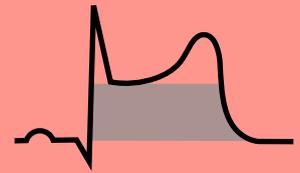


# High Risk ECGs

possible "OMI" (occlusive myocardial infarction) = STEMI-equivalent

**STEMI** *symptoms* + ST-elevation:  $\geq 1\text{mm}$  in min. 2 contiguous leads

- V2/V3:  $\geq 1,5\text{mm}$  (♀)
- $\geq 2\text{mm}$  (♂  $\geq 40$  years)
- $\geq 2,5\text{mm}$  (♂  $< 40$  years)
- rV3-4 / V7-9:  $\geq 0,5\text{mm}$



**Hyperacute T-Waves** broad, high Ts and/or  $T \geq R$ : often precede ST-elevation. DDX: Hyperkalemia

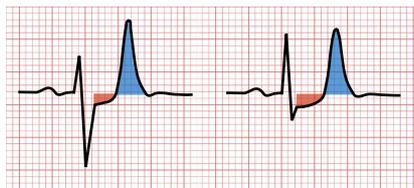
**"Mainstem-ECG"** ST-elevation aVR (+/- V1) + significant ST-depression in min. 6 leads:  
main stem stenosis, prox. LAD / significant 3-vessel-CAD or Type II myocardial injury e.g. anemia, sepsis, shock etc.

**"Semi STEMI"** subtle ST-elevation  $< 1\text{mm}$  + contralateral ST-depression + typical symptoms:  
Serial ECGs (every 10-20 Min, immediately with new symptoms). Persistent symptoms: Early cath!

SPECIALS

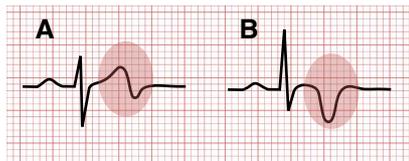
**De Winter Sign**

V1-6: tall T-wave + ascending ST-depression  $\geq 1\text{mm}$



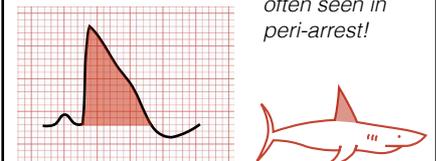
**Wellens-Sign**

often transient (e.g. after chest pain)  
Type A: biphasic T V2/3  
Type B: deeply inverted T (anterior)



**Shark-Fin Sign**

QRS merging with ST because of massive ST-elevation. Typical in multiple, consecutive leads.



**Bundle branch block (BBB)** with typical / suspicious symptoms:

- New left-/right bundle branch block (previous ECG on file?) or changed morphology with known BBB.
- **RBBB**: ST-elevation "within the block" (a "normal" RBBB never has ST-elevation!). **New RBBB: DDX acute PE!**
- **LBBB** oder **pacemaker + LBBB-morphology**:

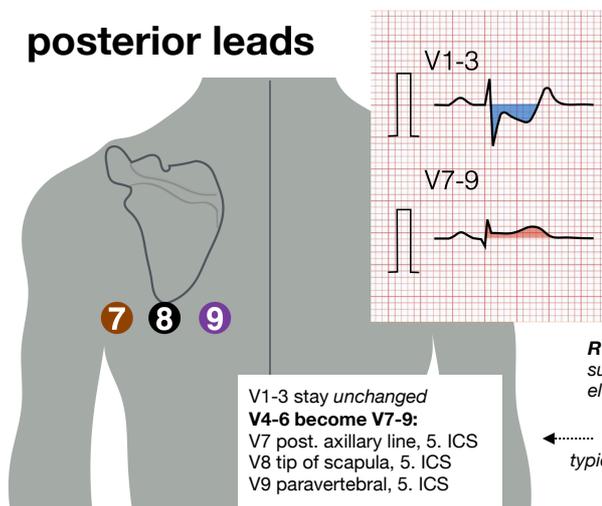
- modified Sgarbossa-criteria
1. Concordant ST-elevation  $\geq 1\text{mm}$
  2. Concordant ST-depression  $\geq 1\text{mm}$  (in V1-3)
  3. Discordant ST-elevation  $\geq 1\text{mm}$  ( $\geq 25\%$  of S-wave)

If min. **one** criteria positive suspect acute myocardial infarction!

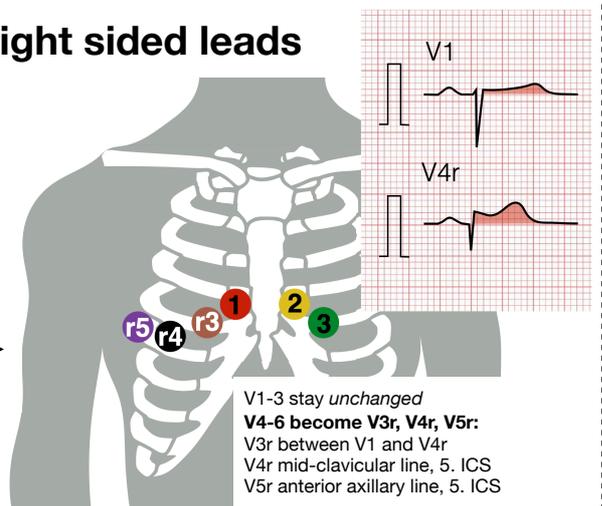


**Additional leads** always with suspicious symptoms/ECG (e.g. "only" ST-depression / isolated elevation)

**posterior leads**



**right sided leads**



**RV ischemia:** subtle elevation V1 + elevation in V3-5r

**posterior MI:** typical: ST-depression V1-3 ST-elevation V7-9

Source: Fessele, Fandler, Gotthardt. Hochrisiko-EKG bei akutem Thoraxschmerz. Med. Klinik Intensiv- u. Notfallmed 2021. Graphics © P. Gotthardt / Nerdfallmedizin

**What's better than one ECG? Two ECGs!** Suspicious symptoms + unclear ECG: Frequently repeat ECGs!