T/Pump® TP700 Series Safe and Effective Localized Temperature Therapy

WHITE PAPER

Research[1] has shown that there is a time-temperature relationship that determines the threshold of epidermal injury. A skin surface temperature of 44˚C (111˚F) may be applied to the skin surface for a duration of approximately 6 hours before producing a cutaneous burn.[1] This is considered the threshold for thermal injury.

Locally applied heat increases the temperatures of the skin, superficial and deeper tissues, and joint cavities. The application of local heat is beneficial for the relaxation of the muscles and for sedative and analgesic effects.[2] Sub-acute and chronic inflammatory conditions can react favorably to heat.[3] The therapeutic use of the T/Pump is up to the discretion of the prescriber.

The models TP700 and TP700C Series T/Pump Localized Temperature Therapy System by Everis provide a temperature range of 10˚C (50˚F) to 42˚C (107˚F).With the controlled flow of heated water not exceeding 42˚C (107˚F), it is appropriate to apply a regime of localized warming temperature therapy for a period of time relative to the comfort of the patient. When the patient is lying on top of a thermal pad, the pressure site should be checked every 30 minutes for erythema caused by capillary closure and a compromise to the circulation of the treatment site. It is likely that a lesion in this area is related to pressure and not a burn.[4]

The models TP700 and TP700C Series T/Pump Localized Temperature Therapy Systems have the capability to regulate and maintain a safe temperature; therefore there is no contraindication to providing localized temperature therapy to an insensate body surface, including diabetic neuropathy. Localized warming of any kind is contraindicated in the presence of cases involving arterial insufficiency, as warming causes an increased tissue metabolic rate that may not be supported (i.e. diminished blood flow, O2 and nutrient supply). In addition, the use of the T/Pump Series for localized temperature therapy is contraindicated in the presence of acute wounds and trauma.

All of the materials that comprise our pads are tested for biocompatibility and meet standards for cytotoxicity, skin sensitization and primary skin irritation. Pads made of polyethylene with a non-woven, clothlike material bonded to one side are most likely to be used with the non-woven surface next to the patient's skin to absorb moisture; therefore we would recommend nothing be placed between the patient and the pads.

References

1. A.R.Moritz MD, F.C.Henriques, Jr., PhD. Studies of Thermal Injuries, II. The Relative Importance of Time and Surface Temperature in the Causation of Cutaneous Burns. 1947 Ch.2, pp.695-720.
2. B. Long, MSN, RN, W.Phipps, PhD, RN, FAAN, V.Cassmeyer, PhD, RN, CS. Medical-Surgical Nursing, Problems of Cognition, Sensation, and Motion. 1987. Unit 10,Ch 40, pp. 1356-1359.
3. J. Bissell, MD. Therapeutic Modalities in Hand Surgery. The Journal of Hand Surgery, Clinical Perspectives. Vol. 24A, No.3, May 1999, pp. 435-448.
4. T. Stewart, PhD., S. Magnano, RN. Burns or Pressure Ulcers in the Surgical Patient? Decubitus. February 1988.

Everis
555 East Eliza St, Ste. A, Schoolcraft, MI 49087 USA
t: 888 902 2239 | **www.everismedical.com**

DOC-14142 Rev 0

Everis™