### Frostbite / Hypothermia Treatment Protocol

**Last Reviewed:** October 4, 2022  
**Last Revised:** July 1, 2023

#### BLS Patient Management

- **Establish, maintain, and ensure**
  - A. A patent and easily managed airway. Use manual maneuvers (head-tilt / chin-lift or jaw thrust), oropharyngeal suction and/or airway adjuncts (OPA / NPAs) as clinically indicated
  - B. Adequate respirations and tidal volume. Use a mouth-to-mask device or bag valve mask (BVM), when clinically indicated. Rescue ventilations via a BVM require the use of a manometer. Waveform / digital capnography is required when paramedics are present
  - C. Controlled bleeding. Use direct pressure and/or pressure dressing(s) and/or tourniquet(s) and/or hemostatic dressing(s), as clinically indicated

- **Oxygen**
  - As clinically indicated. Titrate to maintain, or increase, SpO₂ to a minimum of 94%. A range of 88-92% is acceptable for patients with a history of COPD

- Position the patient as clinically indicated for safety, comfort, and to meet physiologic requirements

- Preserve the patient’s body heat by covering them with warm blankets

- Attach ECG leads to the patient when a paramedic is present

- **Remove from cold**
  - Remove wet clothing and dry the patient, wrapping them with warm, dry blankets then move them to a heated environment. Individually wrap, cover, and protect areas of cold injured tissue; do not rub
  - Obtain a baseline temperature and note the method: tympanic, temporal, axillary, or touch
  - Rough handling may precipitate cardiac arrhythmia(s) in the severely hypothermic patient

#### ALS Patient Management

- **For hypothermia**
  - Adults: Warmed normal saline 250 mL IV/IO bolus. **MAY REPEAT AS CLINICALLY INDICATED TO A MAX ADMINISTRATION OF 2 L.**
  - Pediatrics: Warmed Normal Saline 20 mL / kg IV/IO bolus. Use a volume control administration set for accurate dosing. **MAY REPEAT AS CLINICALLY INDICATED.** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

- **For pain associated with frostbite**
  - Adults: Fentanyl 50 mcg (1 mL) slow IV/IO push or IM/IN. Patient’s systolic BP must be greater than or equal to 90 mmHg at the time of administration. **MAY REPEAT ONCE, IN 5-10 MINUTES, DEPENDENT ON PAIN SEVERITY, TO A MAX OF 100 MCG. ADDITIONAL ADMINISTRATIONS AFTER 100 MCG REQUIRE A BASE HOSPITAL ORDER (BHO).**
  - Pediatrics: Fentanyl 1 mcg / kg slow IV/IO push or IM/IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).** For assistance with accurate dosing, refer to the REMSA PMDR or REMSA app.

  **Adults:** Ketamine 0.3 mg / kg IVPB. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **OR**

  Ketamine 0.5 mg / kg IN. **MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO).**

  **THE MAX SINGLE DOSE FOR EITHER ROUTE IS 30 MG.**

  **ADMINISTRATION OF KETAMINE TO PEDIATRIC PATIENTS IS NOT PERMITTED.**