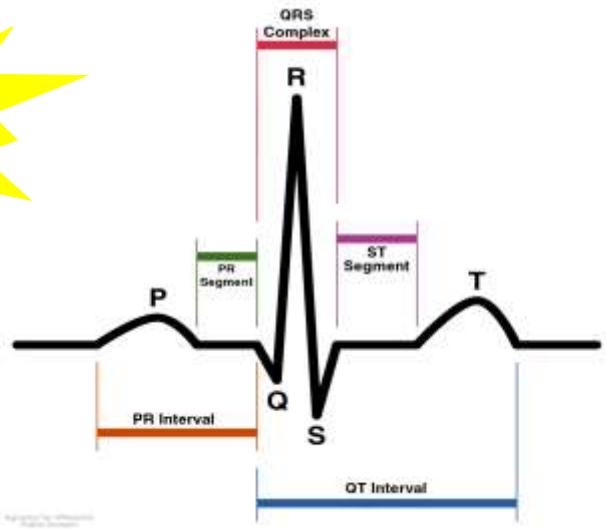
Ultimate Beginner EKG Study Guide



Guide

1 mini box = 0.04 seconds
5 mini boxes = 1 box
1 Box = 0.20 seconds

PR: 0.12 – 0.20 sec = 3-5 mini boxes

QRS: 0.06 – 0.10 sec = 1-2.5 mini boxes

QT: <0.44 seconds = Approx. 10 mini boxes or less

You must know the basics of an EKG before you can truly understand strip reading!

Electrolytes that affect heart rhythm

- Potassium 3.5 – 5 mEq/dL
- Sodium 135 – 145
- Magnesium 1.5 – 2.5 mEq/dL
- Calcium 8.5 – 10.5 mEq/dL

P Wave is Atrial depolarization/contraction

QRS is Ventricular depolarization/Contraction

T wave is ventricular repolarization

Are you overwhelmed and not sure where to start with EKG's?!

START HERE!

1. Count your STRIP!

- Each strip is usually 6 seconds. There is controversy on counting strips, but the quickest method is by counting how many QRS complexes are in your strip.
- This will give you the HEART RATE
- 6-8 complexes = 60-80 bpm
- This will give you somewhat of an idea on if you are dealing with bradycardia or tachycardia.

2. Do you have a P wave? And is it regular?

- Normal PR interval is 0.12-0.20 seconds
- A PR interval greater than that and that stays consistent may indicate 1st Degree Heart Block (check out our heart block guide)
- If there are NO P waves or they are not regular, consider atrial rhythms OR junctional rhythms
    - Irregular P waves may indicate Atrial Flutter or Atrial Fibrillation in which case you will NOT be measuring a PR interval AND the rhythm is considered IRREGULAR
- NORMAL P WAVE?? – MOVE TO STEP 2

3. Is there a QRS Complex?

- Does it look wide or narrow?
- Normal QRS 0.06 – 0.10 seconds.
- Narrowing indicates types of tachycardia and arrythmias
- Widening means the Ventricles are contracting slower and may be caused by arrythmias or certain drug toxicities or overdose

4. Is there a T wave?

- T waves only follow the QRS and can be a big determinant of electrolyte imbalances or Myocardial Infarction (See our Electrolyte Changes Guide)

5. Know the rhythms and piece it together!

- Is it regular but a slow rate? → Sinus Bradycardia
- Is it regular but a normal rate? → Sinus Rhythm
- Is it regular but a fast rate? → Sinus Tachycardia
- Are there multiple P waves and the rate is irregular? → afib

LEARN YOUR RHYTHMS AND USE THIS TOOL TO HELP IDENTIFY THEM