Hypothermia, a core temperature below 36°C, is a common occurrence following both general and regional anesthesia. It has been associated with arrhythmias, myocardial ischemia, platelet dysfunction, poor wound healing, increased incidence of wound infection, decreased drug metabolism, pulmonary vasoconstriction, decreased renal function, a reduction in MAC and a left-shift of the hemoglobin dissociation curve. Hypothermia can also be protective of cardiac and cerebral tissues during times of ischemia, by reducing oxygen demand.

Radiation is the emission of infrared rays from any object above absolute temperature and constitutes the largest source of perioperative heat loss. Conduction, convection and evaporation also contribute. General anesthetics also contribute to heat loss by inhibiting central thermoregulation, causing vasodilation and inhibiting muscle activity.

Intraoperative temperature decline occurs in 3 distinct phases: Phase 1 occurs in the first hour and is the result of redistribution of heat from the core to the periphery. Phase 2 occurs over the following several hours, during which time an equilibrium is established between heat production and heat loss. Finally, Phase 3 represents a steady-state in which further temperature reduction is minimal.

Skin and rectal temperatures can differ considerably from actual core temperature. Accurate core temperatures can be obtained from a PA catheter, nasopharyngeal probe, esophageal probe or tympanic membrane probe.

Additional Reading: