

ANKLE BRACHIAL INDEX (ABI)/ PULSE VOLUME RECORDING (PVR) TESTING

What is Ankle brachial Index (ABI)/ Pulse Volume Recording (PVR) testing and why has your physician ordered these tests for you?

The ABI and PVR testing is used to assess your risk for peripheral artery disease. Peripheral artery disease is a condition that causes narrowing of the arteries in your legs or arms. Over 10 million Americans have peripheral artery disease (PAD), and without proper treatment this could lead to poor circulation, heart attack or stroke.

Signs of PAD on lower extremity:

- Pain
- Numbness in legs brought on by walking, and relieved by rest
- Pain in legs/Feet at rest
- Poorly healing wounds
- Reduced or absent pedal pulses
- Hair loss on legs



The **ankle-brachial index** test compares your blood pressure measured at your ankle with your blood pressure measured at your arm. The test will take approximately 15 – 20 minute and could be done during a regular office visit. The ABI for each lower extremity is calculated by dividing the highest ankle pressure in each lower extremity by the higher of the two brachial artery pressures. A low ankle-brachial index number can indicate narrowing or blockage of the arteries in your legs which leads to further complications.

Pulse Volume Recording (PVR) waveforms are tests which provide qualitative information. It is done by placing a blood pressure cuff that gets inflated to a level that does not interrupt arterial flow (approximately 65 mmHG). As each arterial pulse passes through the segment of artery beneath the cuff, the volume of blood causes distention of the artery. This is sensed by the cuff, which then transmits a volume change to a recorder (BioMedix™ PADnet™+), providing a waveform.

Who should be tested?

The College of Cardiology/American Heart Association (ACC/AHA) guidelines on PAD identified the following groups at risk for lower extremity PAD

- Age ≥ 70 years
- Age 50 to 69 years with a history of smoking or diabetes
- Age 40 to 49 with diabetes and at least one other risk factor for atherosclerosis
- Leg symptoms suggestive of claudication with exertion or ischemic pain at rest
- Abnormal lower extremity pulse examination
- Known atherosclerosis at other sites (eg, coronary, carotid, or renal artery disease)

What will you gain from the ABI and PVR test? This non-invasive ABI, and PVR tests will help identify obstructive disease in your arteries. Your physician will review the results and determine whether medical or surgical treatment is necessary. Early intervention leads to the prevention of ulcers, leg pain, heart attack and stroke.

Information obtained through UpToDate.com

<http://www.uptodate.com/contents/noninvasive-vascular-diagnosis-in-lower-extremity-peripheral-artery-disease> and

<http://www.biomedix.com/> Tamara K. Jansz, PA-Student, Touro College