

FROSTBITE +

Management in the Emergency Department

What you need to know

WHO IS AT RISK?

Frostbite often occurs in winter, but it's important to remember that injuries can occur secondary to refrigerant chemicals, dry ice, CO₂ fire extinguishers, etc.

SOCIAL & BEHAVIOURAL FACTORS

- Homelessness
- Psychiatric disturbance
- Alcohol consumption
- Inadequate clothing

MANAGEMENT: FROZEN WOUNDS



Remove Constrictive Clothing & Jewellery

This improves blood flow to the wound



Rapid Rewarming

Submerge wound in circulating water between 37-39°C until thawed



Reversible NSAIDs

Ibuprofen 6mg/kg PO BID for 5+ days



Consider TPA Candidacy

In consultation with plastic surgery, consider for early presentations (<24h) of life-altering injuries. Practice varies by centre



Tetanus Prophylaxis

Standard tetanus prophylaxis. No evidence for prophylactic antibiotics



AVOID Refreezing

Significant morbidity can result - e.g. don't discharge the homeless without a good plan!

HOW TO REWARM

DO ✓

- Rewarm as soon as possible
- Completely submerge wound for faster thaw
- Target water temp 37-39°C
- Use flowing water (sink/shower) or change water frequently - i.e. keep water warm!
- Give analgesics

DON'T ✗

- Use dry heat: this results in a slower thaw (damage and ischemia)
- Use hotter temperatures: this can result in burns!
- Allow refreezing

WOUND CARE TIPS



Clear Blisters

De-roof or aspirate clear and milky blisters. These contain inflammatory mediators that can harm underlying tissue.



Hemorrhagic Blisters

Controversial. Some recommend de-roofing hemorrhagic blisters while others recommend leaving intact.



Dressings

Use Polysporin & Adaptic dressings with dressing placed between digits to prevent adherence. Change every other day. Once demarcated & mummified, change to Betadine at margins only.



Aloe Vera

Although Aloe Vera is frequently cited, there is little evidence to support its use.

Resources:

Nguyen, C., Chandler, R., Ratanshi, I., & Logsetty, S. (2019). Frostbite. In Jeschke, M., Kamolz, L., Sjoberg, F., & Wolf, S. (Eds.), *The handbook of burns volume 1*. (pp. 529-547). Switzerland: Springer.
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