



Rancho Los Amigos National Rehabilitation Center

DEPARTMENT OF NURSING

CLINICAL

POLICY AND PROCEDURE

SUBJECT: HEAT AND COLD APPLICATION

Policy No.: C124
Effective Date: 04/2006
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Purpose: To provide guidelines for the application of heat and cold in the management of pain and inflammation.

Performed by: RN, LVN, NA, RA, Affiliating Nursing Students under the direct supervision of an RN

Physician Order: Yes, except as indicated below* in policy statement #1

Equipment:

- **Chemical Packs:** A commercial pack that is struck or crushed to activate chemicals, causing a temperature change. These are one time use only.
- **Ice Bag or Collar:** A container into which crushed ice or small ice cubes are placed and applied to small areas of the body. The ice bag can be a commercial bag, a plastic glove or plastic bag with a zipper closure.
- **Soak:** A process in which a body part is submerged in fluid.
- **Warming Blanket:** Designed for patient warming and to provide a safe and effective way to maintain normal body temperature.

Definition of Rebound Phenomenon

Rebound phenomenon occurs at the time the maximum therapeutic effect of hot or cold application is achieved and the opposite effect begins. Typically, heat and cold produce its maximum effect in 20-30 minutes. Continuation of heat application beyond 30-45 minutes causes tissues congestion, blood vessel constriction, and places the patient at risk for burns since constricted blood vessels do not allow body heat to dissipate adequately. Continuation of cold application produces vasodilation, impaired circulation, cell deprivation, damage to the tissues from lack of O₂ and nourishment and reduces the long-term therapeutic effects.

Policy Statements:

1. *The application of heat or cold without a physician's order may only consist of warm or cool compresses at a temperature which can be comfortably held in the hands.
Key Point: The use of other mechanisms to heat or cool a compress (e.g. microwave or ice) is strictly prohibited.
2. Hydrocolator packs may only be applied by Physical or Occupational Therapy.
3. Neither heat nor cold are to be applied to an insensate body part unless ordered by an MD.
4. Heat and cold applications are to be used cautiously in children younger than 2 years of age, older adults, and patients with diabetes, congestive heart failure, spinal injury, and/or those who are comatose.
5. Indications for Use:
 - A. **Heat:** Provides warmth, promotes circulation, speeds healing, relieves muscle spasm, reduces pain, decreases joint stiffness
 - B. **Cold:** Reduces fever, prevents/reduces swelling, controls bleeding, relieves pain, numbs sensation

6. Contraindications for Use:

- A. **Heat:** Patients with sensory impairment e.g., spinal injury or diabetic neuropathy, first 24 hours after traumatic injury, active hemorrhage, noninflammatory edema, localized malignant tumor, skin disorders that cause redness or blisters, metallic implants e.g., pacemaker, or presence of liniments
- B. **Cold:** Open wounds, impaired circulation e.g., Reynaud's phenomenon, allergy or cold hypersensitivity

Procedure:

- 1. A towel may be placed between the heat or cold device and body part.
Key Point: Warm or cool compresses may be applied directly to the skin.
- 2. The heating or cooling device is to be left in place for no more than 30 minutes. Allow the skin and tissue to recover for at least 30 minutes before reapplying.
Key Point: Assess the patient 15 minutes after starting the heat and cold application. Observe the skin for any untoward signs and stop the application if any problems occur.
- 3. Tepid water is to be used for a therapeutic bath used to reduce fever.
- 4. Heat or cold should always be placed on top of the body part, not underneath.
Key Point: Positioning the patient on top of the heat or cold device does not allow for dissipation of the heat or cold and increases the potential for adverse effects.

Patient/Family Teaching

- 1. Instruct patient/family concerning:
 - The indications and contraindications for application of heat/cold
 - Equipment used
 - Rebound phenomenon
 - Signs & Symptoms of excessive exposure to heat/cold

Documentation

- 1. Document use of heat/cold therapy, type of application, duration, site heat/cold applied, patient's skin condition before, during, and after treatment, and how patient tolerated the treatment.
- 2. Document patient/family teaching and understanding in the medical record

Reviewed By: Dulce Dones, MSN, RN

References:

Nettina, S. M. (2023). *Lippincott manual of nursing practice*. (11th ed.). Philadelphia, PA: Lippincott Williams & Wilkins. (p. 118).

Shi, Y., & Wu, W. (2023). Multimodal non-invasive non-pharmacological therapies for chronic pain: mechanisms and progress. *BMC Medicine*, 21(1), 1–29. <https://doi.org/10.1186/s12916-023-03076-2>

Wang, Y., Li, S., Zhang, Y., Chen, Y., Yan, F., Han, L., & Ma, Y. (2021). Heat and cold therapy reduce pain in patients with delayed onset muscle soreness: A systematic review and meta-analysis of 32 randomized controlled trials. *Physical Therapy in Sport*, 48, 177–187. <https://doi.org/10.1016/j.ptsp.2021.01.004>

06/02 – New	11/17 – Revised
04/06 – Revised	12/20 - Revised
07/06 – Revised	01/24 - Reviewed
05/11 – Revised	
11/14 – Revised	