

	VENOUS INSUFFICIENCY (STASIS)	ARTERIAL INSUFFICIENCY	PERIPHERAL NEUROPATHY
H I S T O R Y	<ul style="list-style-type: none"> • Advanced Age • CHF • Lymphedema • Obesity • Orthopedic Procedures • Pain reduced by elevation • Pregnancy • Previous DVT with Phlebitis • Pulmonary Embolus • Reduced mobility • Sedentary Lifestyle • Traumatic Injury • Vascular Ulcers • Work History 	<ul style="list-style-type: none"> • Arterial Disease • Cardiovascular Disease • Diabetes • Dyslipidemia • Hypertension • Increased pain with activity and/or elevation • Intermittent Claudication • Obesity • Painful Ulcer • Sickle Cell Anemia • Smoking • Vascular procedures/surgeries 	<ul style="list-style-type: none"> • Advanced age • Alcoholism • Chemotherapy • Diabetes • Hansen’s Disease • Heredity • HIV, AIDS and related drug therapies • Hypertension • Impaired glucose tolerance • Obesity • Raynaud’s Disease, Scleroderma • Smoking • Spinal Cord Injury and neuromuscular diseases
L O C A T I O N	<ul style="list-style-type: none"> • Malleolus • Medial aspect of leg superior to medial malleolus 	<ul style="list-style-type: none"> • Areas exposed to pressure or repetitive trauma, or rubbing of footwear • Lateral malleolus • Mid tibial • Phalangeal heads • Toe tips or web spaces 	<ul style="list-style-type: none"> • Altered pressure points/sites of painless trauma/repetitive stress • Dorsal and distal toes • Heels • Inter-digital • Metatarsal heads • Mid-foot (dorsal and plantar) • Toe interphalangeal joints

ASSESSMENT

ASSESSMENT	<p>WOUND</p> <ul style="list-style-type: none"> • Base: ruddy red; yellow adherent or loose slough; granulation tissue present, undermining or tunneling are uncommon • Depth: usually shallow • Margins: irregular • Exudate: moderate to heavy • Infection: less common <p>SURROUNDING SKIN</p> <ul style="list-style-type: none"> • Venous dermatitis (erythematic, weeping, scaling, crusting) • Hemosiderosis (brown staining) • Lipodermatosclerosis; Atrophy Blanche • Temperature: normal; warm to touch • Edema: pitting or non-pitting; possible induration and cellulitis • Scarring from previous ulcers, ankle flare, tinea pedis • Infection: Induration, cellulitis, inflamed, tender bulla 	<p>WOUND</p> <ul style="list-style-type: none"> • Base: Pale; granulation rarely present; necrosis, eschar, gangrene (wet or dry) may be present • Depth: may be deep • Margins: edges rolled; punched out, smooth and undermining • Exudate: minimal • Infection: frequent (signs may be subtle) <p>SURROUNDING SKIN</p> <ul style="list-style-type: none"> • Pallor on elevation • Dependant rubor • Shiny, taut, thin, dry, • Hair loss over lower extremities • Atrophy of subcutaneous tissue • Edema: variable; atypical • Temperature: decreased/cold • Infection: Cellulitis • Necrosis, eschar, gangrene may be present <p>NAILS</p> <ul style="list-style-type: none"> • Dystrophic 	<p>WOUND</p> <ul style="list-style-type: none"> • Base: pink/pale; necrotic tissue variable; • Depth: variable • Edges well defined • Exudate: usually small to moderate • Wound shape: usually rounded or oblong and found over bony prominence <p>SURROUNDING SKIN</p> <ul style="list-style-type: none"> • Normal skin tones • Trophic changes • Fissuring or callus formation • Edema: with erythema may indicate high pressure • Temperature: warm <p>NAILS</p> <ul style="list-style-type: none"> • Onychomycosis; dystrophic nails; paronychia, hypertrophy
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<p>PAIN</p> <ul style="list-style-type: none"> Minimal unless infected or desiccated Described as throbbing, sharp, itchy, sore, tender, heaviness Worsens with prolonged dependency <p>PERIPHERAL PULSES</p> <ul style="list-style-type: none"> Present/palpable <p>NON-INVASIVE VASCULAR TESTING</p> <ul style="list-style-type: none"> Capillary Refill: normal (less than 3 seconds) ABI to rule out arterial component <p>MEASURES TO IMPROVE VENOUS RETURN (Provided vascular studies have ruled out significant arterial disease)</p> <ul style="list-style-type: none"> Surgical obliteration of damaged veins Elevation of legs Medications Exercise Education Compression therapy to provide at least 30mm Hg compression at ankle^c <p>**See WOCN Clinical Practice Guideline for Compression Therapy</p>	<p>PAIN</p> <ul style="list-style-type: none"> Intermittent claudication Resting; positional; nocturnal Painful Ulcer Paresthesias <p>PERIPHERAL PULSES</p> <ul style="list-style-type: none"> Absent or diminished <p>NON-INVASIVE VASCULAR TESTING</p> <ul style="list-style-type: none"> Capillary refill: Delayed (more than 3 seconds) ABI <0.9 TCPO2 <40mmHG TP >30mm HG <p>MEASURES TO IMPROVE TISSUE PERFUSION</p> <ul style="list-style-type: none"> Revascularization if possible Medications to improve RBC transit through narrowed vessels Lifestyle changes (avoid tobacco, caffeine, restrictive garments, cold temperatures) Hydration Measures to prevent trauma to tissues (appropriate foot wear) Maintain legs in neutral or dependent position Pressure reduction for heels and toes 	<p>PAIN</p> <ul style="list-style-type: none"> Decreased sensitivity to touch; if present, pain may be superficial, deep, aching, stabbing, dull, sharp, burning or cool; altered sensation not described as “pain” (numbness, warmth, prickling, tingling) <p>PERIPHERAL PULSES</p> <ul style="list-style-type: none"> Palpable/present <p>NON-INVASIVE VASCULAR TESTING</p> <ul style="list-style-type: none"> Capillary refill: Normal <p>NOTE: LEAD may co-exist with neuropathic disease</p> <p>MEASURES TO ELIMINATE TRAUMA</p> <ul style="list-style-type: none"> Reduction of shear stress and offloading of neuropathic wounds (bedrest, contact casting, orthopedic shoes) Use of assistive devices to provide support, balance and additional offloading Appropriate footwear Tight glucose/glycemic control Aggressive prevention/treatment of infection (debridement of callus and necrotic tissue; pharmacologic treatment when appropriate) Revascularization if ischemic Complications: Cellulitis, osteomyelitis, gangrene, Charcot fracture
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- Goals: absorb exudates, maintain moist wound surface

DRY, NON-INFECTED, NECROTIC WOUND

- Keep dry

INFECTED WOUND/DRY OR MOIST NECROSIS

- Referral for potential surgical debridement/antibiotic therapy

OPEN WOUND/NON-NECROTIC

- Moist wound healing;
- Non-occlusive dressings
- Aggressive treatment of any infection

- Use dressings that maintain a moist surface, absorb exudates and allow easy visualization
- Cautious use of occlusive dressings

Revised: October 2006