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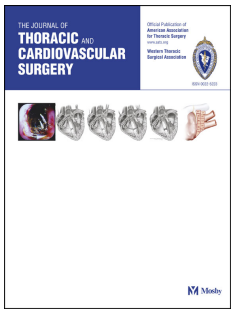

When the going gets tough, the tough go colder!

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When the going gets tough, the tough go colder!

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"There are no Conflicts of Interest in this case"

In this issue of *The Journal of Thoracic and Cardiovascular Surgery*, Proventza, et. al., present data supporting the premise that when utilizing moderate hypothermia (20.1 degrees – 28.0 degrees) during surgery on the aortic arch, higher temperatures (24.0 degrees – 28.0 degrees) are safe (1). They examined outcomes and reported no increase in perioperative mortality, permanent neurologic deficit or permanent renal failure when they performed either hemi- or total-arch reconstruction at these higher temperatures. For sure, this group of surgeons is to be commended for continuously and rigorously examining their outcomes and modifying techniques for highly complex aortic reconstructions. However, like all studies that provoke thoughtful discussion, the devil is in the details. When examining outcomes in these 655 patients there are patterns that suggest that even in the most experienced hands, when the surgery is more difficult because of either complex anatomy or patient comorbidity, the temperature is decreased! And probably for good reason.

Consistent brain protection during surgery on the arch can be provided across a broad spectrum of systemic temperature. These authors utilized antegrade cerebral perfusion (75% bilateral, 25% unilateral). The rate of permanent neurologic deficit wasn't different with either low or high moderate hypothermia (2.1% versus 2.7%, p = 0.60) and compares favorably to surgery utilizing profound hypothermia (< 20 degrees) either with or without adjuncts like retrograde cerebral perfusion (2, 3). Operative mortality (5.1%) was also quite good and did not differ with varying temperature strategies (4.8% low versus 5.4% high, p = 0.70). However, the lower temperature group had a significantly