VANDERBILT UNIVERSITY MEDICAL CENTER

Guideline: Traumatic/Friction Burn Management Guidelines

Revised Date: September 2026
Review Date: September 2028

Content Experts
Anne Wagner, MD Steve Gondek, MD Jill Streams, MD Erica Schoch, RN

Table of Contents

I. Indications: 2
II. Population: 2
III. Definitions: 2
IV. Assessment: 2
V. Analgesia: 2
VI. Goal of Procedural Intervention: 3
A. Support wound bed healing and minimize scarring. 3
VII. Procedure: 3
VIII. Complications: 3
IX. Special Considerations: 3
X. Reference 4

I. Indications:

Patients evaluated by the Emergency Room or those admitted to a trauma service with traumatic/friction burns meeting inclusion criteria.

II. Population:

A. Inclusion: Patients evaluated by the Emergency Room or those admitted to a traumatic/friction wound meeting inclusion criteria.

B. Inclusion: Burn consult should be placed for these patients.

1. Patients with a traumatic/friction wound should receive a Burn Consult as the first evaluation. The Burn Surgeon on call will determine the need to involve additional services.
2. Traumatic/friction burns requiring debridement and multiple scattered dressings
3. Any Full thickness traumatic/friction burn
4. Trauma or Emergency *attending* discretion

C. Exemptions: Who should not get a burn consult with a friction or a traumatic wound

1. Traumatic related injuries that have a consult from another service and that are actively following that wound – however it is still appropriate to consult the burn service for other traumatic/friction burns on the same patient in other areas

D. NOTE: if the patient is going to be discharged from the Emergency Department or if they are going to be admitted to a non-trauma service, a burn consult should be placed for evaluation and to arrange for burn clinic follow up.

III. Injury Severity Definitions:

A. 2nd degree (partial thickness) friction/traumatic wounds

1. A second-degree friction burn is a partial-thickness skin injury caused by rapid rubbing against a rough surface, damaging both the outer layer (epidermis) and the middle layer (dermis) resulting in wet or shiny skin, and intense pain. Generally, will heal within 1-2 weeks with correct wound care




B. 3rd degree (full thickness) friction/traumatic wounds

1. A third-degree friction burn is a severe, full-thickness injury that destroys the outer skin layer (epidermis), the middle layer (dermis), and reaches into the deeper fat or subcutaneous tissue. It is caused by high-force rubbing against a rough surface like a road or treadmill. The affected skin may appear white, black, dry, or leathery. Generally, will require surgical management by the burn team.





C. 4th degree friction/traumatic wounds

1. A fourth-degree friction burn is a severe injury caused when harsh rubbing against a rough surface destroys all layers of the skin and damages deep tissues like muscle, tendons, and bone – extends past the skin layers into deep structures. Will also require surgical management.




IV. Assessment:

A. Physical Exam: Full physical examination and photos of the areas involved.

B. Documentation: Full physical examination and photos detailing % TBSA, location of burns, and depth on H&P, Consult, or progress note.

V. Analgesia:

A. None. It is imperative that a multi-modal approach should be taken to treat acute pain and procedural pain. It is recommended that the patient starts on a combination of acetaminophen, ibuprofen, gabapentin, oxycodone/dilaudid, PRN if there are no contraindications. Ultimately, pain management will be at the discretion of the primary team.

VI. Goal of Procedural Intervention:

A. Support wound bed healing and minimize scarring.

VII. Procedure:

A. Equipment:

1. Nonsterile gloves
2. Clean wash cloths
3. 4x4 kerlix fluffs
4. Hibiclens or dial soap and clean water
5. Wound care supplies (choose one option per specific wound care guidelines).
    a. Bacitracin, xeroform gauze, kerlix gauze. Note: may substitute adaptic for xeroform if xeroform is not available.
    b. Saline, kerlix gauze, ABD pad (may use exu-dry pad).

B. Procedure:

1. Don personal protective equipment.
2. Gentle cleansing of wounds with hibiclens or dial soap and water.
3. Daily wound care (2 options).
    a. For most road rash/traumatic wounds, bacitracin and xeroform gauze are appropriate
    b. For road rash wounds with tissue loss creating a cavity, use saline soaked kerlix followed by an ABD pad to create a wet-to-dry dressing.
    c. Wound care changes will be made as appropriate by the burn team after initial dressings

VIII. Complications:

Infection, bleeding, poor wound healing, scarring, retained debris, decreased mobility, or diminished function.

IX. Special Considerations:

A. Therapy Consults:
   1. OT consults should be placed for any patient with friction burns above the waist, including the face and upper extremitiesto encourage mobility and stretching.
   2. PT consults should be placed for patients with friction burns involving the lower extremities.

B. Inability to do thorough appropriate wound care may require admission for wound care under sedation in the hydrotherapy room.

C. Follow-up: All patients with friction/traumatic wounds that are appropriate for discharge should be discharged after appropriate wound care education, adequate pain management, and a family/friend to assist with transfer home/wound care and should be scheduled in theburn clinic within 1 week of hospital discharge.

X. Reference

1. Agrawal A, Raibagkar S, Vora H. Friction Burns: Epidemiology and Prevention. Ann Burns Fire Disasters 2008 Mar 31;21(1):3-6

2. Al-Qattan, Al-Zahrani, Shanawani, Al-Arfaj.Friction burn injuries to the dorsum of the hand after car and industrial accidents: classification, management and functional recovery. J Burn Care Res Aug 2010;31(4):610-5

3. Brown D, Lu K, Chang K, Levin J, Schullz T, Goverman. A rare case of third degree friction burns and large case of Morel -Lavallee lesion of the abdominal wall. Burns and Trauma. Article number: 6(2018)

4. Han T, Han K, Kim J, Lee G, Choi J, et al. Pediatric hand injury induced by treadmill. Burns . 2005;31:906-