PREOPERATIVE ASSESSMENT

Perform a preoperative assessment for factors that contribute to hypothermia including:

- type and duration of the surgical procedure
- ambient OR temperature if lower than 20˚C (68° F)
- type and duration of the planned anesthesia
- devices required (tourniquet, sequential compression devices)
- patient-related factors (premature and other low-birth-weight infants, > 65 years of age, female sex, low body-surface area or weight, congestive heart failure, higher ventricular function)
- preexisting medical conditions (hypothyroidism, hypoglycemia, malnourishment, burns, trauma, neurologic disorders, cardiac disease, hypotension)
- previous cardiac surgery or history of organ transplantation

A preoperative nursing assessment helps health care providers plan for interventions that may be required to prevent unplanned hypothermia for a patient at risk.

TEMPERATURE MONITORING

- Monitor the patient’s temperature in all phases of perioperative care.
- Choose the temperature monitoring method based on the requirements of the procedure (anesthesia type and delivery method, accessibility of the route, invasiveness of the route).
- Measure temperature using core temperature sites (tympanic membrane [via thermistor], distal esophagus, nasopharynx, cutaneous, pulmonary artery) or “near-core” sites (mouth, axilla, bladder, rectum, skin, tympanic membrane [via infrared sensor]).
- Use the same method of temperature measurement throughout the entire perioperative period if clinically possible.
- Calibrate the temperature monitoring device according to the manufacturer’s written instructions for use.
- Include the temperature measurement method and thermoregulation interventions in the transfer-of-care report.

Establishing a baseline temperature and using the same method of measurement throughout the entire perioperative period allows for early recognition of deviations from normothermia and early intervention to maintain normothermia.
PREVENTION OF HYPOTHERMIA

• Select a method of warming based on the planned procedure, patient positioning, IV sites, and warming equipment constraints.
• Normalize the patient’s core temperature before surgery.
• Use forced-air warming according to the manufacturer’s instructions and only with the appropriate blanket attached to the hose.
• Administer warm IV fluids based on the individual patient’s needs.
• Warm the irrigation solutions (33° C - 40° C [91.4° F - 104° F]) and measure the temperature of the solutions with a US Food and Drug Administration-approved device at the point of use.
• Adjust ambient room temperatures to maintain normothermia.
• Warm the anesthesia gases.
• Initiate rewarming interventions based on the patient’s temperature on arrival in the post-anesthesia care unit.
• Use, clean, and maintain warming devices according to manufacturers’ written instructions for use.

There is evidence that establishes a correlation between hypothermia and surgical complications including increased bleeding, myocardial events, wound infections, postoperative pain, and increased PACU length of stay, among others.

WARMING METHODS

• Choose a method of warming (active, passive, a combination of both) in collaboration with the perioperative team.
• Active warming methods include:
  - increased ambient room temperature
  - radiant warming
  - forced-air warming (blanket, gown)
  - water-filled mattress
  - circulating water garment
  - conductive fabric warming
  - warmed IV and irrigation fluids
  - electric warming blanket
  - carbon fiber blanket
  - electric heating pad
  - thermal exchange chamber
  - negative pressure warming system
• Passive warming methods include:
  - cotton blankets
  - surgical drapes
  - plastic sheeting
  - reflective composites blanket or garment

A combination of these methods may be the most effective approach to warming a surgical patient.
DOCUMENTATION

Document in the patient’s health record:

• preoperative assessment with a baseline temperature measure
• the plan of care for prevention of hypothermia
• temperature measurements taken throughout perioperative care
• the temperature monitoring site
• use of temperature-regulating devices, including identification of the unit and temperature settings used
• other thermoregulation interventions
• postoperative outcome evaluation

Documentation serves as a method of communication among all care providers involved in planning, implementing, and evaluating patient care. Documenting nursing activities provides a description of the perioperative nursing care administered and the status of patient outcomes on transfer of care.