



Prewarm and help prevent unintended hypothermia Stop unintended hypothermia before it begins

- Almost any patient undergoing anesthesia is susceptible to unintended hypothermia because anesthetized patients cannot control their temperature.
- Unintended perioperative hypothermia is largely the result of body heat redistribution that occurs during the first hour after anesthesia induction – a phenomenon called redistribution temperature drop (RTD).
- Actively warming patients before anesthesia induction (prewarming) is an effective way to help prevent intraoperative hypothermia in many surgical cases.
- In most cases, some form of active warming is required to prevent intraoperative hypothermia.¹ Active warming modalities, such as forced-air warming, add to the total heat content of the body. Passive insulators, like warmed cotton blankets, can only slightly reduce the amount of heat lost.

Characteristic Patterns Of General Anesthesia Induced Hypothermia

Hypothermia can develop in the hour immediately following the induction of anesthesia.

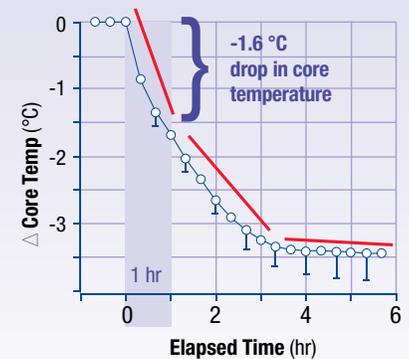


Chart adapted from: Sessler, DL., Perioperative Heat Balance. *Anesthesiology*, V92, No. 2, Feb 2000.

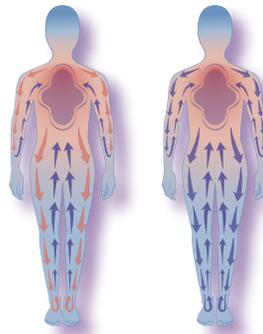
Effects of anesthesia on patient temperature

Research shows that in the first 60 minutes of anesthesia, unwarmed surgical patients can lose up to 1.6°C² as anesthesia-induced vasodilation allows the core's warmer blood to flow freely through the cooler periphery.



Under normal circumstances, the body controls its temperature within a very tight tolerance, with the core being 2°-4°C warmer than the periphery.

This temperature gradient between the core and the periphery is caused by normal thermoregulatory vasoconstriction.



Anesthesia causes vasodilation, which allows the warmer blood to flow freely from the core and mix with the blood from the cooler periphery. As the blood circulates, it cools until returning back to the heart where it causes a drop in core temperature. This drop in temperature is called RTD.



Prewarming with the 3M[™] Bair Paws[™] system can increase the temperature of peripheral tissues, limiting the amount of heat lost from the core through RTD. The warmer periphery limits the blood's rate of cooling and allows the blood to return to the core at a higher temperature.

As little as 15 minutes of prewarming adds to the total heat content of the body. Unintended hypothermia can be prevented in longer procedures by combining prewarming with intraoperative warming.



Prevention is the best approach

- Unintended hypothermia is associated with adverse outcomes such as increased rate of wound infection (SSIs)³, increased length of hospital stay⁴ and higher mortality rates.⁵
- Unintended hypothermia can be prevented; begin by warming in pre-op.
- Prewarming with the Bair Paws system can reduce core temperature drop by decreasing the core-to-periphery temperature gradient.

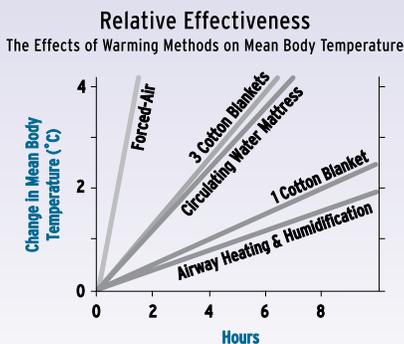
An ideal solution

Easily incorporated into the pre-surgical routine, prewarming can begin as soon as patients are admitted to the pre-surgical area. For this very reason, the Bair Paws system's capabilities make it an ideal prewarming solution. The Bair Paws gown is fully compatible with 3M™ Bair Hugger™ therapy warming units and provides an effective clinical warming solution for the OR.

The negative effects of RTD can be overcome through prewarming. Prewarm your patients with the Bair Paws system, and help stop hypothermia before it begins.

Relative Effectiveness

The Effects of Warming Methods on Mean Body Temperature



Sessler, DI. Current concepts: mild perioperative hypothermia. *New Engl J of Med*, 336: 1730-1737, 1997.

Cotton doesn't cut it

Patients may appreciate the comfort of warmed cotton blankets, but these passive insulators do not provide active warming.¹

Heat from cotton blankets rapidly dissipates into the environment. In addition, the low heat capacity of cotton means that warming cotton blankets before use makes little difference in terms of maintaining the body's total heat content. Patient heat loss is virtually identical with warmed and unwarmed cotton blankets.¹

Increasing the number of blankets covering the patient only slightly decreases heat loss. The reduction in heat loss provided by even three warmed blankets is minimal compared to that provided by active warming.¹

For more information about the Bair Paws patient adjustable warming system, please contact your 3M Patient Warming representative, call us at 1-800-733-7775 or visit www.bairpaws.com.



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2. Sessler, DI. Current concepts: mild perioperative hypothermia. *New Engl J Med*, 336: 1730-1737, 1997.
3. Barie PS., Surgical Site Infections: Epidemiology and Prevention. *Surgical Infections*. Vol 3, Supplement 2002; S-9-S-21.
4. Kurz A., Sessler DI., Lenhardt R., Perioperative normothermia to reduce the incidence of surgical-wound infection and shorten hospitalization. *New Engl J Med*. 1996; 334(19): 1209-15.
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