Question Everything: The Value of Integrating Research Into an Athletic Training Education

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One of my proudest moments as an educator came at the medical preparation meeting on the morning of the 2004 Boston Marathon. The medical director was explaining the myriad of issues that needed to be addressed and the many people who needed to work effectively together for a safe event to take place on the hot day. The Boston Marathon has a rich history, and the outstanding people on the medical staff work hard to provide medical care to this large-scale event every year. But toward the end of the meeting, my University of Connecticut students (more than 10 were present) suddenly started paying closer attention. The medical director explained that body temperature would be assessed using a temporal artery forehead scan/swipe. He then stated that rectal temperatures are not used for various reasons and that rectal temperature assessment was ''not accurate in runners.'' The students immediately started to talk among themselves and turned to me and asked THE all-important question: ''Is temporal artery temperature valid in athletes who have been exercising in the heat?'' They knew the literature well enough in this area (because their professor—me—is a heat/hydration junkie) to question even the medical director of one of the most respected sporting events in the entire world. When I heard the comments from the medical director, my heart raced a bit, but I used the experience as an educational moment. The fact is that no evidence existed at that moment (or exists now) to prove that temporal artery measurement is accurate to assess temperature in hyperthermic athletes who have been exercising in the heat, the very population we would be serving that day. Additionally, no evidence exists to show that rectal temperature is not an outstanding means to quickly and accurately determine the degree of hyperthermia in a collapsed runner. One of my students quickly pointed out to me, ''The medical director was referring to the slight rectal temperature lag as compared to true core; at least the rectal temp tells you the athlete is in trouble and cooling must begin.'' We spent dinner that night planning the research study to test the validity of this temporal artery device and carried out the study in the summer of 2005.

This story highlights the critical nature of good education. It is not to deliver facts and to prepare for the certification exam, although some people may be pained to hear that. A true education occurs when the recipient of the product leaves the room with an inquisitive perspective and enters the clinical setting each day with a ''Does that really work?'' and ''What evidence do we have to support the use of that device or technique?'' attitude. Every course an athletic training student takes should be peppered with honest assessments of the actual evidence to support the topics being covered. This education component should not be left for a current research class but is vital to the growth of our profession and must be embedded within assessment, rehabilitation, modalities, administration, counseling, etc. Ask yourself: Of the million and one special tests that you have learned in your life and that you have taught a student as an ACI or professor, which ones are actually truly valid and reliable and worth doing in terms of clinical usefulness? Maybe the evidence is not yet available, and we should note where deficiencies lie. We have a long way to go in gathering the information to see if much of the clinical reality we live each day is actually clinically worthwhile for our patients. We need to teach our students that we have much to learn.

When we look back in 2035 at what we taught our students in 2005, we will laugh at our ignorance and ineptness and be thankful for the progress in the world of sports medicine research. Unfortunately, we do not have a crystal ball and are not able to see the details of the contents of the educational devices in 2035, so we do the best we can with what we have in 2005. But we can go a long way toward helping our students adapt from now until 2035 by teaching them to question everything. The students who do this will move forward faster. They will be the leaders of the future: always looking for the better way. A better way always exists; it's just a matter of who will discover it and when. The true leader will then disseminate this new info to our fellow athletic trainers, and we will all advance as a profession.

My students questioned the validity of temporal artery temperature assessment on that hot April day, and I secretly smiled inside, even though I was very disappointed that the medical director shared this inaccurate and potentially dangerous information with the 500 members of the medical staff. This experience highlights the value of students' gaining the confidence to doubt the efficacy of established procedures, which can provide them with the foundation to implement evidence-based medical practices during their careers.

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