

## **PRE-WARMING TO MAINTAIN PERIOPERATIVE NORMOTHERMIA**

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Unintended hypothermia in the perioperative period has been shown to cause many adverse effects that impact surgical outcomes. The most significant cause of hypothermia is redistribution temperature drop (RTD) that occurs on induction of anesthesia.

**EBP Question/Purpose** – A literature review indicated forced-air pre-warming reduces the post-induction RTD that occurs with general anesthesia and promotes an increase in the rate of warming after the initial drop in temperature. This study was done to determine if prewarming would help maintain perioperative normothermia in women undergoing breast reconstruction surgery with a transverse rectus abdominis myocutaneous (TRAM) free flap compared to women who were not prewarmed.

**Methodology** - For this evidence-based practice project, 12 adult women at a large academic medical center who were undergoing elective breast reconstruction with a TRAM free flap were pre-warmed with a forced-air gown for a minimum of 30 minutes prior to surgery. Oral temperature was taken prior to and after warming; esophageal temperature was monitored continuously in the operating room; and oral temperature was again monitored in the Post Anesthesia Care Unit (PACU). Data was compared to 12 patients chosen at random from the previous 12 months who underwent TRAM breast reconstruction without pre-warming.

**Results** – This study confirmed the current research. With a mean temperature increase of only 0.2 degree Celsius (C) preoperatively in the prewarmed group, there was less RTD, and the prewarmed group attained a temperature of 36 C quicker after induction than the nonwarmed group. Both groups continued to warm throughout the surgery and ended well above 36 C at the time of entry into the PACU.

**Discussion** - This pilot project suggests that pre-warming with forced-air in the preoperative phase is an effective way of reducing the degree of post-induction redistribution hypothermia and contributes to the maintenance of normothermia.

**Conclusion/Implications for Perianesthesia Nursing and Research**- Pre-warming is a nursing intervention that could affect surgical outcomes and should be considered for patients receiving general anesthesia. Further research is needed to determine the optimal temperature and duration of prewarming necessary to further impact temperature drop in the perioperative period.