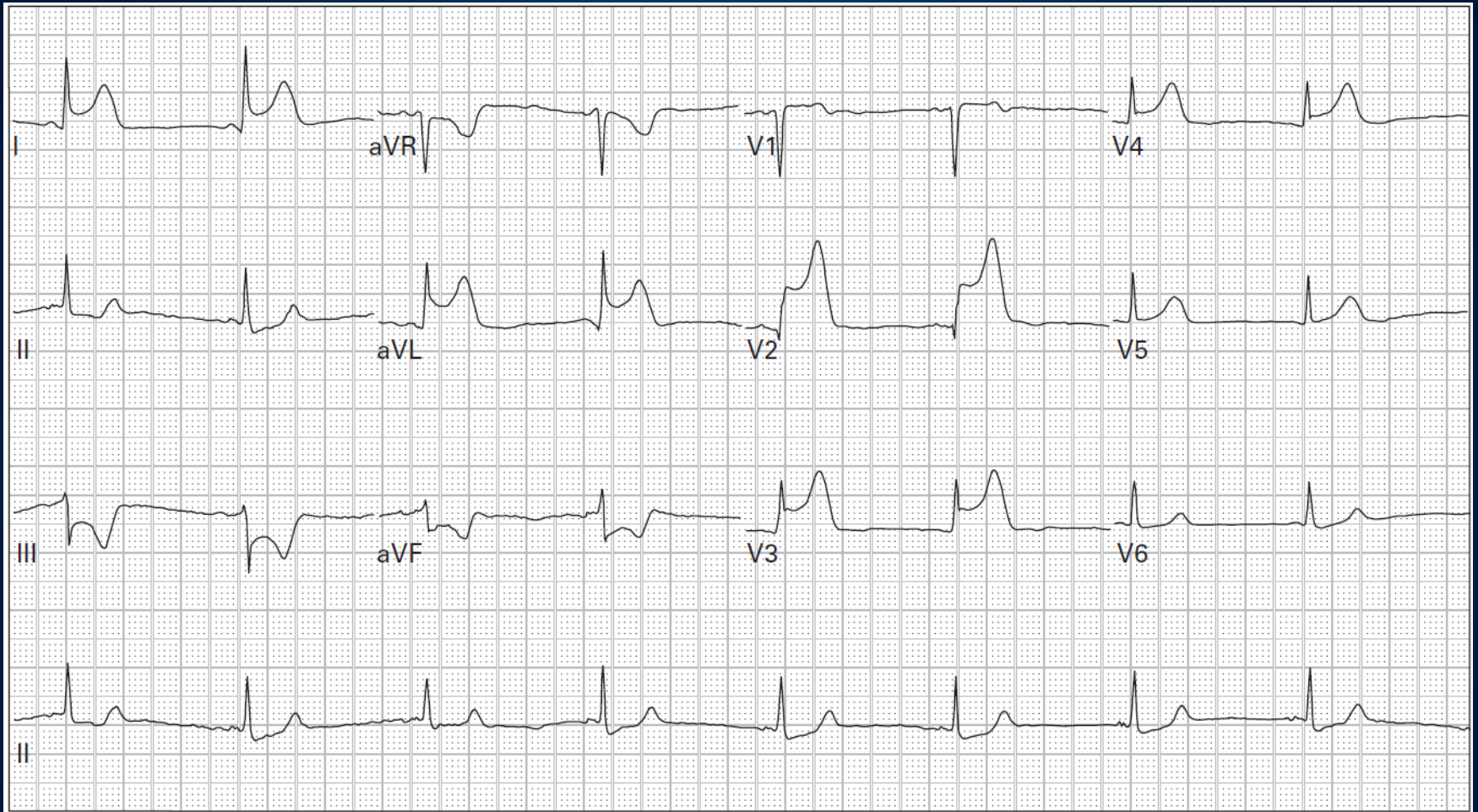
$$SV_1 + RV_6 \text{ (or } RV_5) > 35\text{mm}$$

7. Q waves (previous infarction)



Pathological Q waves - $>30\text{ms}$ and $>1\text{mm}$

8. ST segment

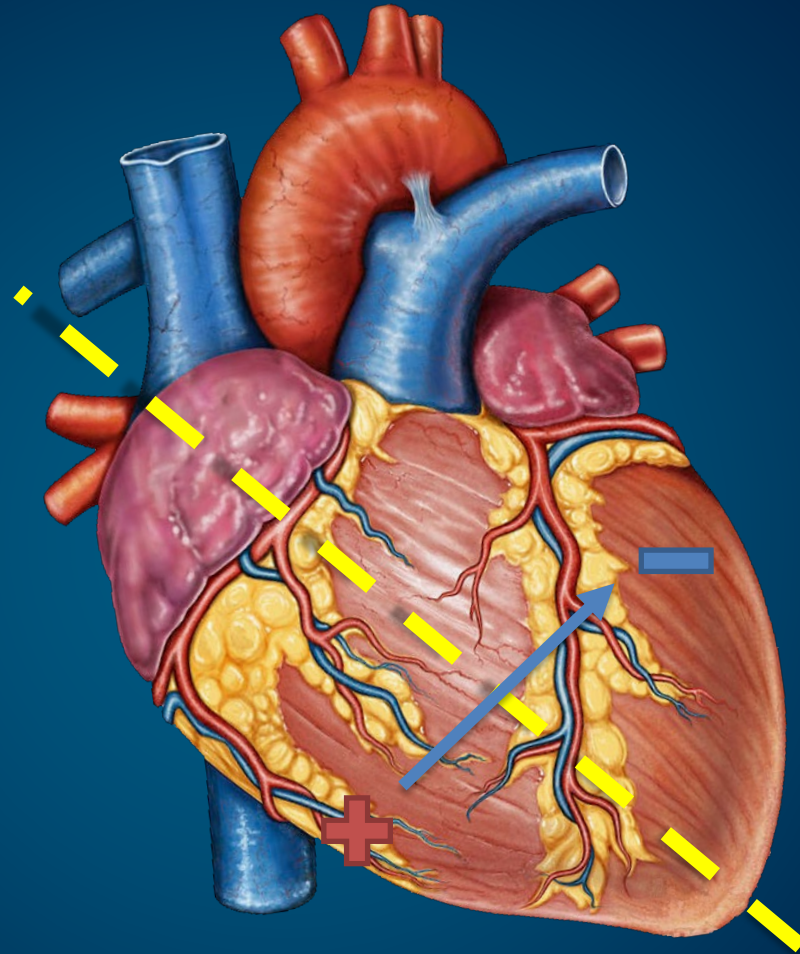


Significant ST elevation > 1 mm (except V_2/V_3)

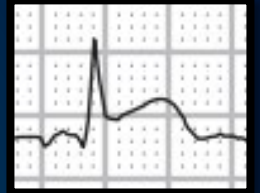
Significant ST depression > 0.5 mm

Consecutive leads!

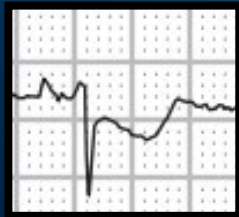
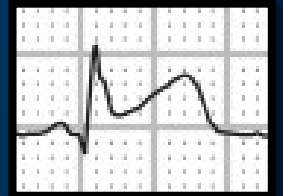
Mirror image



aVL



I

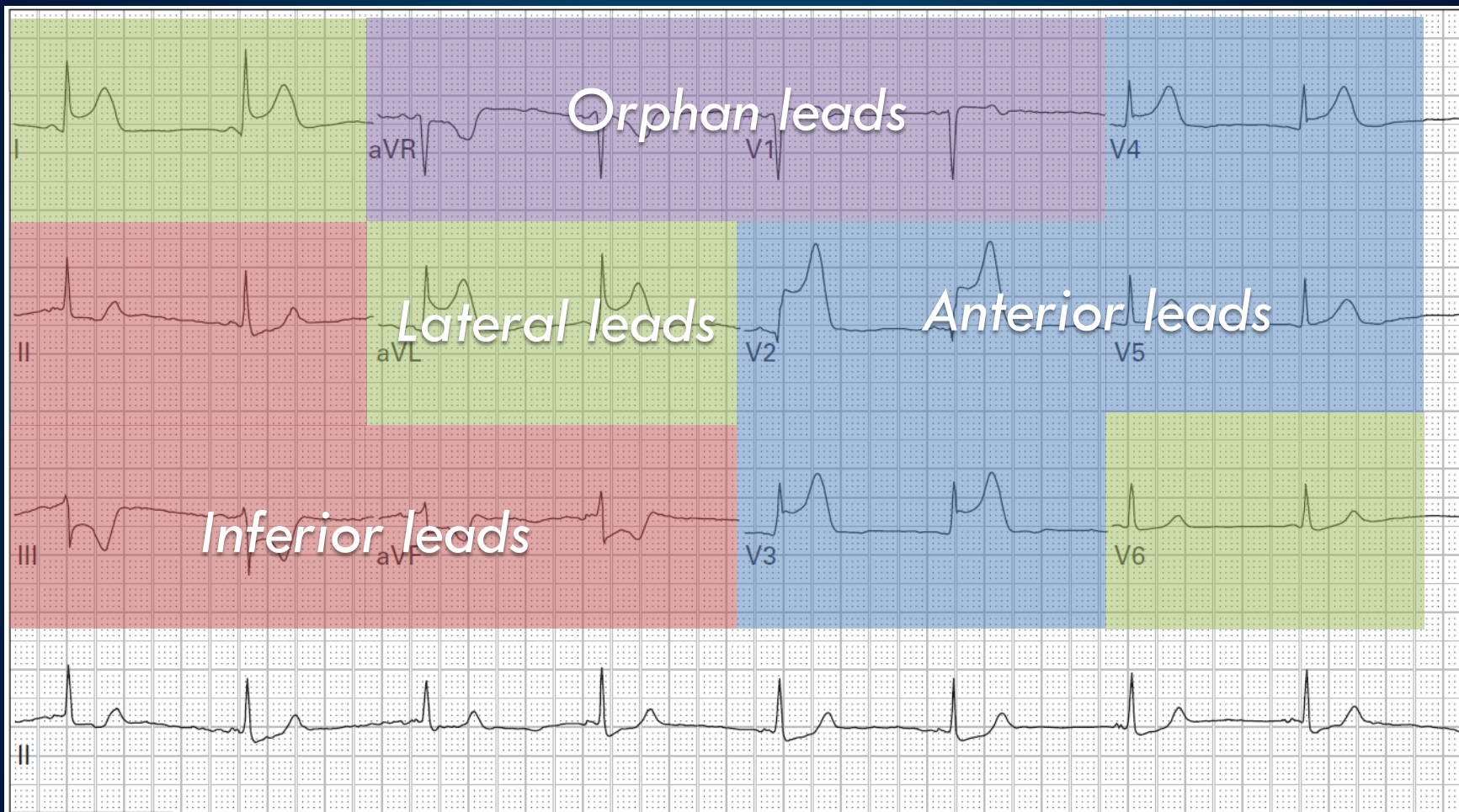


III

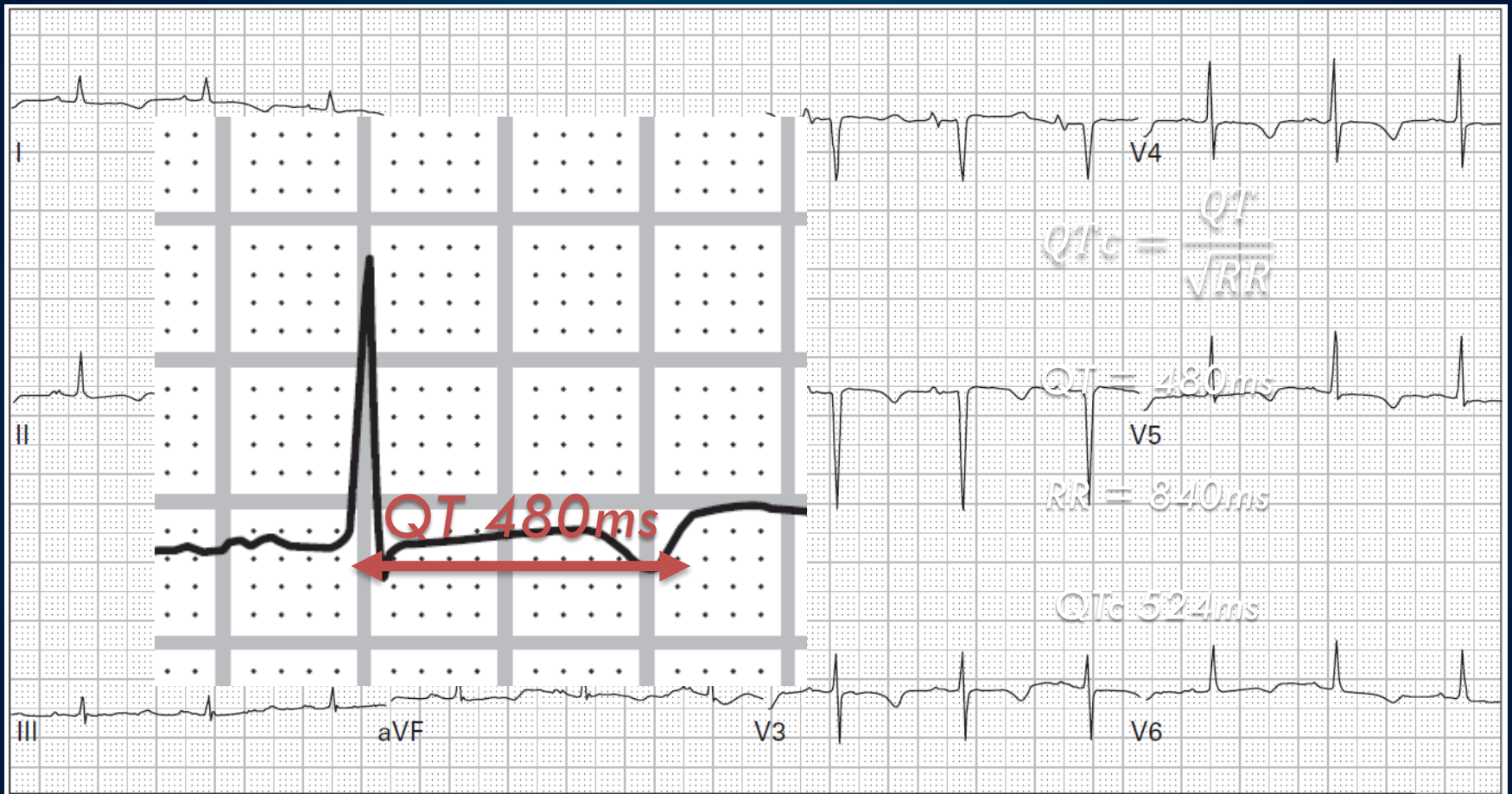
aVF



8. ST segment



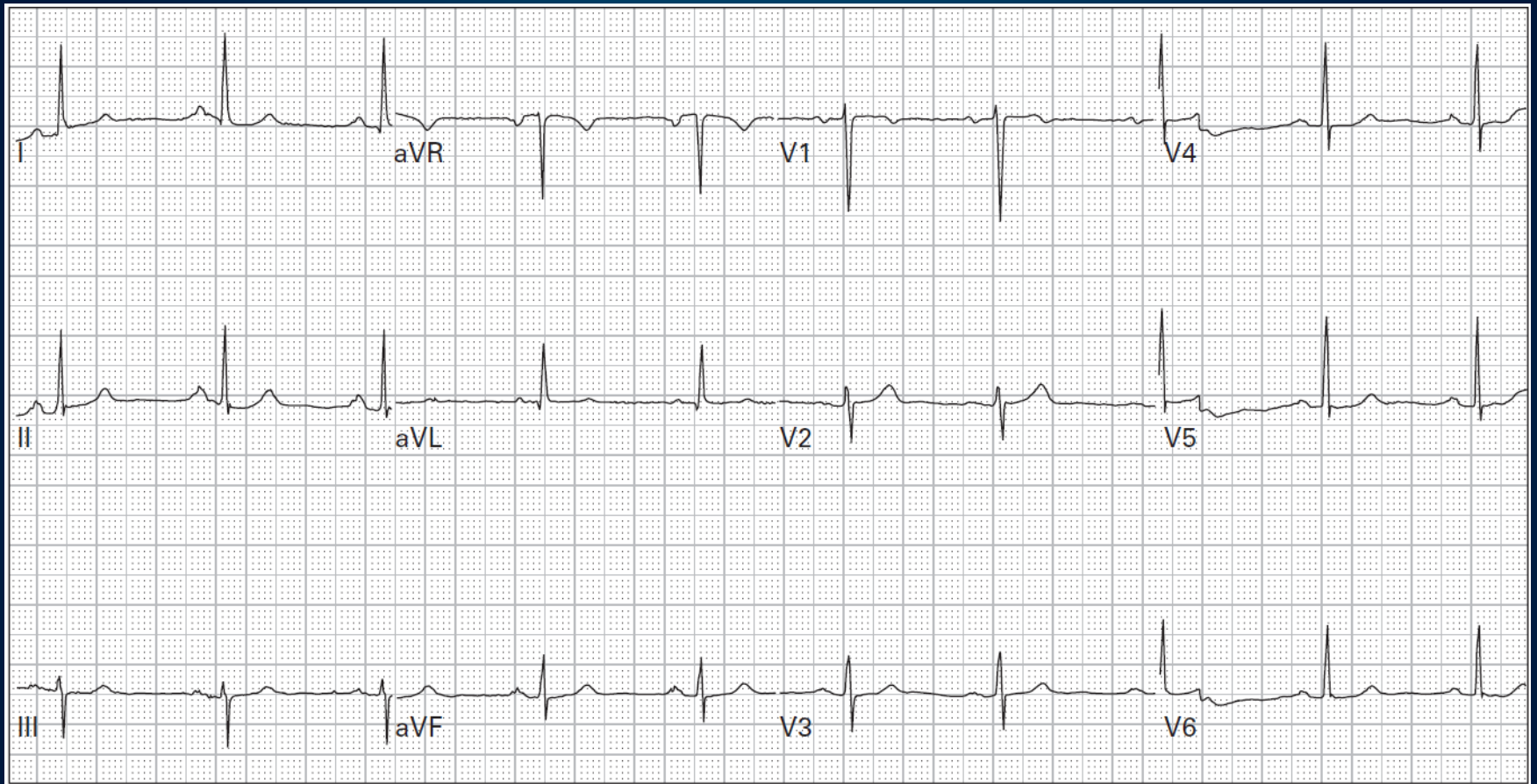
9. T and QT



T_s – positive with positive QRS in limb leads, positive in all precordial leads (except V₁)

QT – calculate QT_c (<450ms for man, <460ms for woman)

Normal ECG



We have to stop now



Any questions?