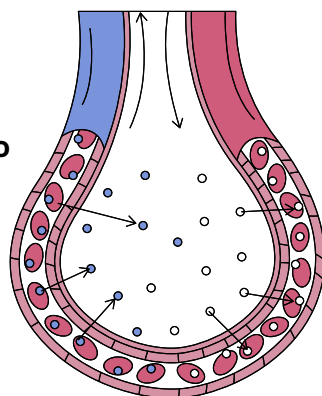




PERIPHERAL VASCULAR DISORDERS

VEINS: FROM the tissues, VACK to the heart



ARTERIES: Blood AWAY from the heart, TOWARDS the tissues

Therefore:

Arterial problem: not enough oxygenated blood reaches the tissue.

Blood is trying to go AWAY from the heart, but can't get there. So the extremity becomes:

6 Ps:

Pain

Pallor

Pulselessness

Poikilothermia

Paresthesia and Paralysis signal a threatened limb.

Venous problem: blood reaches the leg, but has trouble getting back to the heart. Therefore VOLUME stays

Blood gets to the leg but stays/pools there.

Therefore: Warm + Swollen + Brown

Remember

Arterial likes DEPENDENCY.

Venous likes ELEVATION.

Arterial Insufficiency	Venous Insufficiency
Pallor on elevation, dependent rubor; cold	brownish/reddish, usually warm or normal
Usually absent edema	edema is common
Weak or absent pulses	present pulses
Skin is thin, shiny, hairless	skin is thickened and scaly
Deep, painful ulcers	shallow irregular ulcers
Compression contraindicated	Compression stockings are necessary
Dependent position may improve flow	Elevation improves flow



Peripheral Arterial Disease

PAD is obstruction or narrowing of peripheral arteries, most commonly caused by atherosclerosis, resulting in reduced blood flow and ischemia, especially in the lower extremities

Risk Factors

- (#1) Smoking
- Diabetes mellitus
- Hypertension
- Dyslipidemia
- Increasing age
- Obesity
- Family history of atherosclerosis
- Cardiovascular disease
- Physical inactivity

Signs and Symptoms

Classic: Intermittent Claudication

Pain/cramping in the leg with activity that is relieved by rest.

Example:

Client walks 2 blocks then his calf begins hurting. Client stops walking and pain disappears.

Exercise increases oxygen demand, but narrowed arteries cannot deliver enough oxygen.

Classic location

Usually:

- Calf
- Foot
- Thigh
- Buttocks depending on the level of arterial obstruction

Advanced PAD: Rest Pain

As ischemia worsens, rest pain develops, usually in the foot or distal leg, especially at night.

Worsened by: leg elevation

Relieved by: dependent position

Reason: Gravity improves arterial perfusion to the ischemic limb.

Hallmark Signs of PAD

- Cool/cold extremity- Reduced arterial blood flow means reduced heat delivery.
- Pallor with elevation
- Dependent rubor: This occurs because of severe ischemia and reactive vascular changes.
- Weak or absent peripheral pulses
- Thin, shiny skin: Chronic ischemia causes trophic changes.
- Hair loss
- Thickened/brittle nails: Due to chronic poor tissue perfusion.
- Arterial ulcer

Usually: Toes / foot / pressure areas

Appearance:

- Deep
- Punched-out
- Pale or necrotic base
- Painful
- Gangrene (Severe)

Nursing Interventions

1. Assess circulation frequently (Compare both extremities)

Check: Color, Temperature, Peripheral pulses, Capillary refill, Sensation, Pain, Skin integrity, Presence of ulcers

2. Promote exercise

For stable PAD with intermittent claudication, structured walking exercise is beneficial.

30 minutes 3x/week

Typical pattern:

Walk until moderate symptoms → rest → resume walking.

Remember: Exercise promotes development/use of collateral circulation and improves walking ability. Do NOT automatically tell a client with chronic PAD: "Avoid walking because walking causes pain." Controlled exercise is actually an important component of treatment.



3. Smoking cessation (the #1 intervention)

Not “reduce smoking.”

Not “switch cigarettes.”

4. Protect the feet

Because poor perfusion means poor healing.

Teach:

- Inspect feet daily
- Avoid walking barefoot
- Wear properly fitting shoes
- Trim toenails straight across
- Keep feet clean and dry
- Treat wounds promptly
- Avoid heating pads

5. Positioning

For arterial insufficiency: Avoid prolonged elevation.

If elevation worsens ischemic pain, the client may benefit from a dependent position.

6. Avoid constriction

Avoid:

- Tight socks
- Tight clothing
- Crossing legs for prolonged periods
- Anything that further reduces circulation

Medical / Surgical Management

- Conservative management
- Smoking cessation
- Exercise
- Diabetes control
- BP control
- Lipid management
- Weight management
- Antiplatelet therapy

- Revascularization

For significant symptomatic disease: Arterial Surgical bypass

Postoperative care:

Knee flexion should be avoided.

Monitor for graft occlusion (severe pain, absent pulses, cool/pale extremity)

Chronic Venous Insufficiency

CVI occurs when the veins cannot effectively return blood to the heart.

Risk Factors

Major risk factors include:

- Previous DVT
- Older age
- Obesity
- Prolonged standing
- Prolonged sitting
- Pregnancy
- Leg trauma
- Varicose veins
- Venous valve damage



Hallmark Signs “VENOUS”

V: Veins pool

E: Edema

N: No major pulse loss

O: Oozing ulcer

U: Usually warm

S: Skin thick and scaly

Nursing Interventions

1. Elevate the legs

Elevate above heart/right atrial level for about 30 minutes or longer several times per day.

2. Administer anticoagulants for clot prevention as ordered

3. Compression therapy daily

Remember: Don't roll down compression stockings

3. Encourage walking/exercise

4. Avoid prolonged standing/sitting

Encourage:

- Walking
- Leg exercises
- Position changes
 - Avoiding crossing legs for prolonged periods

5. Skin care and wound care



Raynaud's Phenomenon

is episodic vasospasm of small arteries/arterioles, usually in the fingers, triggered by:

- Cold
- Emotional stress

This causes temporary reduction in blood flow.

Primary vs Secondary

Primary Raynaud's

Occurs without an underlying disease.

Usually:

- Younger age
- Symmetric
- Milder
- No tissue damage

Secondary Raynaud's

Occurs because of another condition.

Common associations include:

- Systemic sclerosis/scleroderma
- SLE
- Rheumatoid arthritis
- Other connective tissue disorders
- Occupational vibration exposure
- Certain medications

Signs and Symptoms

COLOR CHANGES

WHITE → BLUE → RED

White: vasospasm and reduced blood flow

Blue: deoxygenated blood/cyanosis

Red: reperfusion after the spasm resolves

During an attack:

- Cold fingers
- Numbness
- Tingling
- Pain
- Burning
- Pallor
- Cyanosis
- Erythema during reperfusion

Nursing Interventions

1. Keep the client warm

Avoid:

- Cold environments
- Cold water
- Sudden temperature changes

Wear:

- Gloves
- Warm socks
- Appropriate clothing

2. Reduce stress

Teach:

- Relaxation
- Stress management
- Biofeedback when appropriate

3. Smoking cessation

Nicotine causes vasoconstriction.

4. Protect fingers/toes

Inspect for:

- Ulcers
- Color changes
- Skin breakdown
- Infection

Pharmacologic Management

First-line medication: Calcium channel blockers

- Nifedipine
- Amlodipine

These promote vasodilation.

Nursing considerations

Monitor for:

- Hypotension
- Dizziness
- Headache
- Peripheral edema



BUERGER DISEASE

Aka: Thromboangiitis Obliterans

is an inflammatory thrombotic disease involving small- and medium-sized arteries and veins of the hands and feet. It causes distal ischemia.

Biggest Risk Factor: TOBACCO USE

Especially cigarette smoking.

It occurs predominantly in younger people who use tobacco and is strongly associated with continued tobacco exposure.

Signs and Symptoms

Early:

- Coldness
- Numbness
- Tingling
- Burning
- Pain

Then:

- Intermittent claudication
- Weak/absent pulses
- Raynaud-like episodes
- Ischemic ulcers
- Gangrene

Nursing Interventions

1. ABSOLUTE TOBACCO CESSATION

2. Protect extremities

Avoid:

- Cold
- Trauma
- Tight shoes
- Constrictive clothing
- Heating pads

3. Assess circulation

Monitor:

- Color
- Temperature
- Pulses
- Pain
- Sensation
- Ulcers
- Signs of gangrene

Pharmacologic Management

Medications may be used depending on the client's presentation.

Possible therapies include:

- Analgesics
- Antiplatelet agents in selected patients
- Vasodilator/prostacyclin therapy in severe ischemia

However:

NO medication can compensate for continued tobacco use.

The central treatment is complete tobacco cessation.