



**ICAR**

**REC M 0015 E**

**International Commission for Alpine Rescue**

**Commission for Mountain Emergency Medicine**

**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

Casualty 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**