

# Physiology Lab Report #10-

## Lab 10: Electrocardiography

### Purpose

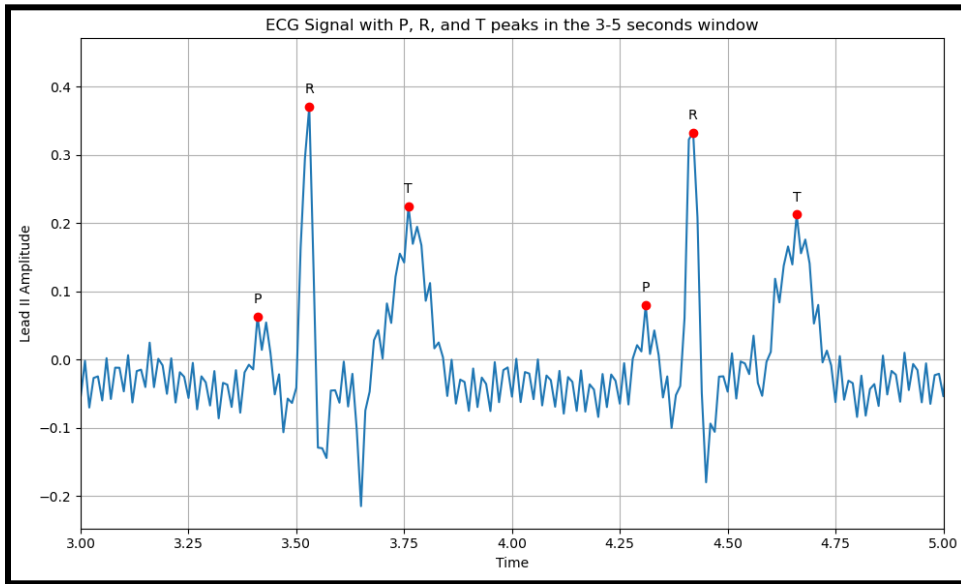
- In this lab we observed the electrical activity of the heart by performing an electrocardiogram or ECG. The purpose of this lab was to observe the changes in electrical activity while performing the ECG and to gain a better understanding of how our hearts are functioning as an ECG and EKG is normally used to assess various heart conditions.

### Procedures

1. Begin by making sure the IWX/214 unit is plugged in and connected to the laptop via USB cable. Insert the C-AAMI-504 EEG cable into Channels 1 and 2 of the IWX/214, and correctly insert the color-coded lead wires into the lead pedestal. You can remove the white and brown wires for this lab. Next, turn on the laptop and let it fully boot up before turning on the IWX/214. The red indicator light on the IWX/214 should light up, and you may hear a USB chime from the laptop.
2. Open LabScribe3 and once it opens, a window will pop up saying "Hardware found IWX214:2008-1-24." and click "OK."
3. To access the "ECG-HeartSounds" tab, click on the "Settings" tab located in the second row from the top (the row that says "File Edit View Tools Settings Advanced External Devices Help"). Then, scroll down about one third of the way in the drop-down window until you see the "Human Heart" tab. Click on that tab, and it should lead you to the "ECG-HeartSounds" tab.
4. Then, ask your partner to remove all jewelry from their ankle and wrist. Clean the regions of skin on the wrist and ankles using an alcohol swab. Let the area dry. Then, open the envelope and take out the disposable ECG electrodes. Attach the lead wires to the electrodes while they're still on the plastic shield.
5. After, place the black (-1) electrode on the cleaned area of the right wrist. Then, repeat it for the inside of the left ankle and the inside of the right ankle.
6. The wires should be like this:
  - the black (-1) lead should be attached to the right wrist
  - the red (+1) lead should be connected to the left ankle
  - the green (C or ground) lead should be connected to the right ankle
7. Tell your partner to sit calmly with their hands in their lap. If they move, the ECG trace might go off the screen. Any muscle movements in the arms or upper body will show up as noise on the ECG recording.
8. To start recording, tap on the Record button at the top right corner of the LabScribe Main window. The signal will start scrolling across the screen. If the ECG appears upside down in Lead II, tap on the upside down triangle next to "A1:ECG 0.3-35Hz" and select "Invert" to correct it. Remember to do this only once.

9. Record the ECG for around 10-20 seconds or less and then click ok "AutoScale" to get a better idea of the graph.
10. Once you're done collecting your data, create an ECG. Be sure to identify the five ECG waves: P, Q, R, S, and T.

## Results



## Discussion

- In this lab we were able to see the electrical activity of the heart through the electrocardiogram. This lab was interesting because I've had an EKG done before and the process wasn't really explained to me so I was lost on what they were doing. After learning about it in class and then actually performing it, it was nice to be able to actually understand what is going on. It was cool to see the way the heart was properly functioning as all the waves were coming and going accordingly. I would do this lab again just because of how interesting it is to see the health of my heart again.

## Conclusion

- The basis of this experiment was for us to understand the function of and EKG. This lab allowed us to gain a better understanding of the process of an EKG as well as the various waveforms associated with the electrical activity that is occurring. It is essential for us to comprehend the necessity of performing an EKG and why it is done as it can help detect and diagnose a wide range of abnormalities and heart conditions.