



**Full-Thickness Arterial Leg/Foot Ulcer**

A full-thickness wound extends into deeper tissues which may involve subcutaneous tissue, muscle, bone or other supporting structures.

**Goals of Care:** restore skin integrity and avoid infection.

**Wound and Skin Care Objectives:** protect intact periwound skin, cleanse wound, manage wound exudate, debride wound, hydrate wound, manage wound odor, and fill in dead space.

*NOTE: Cautious use of moisture-retentive dressings and close monitoring is recommended with ischemic wounds. When peripheral pulses are absent, do not use occlusive dressings. Examples of non-occlusive dressings include hydrogels in amorphous or sheet forms, calcium alginates or impregnated gauze sponges. Examples of non-occlusive cover dressings include composite dressings or gauze.*

*NOTE: Debridement may not be recommended. Consult with wound care specialist.*

# ARTERIAL LEG/FOOT ULCERS



## Healed Arterial Ulcer or Skin at Risk

A healed wound is epithelialized with adequate strength to maintain closure. At risk skin is tissue exposed to potential injury or tissue that is in a weakened condition (e.g. dry, thin).

**Goals of Care:** maintain intact skin and improve tissue tolerance.

**Wound and Skin Care Objectives:** protect and moisturize intact skin.



## Partial-Thickness Arterial Leg/Foot Ulcer

A partial-thickness wound involves the epidermis, dermis or both. It is a superficial wound and may present as an abrasion, blister or shallow crater.

**Goals of Care:** restore skin integrity and avoid infection.

**Wound and Skin Care Objectives:** protect intact periwound skin, cleanse wound, manage wound exudate, debride wound, hydrate wound and manage wound odor.

**NOTE: Cautious use of moisture-retentive dressings and close monitoring is recommended with ischemic wounds. When peripheral pulses are absent, do not use occlusive dressings. Examples of non-occlusive dressings include hydrogels in amorphous or sheet forms, calcium alginates or impregnated gauze sponges. Examples of non-occlusive cover dressings include composite dressings or gauze.**

**NOTE: Debridement may not be recommended. Consult with a wound care specialist.**

## BACKGROUND INFORMATION:

Arterial ulcers result from chronic or acute arterial insufficiency to the skin and subcutaneous tissue of the lower extremities. The most common cause is a progressive disease: atherosclerosis. The precipitating event leading to ulceration is usually trauma, such as a bumped toe or tight shoes. Arterial ulcers may occur alone or in combination with diabetes, venous stasis and numerous other conditions.

The ulcer may be amenable to healing with topical therapies depending upon the degree of ischemia. Pharmacological treatment may include thrombolytic therapy or drugs aimed at increasing the supply of oxygenated blood to the area. However, the primary approach to treatment is revascularization. Therefore, a surgical referral is indicated in these patients.

Arterial **leg/foot** ulcers typically share the following characteristics:

- located most often on the tips of the toes, web spaces or proximal to the lateral malleolus of the foot
- round, small, pale wound base; necrosis or eschar may be present; depth varies
- wound margins have a punched appearance
- small to moderate amounts of wound exudate

The ulcer is staged as partial- or full-thickness. Partial-thickness ulcers involve the epidermis and dermis, whereas full-thickness ulcers extend into deeper tissue which may involve subcutaneous tissue, muscle, bone or other supporting structures.

The **skin of the periwound, leg and foot area** may have evidence of the following changes:

- shiny, taut, thin appearance
- erythema
- dry and without hair
- cool skin temperature
- indurated area around wound
- cellulitis
- dependent rubor and pallor on elevation
- diminished or absent pulses

*Multidisciplinary management of these patients with early intervention and close monitoring is key to prevention of more serious complications. Improper management of complications such as gangrene and osteomyelitis may result in amputation.*

The algorithm on the reverse side provides a general path of decision-making for assessment and topical management of arterial leg ulcers. Below is detailed information designed to *assist* health care providers. This tool should be used along with the consultative services of a wound care specialist such as an ET nurse, physical therapist, clinical nurse specialist with expertise in wound management or a physician when indicated.

## NURSING ASSESSMENTS:

The following provides a guideline for clinical assessment. Assessments must be done at regular intervals and are used to drive treatment decisions.

- **Assessment of risk or contributing factors:** smoking; diabetes; increased age; atherosclerosis. Other associated factors include arthritis; anemia; CVA; vascular procedures/surgeries; hyperlipidemia; hypertension; pressure and friction.
- **General assessments:** *differentiation between arterial, venous, and diabetic etiology is essential and will guide interventions.* Patients with combined ulcer etiology require complete evaluation by a multidisciplinary team.
- **Assessment of leg** may reveal ischemic skin changes; purpura; atrophy of subcutaneous skin; thick toe nails; hair loss on lower extremities; taut, shiny, dry skin; pitting or dependent edema; an ankle-brachial index of <0.8 may indicate ischemia and should be evaluated further. Pain may be severe and debilitating with intermittent claudication, rest pain or nocturnal pain.
- **Assessment of nutrition, previous ulcer care (if applicable), level of understanding, compliance in care and learning style.**
- **Assessment of wound:** infection; edema; exudate; odor; size (length, width and depth); necrotic tissue; granulation; epithelialization; and periwound skin condition.

## GENERAL NURSING INTERVENTIONS:

- **Optimize perfusion:** refer for surgical evaluation and consideration of possible revascularization.
- **Support moist wound healing:** if perfusion is poor, the wound bed may dry out quickly. If the patient with an arterial ulcer is not a surgical candidate, *cautious use of moisture-retentive dressings, keeping dry wounds dry and close monitoring are important.*
- **Prevent, treat and observe for signs of infection:** consult with physician to determine the need for antibiotic therapy, debridement, cleansing and dressing approach. If gangrene is present, keep the wound dry to avoid further bacterial growth. Wounds located between the toes may benefit from cotton or sheepskin placed between the toes to absorb fluid and protect skin. Following revascularization, moist wound healing techniques may be resumed.
- **Ambulate as tolerated.**
- **Control edema, if present.**
- **Debride when indicated:** method selected is based upon the condition of the patient and wound. *Debridement may be contraindicated in arterial wounds.* Methods of debridement include: autolytic, mechanical, sharp and enzymatic.
- **Perform daily skin inspection and care:** this may include cleansing, moisturizing and protective barriers.
- **Provide adequate nutritional intake.**
- **Manage pain.**
- **Provide education:** patient, family and caregiver. Topics include: smoking cessation; compliance with medications; control of diabetes; avoidance of exposure to friction or trauma; avoidance of extreme temperatures on skin; limitation of constrictive clothing, leg crossing, going bare foot; proper footwear and nail care; positioning to control pain; close follow-up with care providers.
- **Document** assessments and interventions.
- **Reassess** at regular intervals per agency protocol.

# HOLLISTER PRODUCTS

for improved outcomes

## Healed Ulcer or Skin at Risk

Restore Clean `N Moist  
Hollister Skin Cleanser  
Restore Barrier Creme  
Hollister Skin Conditioning Creme  
Hollister Moisture Barrier Ointment  
Hollister Skin Gel  
Restore Extra Thin Hydrocolloid  
EpiFlex Heel and Elbow Protectors

## Partial-Thickness Ulcer

**SKIN CARE**  
Restore Clean `N Moist  
Hollister Skin Cleanser  
Restore Barrier Creme  
Hollister Skin Conditioning Creme  
Hollister Moisture Barrier Ointment  
Hollister Skin Gel  
EpiFlex Heel and Elbow Protectors

## WOUND CARE

Restore Wound Cleanser  
Restore Extra Thin Hydrocolloid\*  
Restore Cx Hydrocolloid\*  
Restore Plus Hydrocolloid\*  
Restore Hydrogel (gel, sponge, packing strip)  
Restore CalciCare Calcium Alginate  
Odor-Absorbent Dressing  
Hollister Deodorizer Germicide

\*Occlusive Wound Care Dressings

## Full-Thickness Ulcer

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\*Occlusive Wound Care Dressings

*Developed in collaboration with Bonnie Sue Rolstad, RN, BA, CWOCN  
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Photography courtesy of Ms. Rolstad*

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