

# Practice Protocol: Peripheral Arterial Disease

**Nature:** Gradual decrease in blood flow to the lower extremity. May result in delayed wound healing, claudication or gangrene.

**Course:** The disease is progressive.

## Testing/Treatment:

### 1. Non-Invasive

- a. **ABI (Ankle Brachial Index)** – Blood pressure is taken at multiple LE locations (thigh, calf, ankle, midfoot, hallux) and compared with the arm. Values close to arm pressure are considered good. A ratio close to 1 indicates excellent circulation, <0.7 indicates a wound will not heal and over >1.2 indicates there are hardening of arteries and the study is unreliable.
- b. **PVR (Pulse Volume Recordings)** – This test is done with an ultrasound to measure the amplitude of the pulse. Lower amplitude and monophasic volumes are consistent with poor circulation. Higher amplitude and triphasic volumes are consistent with good circulation.
- c. **Trancutaneous Oxygen (TCpO2)** – Measures the amount of oxygen released by the capillaries in a specific area. This is useful to gauge wound healing capability at a specific site.
- d. **MRA** – MRI of the arterial supply that can show blockage and disease of arteries
- e. **CT-Angio** – Use of CT Scan with contrast to map out flow through arteries (more IV dye than Angiogram)

### 2. Invasive

- a. **Arteriogram** – A Vascular Surgeon or Endovascular Cardiologist punctures the Femoral Artery in the Groin and threads instruments into the artery. IV Dye is used with C-Arm to visualize flow and runoff within an artery.
  - i. **Angioplasty** – If a blockage in an artery found, a balloon can be inflated and force the artery to open. This result is usually temporary.
  - ii. **Stent Placement** – A ring is place within an artery to prevent the collapsing of an artery after angioplasty has been performed.
  - iii. **Arthrectomy** – Plaque can be removed from an artery during an angiogram, but it is risky as perforation of the artery can lead to internal bleeding and death.
- b. **Endarterectomy** – Surgical removal of plaque from an artery.
- c. **Vascular Bypass** – A native vein can be harvested or a Gortex tube can be used to attach to a large artery (femoral) proximal and distal to a blockage. This diverts blood around a blockage to restore blood flow to the ischemic area.

## PVD-7~LOWER EXTREMITY PERIPHERAL VASCULAR DISEASE

### • **Individuals at Risk for Lower Extremity Peripheral Arterial Disease\***

- Age less than 50 years, with diabetes and one other atherosclerosis risk factor (smoking, dyslipidemia, hypertension, or hyperhomocysteinemia)
- Age 50 to 69 years and history of smoking or diabetes
- Age 70 years and older
- Leg symptoms with exertion (suggestive of claudication) or ischemic rest pain
- Abnormal lower extremity pulse examination
- Known atherosclerotic coronary, carotid, or renal artery disease