

# Peripheral Artery Disease (PAD) and Lower Extremity Testing: An Anatomical Overview

**Peripheral Artery Disease (PAD)** is a circulatory condition where narrowed arteries reduce blood flow to the limbs, most commonly the legs. This reduced blood flow can cause pain, numbness, and cramping, especially during physical activity. Understanding the underlying anatomy is crucial for effective PAD diagnosis and treatment.

## Key Anatomical Structures in PAD

**Aorta:** The largest artery in the body, the aorta branches into smaller arteries that supply blood to the legs.

**Iliac Arteries:** These arteries branch off the aorta and further divide into the femoral arteries.

**Femoral Arteries:** These major arteries run down the length of the thigh and supply blood to the leg muscles.

**Popliteal Artery:** Located behind the knee, this artery is a continuation of the femoral artery.

**Tibial and Peroneal Arteries:** These arteries branch off the popliteal artery and supply blood to the lower leg and foot.

## PAD and Lower Extremity Testing

PAD often affects the arteries in the legs, making lower extremity testing essential for diagnosis.

### Here's how PAD impacts these tests:

**Ankle-Brachial Index (ABI):** This test compares blood pressure in the ankle to blood pressure in the arm. In PAD, ankle pressure is usually lower due to reduced blood flow.

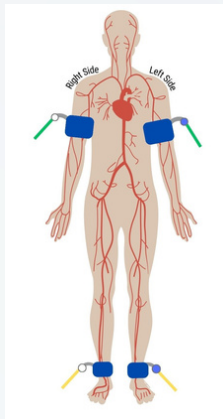
**Segmental Limb Pressures:** This test measures blood pressure at different points along the leg. A significant drop in pressure between segments can indicate a blockage.

**Pulse Volume Recordings (PVRs):** This test assesses blood flow in the legs by measuring changes in leg volume with each heartbeat. PAD can cause weaker or absent pulses.

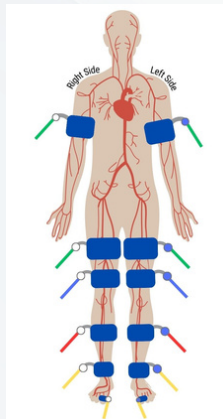
**Doppler-Based Testing:** This non-invasive test uses sound waves to evaluate blood flow in the arteries. It can detect abnormal blood flow patterns and measure the velocity of blood flow, which can help identify areas of narrowing or blockage.

## How ABI Systems Aid in PAD Detection

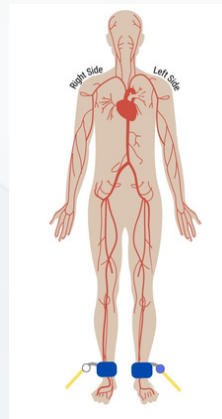
ABI systems streamline the process of measuring ankle and brachial blood pressures, providing a quick and non-invasive assessment of PAD risk. By detecting reduced blood flow, these systems can help healthcare professionals identify PAD early on, leading to timely interventions and improved patient outcomes.



ABI



Segmental



PVR Waveforms



Doppler-Based Testing

## Peripheral Artery Disease What's in a name?



### PERIPHERAL

Away from the center of the body or body part.

### ARTERY

A blood vessel that carries blood from the heart to tissues and organs in the body



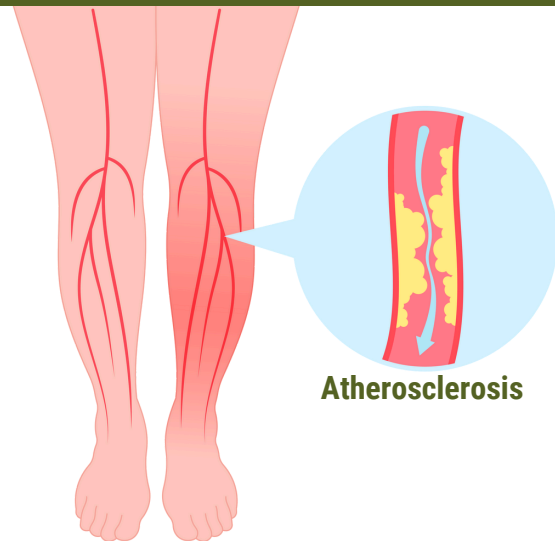
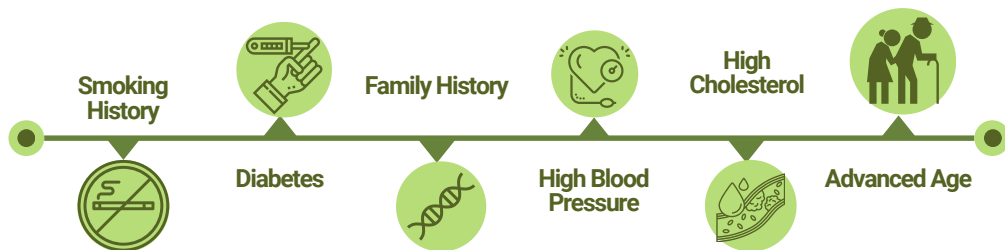
### DISEASE

Sickness or illness

## PERIPHERAL ARTERY DISEASE

(PAD) is an often silent condition where narrowed arteries reduce blood flow to the legs, causing symptoms like leg pain, numbness, and slow-healing wounds.

**10% OF PATIENTS WITH THESE RISK-FACTORS WILL HAVE P.A.D. BUT PROBABLY DO NOT EVEN KNOW IT**



### COMMON PAD SYMPTOMS AND SIGNS

#### CLAUDICATION



#### REST PAIN



#### COLD/NUMB FEET



While leg pain is the classic PAD symptom

**5 OUT OF 10 PEOPLE LIVING WITH PAD don't experience any symptoms at all**



### PHYSICAL EXAM SIGNS OF PAD



### PEOPLE LIVING WITH PAD

have a greater chance of having a heart attack, stroke, amputation, or even death.

### EARLY DETECTION SAVES LIVES:

PAD is diagnosed using ABI, which measures the blood pressure ratio in arms and legs, or PVR waveforms, which assess blood flow by recording volume changes in the arteries. Both procedures are *simple and quick*.

### DETECTION EXAM TYPES

- Doppler ABI
- Doppler/PPG TBI
- Doppler Segmental
- Doppler Stress/Exercise
- PVR waveforms

### ABI EXAM DISEASE INDICATIONS

| RESTING ABI      |           |
|------------------|-----------|
| Normal           | >1.0      |
| Mild Disease     | 0.8 - 0.9 |
| Moderate Disease | 0.5 - 0.8 |
| Severe Disease   | <0.5      |

### OPTIONS FOR TREATMENT OF PAD:

#### LESS INVASIVE TREATMENT OPTIONS

#### LIFESTYLE MODIFICATIONS

Exercise, diet changes, and medication may be used to lower many symptoms of PAD.

#### ENDOVASCULAR THERAPIES

Minimally invasive techniques that open arteries that have become narrowed or blocked.

#### INCREASINGLY INVASIVE OPTIONS

#### SURGICAL INTERVENTION

Untreated PAD can ultimately result in the amputation of a limb.



When it comes to Peripheral Artery Disease (PAD), early detection is crucial. Catching the disease in its earliest stage can lead to the best possible outcome for patients.



Discover the early signs of PAD in your patients with Newman Medical's cutting-edge PAD testing solutions. Learn how finding PAD in your patients early benefits both your patients and your practice.

