

analysis section of our paper. Our power analysis revealed that enrolling 300 participants would provide more than 80% power to detect a difference in ranking one half-level or greater by sex, age, and interaction, with adjustment for multiple testing for the three ranked measures (confidence, intelligence, care of family member).

Second, the current study focused on evaluating the effects of sex and age of an anesthesiologist on the anesthesiologist's perceived competence. This study was designed notably different from our previous study³ that evaluated the effects of anesthesiologist body language and sex on patient perceptions of anesthesiologist competence. Indeed, our previous study did not detect a difference in patient perceptions related to sex of the anesthesiologist, but did detect a preference for anesthesiologists displaying confident, high-power body language (rather than unconfident, low-power body language) on all four measures of anesthesiologist competence. In the current study, we removed body language as a variable by having all actors demonstrate confident, high-power body language. By removing this variable, we were able to detect a difference in patient preferences related to the sex of the anesthesiologist. This does not make our results "unstable" as suggested by Wang *et al.*,¹ rather, it reveals that there is a hierarchy of anesthesiologist characteristics to which patients respond. That is, an anesthesiologist's body language may weigh more heavily upon a patient's perception of an anesthesiologist's confidence and competence. Once over this hurdle, some patients would perceive the competence differently according to the anesthesiologist's sex and age. In future studies, it would be interesting to investigate this hierarchy of anesthesiologist characteristics further. Again, we appreciate the concerns of Wang *et al.*, but we can reassure the readers that appropriate statistical considerations were taken in our study.

Competing Interests

Dr. Forkin receives funding from Hemosonics, LLC (Charlottesville, Virginia) for research unrelated to this work. The remaining authors declare no competing interests.

Katherine T. Forkin, M.D., Genevieve R. Lyons, M.S.P.H., Jennie Z. Ma, Ph.D., Edward C. Nemergut, M.D. University of Virginia, Charlottesville, Virginia (all authors). ket2a@hscmail.mcc.virginia.edu

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Perioperative Temperature Monitoring: Comment

To the Editor:

Dr. Sessler penned an excellent review of body temperature and the implications of hypothermia and coagulation.¹ It states that body temperature averages about 37°C. In industrial nations, recently recorded data from extensive cohort studies indicate that this is closer to 36.5°C and continues to decline secondary to changes in physical activity, body composition, and antibiotic usage.² These results included adjustments for age, height, weight, and time of day.³ This new 36.5°C value was resistant to potential confounders of ambient temperature, time of day, patient demographics, and comorbidities.² After more than two centuries, the norm of 37°C may need replacement to a suggested new standard of 36.5°C. This new proposed normothermia standard is fluid, might continue to decline, and has patient care and quality improvement implications.

Competing Interests

The author declares no competing interests.

Todd Nelson, M.D. UCHealth Memorial Hospital North, Colorado Springs, Colorado. todd.nelson@uchealth.org

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Perioperative Temperature Monitoring: Reply

In Reply:

Commenting on our review, Nelson writes that “extensive cohort studies indicate that [body temperature] is closer to 36.5°C than 37°C.”¹ The review indeed specified that “normal human core body averages about 37°C,” and that “there is a superimposed circadian rhythm with roughly a 1°C range.”² “Normal core body temperature thus varies from ≈36.5°C (usually about 3:00 AM) to ≈37.5°C (usually about 3:00 PM). In premenopausal women, there are also superimposed changes in temperature with the menstrual cycle, with core temperature being about 0.5°C greater during the luteal phase.”

Nelson cites two studies to support an average core temperature of 36.5°C. In one of them, Gurven *et al.*³ present a cohort study in which average core temperature somewhat implausibly decreased ~0.5°C over just 16 yr. However, about a third of the way through, temperature measurement changed from mercury-in-glass oral thermometers, which are reasonably accurate, to infrared aural canal thermometers, which are not. The other study cited, Protsiv *et al.*,⁴ is more convincing and describes a large cohort, 2007 through 2017, in which core temperatures were estimated with digital oral thermometers. The average was 36.7°C in men and 36.8°C in women. Importantly, though, electronic oral temperatures average 0.25°C below true core temperature.⁵ Protsiv’s report is thus perfectly consistent with average core temperature being very close to 37°C.

There have also been several studies in which core temperature was measured over time with ingested capsules which accurately report core temperature. Core

temperatures reported in these studies were 37.1 ± 0.1°C,⁶ 36.8 ± 0.3°C,⁷ and 37.1 ± 0.1°C.⁸

There is not a single “normal body temperature.” Instead, core temperature varies over the circadian cycle, between men and women, with age, and over the menstrual cycle. However, available evidence indicates that 37°C is a reasonable estimate of normal core temperature in humans.

Competing Interests

The authors declare no competing interests.

Daniel I. Sessler, M.D., Rod J. Nault, B.A. Department of Outcomes Research, Cleveland Clinic, Cleveland, Ohio (D.I.S.).
ds@or.org

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