

simplePVR™ with simpleABI Cuff-Link™ Systems

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

Exam Purpose: The simplePVR™ 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.

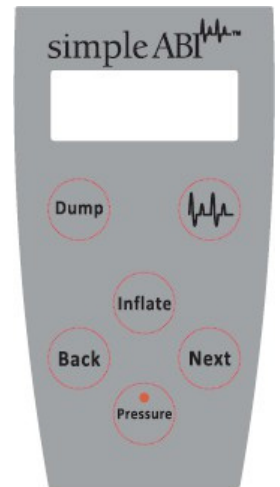
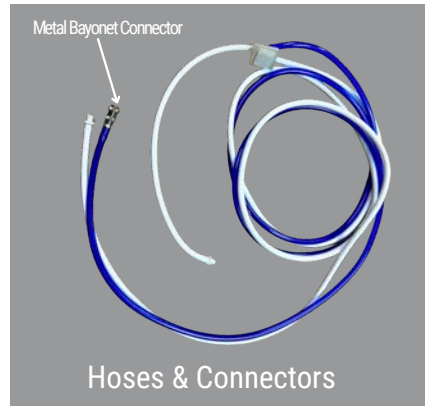
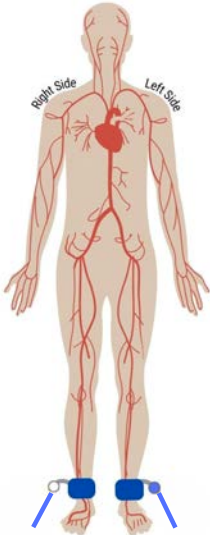
Background: The simplePVR™ exam is a diagnostic test that examines arterial waveforms to determine the need for further vascular evaluation. The exam can be done in either a sitting or supine position and does not require the removal of shoes or socks.

The simplePVR™ Procedure

Setting up

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

Attaching cuffs Wrap appropriate cuffs at each site. Then, blue hoses to ankles. White connectors to patient's right side, blue connectors to left side. *NOTE* the image is reversed as if you are looking at the patient lying down



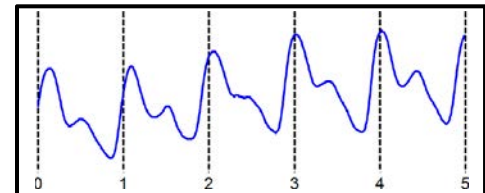
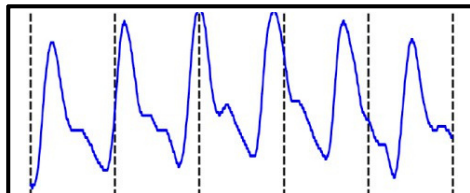
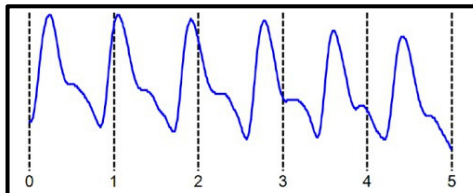
Obtaining Waveforms

1. To obtain a **PVR waveform** click on one of the boxes for taking a waveform in the middle of the screen. Press the button with the **waveform** image on it on the top right of the remote. The cuff will inflate to about 80 mmHg pressure, slowly deflate to about 65 mm and then hold that while the waveform is obtained. The patient should remain still during the measurement; the waveform will start to appear after the cuff reaches 65 mm.
2. If you are not satisfied with the waveform, just push the **waveform** button again
3. Press either **Next** or **Back** after the waveform is obtained to move to the other side.
4. Repeat the **waveform** sequence for the other leg.

When finished, save the report if desired.

Interpreting PVR Waveforms Normal Waveforms:

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



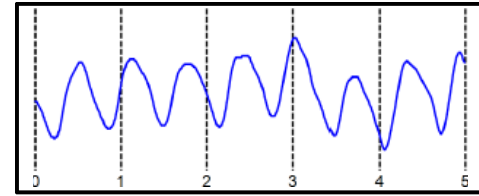
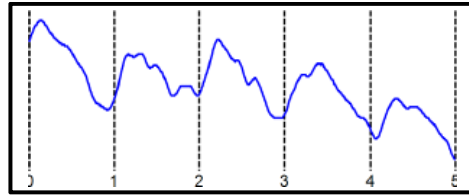
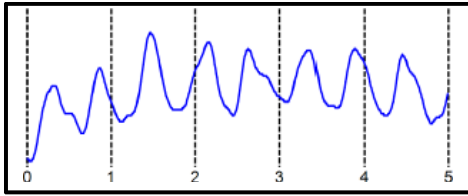
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The simplePVR™ Procedure (continued)

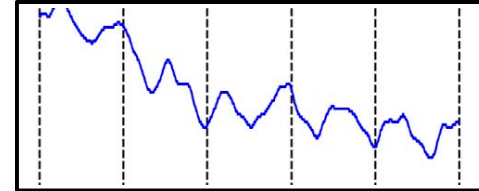
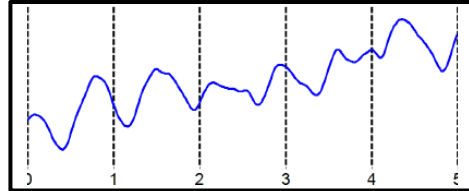
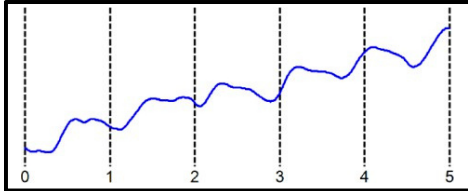
Interpreting PVR Waveforms (continued)

Abnormal Waveforms

Moderately abnormal PVR waveforms will cause the waveform to broaden and the reflected wave (dicrotic 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.
- Cuffs may be placed over thin clothing or stockings.
- If the patient is supine, don't let the patient try to help by lifting their leg - as soon as they relax their muscles the cuff will become loose.
- If supine, placing a pillow under the patients 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:

- PVRs provide a measure of the total blood flow through the limb unlike Doppler waveforms which show only the flow in the artery directly in front of the probe.
- PVRs are not affected by calcified arteries (if the ABI is greater than 1.4 it is likely due to calcified arteries)
- PVRs are easier to perform than Doppler waveform analysis
- The only skill required to acquire PVRs is the ability to wrap vascular cuffs snugly
- PVRs require patient cooperation; limb motion affects the waveform. Patients should be instructed not to move or talk during this test