

Appendix 8. Treatment of cryogenic cold burns and frostbite

**** (print this off and give to paramedics / medical practitioner) ****

Cold burns or frostbite should receive medical attention as quickly as possible. However, such injuries are not an everyday occurrence and doctors, hospital staff or first aid personnel may not be aware of the basic methods of treatment. The following procedures for first aid treatment and for further treatments to be given by a medical practitioner or a hospital are therefore provided.

First-aid treatment

The aim of treatment is to raise the temperature of the affected area SLOWLY back to normal

Minor injuries:

- Move victim to comfortable room if possible
- Ensure that clothing about the affected area is loose to provide unrestricted circulation. Do not remove adherent clothing until thawed thoroughly.
- Place affected area in TEPID WATER or flow TEPID WATER over the area for half an hour until skin changes from pale yellow through blue to pink or red. DO NOT use hot water or any other form of direct heat.
- Cover affected part with bulky dry sterile dressing
- Send victim to hospital casualty department.

Major injuries:

- **Call 999 and immediately call for assistance so someone can call Security on the relevant site emergency phone number to inform them of what is happening.**
- Follow minor injury procedure as far as possible

NEVER GIVE ALCOHOL OR ALLOW SMOKING

Hospital or Medical Practitioner treatment:

- Remove any clothing that may restrict circulation to the affected area
- Immediately place the area of the body exposed to the cold temperature in a water bath with a temperature of, ideally, not less than 40°C (104°F) but certainly not more than 42°C (108°F)

Note: Never use hot water or dry heat. Temperature in excess of 45°C will superimpose a burn on the frozen tissue.

- If there has been extensive body exposure to cryogenic temperatures such that the general body temperature is depressed the patient must be re-warmed without delay. The patient should be placed in a bath of warm water at a temperature between 40-42°C (104-108°F) It is important that the temperature of the bath is maintained at a level of not less than 40°C to maximise the rate of re-warming.
- In the absence of facilities for this treatment the patient should be taken to a warm atmosphere, preferably at a temperature of 22°C kept at rest and slightly covered with one of two blankets until recovery is complete.
- Shock may occur during the rewarming process.
- Frozen tissues are often painless and appear waxy with a pallid, yellowish colour. Thawing after disruptive deep burns results in vasodilation, increased capillary permeability and oedema. The tissues become painful, swollen and prone to infection when thawed. Thawing may take from 15-60 minutes and should be continued until the pale colour of the skin turns to pink or red. The thawing process may require major analgesia. Symptomatic treatment and the prevention of infection is indicated.
- If the frozen area of the body is thawed by the time medical attention has been obtained, do not re-warm. Cover the area with dry sterile dressings with a large bulky protective covering.