Medical Article References for:
Laparoscopic Warming and Humidification

- **Humidified gas prevents Hypothermia induced by Laparoscopic Insufflation**
  J.R. Bessell et al, Surgical Endoscopy 1999 13:101-105. “We advocate the use of warmed but also humidified gas to maintain temperature homeostasis during laparoscopy.”
  Surgical Endoscopy, Springer-Verlag NY, NY.
  Article

- **Measurement of CO\(_2\) Hypothermia during Laparoscopy and Pelviscopy**
  How cold it gets and how to prevent it. Volker J. Morrison JE et al, AAGL, Aug.1999Vol.6(3)289-295
  “hydration seems to be even more important than heating the gas.”
  AAGL “Advancing Minimally Invasive Gynecology Worldwide” Santa Fe Springs, CA
  Article

- **Severe Local Hypothermia from Laparoscopic Gas Evaporative Jet Cooling**
  “ evaporative cooling during laparoscopy are completely eliminated by humidifying the insufflation gas stream.”
  Journal of the Society of Laparoendoscopic Surgeons. Miami FL.
  Article

- **Laparoscopic surgery—a revolution in the field of gynecology. Anand A.**
  “ Since it is a closed operation, laparoscopic surgery preserves the moist conditions of the abdomen, which in turn reduces the risk of adhesion formation.”
  Abstract

- **Comparison of Immunologic and Physiologic Effects of CO\(_2\) Pneumoperitoneum at Room and Body Temperatures**
  Puttick MI, Scott-Coombes et al. “ The authors conclude that intra-operative cooling can be prevented by warming the insufflation gas even in short laparoscopic procedures.”
  Article

- **Mild Intra-operative Hypothermia Prolongs Post-anesthetic Recovery**
  Lenhardt R, Marker E et al. “ Maintaining core normothermia is thus likely to decrease time in the postanesthesia care unit and may reduce the costs of care.”
  Article

- **Pain Intensity Following Laparoscopy**
  Korrell M, Schmaus F, et al. “ a significant advantage was noted for the group treated with warmed CO\(_2\).”
  Abstract

- **Hypothermia**
  B.V. MacFadyen, Jr., Surgical Endoscopy 1999 13: 99-100. “ It appears that heated humidified gas is a key factor in preventing heat loss as opposed to dry heated CO\(_2\).”
  Surgical Endoscopy, Springer-Verlag NY, NY.
  Article

- **Desertification of the Peritoneum by Thin-Film Evaporation During Laparoscopy**
  Douglas E. Ott, JSLS 2003 7:189-195 “ Laparoscopically induced arid conditions, their complications, and thin-film peritoneal fluid evaporation are prevented by changing the characteristics of the gas to 36°C and 95% humidity.”
  Journal of the Society of Laparoendoscopic Surgeons. Miami FL.
  Article