

**HYPERTHERMIA / FEVER MANAGEMENT**

**PURPOSE:** To outline the management of patients who have a fever or hyperthermia.

**SUPPORTIVE DATA:** Hyperthermia and fever are conditions which cause an elevated core temperature above a person's normal body temperature. With *fever*, the hypothalamus raises the body's temperature set point in response to a threat such as infection. With *hyperthermia*, there is not an increase in the temperature set point; and heat is produced faster than it can be dissipated. Causes of *hyperthermia* include heat stroke, endocrine diseases such as thyroid storm, neuroleptic malignant syndrome, and malignant hyperthermia.

*Fever* is commonly managed with antipyretics. Cooling measures such as bathing with cool or tepid water are beneficial in rapidly reducing body temperature for both fever and hyperthermia. Cooling blankets should be used with caution, as they may cause vasoconstriction (preventing heat loss via the skin), shivering (which increases heat production), discomfort, and injury to the skin. Alcohol baths are not to be used. Cooling blankets and cool packs may not be indicated in specific patient populations (e.g. sickle cell, graft).

For *fever*, antipyretics should be given before external cooling measures, in order to decrease the body's temperature set point. If the set point is not reduced first, the body will attempt to increase its temperature to the set point during cooling measures e.g., with shivering, vasoconstriction.

Increased temperature (hyperthermia/fever) in patients with traumatic brain injury, subarachnoid hemorrhage and stroke is associated with poor outcomes; therefore the care plan for these patients should include prevention and management of increased temperature.

- ASSESSMENT:**
1. Verify physicians order for cooling blanket (if applicable).
  2. Assess vital signs (VS) including temperature a minimum of every 2 hours ICU, every 4 hours Acute Care Units.
  3. Assess skin under cooling device (e.g. cool packs, cooling blanket) a minimum of every 2 hours.
  4. Assess the following a minimum of every 4 hours ICU, every 8 hours Acute Care Units:
    - Activity, appearance (Peds)
    - Level of consciousness
    - Feeding (Peds)
    - Seizures
    - Skin temp, color, condition
    - Presence/absence of sweating, moisture
    - Shivering
  5. Measure intake and output every hour ICU, every 4 hours Peds, every 8 hours Acute Care Units.
  6. Assess hydration status a minimum of every 4 hours ICU and Peds patients; every 8 hours Acute Care Units to include:
    - Mucous membranes
    - Skin turgor
  7. Assess lab values as drawn (e.g. WBCs, cultures).
- COOLING MEASURES:**
8. Institute the following cooling measures as indicated:
    - Maintain cool environment
    - Remove extra clothing and cover patient with sheet
    - Provide tepid sponge bath
    - Encourage oral fluids unless contraindicated
  9. Institute the following cooling measures as ordered:
    - Cooling blanket
      - Set temperature no more than a few degrees below room temperature

(approximately 23.9°C / 75°F)

- Place blanket placed on top of patient. [Use **blanket device only. Do not use Kool-Kit (vest, head wrap and lower body blanket set). Kool-Kit is to be used for therapeutic hypothermia only**].

- Use auto mode if available on machine being used

- Bair hugger™ set at “ambient” temperature
- Cool packs to groin, neck, and axillae (over large blood vessels areas).

MAINTENANCE/  
COMFORT

10. Assist the patient with activity (e.g. activities of daily living) in order to prevent heat production
11. Provide/ assist with oral care for dry mouth.
12. Keep gown and bed linen dry.
13. Remove cool packs and cooling blanket (or turn up the temperature of the cooling blanket) if patient shivers or complains of discomfort. Recheck VS in one hour.

MEDICATIONS:

14. Administer antipyretics as ordered.

SAFETY:

15. Place a barrier (e.g. sheet, washcloth) between the patient and cooling blanket or cool pack to prevent tissue injury.

PATIENT/ FAMILY  
TEACHING:

16. Instruct patient/ family/ caregivers regarding
  - Cooling interventions
  - To limit activity in order to prevent heat production

REPORTABLE  
CONDITIONS:

17. Notify physician for:
  - Fever despite cooling measures
  - Persistent temperature less than 36.1 °C (97 ° F) after cooling measure are discontinued
  - Seizure activity
  - Abnormal
    - VS, hemodynamics outside of prescribed range
    - Assessment findings
  - Significant change in lab values
  - Signs of decreased perfusion
  - Shivering
  - Injury to skin

ADDITIONAL  
PROTOCOLS:

18. Refer to following as indicated:
  - Confused Patient
  - Intravenous Therapy
  - Seizure

DOCUMENTA-  
TION:

19. Document in accordance with documentation standards including application and removal of cooling measures.

#### REFERENCES:

Kelly, E. M. (2005). External warming/cooling devices. In Lynn-McHale Wiegand, D., & Carlson, K. K. (Eds.), *AACN Procedure Manual for Critical Care*, 5th Ed. St Louis Missouri.

MacLaren, G., & Spelman, D. (2013). Fever in the intensive care unit. Retrieved from UpToDate.com

Porat, R., & Dinarello, C. A. (2013). Pathophysiology and treatment of fever in adults. Retrieved from UpToDate.com

Scrase, W., & Tranter, S. (2011). Improving evidence-based care for patients with pyrexia. *Nursing Standard*, 25, 29, 37-41.

Thompson, H. J., & Kagan, S. H. (2010). Clinical management by fever by nurses: Doing what works. *Journal of Advanced Nursing*, 62(2), 358-370

Initial date approved: 08/93	Reviewed and approved by: Professional Practice Committee Nurse Executive Committee Attending Staff Association Executive Committee	11/94, 03/96, 07/97, 04/01, 03/05, 11/13, 3/15, 01/17
---------------------------------	--	--