Recommendation REC M 0015 of the Commission for Mountain Emergency Medicine

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On Site Treatment of Frostbite for Mountaineers

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Intended for mountaineers
Definition

Frostbite is a localised cold injury. It may be superficial or deep. It may lead to amputation of the frozen part.

Predisposing factors

- Dehydration/Exhaustion/Lack of Fitness
- Poor Insulation/humidity/windchill
- Immobilisation
- Injuries e.g. Fractures
- High altitude
- Previous Frostbite
- Restriction of Circulation by Equipment e.g. Harness, tight boots, watch, rings.
- Pre-existing illness e.g. diabetes, Raynaud's syndrome
- Alcohol/ Nicotine/ Drugs

Prevention:

Frostbite is preventable, by avoiding the predisposing factors. In particular, Boots and Gloves should be good, windproof and not too tight

Recovery of sensation after 10 mins rewarming may indicate superficial frostbite, with a good prognosis but indicates that prevention has failed. Recurrence is likely unless prevention is improved.

Symptoms/Signs:

- White pale issue with numbness
- Increasing loss of sensation without pain
Emergency Treatment

1. In the Open with possible onset of frostbite

- Move out of the wind/Consider turning back/Drink fluids (Warm if possible)
- Remove boots - but consider may be problems with replacement if swelling occurs
- Remove socks/gloves if wet. Change for dry
- Warm by placing foot/hand in companion's armpit/groin for 10 minutes only
- Replace boots
- Give one aspirin or ibuprofen to improve circulation (if available and not contra-indicated)
- Don’t rub affected part - may cause tissue damage.
- Don’t apply direct heat

If sensation returns - can continue to walk
If no return of sensation - go to nearest warm shelter (hut/base camp)
- seek medical treatment.
At High Altitude: Give Oxygen, if available

2. Base Camp, Mountain Hut or other Stable Sheltered Situation

Remove boots / change wet clothing for dry / remove rings from fingers
Warm fluids to drink (+/- alcohol)
Aspirin 500 - 1000mg or ibuprofen 400 - 800mg for pain relief and to improve circulation

Rapid Rewarming:
- Never use Dry Heat / Never rub
- Immerse part in warm water (with disinfecting agent if available) at 37°C. (="baby bath" temperature, check with elbow)
- Add further hot water to maintain temperature
- Warm the affected part to the same temperature as the rest of the body, or till colour returns (Approx. 1 hr for foot)
- Dry, then carefully apply loose bandaging-sterile if possible. Elevate

Casually cannot walk out after rewarming of feet- transport is mandatory
The procedure causes large blisters. Do not burst them.
REMEMBER:

DO NOT: RUB WITH SNOW OR OTHER MATERIAL

DO NOT: REWARM ONE PART IF THE CASUALTY HAS HYPOTHERMIA

DO NOT: START REWARMING IF THERE IS A POSSIBILITY OF REFREEZING

DO: GET MEDICAL HELP AS SOON AS POSSIBLE-
IF CIRCULATION OF THE FROZEN PART IS NOT RESTORED WITHIN 48 HOURS, LOSS OF THE FROZEN PART IS POSSIBLE