

ECG FACTSHEET

KNOW THE BASICS: HOW TO CALCULATE RATE

Regular Rhythm

$$\text{Rate} = \frac{300}{\text{Number of large boxes}} \quad \text{OR} \quad \frac{1500}{\text{Number of small boxes}}$$

Irregular Rhythm

$$\text{Rate} = \frac{\text{Number of big boxes between 6R waves (5 cycles)}}{300 \times 5}$$

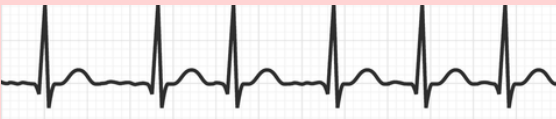
Tachycardia: > 100 bpm

Bradycardia: < 50 bpm

IRREGULARLY IRREGULAR RHYTHM

Common cause:

- Atrial fibrillation
- Atrial flutter with variable conduction
- Atrial tachycardia with variable conduction
- Multifocal atrial tachycardia

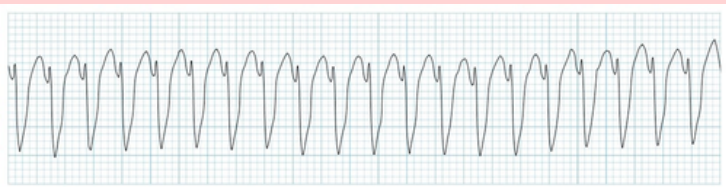


Tips? Look at the Atrial rate!

- > 350/min = A.fib
- 250-350/min = A.flutter
- < 250/min = A.tachycardia

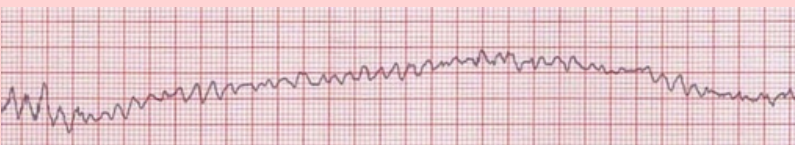
VENTRICULAR TACHYCARDIA

- Ventricular rate > 120 bpm
- Rhythm: relatively regular
- QRS width between 3-5 small squares
- Causes: Sodium channel blocker (particularly TCA) toxicity, Hyperkalemia in ESRF



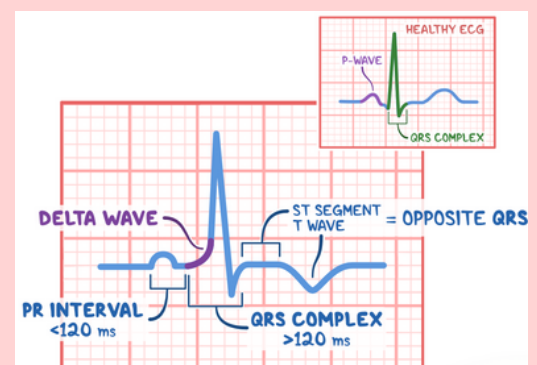
VENTRICULAR FIBRILLATION

- No identifiable P waves, QRS complexes, or T waves
- Rate 150 to 500 per minute



WOLFF-PARKINSON WHITE SYNDROME (WPW) SYNDROME

- Congenital accessory pathway
- Episodes of tachyarrhythmias
- Pre-excitation and short PR interval
- Delta Wave
- Avoid AV Nodal Blocking Agents



ECG FACTSHEET

PREMATURE ATRIAL COMPLEX

- Premature beat arising from ectopic pacemaking tissue
- Abnormal P wave, followed by a normal QRS
- P wave may superseed on T wave, causing a taller looking T wave



MULTIFOCAL ATRIAL TACHYCARDIA

- Irregularly irregular rhythm with varying PP, PR and RR intervals
- At least 3 distinctive P-wave morphologies
- Right atrial dilatation (from cor pulmonale)
- Cause: Severe COPD/ congestive heart failure



LEFT BUNDLE BRANCH BLOCK

WILLIAM

- Wide QRS
- Absence of Q waves in lateral leads
- Prominent S wave in V1, V2
- If QRS is narrow: Incomplete LBBB

RIGHT BUNDLE BRANCH BLOCK

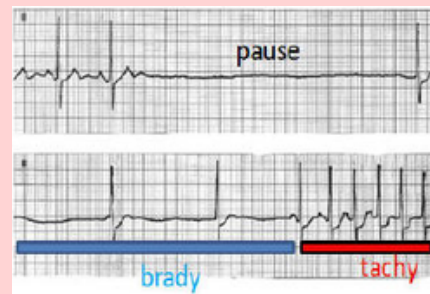
MARROW

- Wide QRS
- M shaped complex in V1, V2
- Prominent S wave in V5, V6



SINUS SICK SYNDROME

- Cause: idiopathic degeneration, ischemia, cardiomyopathy, hypothyroidism, beta-blockers, calcium channel blockers
- ECG features include:
 - Sinus bradycardia
 - Sinus arrest (Pause > 3 sec)



HYPERKALEMIA

- ECG features:
 - Hyperacute T waves
 - P wave widening/flattening
 - PR prolongation
 - Generally symmetrical
- Perform Serial ECG if suspect myocardial infarction

DIGOXIN TOXICITY

- Digitalis effect = ST depression with Bowl/ Scoop Shape

