

# ED APPROACH TO



## PACEMAKER ECGs

**GOLDEN RULE: ALWAYS GO THROUGH YOUR USUAL ECG APPROACH EVEN FOR PACED ECGs**

1.



**WHAT IS THE RATE?**

**FAST**

NORMAL RESPONSE  
ATRIAL ARRHYTHMIA  
PACEMAKER-MEDIATED TACHYCARDIA  
SENSOR-INDUCED TACHYCARDIA

**SLOW**

FAILURE TO CAPTURE (FTC)  
FAILURE TO PACE (FTP)

**NORMAL**

2.



**IS THERE A P WAVE OR QRS COMPLEX FOLLOWING EVERY PACER SPIKE?**

**DDx: FTC**

- hardware problem (lead #/inadequate contact, battery issue)
- exit block (increased threshold at electrode attachment site)
- medical issue (e.g. electrolytes, drugs, MI)

**NO**

FAILURE TO CAPTURE (FTC)

**YES**

3.



**ARE PACER SPIKES SEEN THROUGHOUT WITH NO SINUS PAUSES OR ASYSTOLE?**

**DDx: FTP**

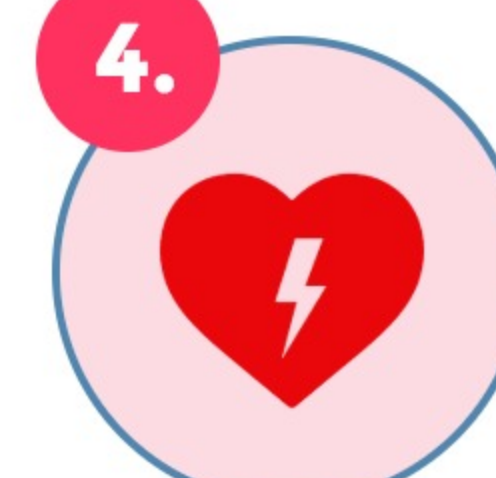
- hardware problem (e.g. pulse generator, battery or insulation malfunction)
- over-sensing (e.g. sensing myopotentials, other chambers or T-waves)

**NO**

FAILURE TO PACE (FTP)

**YES**

4.



**ARE THERE PACER SPIKES DURING OR FOLLOWING NATIVE CARDIAC ACTIVITY?**

**DDx: FTS/UNDER-SENSING**

- hardware problem (e.g. lead #/inadequate contact, insulation problem)
- low native voltages

**YES**

FAILURE TO SENSE (FTS) OR UNDER-SENSING

**NO**

**APPROPRIATE PACING ON ECG**