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## **Clinical Column**

# Symptom differentiating between arterial and venous disease in the lower extremities



Paula Cassell, RN

Early identification of blood vessel disease is crucial for the vascular patient. There are multiple factors in identifying arterial and venous disease. Patients may complain of a broad spectrum of symptoms such as pain, discoloration, coolness, numbness, or wounds to the lower extremities to name a few. The more subjective and objective data obtained during a nursing assessment will assist in determining if a patient has arterial and or venous disease. It is believed that there are over 8 million Peripheral Arterial Disease (PAD) sufferers in the United States alone and millions more around the world. Diagnostics are imperative for a differentiating diagnosis but for this discussion that we will focus on the nursing assessment for differences and similarities of arterial and venous disease presentation (Figures 1-3).

A thorough physical examination should be accompanied by a detailed medical history. As clinicians, we innately begin to inspect our patients while we listen to their current history of present illness. There is no better place to start than at the beginning. Ask the patient about the onset, location, duration, characteristics, aggravating and relieving factors along with current treatment of symptoms. It is important to inquire of any recent injury or trauma. Medical, surgical, family, and social history should also be documented in the chart along with any known arterial or venous disease.

Risk factors for arterial disease:

- tobacco use
- obesity
- inactivity
- hypercholesterol

From the Peachtree Vascular Specialists, P.C, Stockbridge, Georgia.

Corresponding author: Paula Cassell, RN, Peachtree Vascular Specialists, P.C., 1035 Southcrest Drive Suite 250, Stockbridge, GA 30281 (E-mail: pcassell@pvsatl.com).

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- hypertension
- diabetes
- over aged 50 years

Most common symptoms of lower extremity arterial disease:

- pain at rest
- hanging the extremity in the dependent position improves pain
- cramping to calves, thighs, or buttocks with walking
- stopping to rest while walking improves pain
- leg numbness or weakness
- decrease or inability to extend or flex toes

Presentation of arterial disease:

- coolness to extremity
- decreased or absent pulses at dorsalis pedis or posterior tibial
- wounds in varying locations lower leg, foot and toes
- wounds round in shape
- Buerger's test (pallor elevation)
- ischemic rubor, blue, and dark red
- dry shiny skin
- loss of hair or thickened toenails
- decreased ankle brachial index (ABI) on duplex

Treatment options for arterial disease:

 PAD can be treated through medication, surgical procedure, and changes to lifestyle, such as stopping smoking and exercising regularly. Surgery and medication can improve blood flow and treatment of underlying causes, such as problems with blood pressure, cholesterol levels, and diabetes, will assist.<sup>2</sup>

Risk factors for venous disease:

- sedentary lifestyle
- thrombophlebitis
- venous reflux
- sudden change in weight gain or loss, pregnancy
- varicose veins or family history

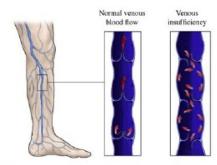
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#### Arterial Insufficiency/PAD

Narrowing of the arteries, commonly the pelvis & legs

Clinical Symptoms: cramping, pain, tired legs or hip muscles that worsens during walking/activity and subsides with rest



#### Venous Insufficiency/PVD

Inadequate return of venous blood from the legs to the heart

#### **Clinical Symptoms:**

tired/heavy, achy cramping in the legs; pain worsens when standing and improves with leg elevation and activity

 ${f PAD}=$  peripheral arterial disease;  ${f PVD}=$  peripheral venous disease

Figure 1. Arterial insufficiency versus venous insufficiency.

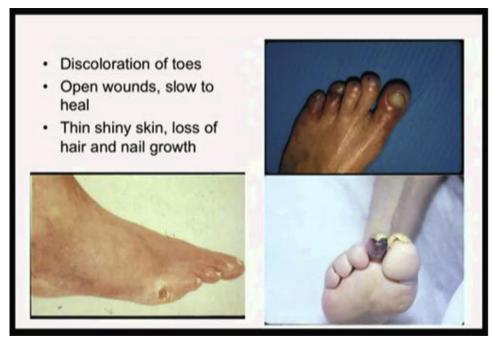


Figure 2. Physical signs of advanced PAD.

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