Experiment HH-1: The Electrocardiogram and Peripheral Circulation

Equipment Required

PC or Mac Computer

IXTA, USB cable, IXTA power supply

iWire-B3G ECG cable and electrode lead wires

PT-104 Pulse plethysmograph

Stethoscope

Alcohol swabs

Disposable ECG electrodes

Ice, cold and hot water, plastic bags

Note – You must connect the iWire-B3G to the IXTA prior to turning it on.

ECG Cable and Pulse Transducer Setup

1. Locate the PT-104 pulse plethysmograph and iWire-B3G ECG cable and electrode lead wires.

Figure HH-1-S1: The PT-104 pulse plethysmograph.

2. Plug the DIN8 connector to the PT-104 into Channel A5 of the IXTA.
3. Insert the connector on the end of the iWire-B3G ECG cable into the iWire 1 input on the front of the IXTA.
4. Insert the connectors on the red, black, and green electrode lead wires into the matching sockets on the ECG cable.

5. Instruct the subject to remove all jewelry from their wrists and ankles. Another option is to use the area just under each clavicle which will give a better recording.
6. Use an alcohol swab to clean and scrub a region with little or no hair, on the inside of the subject's right wrist/clavicle. Let the area dry.
7. Repeat for the inside of the left wrist/clavicle and the inside of the right ankle or lower right abdomen.

Figure HH-1-S2: The ECG cable and pulse transducer connected to an IXTA.

8. Snap the lead wires onto the electrodes, so that:
    - the red (+1) lead is attached to the left wrist or just under the left clavicle,
    - the black (-1) lead is connected to the right wrist or just under the right clavicle,
    - the green (C or ground) lead is connected to the right leg or on the abdomen.
9. Place the plethysmograph on the volar surface (where the fingerprints are located) of the distal segment of the subject's middle finger or thumb, and wrap the Velcro^{tm} strap around the end of the finger to attach the unit firmly in place.
10. Instruct the subject to sit quietly with their hands in their lap. If the subject moves, the ECG trace will move off the top or bottom of the screen. If the subject moves any muscles in the arms or upper body, electromyograms (EMGs) from the muscles will appear as noise.