

Thermal Angel[®]

Blood and IV Fluid Infusion Warmer



Results of Hypothermia

- Mortality was twice as high (53%) in patients with a cT<32°C compared with patients with a cT<34°C (28%)...¹
- Hypothermia increases fluid requirements and independently increases acute mortality after major trauma...²
- Secondary hypothermia may present the clinician with an extraordinary set of challenging problems. Rapid rewarming ... is essential to correct the many reversible changes associated with hypothermia. Despite aggressive management, secondary hypothermia continues to exact a large toll on the mortality of trauma victims ...³
- The terms “lowering of core temperature” poses grave problems as cardiac output decreases and the heart becomes susceptible to atrial and ventricular arrhythmias, which are often resistant to conventional therapy...⁴
- Traumatic injury places the patient at risk for hypothermia in both prehospital and hospital settings. Hypothermia significantly affects physiologic processes in the body and increases mortality in the trauma patient. Identifying trauma patients at risk for hypothermia preventing hypothermia, and managing its complications are essential for positive outcomes ...⁵
- Hypothermia introduces myocardial dysfunction, coagulopathy, hyperkalemia, vasoconstriction, and a host of other problems that negatively affect survival rate. It is very difficult to increase the core temperature once hypothermia has started; therefore, all steps that can be taken in the field to preserve normothermia must be initiated...⁶
- Hypothermia is the third most serious condition of a trauma patient, ranking close to hypoxia and hypovolemia...⁷
- Most surgical patients experience a drop in body temperature, or hypothermia, due to the use of anesthetics and cold intravenous fluids. A 1997 study found that keeping patients warm to prevent hypothermia reduced the risk of serious complications such as heart attack by 55%...⁸
- Blood units must not be warmed by immersion in a water bath or by a domestic microwave oven because uneven heating, damage to blood cells, and denaturation of blood proteins may occur...⁹

¹ Early Fluid Resuscitation in Hemorrhagic Shock, Deakin CD; Eur J Emerg Med 1994, Jun; 1(2): 83-517.

² Is Hypothermia in the Victim of Trauma Protective or Harmful? A randomized, prospective study, Ann Surg.

³ Hypothermia: Impact on the Trauma Victim. Cullinane DC; NLM PUBMED CIT. ID: Tenn Med 1997 Aug; 90(8): 323-627.

⁴ Hemorrhagic Shock and Trauma, Charles M. Elboim, MC, Dpt Surgery, Harvard Medical School, Trauma and Emergency Medicine; Volume 22 No. 2, Comprehensive Therapy, 1985. pp 6-7.

⁵ Hypothermia in the Trauma Patient. Fritsch DE; AACN Clin Issues 1995 May; 6(2); 196-247.

⁶ Conservation of Body Heat. Prehospital Trauma Life Support, 4th edition, 1999; pp 153-154.

⁷ Should Normothermia be Maintained during Major Surgery? Cheney F; JAMA, April 1997, v277 n14 p1165 (2).

⁸ Should Normothermia be Maintained during Major Surgery? Cheney F; JAMA, April 1997, v277 n14 p1165 (2).

⁹ Transfusion Therapy. Harmening D; Modern Blood Banking and Transfusion Practices, Fourth Edition: 1999, pp 356; FA Davis Company.

Estill Medical Technologies, Inc.

4144 N. Central Expwy. Suite 260 Dallas, Texas 75204

(214) 561-6001 Fax: (214) 561-1930 Toll Free: (877) 354-0286 www.thermalangel.com