

Date: 9/8/2014

Subject: KINE 3850 Cardiac Dysrhythmia Interpretation

Topics Covered:

- Leads on the ECG
- Einthoven's Triangle
- ECG Controls
- Calculating Heart Rate

Topic #1: Leads on the ECG

- 12 leads/"views" in total
- 4 bipolar wirings on the limbs (Leads I, II, III made)
 1. White wire on right arm
 2. Green ground wire on right leg
 3. Black Wire on left arm
 4. Red wire on left leg
- 6 unipolar wirings on the precordial cavity (Leads v1-v6)
 1. v1 placed in 4th intercostal space on right side of sternum
 2. v2 placed " " on left side of sternum
 3. v3 on 5th rib, on halfway mark of imaginary line drawn between v2 and v4
 4. v4 placed in 5th intercostal space at midclavicular line
 5. v5 placed on anterior axillary line (5th intercostal space)
 6. v6 placed at mid axillary line (5th intercostal space)
- 3 leads made through augmentation
 1. aVR (line runs through heart to right arm)
 2. aVL (line runs through heart and towards left arm)
 3. aVF (line bisects heart and goes toward feet)

Topic #2: Einthoven's Triangle

- Downward pointing triangle
- Heart located in the center
- Three wires
 1. one running from right arm to left arm
 2. one running from right arm to left leg
 3. one running from left arm to left leg+ "from" negative electrode "to" positive electrode

Topic #3: ECG Controls

- Speed (horizontal axis) adjusted for very fast heart rates (normal speed 25mm/s)
- Gain controls height of waveform (vertical axis)
- Artifact filter reduces abnormal tracings (40-150Hz)
- For legal reasons, ECG papers need to be saved for 7 years

Topic #4: Calculating Heart Rate

- one square represents 1mv over 0.04 seconds
- one emboldened 5x5 box represents 5mv over 0.20 seconds
- 6 second method
 1. Count number of full sequences (P+QRS+T) in a 6 second period
 2. Multiply by 10 to get per minute rate
- 1500 method
 1. Count number of squares between two R waves
 2. 1500 divided by result gives a per minute rate