

**Please Read the User Manual first:** This is a quick reference guide

**Exam Purpose:** The ABI-Q procedure is a 1-2 minute exam to quickly and effectively assess the lower extremity arteries for peripheral artery disease. It utilizes PVR waveforms at both ankles.

**Background:** The ABI-Q exam is a test that examines arterial waveforms to determine the need for further vascular evaluation. The test is intended to aid in the diagnosis of peripheral artery disease, but does not provide a diagnosis in and of itself

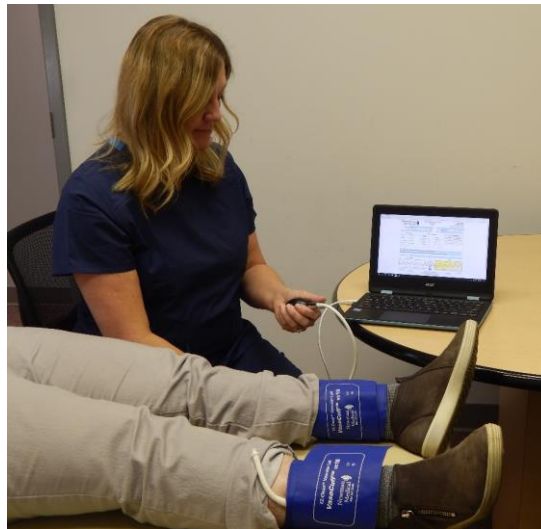
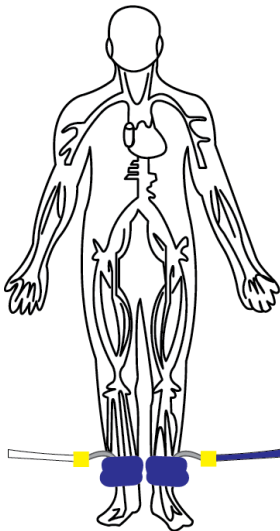
## The simple ABI-Q Procedure

### Setting up

**Opening the exam:** On the computer desktop, double click the simpleABI icon. When the program opens select *File* → *New* → *New ABI-Q Report*. The report will open and you can enter patient information, risk factors, symptoms, ICD codes, etc.

**Attaching cuffs:** With the patient in the supine position, wrap 10cm cuffs at each ankle. Attach the hose from the PVR control unit to right cuff as shown below.

\*NOTE\* the image is reversed as if you are looking at the patient lying down.



### Obtaining Waveforms:

1. To obtain a PVR waveform click on the right **PVR** button in the middle of the screen.
2. Tighten the thumb valve and pump the bulb to roughly 80 mmHg pressure and then slowly deflate to roughly 65 mmHg and stop. The center section of the target pressure gauge will turn green (if red, too low or too high). When a constant green, click on the **Get Waveform** button. **PVRs require patient cooperation; limb motion affects the waveform. Patients should be instructed not to move or talk during this test.** The waveform will start to appear within 10 seconds.
3. If you are not satisfied with the waveform, leave the cuff inflated (in the green) and click on the **Get Waveform** button again to overwrite the previous waveform.
4. Release the air in the cuff and move the hose to the left leg cuff and repeat the above steps. On your computer keyboard, press the tab key to highlight the left leg PVR section or simply click on the left leg **PVR** button.
5. Under each waveform will be the calculated ABI-Q.

### ABI-Q Guidelines:

|       |             |                       |
|-------|-------------|-----------------------|
| ABI-Q | > 1.00      | Normal                |
| ABI-Q | 0.91 – 0.99 | Borderline            |
| ABI-Q | < 0.90      | Increased risk of PAD |

**When finished, save the report if desired.**

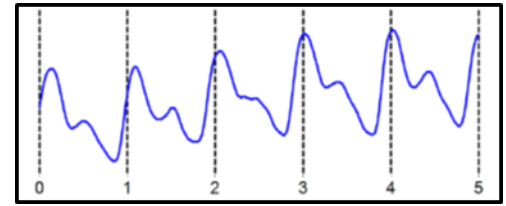
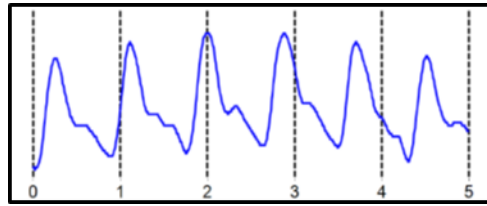
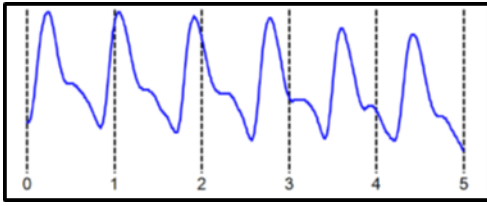
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# simple ABI-Q™ Procedure (continued)

Interpreting PVR Waveforms – Additional information can be obtained by analyzing the PVR waveforms:

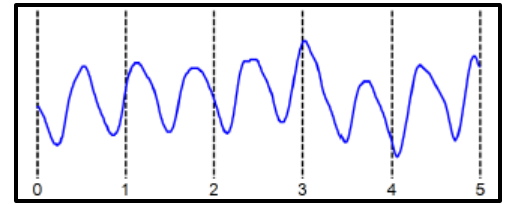
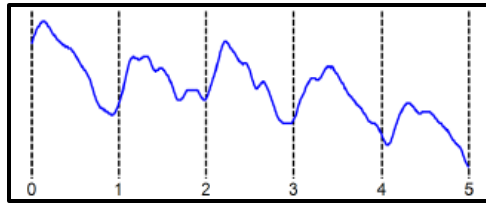
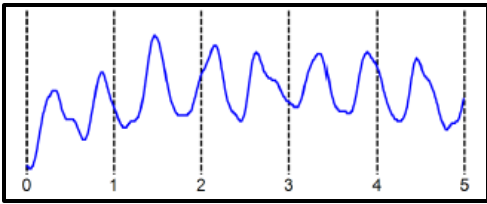
## **Normal Waveforms:**

Normal PVR waveforms have a sharp upslope and a prominent reflected wave in late systole, or dirotic notch

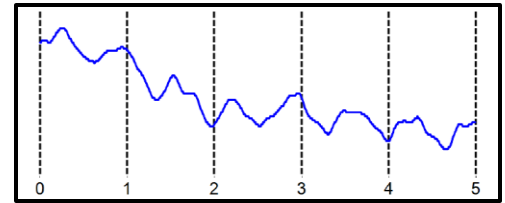
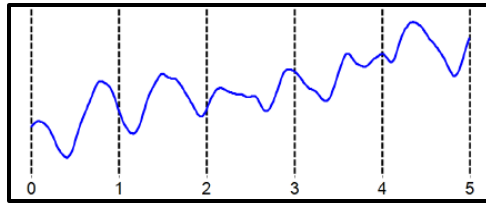
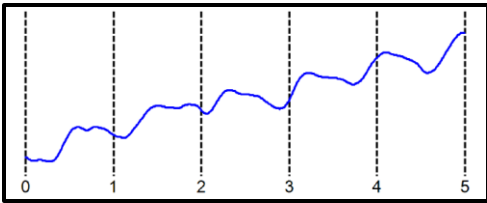


## **Abnormal Waveforms:**

Moderately abnormal PVR waveforms will cause the waveform to broaden and the reflected wave (dirotic notch) will not be present



Severely abnormal PVR waveforms have little to no amplitude, or even appear as a 'flatline'



## Helpful Hints

### **Cuff technique hints:**

- Wrap the cuff snugly.
- While wrapping cuffs, don't let the patient try to help by lifting their leg - as soon as they relax their muscles the cuff will become loose.
- Placing a pillow under the patient's heels may aid the examination.
- Have the patient remain as still and quiet as possible while taking the waveforms.
- If the patient has tremors that interfere with the waveform, having them do a few dorsiflexions with their toes before taking the waveform can sometimes help.

### **PVR BASICS – adapted from “The Pocket Guide to Physiologic Arterial Testing” Robert Daigle, BA**

#### **How Pulse Volume Recording (PVR) Works:**

- Blood volume in the legs increases with each pulse and this increases the pressure in the cuff. These small changes are recorded and saved as the PVR waveform

#### **Advantages of PVR:**

- PVR waveforms provide a measure of the total blood flow through the entire limb unlike Doppler waveforms which show only the flow in the artery directly in front of the probe.
- PVR waveforms are not affected by calcified, incompressible arteries, often present in diabetics.
- PVR waveforms are typically easier to obtain than Doppler waveforms.
- PVR waveforms are not affected by temperature or ambient light unlike digit and/or toe sensors.
- The only skill required to acquire PVR waveforms is the ability to wrap vascular cuffs.