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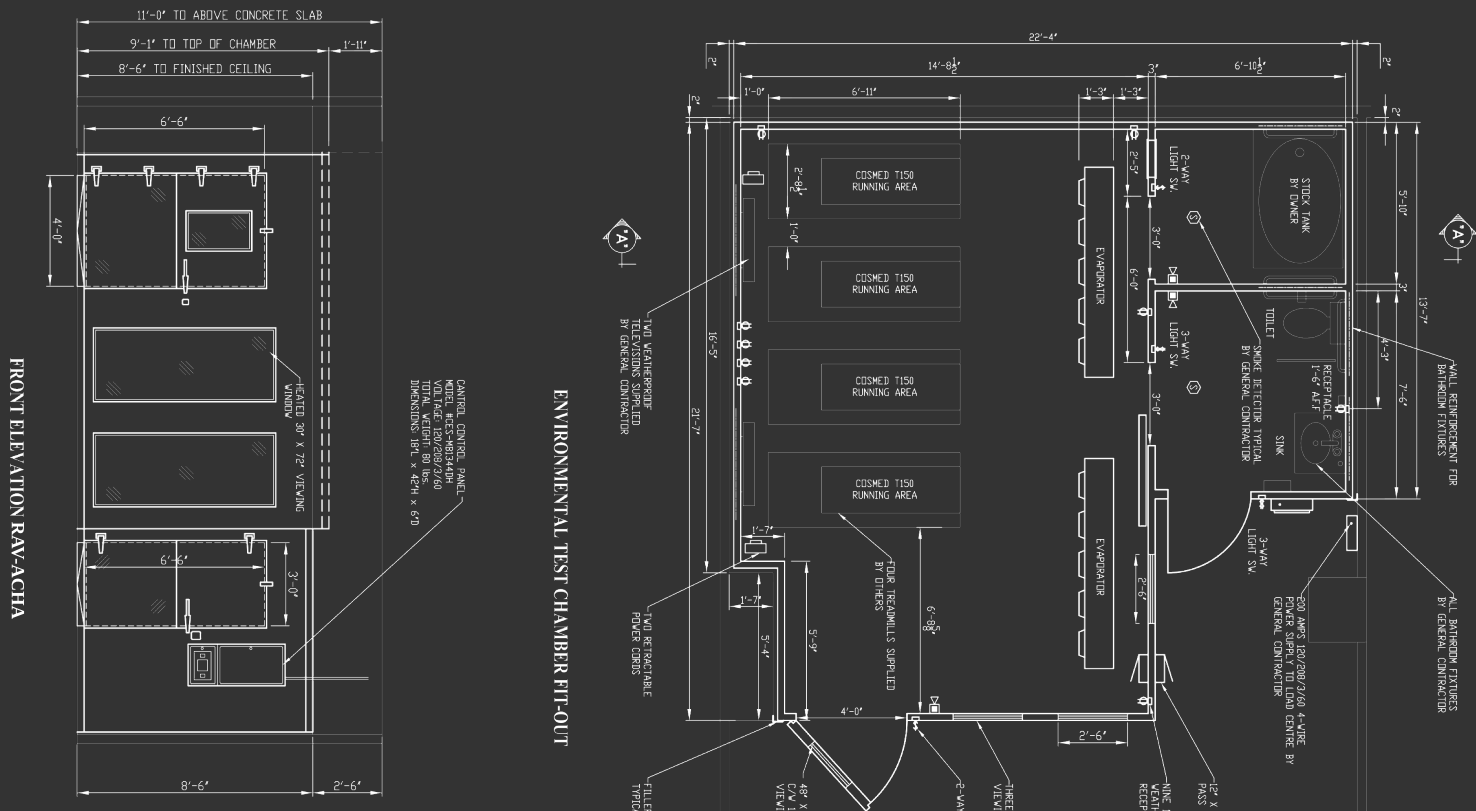
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PERTINACITY

The Stories of KSI
2017, volume 3, issue 1



KOREY STRINGER INSTITUTE



Advancement of Emergency Health and Safety in Youth Sport Leagues



Collaborative Solutions for Safety in Florida High School Sports



3rd Annual Collaborative Solutions for Safety in Sports

SECTION A-A

UConn
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KSI
Korey Stringer Institute
UNIVERSITY OF CONNECTICUT
Preventing sudden death in sport

KOREY STRINGER INSTITUTE- Providing first-rate information, education, research, assistance and advocacy to protect athlete, warfighter, and laborer.

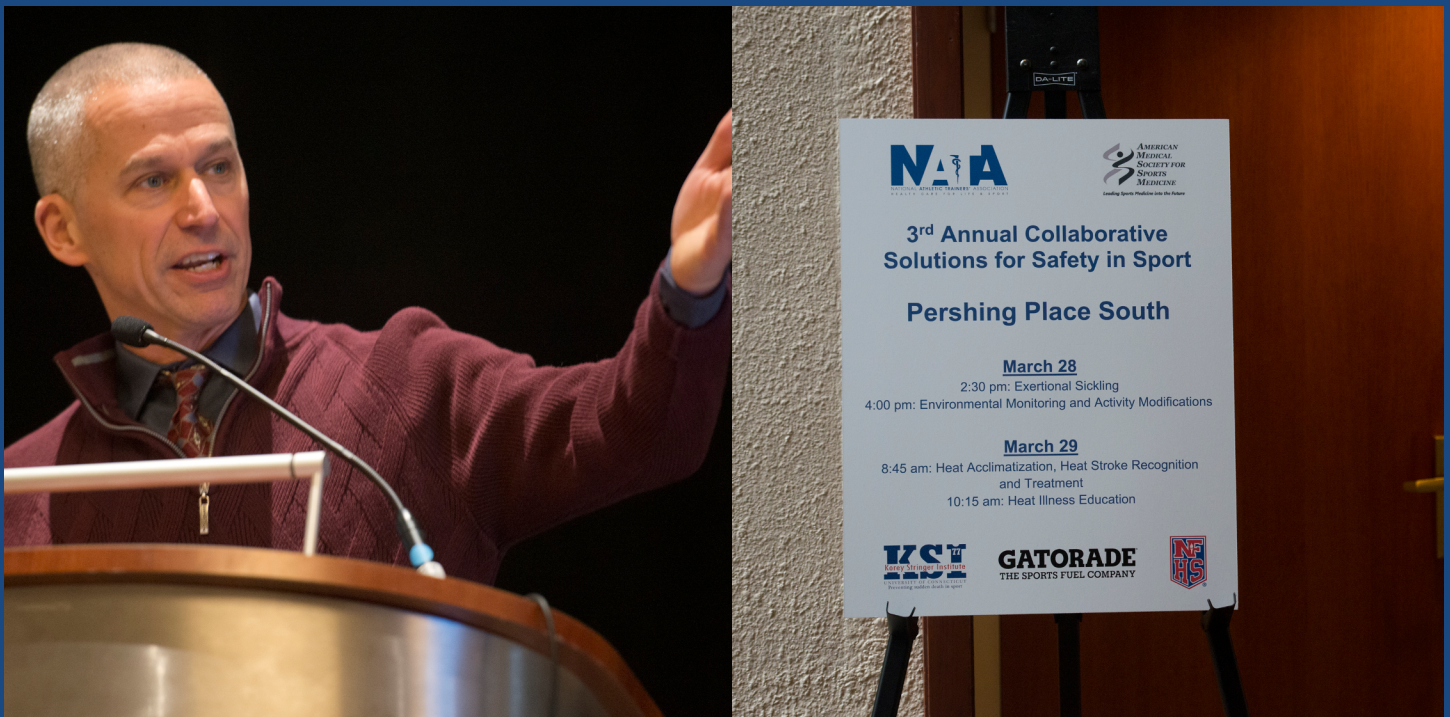
THE MOMENTUM OF CHANGE

DOUGLAS CASA, PHD, ATC, FNAK, FASCM, FNATA
CEO, KOREY STRINGER INSTITUTE

On August 8, 2017, the Korey Stringer Institute (KSI) will host a press conference at the National Football League (NFL) headquarters. This will provide the public with a comprehensive overview of the health and safety standards for high school athletes. The press conference will report on the status of all 50 states and the District of Columbia. It will provide a snapshot of our current situation, which is ultimately a report about the potential for progress. Many states have made massive strides in the past five years to overhaul health and safety standards. Our report will reflect the efforts of states like Florida, Utah, South Carolina, Georgia, Arkansas, Vermont, Texas, New Jersey, and others to lead the way toward fulfilling our obligation to optimize health and safety standards for the youth athletes we supervise (and for the children for which we are parents!!!).

When a state-level Sports Medicine Advisory Committee (SMAC), usually made up of sports medicine physicians and athletic trainers, work closely and constructively with the state high school athletic association, then the sky is the limit for advocating for the implementation of best practices. To help guide these entities a publication titled “The Inter-Association Task Force for Preventing Sudden Death in Secondary School Athletics Programs: Best Practice Recommendations” was published in 2013 in the *Journal of Athletic Training*. The document was endorsed by 14 sports medicine and athletic organizations, including: American College of Sports Medicine, American Medical Society for Sports Medicine (AMSSM), American Orthopaedic Society for Sports Medicine, American Osteopathic Academy of Sports Medicine, Canadian Athletic Therapists Association, Gatorade Sports Science Institute, Korey Stringer Institute, Matthew A. Gfeller Sport-Related Traumatic Brain Injury Researcher Center, National Athletic Trainers’ Association (NATA), National Center for Catastrophic Sport Injury Research, National Council on Strength and Fitness, National Federation of State High School Associations, National Interscholastic Athletic Administrators Association, and National Strength and Conditioning Association.





After the document was released, Dr. Jon Drezner, a Seattle Seahawks team physician and University of Washington professor of medicine, and I worked to create a long-term strategy toward getting these best practices implemented across the country. We brought in the NATA and AMSSM to partner with us and KSI to form something called the “Collaborative Solutions for Safety in Sport” (CSSS). In 2015, 2016, and 2017, we hosted a national CSSS meeting where a member of each state’s SMAC and each state’s high school athletic association attended a meeting where we assembled these concerned parties to move forward faster the policy changes that are desperately needed. The NFL hosted in year one, the NCAA hosted in year 2, and the Kansas City Chiefs assisted in year 3. We recently were informed that the NATA and the AMSSM wish to continue funding this initiative in the future.

We are seeing rewarding results from these efforts, where states are moving toward policy modifications for high school athletes at a faster rate than we have ever witnessed in our country. The story about Florida on page 30 provides a glimpse of the incredible influence this meeting has had on providing motivation for the states to make changes. Florida has the potential to lead the way, and the momentum of change that I am witnessing excites me. KSI cannot go one week without assisting or being informed of another major step forward that a state is making.

KSI will never stop in its quest to optimize health and safety standards for high school athletes. It is part of the core mission of our organization. The path of change is often not a smooth one, and we certainly have frustrated some along the way, but in our service to the high school athletes in America, we will forge ahead, undeterred. The snowball has begun rolling down the hill. We had a big role in pushing it down, and we will keep the path as clear as possible as it travels downward so as to keep the momentum at its fullest potential.

OUR MISSION AND ENDEAVOURS COULD NOT HAVE BEEN MADE POSSIBLE WITHOUT OUR CORPORATE PARTNERS. WE ARE GREATLY APPRECIATIVE OF YOUR CONTINUED SUPPORT.



National Football League: The National Football league is a founding partner of the Korey Stringer Institute. The NFL supports multiple player safety initiatives for athletes of all levels. For more information on the NFL's Health and Safety Initiatives, visit [NFL Evolution](#).

Gatorade: Gatorade is a founding partner of the Korey Stringer Institute. Gatorade and the **Gatorade Sport Science Institute** continue to search for and study new and innovative ways to help athletes improve performance by facilitating proper hydration and nutrition.

National Athletic Trainers' Association: The National Athletic Trainers' Association is the professional membership association for certified athletic trainers and others who support the athletic training profession. Its mission is to engage and foster the continued growth and development of the athletic training profession and athletic trainers as unique health care providers.

University of Connecticut: The Korey Stringer Institute is housed at the University of Connecticut. The **Department of Kinesiology** faculty are renowned for their research and expertise in the areas of heat and hydration, injury prevention, and strength and conditioning.

Camelbak: The mission of Camelbak is to continuously reinvent and forever change the way people hydrate and perform. Visit [Hydrated](#) for useful resources on hydration practice.

Kestrel Pocket Weather Meters by Nielsen-Kellerman: Nielsen-Kellerman is committed to ensuring that people know the weather and environmental conditions that impact their health, safety and bottom line. NK's Kestrel meters are rugged, accurate, fully calibrated, portable, affordable and easy to use. KSI uses these wet bulb globe temperature thermometers to determine environmental conditions during research studies both inside the heat chamber and in field studies. Visit [heatstress.com](#) for resources on physical activity in heat stress.

Mission: Mission has a dual mission. While delivering world-class innovations that meet the unique needs of an athletic lifestyle, Mission also makes an impact off the field of play through the **M Foundation**, which promotes the health and safety of youth athletes, and simultaneously recognizes and awards high school athletes that give back to their community. Mission is currently running the **Heat Safety Pledge** initiative to advocate for heat safety awareness.

Heartsmart.com: HeartSmart.com is a leading provider of Automated External Defibrillators, also referred to as AEDs. HeartSmart.com offers AED program to support AED owners with essential services, support, product maintenance, and training.

PERTINACITY

2017 Spring, volume 3, issue 1

8 Recent Visit to the IMG Academy

27 ATLAS Updates

9 Collaborations with Climate Researchers

28 6th Int. Conference on the Physiology & Pharmacology of Temp. Regulation

10 2017 Youth Sport Safety Governing Bodies Meeting

30 Collaborative Solutions for Safety in Florida High School Sports

13 Emergency Health and Safety in Youth Sport Leagues

33 Examining Perceptions of Athletic Trainers and the Profession

16 Research Corner: Tarp-Assisted Cooling

34 Research Corner: Epidemiology of Exertional Heat Illness

18 Year Round Football Practice Contact for College Student-Athletes Recommendations

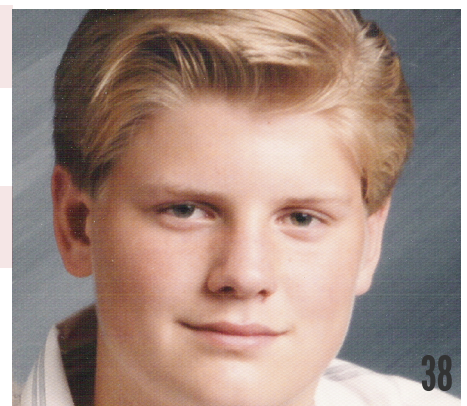
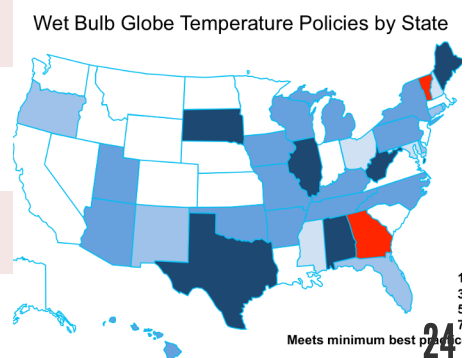
36 3rd Annual Collaborative Solutions for Safety in Sports

22 Applied Performance Science

38 Personal Story: Kendrick Fincher

24 Current Statistics on WBGT Policies at the Secondary School Level

40 The Small Price of Survival: Part II



SPOTLIGHT

THE **SPOTLIGHT** SERIES FEATURES THE PEOPLE OF THE KSI, AND THOSE WHO SHARE AND REPRESENT THE PASSION OF THE KSI.



CINDY CHANG, MD
MEDICAL & SCIENCE
ADVISORY BOARD
KOREY STRINGER INSTITUTE

Could you tell us about yourself?

I am going to start at the very beginning, because I want to demonstrate to people that anything is possible, with hard work, integrity, and a passion to make a difference and effect change!

My parents grew up in China and experienced much in their young lives, including the atrocities of multiple wars, before arriving in Taiwan and graduating from college, and then landing in the US to attend graduate schools. They faced the discrimination of that time, including being investigated by the FBI during the McCarthyism era. They settled in Columbus "a safe, inexpensive place to raise a family" and I, along with my 3 older siblings, grew up there and then attended our local public university, The Ohio State University. I also went to medical school at OSU, became adventurous and to my parents' angst moved to California to complete my family medicine residency at UCLA, and then returned to OSU to start my sports medicine fellowship. I really planned on staying in my hometown, working as a family physician and team physician.

Fast forward, 25 years later. I am now a clinical professor at UC-San Francisco and treat patients of all ages for sports medicine related injuries and illnesses. In between, I have served as a team physician and CMO to our USA athletes in Nagano, Salt Lake City, Rio, Beijing, and London. I have lectured in far away places like Santiago and Johannesburg and Monaco. I worked as one of the first female head team physicians for a D-I football university at UC-Berkeley. I have met many amazing and inspiring people over the course of my career. I have truly been blessed, and I sometimes have to pinch myself to make sure that I have not been in a really long dream!

And now, I find myself doing maybe the most important work of my career, which is working to improve the health and safety of all athletes, and especially our youth athletes. As a member of the Sports Medicine Advisory Committees for both the California Interscholastic Federation and the National Federation for State High School Associations, I am committed to improving the knowledge of all involved stakeholders so that we can greatly reduce the risk of injury and illness in our high school student-athletes. I am also committed to push through a state law licensing athletic trainers, to help ensure safe, high quality health care especially for our high school athletes. And locally, I am working to get AEDs into our schools.

Could you tell us about your first involvement/interaction with the Korey Stringer Institute?

Korey Stringer played at OSU when I was a sports medicine fellow and then faculty member and team physician there, from 1992 to 1995. So, I was deeply affected when he died of exertional heat stroke in 2001, playing the sport that he loved. I first spoke with Kelci Stringer years later after she presented at a sports medicine meeting with Doug Casa, shortly after they had established the Korey Stringer Institute. I was greatly impressed with their unwavering commitment to prevent this tragedy from happening to anyone else. However, it wasn't until the very first planning meeting involving the American Medical Society for Sports Medicine (AMSSM) and the National Athletic Trainers' Association (NATA) in Dallas in 2014 to discuss the implementation of the consensus statement "Preventing Sudden Death in Secondary School Athletics: Best Practices Recommendations" that I first got to work closely with Doug Casa and his KSI staff. It was just shortly after the inaugural Collaborative Solutions for Safety in Sport conference in New York City in 2015 that I was asked to join the KSI Medical and Science Advisory Board.

In what ways has KSI impacted you?

KSI has brought me together with like-minded colleagues, from administrators to coaches to other health care providers and researchers, inspiring me to work with others as a team to provide safe athletic environments for all of our youth and high school athletes. KSI's quality research in the areas of athlete health and safety and the availability of its staff to answer questions concerning program implementation have also been vital in supporting my efforts to educate and provide individual organizations and communities with best solutions for difficult challenges.

For broad progress, we all need to be part of this large national—and hopefully even international—educational movement that will change the way the next generation thinks. Let's show our youth athletes that a cooling tub, AED and Emergency Action Plan (EAP) are pieces of equipment that are just as essential to participate in a sporting activity as a football, track spikes, and basketball net. Let's all dare to make a difference and effect change!

RACHAEL OATS, CAE

BOARD OF ADVISORS KOREY STRINGER INSTITUTE

Could you tell us about yourself?

I've been fortunate to spend the majority of my career with the National Athletic Trainers' Association. I was hired in 1999 as the continuing education associate and have worked in a variety of capacities for both NATA and its 501(c)3 non-profit research and education Foundation. In my current role as NATA's associate executive director, I oversee many of the association's strategic departments – Marketing & Communications, Member Services, Knowledge Initiatives (professional development) and Honors and Awards. I also supervise our in-house Athletic Trainer in Residence and our Foundation director. In my 18 years with NATA, I've been the staff liaison to the Secondary School Athletic Trainers' Committee, College/University Athletic Trainers' Committee and many of our inter-association task forces, on topics such as sudden cardiac arrest, sickle cell trait in athletes and pre-hospital care of the spine injured athlete, to name a few. I received my Bachelors of Science degree in Public Relations from East Texas State University (now Texas A&M-Commerce) and earned my Certified Association Executive credential in 2008. I'm currently a member of the Dallas/Ft. Worth Society of Association Executives (DFWAE), Texas Society of Association Executives (TSAE), American Society of Association Executives (ASAE) and Chi Omega Alumnae of Dallas. In my spare time, I serve as a mentor in TSAE's Young Executive's Leadership Program and regularly volunteer with local groups such as East Lake Pet Orphanage and the Dallas Resource Center.

Could you tell us about your first involvement/interaction with the Korey Stringer Institute?

I was working for NATA when Korey's tragic death occurred, so I've been familiar with KSI since its inception in 2010. Having known CEO Doug Casa for most of my tenure with NATA, I've had the pleasure of watching "from the sidelines" as KSI has grown and evolved over the years. In 2014 I was invited to attend a meeting of the Board of Advisors as an observer and, following NATA's official partnership with KSI in 2016, I was honored to be asked to serve on the Board.

In what ways has KSI impacted you?

Working with KSI has been extremely rewarding for me, both personally and professionally. The work KSI does – in partnership with NATA, as well as independently – is substantial, impactful, has made physical activity safer for individuals of all ages and has, without question, saved lives. I am continually impressed by the volume and scope of outstanding work and research conducted by Doug and his crew. KSI is making a difference every single day and to play a (very) minor role in KSI's many successes has been a highlight of my career. From a personal standpoint, I'm extremely grateful for the friendships I've made with KSI's amazing staff and volunteers as we've collaborated on projects over the years.

JULIANA ROURKE

KOREY STRINGER INSTITUTE RESEARCH ASSISTANT ALLIED HEALTH STUDENT, UNIVERSITY OF CONNECTICUT

Could you tell us about yourself?

I am a senior and my major is Allied Health with a minor in psychology at the University of Connecticut. I came to the University of Connecticut as a transfer student and from the second I came for my orientation I have never thought twice about this decision. I have made so many wonderful friends. I am a physical therapy technician, a tutor for grades K-12 and a waitress. My plan for after graduation is to take the next year off and to begin applying to physical therapy doctoral programs starting in December.

Could you tell us about your first involvement/interaction with the Korey Stringer Institute?

I had a meeting with my advisor arranged during my first semester and we discussed multiple topics but the most important one for me was about getting involved on campus. I discussed that I was planning to apply to physical therapy school and wanted to be involved with an organization that would ultimately provide me with experiences that will carry with me as I pursue my career. She immediately told me to email Dr. Casa about getting involved with KSI. I received an energetic email informing me that I should absolutely come to their first meeting on that Thursday. I was pleasantly surprised to see a large room full of other students who were also interested as well. We heard all about the different studies that were currently being conducted and who needed extra help. I knew right away I wanted to be involved with the Athletic Training Locations and Services (ATLAS) project with Dr. Huggins. Ever since, I have continued to work with KSI and the ATLAS project every semester. I have enjoyed seeing the impact that working with Dr. Huggins on this project has made for Athletic Trainers across the country.

In what ways has KSI impacted you?

KSI has provided me many opportunities I would have never had the chance to experience, from helping in the research tent at the Falmouth Road Race, to attending the Annual Fundraising Gala at the NFL headquarters and even having a summer job position. Every time I go to KSI, I am surrounded by graduate students who all inspire me to continue my education after I graduate. They discuss their dissertations and the different studies they are all conducting and seeing their dedication and how hard they work motivates me. I could not imagine what my experience at UConn would have been like if I had never joined KSI. I am excited to continue working with KSI after I graduate and know there is still much more to learn from everyone.



Recent Visit to the IMG Academy

The Korey Stringer Institute (KSI) has had the unique opportunity to assist some elite athletes in the past nine months. Working with some of the medical and coaching staff, KSI has had opportunities in September 2016 and March 2017 to assist with various sports and staff at the famed IMG Academy in Bradenton, FL. IMG Academy is considered one of the preeminent facilities in the world for developing and training elite athletes across a wide variety of sports. Some of the sports in which they have a particular focus include tennis, golf, soccer, track & field, lacrosse, American football, basketball, as well as specific strength and conditioning training for draft preparation. In the Fall of 2016, Douglas Casa, CEO, KSI gave multiple educational sessions to the medical staff and sports performance staff. The two talks were related to preventing sudden death in sport (for the IMG medical staff) and maximizing athletic performance in the heat (for medical staff and sports performance staff). Additionally, Casa had individual meetings with particular coaches and staff to assist with individual sport issues.

During a recent visit, Casa worked with Dr. Jeremy Ng, the team physician for the youth national soccer teams (also KSI Medical and Science Advisory Board member) and the medical/sports performance staff of the US National under 17 boys team to help them prepare for the heat stress of the World Cup qualifying games in Panama in April/May 2017. As of May 1st, team USA has defeated Mexico (first time ever!), El Salvador, and Jamaica, and has won the group stage. They are now in the classification stage; if they perform well, they qualify for the U-17 World Cup in India in the Fall 2017.



Gaining Momentum to Form Collaborations with Climate Researchers

YURI HOSOKAWA, PHD, ATC, VICE PRESIDENT OF COMMUNICATION, VICE PRESIDENT OF EDUCATION

On January 24th, 2017, Yuri Hosokawa, Vice President of Communication and Education, presented at the 97th Annual American Meteorological Society Meeting, Seattle, WA. This was the second time Hosokawa attended the meeting to present at their joint session on extreme heat, which was hosted by the Conference on Environment and Health. The session attracted climatologists, biometeorologists, epidemiologists, public health administrators, and government researchers to share their recent research findings about impact that extreme heat environment has on various population (e.g., children, laborers, elderly, athletes, low socioeconomic class population, urban cities).



The presentation by Hosokawa, “*Current Heat-Related Initiatives in the Realm of Military and Occupational Fields*” covered themes that emerged from our recent meeting with the Uniformed Services University of the Health Sciences, Occupational Health and Safety Administration, National Institute for Safety and Health, and National Oceanic and Atmospheric Administration. These include: (1) future need to consolidate heat safety information for public usage, (2) development of standard documentation procedure for post-incident investigations of exertional heat stroke in athletics, occupational, and military settings, (3) continued effort to provide individualized return-to-play/duty recommendations for exertional heat stroke patients using heat tolerance test, and (4) re-evaluation of the existing activity modification guidelines. Interdisciplinary collaboration is necessary among researchers and public officials to develop comprehensive, evidence-based standards to ensure the safety of the physically active population who are exposed to heat risks. Our expertise on exercise physiology/athletic training would complement the research conducted by climatologists, and vice versa.

2017 Youth Sport Safety Governing Bodies Meeting

SAMANTHA SCARNEO, MS, ATC, DIRECTOR OF SPORT SAFETY

Four years ago, Dr. Casa had a vision to bring together the representatives responsible for safety initiatives for the leading national governing bodies (NGBs) of youth sports and educate them on how to make their sport safer. This past week, the four-year effort concluded with a meeting at the National Athletic Trainers Association (NATA) headquarters in Carrollton, TX. We have accomplished an astonishing amount over the past three years. In 2015, the 1st Youth Sport Safety Governing Bodies (YSSGB) Meeting was convened by the Korey Stringer Institute (KSI) and hosted by the National Football League in New York, NY. The goal of this inaugural meeting was to educate the NGB attendees on the top causes of sudden death in sport and to learn what various NGBs have done up to this point to improve youth athlete safety. From this meeting, we were able to leave with a better understanding of the inner-workings of the NGBs, and also learned that it was extremely difficult for NGBs to provide any type of mandate or requirement because they do not have a structure to govern and oversee mandates outside of sport rules. From there, we knew we needed to create a document that outlines what the best practice recommendations should be for youth organizations.

Several position statements, consensus statements, inter-association task force documents, and research articles have been published by professional organizations. However, these documents have had a focus on the high school and older athlete, leaving paucity in the literature as to best practice recommendations for the youth athlete. The 2nd YSSGB meeting led by the KSI and the NATA in 2016 focused on creation of a document and aimed to get feedback from the NGBs on what should be included in a best practice document. The outcome from this meeting includes a document to serve as the first of its kind to guide recommendations for improving sport safety for the youth athlete.



It was also in the 2016 meeting that the leaders in the NGBs requested to KSI and NATA that we convene to discuss how to continue efforts to make youth sport safer. This led to our objective for the 2017 YSSGB meeting to discuss the potential tasks that should be addressed for future efforts and again lead by the NATA and KSI.

This year's attendees included a mix of both new faces and veterans to the meeting:

- | | | |
|--------------------------|----------------------------|-------------------------------|
| • US All Star Federation | • USA Lacrosse | • American Academy of |
| • USA Baseball | • US Soccer | Pediatrics |
| • USA Basketball | • USA Track and Field | • Korey Stringer Institute |
| • USA Football | • USA Wrestling | • National Athletic Trainers' |
| • USA Gymnastics | • American Medical Society | Association |
| • USA Hockey | for Sports Medicine | • Safe Kids World Wide |

At the meeting, we discussed strengths, areas for improvement, facilitators and barriers for promoting safety initiatives within their own organizations. We had veteran NGBs that discussed their successes and struggles in spearheading the youth sport safety initiatives, while other NGBs that are relatively new shared their recent achievement in mandating the background checks for their coaches; which is also an important topic to be addressed by the NGBs to ensure youth athlete safety. Every representative from the NGBs believed that they could continue to learn from this collaborative effort and were hopeful for future meetings to continue their discussions in keeping their youth athletes safe.

It was also in the 2016 meeting that the leaders in the NGBs requested to KSI and NATA that we convene to discuss how to continue efforts to make youth sport safer. This led to our objective for the 2017 YSSGB meeting to discuss the potential tasks that should be addressed for future efforts and again lead by the NATA and KSI.

This year's attendees included a mix of both new faces and veterans to the meeting.

I would be remiss if I did not conclude with a heart-felt thank you to the NATA for their extremely warm welcome to their facilities and for their sponsorship of the meeting. Specifically, to Katie Scott, MS, ATC, Athletic Trainer in Residence at the NATA, for all of her time and effort into the creation of this meeting during the past two years, and for her continued commitment, dedication, and passion for improving the profession of athletic training and sport safety for all athletes. I would also like to thank the NATA Foundation for hosting our dinner on Thursday night, and to Camelbak and Jones and Bartlett for donating their products.

'If you want to go fast, go alone.

If you want to go far, go together' -African Proverb

A Huge Step in the Advancement of Emergency Health and Safety In Youth Sport Leagues

ROBERT HUGGINS, PHD, ATC

VICE PRESIDENT OF RESEARCH, VICE PRESIDENT OF ATHLETE PERFORMANCE & SAFETY

At exactly 10am on March 6, 2017 a document entitled, “*The Inter-Association Task Force [IATF] Document on Emergency Health and Safety: Best Practice Recommendations for Youth Sports Leagues*”, was released at the Youth Sports Safety Summit in Indianapolis, IN at the NCAA Headquarters. This document was developed from a task force meeting that occurred in 2016 at the NFL with key stakeholders in youth sport. Various youth sport national governing bodies (NGBs), prominent medical associations (e.g. American Academy of Pediatrics, American Medical Society for Sports Medicine, and Emergency Room Physicians, National Athletic Trainers’ Association [NATA]) and advocacy groups (e.g. Korey Stringer Institute [KSI], Safe Kids Worldwide) who promote the health and safety of youth sports participated in the development of the task force proceedings. The task force was convened by the Korey Stringer Institute with the support of the National Athletic Trainers’ Association at a meeting entitled the Youth Sport Safety Governing Bodies Meeting. At that meeting best practice policies regarding cardiac, heat, head, environmental, emergency action plans, and pre-existing medical conditions were discussed and the group came up with wording that would be specifically directed to NGBs, and this document was the product of that meeting.

At the YSSS meeting in Indy, the morning line up centered around emergency risk action plans, treatment of sudden cardiac arrest, and insurance risk in sport with breakout sessions by Ron Courson (athletic trainer at the University of Georgia), Mary Newman (Sudden Cardiac Arrest Foundation), and James Shipp (A-G Administrators). Immediately following these sessions the IATF document was officially released online by the Journal of Athletic Training, and key contributors of the document task force presented on what this document means for youth sport leagues, how it will impact healthcare, and the potential impact it could have on policies at the youth sport level nationwide. President of the NATA, Scott Sailor, began the session by announcing the NATA press release of the document and what he hopes the document will do to improve the health and safety of our youth athletes. Furthermore, he stated that the, “independent operation of the NGBs make implementing best practice safety policies challenging,” and that this document is, “a road map for changes to policies and procedures.”

Co-chair of the task force document, Dr. Robert Huggins, VP of Research and Athlete Performance & Safety at the KSI at the University of Connecticut, justified the need for improved emergency health and safety in youth sport. He stated that, “31 million children ages 6-14 participate in sport each year.” and that, “39% of life-threatening injuries are sport related in children ages 6-18.” He also discussed that data from 2010-2014 revealed, “24% of deaths occurred during participation in your sport leagues and 47% were from cardiac issues.”

The discussion then focused on where NGBs can improve summarizing that few NGBs have published policies and procedures specific to emergency condition and that few have the organizational structure in place to support the appropriate training, certification, and implementation. He stated that this document is meant to be a:

“Serve and a call to action for youth sport governing bodies to provide system for member organizations to educate league leaders and their members about the current best practice policies and procedures.”



Dr. John Jardine, MD and chief medical officer of the Korey Stringer Institute followed by stating that "This document has many components that parents just won't think to ask their league, their program and their coaches."

He also called medical directors to action who oversee the health and safety of various national governing bodies. He urged them to keep moving forward in promoting best practices and that this document was created with them in mind. He stated, "The checklists in this document are unique and they clearly identify all of the policies that need to be put in place and the procedure to accomplish that policy." Following Dr. Jardine, Alexandra Flury from Safe Kids Worldwide (also an endorser of the IATF document) stated that she hopes that this document will create dialogue between parents, coaches, and players that will drive change within their organizations. Furthermore, she stressed the importance of education especially at the grassroots level in youth sport. Finally, Mike Clayton from USA Wrestling spoke about how he was glad to be a part of this task force and that he is extremely proud of USA Wrestling for taking a stance to promote the health and safety of their members. As the sole governing body to support the task force document, he stated that they already have taken huge steps, especially in the areas of emergency action plans and coaches training to move towards the best practices outlined in the document.

The Task Force recommends NGBs implement the following:

1. Emergency action plans (EAPs) should be put in place by all member organizations, and provide templates and assistance in the development of EAPs.
2. Provide an educational plan to train member organization leaders, who in turn inform member coaches about how to organize and conduct EAP training.
3. If one is not already in place, develop a strategic plan to direct its member organizations toward resources for appropriate emergency equipment and medical services.
4. Develop a training structure to provide education related to emergency health and safety best practices for all members, including but not limited to member leaders, member coaches and parents or guardians of member athletes.
5. Make available for all members training modules or educational content on best practices related to emergency action plans; sudden cardiac arrest; exertional heat stroke; catastrophic brain and neck injury; pre-existing medical conditions; environmental conditions and medical services.
6. Develop an educational training and certification reporting system for member organizations and member coaches related to all content in item.
7. Create a reporting structure or system to monitor noncompliance as each member organization moves towards the health and safety best practice policies recommended in the document.

“Given the large youth sport participation rates, we must continue to improve sport safety policies and strive towards better practices. Catastrophic injury is an obvious threat to this population,” adds Huggins. “With increased awareness of the potential causes of death and implementation of potential preventive mechanisms, member organizations can improve the health and safety of our young athletes.”



Research Corner:

Hosokawa Y, Adams WM, Belval LN, et al.

Tarp-Assisted Cooling as a Method of Whole-Body Cooling in Hyperthermic Individuals

Annals of Emergency Medicine. 2017;69(3):347-352.

BRAD ENDRES, BS, ATC, CSCS, ASSISTANT DIRECTOR OF SPORTS SAFETY

KELSEY RYNKIEWICZ BS, ATC, NREMT, ASSISTANT DIRECTOR OF EDUCATION

Exertional heat stroke (EHS) occurring during sport or physical activity is a medical emergency requiring prompt treatment for survival. It occurs when body heat production continuously exceeds the rate in which the body can cool itself down, resulting in an internal body temperature greater than or equal to 40.5°C (104.9°F) with central nervous system dysfunction. During EHS, the internal body temperature often exceeds the threshold temperature for cell damage (40.83°C [105.5°F]), resulting in a cascade of events leading to organ failure if not treated in a timely manner. Immediate, on-site cooling through cold-water immersion (CWI) within 30 minutes of collapse is the current best-practice standard of EHS treatment and enhances the chance of survival. CWI is the criterion standard method of treatment for EHS because it has been shown to have the

greatest internal body temperature cooling rates (0.15°C/min to ~0.35°C/min [0.27°F/min to ~0.63°F/min]). In certain situations, however, the use of CWI tub may not be feasible. Some examples of these situations include forward deployment in a military setting or physical labor in a remote setting. Therefore, other cooling methods should be investigated in order to provide safe and effective cooling interventions for individuals suffering from EHS where the access to CWI is logistically limited.

Hosokawa, et al. investigated this very topic in a recent research study. The purpose was to find the cooling rate of tarp-assisted cooling (TACo) after exercise-induced hyperthermia in order to compare the results to the standard of cold-water immersion. In their study, Hosokawa et al. compared the cooling rates

of TACo against passive cooling on 14 subjects (8 males, 6 females) in a laboratory setting. To perform TACo, the subjects were laid on top of a tarp after exercise. Three research assistants held the tarp in such a way to support the subject in a semi-reclining supine position. Twenty gallons of water and 10 gallons of ice were then poured into the tarp to immerse the subject's torso and legs in the cold ice water. The research assistants continuously agitated the tarp to circulate the water during the cooling bout. Cooling rates for TACo was $0.17^{\circ}\text{C}/\text{min}$ [$0.31^{\circ}\text{F}/\text{min}$], while passive cooling results in rates of $0.04^{\circ}\text{C}/\text{min}$ [$0.07^{\circ}\text{F}/\text{min}$]. TACo was found to successfully exceed the current minimal requirement in ideal cooling rate of $0.155^{\circ}\text{C}/\text{min}$ ($0.28^{\circ}\text{F}/\text{min}$). Furthermore, the average time to prepare an individual for TACo was 3.4 ± 1.0 minutes, with an average cooling time of 10.30 ± 1.3 minutes. This is well under the 30-minute critical time to treat patients with EHS.

In conclusion, the current study supports the use of TACo for body cooling within the critical treatment time for EHS. In the absence of a stationary cooling station such as a CWI tub dedicated for EHS treatment, TACo can serve as a safe, effective, inexpensive, and field-expedient alternative method for internal body temperature cooling.

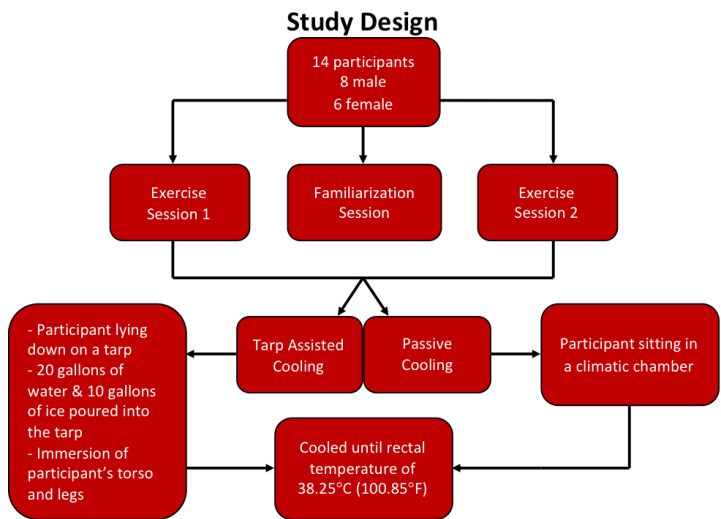


Figure: Study design overview.

Key Points

- Exertional heat stroke (EHS) occurring during sport or physical activity is a medical emergency requiring prompt treatment for survival
- Immediate, on-site cooling of EHS patients before transport enhances the chances of survival **“cool first, transport second”**
- The critical time to treat patients with EHS is 30 minutes
- Tarp-assisted cooling is within the critical treatment time for EHS, 10.30 minutes as compared to 42.78 minutes for passive cooling
- The minimal accepted cooling rate for EHS treatment is $0.155^{\circ}\text{C}/\text{min}$ ($0.28^{\circ}\text{F}/\text{min}$), which the tarp-assisted cooling method exceeded ($0.17^{\circ}\text{C}/\text{min}$ [$0.31^{\circ}\text{F}/\text{min}$]) as compared to passive cooling ($0.04^{\circ}\text{C}/\text{min}$ [$0.07^{\circ}\text{F}/\text{min}$])
- Tarp-assisted cooling requires inexpensive and portable materials and could be used at the site of collapse for an EHS patient
- Further studies may investigate the effectiveness and feasibility of tarp-assisted cooling in a field setting

Year Round Football Practice Contact For College Student-Athletes Recommendations

PRINTED WITH PERMISSION FROM THE NATIONAL COLLEGIATE ATHLETIC ASSOCIATION (NCAA). JANUARY, 2017.

PRESEASON PRACTICE RECOMMENDATIONS

Two-a-day practices are not recommended. A second session of no helmet/pad activity may include walk-throughs or meetings; conditioning in the second session of activity is not allowed.

The preseason may be extended by one week in the calendar year to accommodate the lost practice time from elimination of two-a-days, and to help ensure that players obtain the necessary skill set for competitive play.

In any given seven days following the five-day acclimation period:

- Up to three days of practice can be live contact (tackling or thud).
- There should be a minimum of three non-contact/minimal contact practices in a given week.
- A non-contact/minimal contact practice should follow a scrimmage.
- One day should be no football practice.

Difference from the 2014 guidelines:

1. Recommendation to discontinue two-a-day practices.
2. Recommendation to allow an extension of the preseason by one week. This requires a legislative change if the preseason begins one week earlier.
3. Recommendation to reduce weekly live contact practices from four to three.
4. Non-contact/minimal contact practice recommendations have been added.
5. Non-contact/minimal contact practice recommendation the day following a scrimmage has been added.
6. One day of no football practice recommendation has been added.
7. Legislation 17.10.2.1 would need to be updated if the preseason practice time begins one week earlier.

INSEASON PRACTICE RECOMMENDATIONS

Inseason is defined as the period between six days prior to the first regular-season game and the final regular-season game or conference championship game (for participating institutions).

In any given week:

- Three days of practice should be non-contact/ minimal contact.
- One day of live contact/tackling should be allowed.
- One day of live contact/thud should be allowed.

Difference from the 2014 guidelines:

1. Recommendation to no longer allow two live contact/tackling days per week.
2. Non-contact day/minimal contact recommendations have been added.

POSTSEASON PRACTICE RECOMMENDATIONS

NCAA Championships (Football Championship Subdivision/Division II/Division III), bowl (Football Bowl Subdivision)

- If there is a two-week or less period of time between the final regular-season game or conference championship game (for participating institutions) and the next bowl or postseason game, then inseason practice recommendations should remain in place.
- If there is greater than two weeks between the final regular-season game or conference championship game (for participating institutions) and the next bowl or postseason game, then:
 - Up to three days may be live-contact (two of which should be live contact/thud).
 - There must be three non-contact/minimal contact practices in a given week.
 - The day preceding and following live contact/ tackling should be non-contact/minimal contact or no football practice.
 - One day must be no football practice.

Difference from the 2014 guidelines:

1. Current guidelines do not differentiate postseason/ bowl practice from inseason practice.

SPRING PRACTICE RECOMMENDATIONS

(Divisions I and II)

- Of the 15 allowable sessions that may occur during the spring practice season, eight practices may involve live contact (tackling or thud); three of these live contact practices may include greater than 50 percent live contact (scrimmages). Live contact practices should be limited to two in a given week and should not occur on consecutive days. The day following live scrimmage should be non-contact/minimal contact.

Difference from the 2014 guidelines:

1. Non-contact/minimal contact practice recommendation the day following live scrimmage.

SAFETY IN COLLEGE FOOTBALL SUMMIT PARTICIPANTS

Jeff Allen, Head Athletic Trainer, University of Alabama
(attending on behalf of Nick Saban)

Scott Anderson, College Athletics Trainers Society,
University of Oklahoma

Doug Aukerman, Pacific 12 Conference

Julian Bailes, MD, Congress of Neurological Surgeons,
American Association of Neurological Surgeons

Stevie Baker-Watson, Director of Athletics, DePauw
University

Brad Bankston, Commissioner, Old Dominion Athletic
Conference

Karl Benson, Commissioner, Sun Belt Conference

Bob Boerigter, Commissioner, Mid-America
Intercollegiate Athletics Association

Bob Bowlsby, Commissioner, Big 12, Chair, Football
Oversight Committee

Matthew Breiding, Centers for Disease Control and
Prevention

Steve Broglio, MD, Principal Investigator CARE
Consortium, University of Michigan

William Bynum, President, Mississippi Valley State
University

Jeff Bytowski, DO, American Osteopathic Academy of
Sports Medicine

Carolyn Campbell-McGovern, Ivy League

Doug Casa, Ph.D., Consortium Director, Division on
Exertional Injury, National Center for Catastrophic Sport
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Bob Casmus, CSMAS, Catawba College

Scott Caulfield, National Strength & Conditioning
Association

Randy Cohen, National Athletic Trainers' Association

Bob Colgate, National Federation of State High School
Associations

Dawn Comstock, Associate Professor, University of
Colorado, Denver

Julie Cromer Peoples, Senior Woman Administrator,
University of Arkansas Fayetteville

Kevin Crutchfield, MD, American Academy of Neurology

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Jon Divine, MD, President, American Medical Society for
Sports Medicine

Tom Dompier, Ph.D., President, Datalys

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Virginia

Stefan Duma, Ph.D., Director, School of Biomedical
Engineering and Sciences, Virginia Polytechnic University

Ruben Echemendia, Ph.D., President, Sports
Neuropsychology Society

Brent Feland, MD, Collegiate Strength & Conditioning
Coaches' Association

Scott Gines, Director of Athletics, Texas A&M University,
Kingsville

Kevin Guskiewicz, Ph.D., University of North Carolina,
Chapel Hill

Allen Hardin, Senior Associate Athletics Director,
University of Texas

Steven Hatchell, President, National Football Foundation

Bill Heinz, Chair, Sports Medicine Advisory Committee,
NFHS

Jamie Hixson, Associate Commissioner, Mountain West
Conference

Peter Indelicato, American Orthopaedic Society for Sports
Medicine

Nick Inzerello, Senior Director, Football Development,
USA Football

Jay Jacobs, SVPC, Auburn University

Chris Jones, Division I Football Oversight Committee
(proxy), University of Richmond

Kerry Kenny, Assistant Commissioner, Big Ten
Conference

Zachary Kerr, Director, Datalys

Anthony Kontos, Ph.D., Assistant Research Director,
Sports Medicine Concussion Program, University of
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Society

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Jack Marucci, Louisiana State University

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Consortium

William Meehan, MD, American Academy of Pediatrics

Jason Mihalik, Ph.D., University of North Carolina, Chapel
Hill

Bob Murphy, Board Member, College Athletics Trainers
Society

Bob Nielson, Chair, NCAA Rules Committee

Scott Oliaro, Board Member, College Athletics Trainers'
Association

Kene Orjioko, Division I Student-Athlete Advisory
Committee (SAAC), University of California, Los Angeles

Steve Pachman, JD, Montgomery McCracken

Sourav Poddar, MD, American College of Sports Medicine

Kayla Porter, Division III Student-Athlete Advisory Committee, Frostburg State University

Rogers Redding, Secretary Rules Editor, NCAA Football Rules Committee

Yvette Rooks, Board Member, College Athletics Trainers Society

Eric Rozen, Board Member, College Athletics Trainers Society

Scott Sailor, President, National Athletic Trainers' Association

Jon Steinbrecher, Commissioner, Mid-American Conference

Ken Stephens, National Operating Committee on Standards for Athletic Equipment

Edward Stewart, Senior Associate Commissioner, Big 12 Conference

Michael Strickland, Senior Associate Commissioner, Atlantic Coast Conference

Grant Teaff, Executive Director, American Football Coaches Association

Buddy Teevens, Coach, Dartmouth University

James Tucker, MD, Board Member, College Athletics Trainers Society

Steve Walz, Associate Director of Athletics, University of South Florida

Alfred White, Senior Associate Commissioner, Conference USA

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Kathleen McNeely, Chief Financial Officer, NCAA

Terrie Meyer, Executive Assistant, Sport Science Institute

John Parsons, Director, Sport Science Institute

Chris Radford, Associate Director, Public & Media Relations

Stephanie Quigg, Director, Academic & Membership Affairs

ENDORISING MEDICAL ORGANIZATIONS

American Academy of Neurology (Affirmation of Value)

American Association of Neurological Surgeons

American Academy of Pediatrics

American College of Sports Medicine

American Medical Society for Sports Medicine

American Orthopaedic Society for Sports Medicine

American Osteopathic Academy of Sports Medicine

College Athletic Trainers' Society

Collegiate Strength and Conditioning Coaches Association

Competitive Safeguards and Medical Aspects of Sports

Congress of Neurological Surgeons

Korey Stringer Institute

National Athletic Trainers' Association

National Operating Committee on Standards for Athletic Equipment

National Strength and Conditioning Association

Sports Neuropsychology Society

ENDORISING FOOTBALL ORGANIZATIONS

American Football Coaches Association

National Football Foundation

NCAA Football Oversight Committee

NCAA Football Rules Committee

USA Football

Presentations at American College of Sports Medicine (ACSM) Annual Meeting by KSI

Wednesday May 31, 2017

Poster

Samantha Scarneo: *Assessing the Reliability and Validity of an Objective Method of Measuring Postural Stability: Preliminary Data*

Thursday June 1, 2017

Symposium

Douglas Casa: *Catastrophic Heat and Exertional-Related Conditions among Athletes*

Poster

Courteney Benjamin: *Monitoring Markers of Nutrition Status Throughout a Collegiate Soccer Season*

Luke Belval: *Comparison of Rectal Temperature Prediction Models Utilizing Machine Learning*

Robert A. Huggins: *Biomarkers of Endocrine, Muscle, and Inflammatory Health Track Training Load of a Collegiate Soccer Season*

Ryan Curtis: *Starters and Non-Starters Require Separate Load Monitoring and Analyses Throughout a Collegiate Soccer Season*

Yuri Hosokawa: *Use of Adjusted Physical Strain Index as a Measure to Assess Modified Heat Tolerance Test*
Andrea Fortunati: *Monitoring Markers of Oxygen Transport Throughout a Collegiate Soccer Season*

Rachel Katch: *Weighted Heat Stress Score as a Predictor of Rectal Temperature in a Warm Weather Race*

Friday, June 2, 2017

Thematic Poster

Brad Endres: *Epidemiology of Sudden Death in American Youth Sports*

Free Communications/Oral Presentation

William Adams: *Monitoring Cardiovascular, Liver, Kidney and Hematological Health Markers Throughout A Collegiate Soccer Season*

Applied Performance Science

Why Monitor Your Athletes?

Athlete monitoring is quickly becoming standard practice for maximizing player performance, reducing injury risk, and optimizing competition readiness. In regards to high-performance programs, monitoring load-performance and load-injury relationships are essential for providing insight into how athletes are responding to stresses incurred during and outside of training and competition. There are numerous benefits to monitoring athletes such as gathering scientific explanations for changes in performance or injury risk, enhancing coach and practitioner confidence when manipulating training loads, and boosting athlete-coach-practitioner relationships. Athletes often feel empowered during the monitoring process as they are not only reminded of their importance to the program, but also gain insight into their body's responses and adaptations to stress. This involvement encourages ownership, accountability to teammates, and can drive excellence. While the reasons for monitoring your athletes are many, below are the top 4 reminders that "if you're not assessing, you're guessing!"

Optimize Athlete Readiness

Assessing athletes' wellness, hydration, and fatigue status is essential to ensuring readiness

RYAN CURTIS, MS, ATC, CSCS

ASSOCIATE DIRECTOR OF ATHLETE PERFORMANCE AND SAFETY



Figure: Top four reasons why you should monitor your athletes' performance.

to optimally perform. Consistent monitoring of wellness through subjective questionnaires can provide insight into athletes' stress, soreness, and motivation levels. Monitoring training loads can additionally verify an appropriate taper prior to competition, which can be confirmed through player wellness reports. Also, objective internal measures such as heart rate recovery and variability metrics can provide insight into autonomic nervous system status, while urine concentration and color can detail hydration status.

Peak at the Right Time

In sports and life, it's not always possible to peak for every competition or important event. However, by capturing physical loads, coaches and practitioners can be sure of their scientific approach in training periodization. This is essential in allowing the athlete to peak at the right time (e.g., post-season, national or international competitions, or important rivalries). Monitoring loads and wellness allows the practitioner to maximize supercompensation (adaptation to stress) and reduce the risk of non-functional overreaching (long-lasting fatigue).

Minimize Injury Risk

A growing body of literature confirms that management of training load can be effective in reducing injury risk. Monitoring load-injury relationships can help identify and manage training factors (e.g., acute:chronic workload, high-intensity running distance, body load, mean running speed) relevant to the team and individual athlete. While injury is difficult to predict, gathering insight into important confounding factors such as environmental conditions, fatigue status, mood or sleep disturbances, or stress can provide insight to the practitioner for potential load management or athlete-education intervention.

Return to Play Safely and Efficiently

Medical and fitness practitioners play a vital role in providing the safest environment possible for athletes to return to play from injury or illness. In preparing athletes to return, it is critical for practitioners to feel confident that their load manipulations are both optimizing adaptation and reducing the risk of re-injury. Additionally, confirming that physical loads and capacities meet or exceed those expected during competition is highly useful in ensuring athletes are ready to be reintroduced to full play.

UPCOMING EVENTS

NCAA Sport Science Institute Task Force - Sleep Summit
May 1st - 2nd, 2017
NCAA Headquarters, Indianapolis, IN

Korey Stringer Institute Board Meeting & 6th Annual Fund Raising Gala
May 11th, 2017
NFL Headquarters, New York, NY

KSI Medical and Science Advisory Board Meeting
May 31st, 2017
Denver, CO

American College of Sports Medicine 64th Annual Meeting
May 30th - June 3rd, 2017
Denver, CO

CoxHealth Sports Medicine Symposium
June 16th-17th, 2017
Springfield, MO

American Society of Safety Engineers Heat Safety Panel
June 20th, 2017
Denver, CO

Medical College of Wisconsin Workshop
June 24th, 2017
Milwaukee, WI

National Athletic Trainers' Association 68th Clinical Symposia & AT Expo
June 26th - June 29th, 2017
Houston, TX

National Strength and Conditioning Association Convention
July 12th - 15th, 2017
Las Vegas, NV

Southwest Athletic Trainers' Association 63rd Annual Clinical Symposium
July 19th - 22nd, 2017
San Marcos, TX

Lake Placid Ironman Triathlon
July 23rd, 2017
Lake Placid, NY

20th Beach to Beacon 10K Road Race
August 5th, 2017
Cape Elizabeth, ME

KSI Secondary School State Policy Press Conference
August 8th, 2017
NFL Headquarters, New York, NY

Falmouth Road Race Medical Symposia
August 17th, 2017
Falmouth, MA

45th Falmouth Road Race
August 20th, 2017
Falmouth, MA

MISSION Heat Lab at UConn's Korey Stringer Institute Grand Opening
September 22nd, 2017
Korey Stringer Institute, Storrs, CT

Malignant Hyperthermia Association of the United States Scientific Meeting
September 23rd- 24th, 2017
Minneapolis, MN

KSI, NOAA, OSHA, NIOSH, USUHS Meeting
October 19th, 2017
Bethesda, MD

Marine Corps Marathon Medical Symposium & Medical Tent
October 20th & 22nd, 2017
Arlington, VA

Current Statistics on Wet Bulb Globe Temperature Policies at the Secondary School Level

WILLIAM ADAMS, PHD, ATC, VICE PRESIDENT OF SPORT SAFETY

SAMANTHA SCARNEO, MS, ATC, DIRECTOR OF SPORT SAFETY

Basic Facts

Wet bulb globe temperature (WBGT) is an environmental measurement index that accounts for ambient temperature, relative humidity, the radiant load from the sun, and wind speed, to provide one with an assessment of the heat stress placed on the body from the external environment. Another index that is often referenced is heat index, which factors in ambient temperature and humidity. However, this index is not appropriate for exercising scenarios compared to that of WBGT, as it was developed for a person walking in a shaded area.

Based on the aforementioned risks, recent consensus and position statements detail specific recommendations pertaining to modifying sport and physical activity as environmental conditions become more extreme. Table 1 shows the components of the current minimum standards that should be considered when developing an environmental based activity modification policy.

At the high school level, it is up to each individual state and their high school athletics association to develop and implement health and safety policies for their student athletes, including environmental based activity modifications using WBGT. Further, the WBGT policy should be detailed in the state regulation handbook so that the policy is strictly enforced. See Figure 1 for current statistics related to WBGT policies in the United States as well as the associated map depicting where state high school athletics associations stand pertaining to requiring such policies.

Wet Bulb Globe Temperature Policies by State

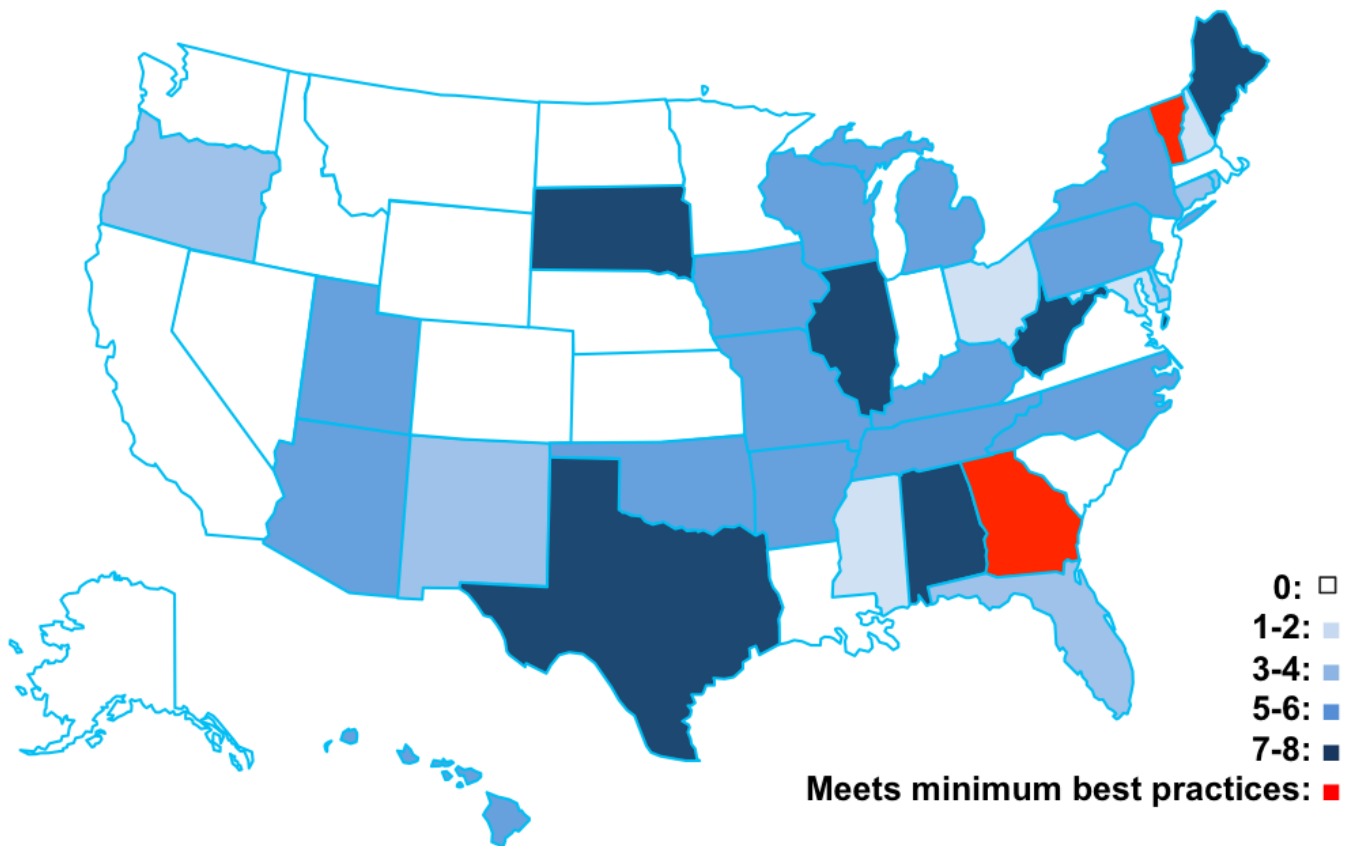


Figure 1: Representation of the number of states in which they mandated evidence-based practice policies for wet bulb globe temperature policies in secondary schools (This data is taken from publicly accessible documentation from each state's high school athletics association and is current as of February 2017).

Statistics on WBGT Policies

- 29 out of 50 states currently require all schools to have a heat modification policy
- 22% of states recommend that the heat policy is based off WBGT (not heat index or other methods)
- 20 states require that the heat policy has at least a four-step progression of modifications
- 49% of states require the modification of equipment
- 6 states require WBGT temperature guidelines be based off epidemiological data specific to the state/region
- 19 states require modification of water breaks and modification of work-to-rest ratios

Recommended and/or encouraged guidelines at the state high school athletics association level are insufficient in maximizing the protection of our young student athletes, as it leaves the development of policies and procedures up to each individual school and school district. In cases where there is no athletic trainer employed, the decisions are made by individuals with zero medical expertise.

Developing the best evidence-based practice policies, such as environmental-based activity modification policies, assists in protecting young student athletes and should be commonplace in all states and schools hosting high school athletics.

WET BULB GLOBE TEMPERATURE POLICIES	
Policy Recommendations	
1	State requires all schools to have a heat modification policy.
2	The recommended heat policy is based off of WBGT (not heat index or any other methods).
3	The WBGT temperature guidelines are based off of epidemiological data specific to that state/region (for bigger states a more comprehensive analysis may be needed).
4	The heat policy has at least 4-step progression of modifications.
5	Policy includes modification of equipment (if applicable to the sport).
6	Policy includes modification of work: rest ratios.
7	Policy includes modification of total practice time.
8	Policy includes modification of water breaks.
9	Policy mentions the use of a shaded area for rest breaks.

FOR MORE INFORMATION ON OTHER SECONDARY SCHOOL HEALTH & SAFETY POLICIES, VISIT [KSL.UCONN.EDU](https://ksl.uconn.edu)

ATLAS

ATLAS Updates

ATHLETIC TRAINING LOCATIONS AND SERVICES
SARAH ATTANASIO BS, ATC, ASSISTANT DIRECTOR OF RESEARCH

Since the creation of the **Athletic Training Locations And Services (ATLAS)** project was launched in January of 2016, the growth and impact on the athletic training (AT) profession has far exceeded expectations. The Korey Stringer Institute group, comprised of undergraduate, masters students and post doctorate fellows along side the NATA Secondary Schools Committee (SSC), continue to locate high schools athletic trainers and their services across the country. To date, there have been 9,638 ATLAS surveys completed. As a refresher, the ATLAS survey is completed online (<http://ksi.uconn.edu/nata-atlas/>) by athletic trainers working in the secondary setting. The project creates a real-time database of AT services in the secondary school setting (both public and private), which can be used as a directory to improve communication and delivery of healthcare across the country. ATLAS can assist states in moving toward full-time athletic training services as well as provide useful data to increase athletic training services across the country.

A major goal of the ATLAS project is to identify each high school in the country and to identify the extent of athletic training services provided. As of April 2017, we have 21 states that are 100% mapped, meaning KSI has a firm grasp on the total number of high schools in that state and the AT coverage status. The states and districts 100% mapped are: AR, CT, DE, D.C, HI, KS, ME, MD, MN, MT, OH, OK, OR, RI, SC, SD, TN, VT, VA, WV and WY. With the help of the SSC and numerous ATs working in their states, we are able to accomplish mapping the states. Every state in the country is working with us to identify the unknown high school coverage and it could not be done without all of the help!

Nationwide, 73% (n=16,326/22,194) of the public and private high schools are mapped. The conditions the AT can be mapped under are a full-time, part-time or no AT present at the school. Of the schools that we have mapped, we know that 52% (n=11,534/22,194) of the schools have athletic training services, whether that they are providing full-time or part-time coverage at the secondary school. As we continue to map the remaining 5,868 schools in the next two months, we also continue to encourage ATLAS Survey completion, as it identifies many other important variables such as number of athletes, number of sports at the school, how the AT is hired, etc. Future publications and presentations will give more information regarding these statistics.

Table 1. Breakdown of AT services split into the ten NATA districts (As of April 11, 2017).

NATA District	% Total Public & Private Schools with AT Services
1	63%
2	75%
3	66%
4	55%
5	45%
6	44%
7	45%
8	62%
9	53%
10	34%

6th International Conference on the Physiology and Pharmacology of Temperature Regulation

WILLIAM ADAMS, PHD, ATC, VICE PRESIDENT OF SPORT SAFETY

From December 5-9th, I had the pleasure of representing KSI at the 6th International Conference on the Physiology and Pharmacology of Temperature Regulation. This conference is a biannual conference held in different locations around the world that brings together the world's leading thermal physiologists to present on topics from a basic (cellular and molecular) level of thermal physiology to clinical and applied applications of that research. This year's conference was held in Ljubljana, Slovenia, the patron city of Saint George, which is located in the central part of Slovenia.

The meeting started with an in depth discussion on the association of climate change on health. A European-based project, HEAT-SHIELD, was introduced to the audience, which is a group tasked with developing guidelines and policies to handle heat stress from various aspects associated with climate change. The development of a well-rounded set of guidelines is needed to address this issue, especially as Europe is seeing the effects of increasing environmental conditions and a large migration of persons from other areas in the world, which when coupled together may cause downstream detrimental effects on health as a whole.

The conference continued with various symposiums, oral presentations and poster presentations on topics related to inflammation and the thermal response, fever, metabolic



influences on thermal physiology, and the influence of exercise on thermal physiology. I had the pleasure of presenting some data that I collected examining the influence of hydration on body temperature and heart rate responses during repeated bouts of exercise in the heat. The talk was well received and it prompted some great discussion amongst other physiologists.

It was great being able to meet new friends, connect with others, and to discuss future collaborative work with some excellent researchers. The opportunity to attend this conference and to see the beautiful city of Ljubljana was an extremely rewarding experience, and I would encourage anyone that does research in this area to attend the 2018 Conference in Split, Croatia.



Presentations at National Athletic Trainers' Association (NATA) Annual Meeting by KSI

Tuesday June 27, 2017

Committee Session

Robert A. Huggins: Out of the Fire and Into the Frying Pan: An Overview of the Secondary Schools ATLAS Project—Where Are We Now?

Oral Presentation

William Adams: Implementation of Heat Acclimatization Policies in Secondary School Athletics

Andres Almeraya: Implementation of Automated External Defibrillator Policies in Secondary School Athletics

Poster

Rachel Katch: Cold Water Immersion in the Treatment of Exertional Heat Stroke Remains the Gold Standard at the Falmouth Road Race

Alexandra Finn: Implementation of Wet Bulb Globe Temperature Policies in Secondary School Athletics

Luke Belval: Gender Related Incidence of Exertional Heat Stroke in a Warm Weather Road Race

Lesley Vandermark: The Relationship of Thirst to Hydration Markers Before and After Exercise

Wednesday June 28, 2017

Feature Presentation

Douglas Casa: Catastrophic Heat and Exertional-Related Conditions among Athletes

Oral Presentation

Sarah Attanasio: Employment of Athletic Trainers In Secondary Schools: The ATLAS Project

Samantha Scarneo: Implementation of Emergency Action Plan Policies in Secondary School Athletics

Brad Endres: Epidemiology of Sudden Cardiac Death in American Youth Sports

Thursday June 29, 2017

Committee Session

Yuri Hosokawa & Robert Huggins: The Secondary School AT Value Model, Minimizing Cost and Maximizing Safety from an Insurance Perspective

Feature Presentation

William Adams: Enhancing Safety of Secondary School Athletics Through Policy Change

Thematic Poster

Kelsey M. Rynkiewicz: Implementation of Concussion Policies in Secondary School Athletics

Robert A. Huggins: The Presence of Athletic Trainers During Secondary School Sudden Death

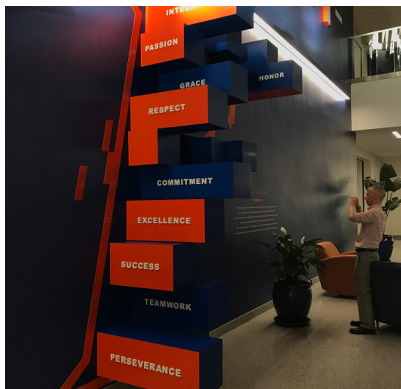
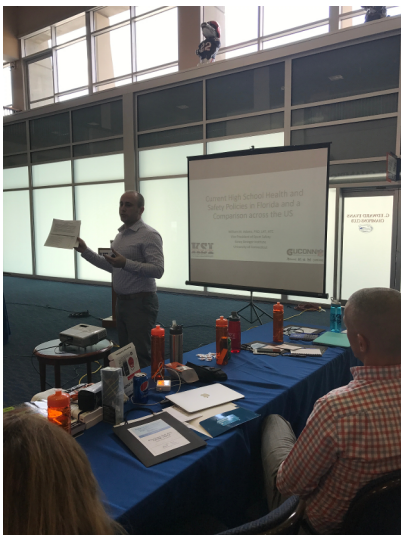
Collaborative Solutions for Safety in Florida High School Sports



WILLIAM ADAMS, PHD, ATC, VICE PRESIDENT OF SPORT SAFETY

On March 9-10, 2017, Drs. Douglas Casa, PhD, ATC, FACSM, FNATA, FNAK and William Adams, PhD, ATC along with KSI staff member Courteney Benjamin, MS, CSCS traveled to the University of Florida to attend their Collaborative Solutions for Safety in Florida High School Sports meeting. Organized by the University of Florida and the Florida Association of Sports Medicine (FASmed), the aim of the meeting was to begin taking steps towards integrating health and safety policies for Florida's High School athletes.

The meeting was attended by representatives from various regions within the state of Florida, and included sports medicine physicians, athletic trainers, high school administrators, coaches, and the Florida High School Athletics Association. Dr. Casa spoke on the importance of implementing the best evidence-based practice policies focused on the leading causes of death in sport, and provided numerous case examples as to how these policies have been effective at reducing the number of sport-related deaths. Dr. Adams followed by discussing the current standing of health and safety policies mandated for high school athletics in Florida.





Following these initial talks, the rest of the meeting consisted of various break out sessions specifically designed to stimulate discussion amongst the group and discuss strategies for how to implement changes to current policies related to emergency action plans, environmental monitoring and activity modification guidelines, concussion, AEDs, and coaching education. Discussing the current barriers for implementing the aforementioned policies and strategies to overcome these barriers with the attendees, who many are the state leaders in their respective professions, allowed everyone in the room to participate to assist in developing a plan going forward to present to the Florida High School Athletics Association to further protect their student-athletes.

Overall, this meeting was a tremendous success, and we are truly thankful for the University of Florida and FASmed for organizing this meeting and for the University of Florida for hosting the meeting at their facilities. Having a group of highly motivated individuals from across the state of Florida come together to discuss how they can improve high school student-athlete health and safety is a model example of ways other states can have similar successes. The coordinated efforts of sports medicine professionals, administrators of high school and state high school athletics association, and coaches are instrumental for preventing sudden death in our young athletes who have a full life to live in front of them.



Examining Perceptions of Athletic Trainers and the Profession

An Ongoing Study

ALICIA PIKE, MS, ATC, ASSOCIATE DIRECTOR OF RESEARCH

What are parents', coaches', and legislators' perceptions of medical care provided in the secondary school setting? Do principals, athletic directors, and superintendents understand the value and role of athletic trainers at their schools? This remains unknown, but a new study aims to answer these questions.

Staff members at the Korey Stringer Institute (KSI) are currently working with the National Athletic Trainers' Association on a study examining key stakeholders' perceptions of medical care provided to student-athletes in secondary school athletics programs. The selection of the six stakeholder groups was purposeful. These individuals all have an influence on the presence of an athletic trainer at the high school level. While athletic directors may not fully understand the role of an athletic trainer (1), little to no research has examined perceptions and awareness of athletic

trainers, or any health and safety best practices, from all key stakeholders who impact the presence of athletic trainers in secondary schools.

We need to first understand the perceptions of these various constituent groups in order to identify needs for targeted educational efforts. Our ultimate goal is to assess and enhance understanding of not only the role of the athletic trainer, but also the value of the profession in promoting and ensuring student-athlete health and safety.

Although we are still actively engaged in the research process, mark your calendars! We hope to provide preliminary results from this study in the next issue of *Pertinacity*.

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Research Corner:

Yeargin SW, Kerr ZY, Casa DJ et al.

Epidemiology of Exertional Heat Illnesses in Youth, High School, and College Football.

Medicine & Science in Sports & Exercise. 2016;48(8):1523-1529.

ANDRES ALMERAYA BS, ATC, ASSISTANT DIRECTOR OF COMMUNICATION

ALEXANDRA FINN, LAT, ATC, NREMT,

External heat illnesses (EHI) affect a wide variety of athletes across different ages and varying sports. In the past decade, emergency rooms have revealed a 133% increase in the amount of exertional heat illness cases. Additionally, the majority of EHI cases reported in emergency rooms are seen in individuals who are 20 years or younger. Epidemiology data has shown that high school football players are 10-11 times more likely to suffer from a heat related illness. In order to help reduce the number of heat related illnesses, it is important for healthcare providers to not only understand how to prevent and treat heat related illness, but also understand the incidence of EHI. The study “Epidemiology of Exertional Heat Illness in Youth, High School, and College Football” by Yeargin et al. looked to describe the epidemiology of exertional heat illness events in football participants at the youth, high school, and collegiate level during the 2012-2014 seasons.

Exertional heat stroke is a life threatening condition that accounts for approximately 2% of sport-related deaths. To date, there is limited information on exertional heat illnesses in the youth populations and this data has never been compared across different levels (youth, high school and college). In order to help mitigate the number of heat-related illnesses, the National Collegiate Athletic Association (NCAA) required heat acclimatization guidelines be implemented beginning in 2003, which have shown to be effective. As of now, there are no mandated guidelines for high school or youth athletes even though it has been estimated that three million youth participate in football, which is significantly more than that of high school and collegiate levels.

The findings from this study suggest that there is a growing need for EHI prevention across all levels of sport. The results showed that 198 EHI were reported during the 2012-2014 seasons, and the college setting reported the most EHI incidences. Furthermore, national policies and procedures need to be put in place to help reduce the incidences of exertional heat related illnesses at all levels of sport.

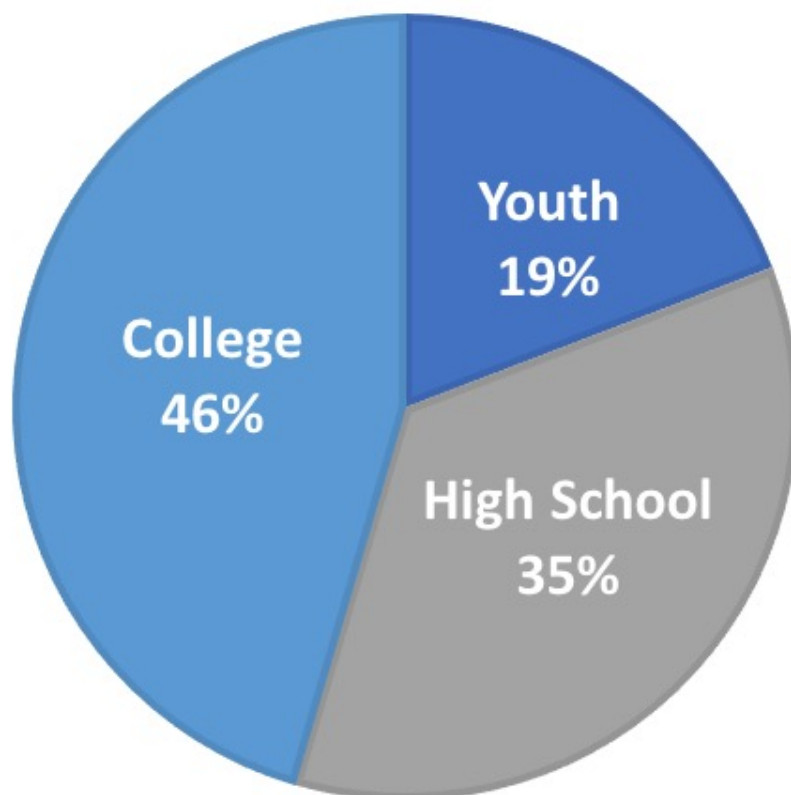


Figure: Percentage of recorded exertional heat illnesses across three levels of American football, youth, high school, and collegiate. Data originates from Youth Football Surveillance System, NATION, and NCAA databases.

Table: Number of exertional heat illnesses resulted in 'Time Loss' in youth, high school, and collegiate levels

Type of Injury	Youth	High School	College
Hyponatremia	0	1	1
Dehydration	12	20	26
Heat Cramps	6	20	41
Heat Syncope	4	6	3
Heat Exhaustion	16	23	18
Heat Stroke	0	0	1
Total	38	70	90

3rd Annual Collaborative Solutions for Safety in Sports

WILLIAM ADAMS, PHD, ATC, VICE PRESIDENT OF SPORT SAFETY

The 3rd annual Collaborative Solutions for Safety in Sport meeting was held March 28-29, 2017 in Kansas City, MO and brought over 100 individuals representing all 50 states and the District of Columbia together to continue the task of enhancing the health and safety policies for high school athletics. This meeting, hosted by the National Athletic Trainers' Association and the American Medical Society for Sports Medicine and supported by the Korey Stringer Institute and Gatorade, began out of an idea spawned by Drs. Douglas Casa, PhD, ATC, FACSM, FNATA, FNAK, and Jonathan Drezner, MD to make high school sports safer for the participating athletes.

This year's meeting was constructed so that the attendees decided on the topics to be discussed. Prior to the meeting, all of the attendees were sent a survey that asked them which topics they would either want to learn more about or have in depth discussions about. From the survey, 16 breakout sessions were formed, where the attendees who wanted to learn more about one particular topic were able to come

together in small groups to have further discussions.

Overall, these breakout sessions were immensely successful as they stimulated many fruitful discussions over the successes, barriers, and other strategies to help develop and implement health and safety policies across the US. It was great to see states that have been successful in implementing change in a certain area (e.g., heat acclimatization) providing feedback and suggestions to states that have not been successful in implementing such policies. These discussions provided great peer-to-peer feedback, which may have been better received for some individuals.



Having attended all of the Collaborative Solutions for Safety in Sport meetings over the past three years, it has been amazing to see the efforts taken by leaders from state high school athletics associations and sports medicine advisory committees to develop and implement health and safety policies. States like Vermont, Illinois, South Carolina, Utah, New Jersey, and many others have taken advantage of these meetings to implement best-practice policies in their state with many crediting the Collaborative Solutions meeting as the event that was the impetus for change.

While many states have made great strides in improving the health and safety of their student athletes, others have remained resistant to change and often cite “We haven’t had anything happen in our state, so there is no reason to change.” We must remember that implementing evidence-based minimum best practice policies, such as emergency action plans, heat acclimatization, access to AEDs, environmental-based activity modification guidelines, and the management of sport related concussion cost little to no money to implement. Therefore, there should be no reason not to take the proactive steps to keeping our young student athletes safe.

Keeping the forward progress mindset and further cultivating relationships between sports medicine advisory committees, high school athletics associations, and coaches with the mindset of having the most up-to-date evidence-based policies in place is needed to ensure that our young athletes are protected while playing the sports that they love.

Colleagues and friends,

I’m so sorry to miss the 3rd annual Collaborative Solutions for Safety in Sports meeting. Through your dedication, this meeting has advanced many policy initiatives to protect student-athletes from catastrophic events. As we discussed last year, policy change is hard. It requires commitment, persistence, and follow-through. Understanding the issues is just the first step. Developing and enacting written policies appropriate for your state and member schools is a big second step. Perhaps the hardest step is ensuring your member schools are actually implementing the policies on the ground where they’ll make the most difference.

To effectively make change, it requires a “driver”. Someone to own the program, top to bottom, engage relevant stakeholders, and make sure policy change is happening on the ground level. I am thankful for your continued leadership and commitment to student safety. So much has been accomplished, yet so much is yet to be done. I will miss our collective discussion and the inspiring energy that emerges from sharing our successes and challenges. I want to thank NATA and AMSSM for their continued support of this meeting, and to Doug and his team at KSI. Without their incredible work behind the scenes, this conference would not be possible.

Very sincerely,

Jonathan Drezner, MD

Professor, Department of Family Medicine

Director, Center for Sports Cardiology

University of Washington

**'...policy change is hard.
It requires commitment, persistence, and follow-through.
Understanding the issues is just the first step.'**

Personal Story

#05: Excerpt from the book 'Good Night Kendrick, I Love You: A Mother's Journal through Grief' (Trafford, Publishing 2011) by Rhonda Roseland Fincher, who lost her thirteen-year old son to exertional heat stroke during a middle school football practice.

Chapter 6: A New Calendar Year Without Kendrick

The pages on the calendar are milestones. Making it through Thanksgiving and Christmas were two huge milestones. Now, another milestone greeted us ... a new year starting without Kendrick.

January 20, 1996

I've just been looking through your photo albums and crying. I haven't written to you for so long. I think a sense of denial just to get through the holidays. It's the new year now and on one hand I'm glad to say goodbye to the sorrow of 1995 but how do I get going on this new year without you? I was reading from the Bible a little earlier. What if heaven is not there? What if you're just gone? Where is heaven? It must be very far away in another solar system. I miss you so much. I miss your jokes, your laughter, your hugs, your kisses, your sweetness, the way you said, "Mom" and "Good night, Mom, I love you."

We've done a lot since the end of November. Are you watching over us? We've been trying to keep busy to keep the sorrow away. The frames we ordered for family and friends in your memory were beautiful. They will be nice memories.

After Kendrick died we had wooden frames made to hold his photo that were etched with "Remembering the spirit of compassion, kindness and friendship to all" along with his name and birth and death dates. We gave them to some family members and special friends.

We can't decide what to do about a ballpark or

other memorial. We're considering just setting up a foundation for now. We're going to order sports drink bottles with instructions on how to avoid heat illness.

We meet with the lawyers on Monday to find out what they recommend.

It feels good to be writing to you again. I don't know if it is healthy for healing, but I imagine because it helps me talk through some of my feelings.

Aunt Shelly is doing okay right now. I hope she stays healthy. Her family needs her here.



Well, Dear, I guess I'm able to face my recovery from my grief again. So, I will continue to write in here more often again. Your birthday would have been in a week and a half. You'd be continually making your requests and pestering me about what I was buying you.

I love you, Sweetheart. I miss you so much and you know you are on my mind almost constantly. Sometimes I'm okay and sometimes I'm not. Sometimes I feel like I try to pretend it didn't happen, and sometimes I wonder if your life was a dream rather than losing you a nightmare.

Well, Hon, I'm going to start on my new year. I'm going to make my list of goals for the year for me and also what I want to do in your memory. So good night, Kendrick. I love you!

January 30, 1996 – Tuesday

Kendrick- I miss you so. I keep waking up early in the mornings and thinking about you. I can't believe I won't see you again. I won't see you grow up, go on dates, drive a car. At church on Sunday a young man that came to visit us after you died came and sat next to us and I was looking at his hands and how much I miss holding your hands. We placed flowers at the front of the church on Sunday -fourteen white roses in memory of your birthday. Dad is supposed to go get one so we can dry it and save in memory.

I got the sample of the water bottles we're considering distributing for all the sports programs with heat stroke prevention information. We're meeting with the lawyer on Thursday to talk about setting up a nonprofit foundation. The lawyer from last Monday canceled our appointment and we're meeting with them on Saturday regarding a suit or whatever they recommend.

Your sister is doing great. She's growing up so fast. I remember you at that age changing from a

little boy into a young man.

After church on Sunday a couple came up to us and asked us if we were the Fincher's. They were Marty and Bill Keeling. Their son, Andy, was there at practice with you and he had heat exhaustion. He passed out behind the school and a UPS driver found him. He was treated and released at the hospital. Wonder why he was saved and you weren't. What did we do wrong? Why would God spare him and not you? Is Andy lucky or were you lucky to go to heaven early? I don't like waiting for answers!! What I wouldn't give to replay time and have a different ending to last summer.

Daddy's on the phone talking with Uncle Kenny (Mike's uncle from Chicago). We had fun seeing him at Christmas. We told him how much you thought of him.

Life ... I was listening to a tape by Wayne Dyer the other day and he said, "We think we are human beings with a spiritual side. What we forget is that we are really spiritual beings having a human experience." But, it's that fear of the unknown. Now I know you are there in the unknown. The unknown I like to believe is heaven and God and all things good. I believe that you are cared for and loved and peaceful in a blissful life. Faith ... that which we don't see and yet believe.

I have faith I will see you again.

Good night, Kendrick.

I love you!

The Small Price of Survival: Part II

COLIN POITRAS, UNIVERSITY RELATIONS ASSOCIATE, UNIVERSITY OF CONNECTICUT

REPRINTED FROM UCONN MAGAZINE, SEPTEMBER, 2016.

Professor Douglas Casa '97 Ph.D. and the staff of UConn's Korey Stringer Institute are working to prevent high school athletes from dying. Here's what they want every parent — and coach — to know.

“EXERTIONAL HEAT STROKE IS ALMOST ALWAYS PREVENTABLE, AND IT IS 100 PERCENT SURVIVABLE IF APPROPRIATE TREATMENT BEGINS IMMEDIATELY.”

COOL FIRST. TRANSPORT SECOND.

If there is a single overriding mantra steeped into the minds of every staff member of the Korey Stringer Institute, it is “Cool first. Transport second.”

At first glance the advice may seem counterintuitive, holding back transportation to a hospital in a medical emergency. But rapid cooling through immediate immersion in an ice-water bath is the most effective way of treating heat stroke, says Casa, who has successfully treated more than 200 heat stroke victims at races and other events over the years.

“How you respond in the first 10 minutes of a catastrophic incident is often the difference between life and death,” Casa says.

The KSI recommends having large plastic immersion tubs filled with ice water at all high school practices and sporting events when it is hot. Using a rectal thermometer to get an accurate core body temperature and assessing the environmental strain by using the wet bulb globe temperature is also important. A wet bulb globe thermometer captures air temperature, humidity, sun angle, and wind speed, factors that can influence the body's ability to cool itself. Not wearing full game gear, allowing proper rest and hydration periods, and limiting aggressive two-a-day and three-a-day practices during early summer to give athletes time to adjust is critical too. Despite resistance fueled by longstanding local traditions, Casa says there is mounting evidence that these heat acclimatization guidelines work.

In the two years after the incidents involving Will, Tyler, and Logan, Arkansas officials adopted new laws requiring all public high schools to have emergency action plans for serious athlete illness or injury, automatic external defibrillators on-site, and additional medical training for coaching staff. Arkansas was one of the first states, in 2012, to adopt KSI's recommended heat acclimatization guidelines, and is now considered a national leader in protecting high school athletes on the practice field.

Seventeen states currently follow all of KSI and the task force's recommended heat-acclimatization policies (see "Road Map," below). New Jersey was the first to adopt those guidelines, in 2011, and since then, no high school football players have died of heat stroke during preseason practice in any of the 17 states that were properly following the guidelines. At least three high school students died of complications from exertional heat stroke last year — in states that are not following the guidelines.

"WHATEVER IT TAKES"

Casa and his team of colleagues at the Korey Stringer Institute have been spreading messages of survival across the country for the past six years. There are more than 7.5 million high school athletes competing in the U.S., and of that total 1.1 million play football. That's compared to about 100,000 college and professional athletes playing the game. It may not be surprising, then, that the secondary school population leads the nation in sports-related deaths. And yet, currently only about half of U.S. high schools have a full-time athletic trainer.

Early on in his career (Casa has been at UConn since 1999), he and UConn Kinesiology Professor Lawrence Armstrong, also an expert on hydration, guided the NCAA in making sweeping changes to its practice protocols to protect athletes. Before the new heat-acclimatization policies were put into place, on average one to two NCAA student athletes died each August from heat stroke. Since the changes were adopted, in 2003, there have been only two heat-related deaths in August in colleges that have properly followed the guidelines.

"One simple policy change has saved 15 to 20 lives," says Casa.

The NFL adopted similar changes in 2011.

But convincing high schools to accept the changes is an entirely different battle.

"The NFL and NCAA have the authority within their organizations to adopt sweeping changes," explains Casa. "But at the high school level, those changes can only be made by the individual high school athletic associations in each state. It's a grueling process."

One state at a time — through phone calls, conferences, board meetings, and, yes, even small gatherings in backyards — the KSI team is convincing state leaders to adopt new policies to better protect high school students from heat stroke, sudden cardiac arrest, exertional sickling in athletes with the sickle cell trait, and head and body trauma — the leading causes of sudden death in sport.

"KSI is a grassroots organization," Casa says of the national campaign. **"We don't simply preach from a podium. We're doing whatever it takes to bring about change."**

AUGUST, 2010. ARKANSAS CHILDREN'S HOSPITAL, LITTLE ROCK, AR

It takes one round of kidney dialysis and several days in the intensive care unit before Logan Johnson is stabilized and discharged from Arkansas Children's Hospital. A full six month pass before he is able to resume normal exercise. The first couple of weeks in the hospital are touch and go for both Tyler Davenport and Will James. After that, however — because of the athletic trainer's quick action to cool Will's body before medical transport arrived — Will James begins to recover. Tyler is a different story. After three weeks, his brain is damaged. His nervous system is shutting down. He cannot speak. His muscle tissue is dying, and doctors fear he will soon lose his right hand and forearm.

In early September, still weak and needing kidney dialysis, Will James is being discharged from Arkansas Children's. But before he goes, he wants to check in on Tyler, the other offensive lineman who collapsed and who has been going through so many of the same things. He walks across the hall and into Tyler's room for the first time. He is stunned and saddened to find Tyler looking shockingly weak and unable to communicate.

After Will leaves, Tyler's struggles increase. The days wear on. After two months, Tyler's parents ask him if he wants to let go. He squeezes their hands. Tyler Davenport dies on Oct. 12.

On Friday morning, October 15, 2010, at Cabin Creek Baptist Church in Lamar, Arkansas, Will attends Tyler's funeral.

Plastic immersion tub: \$135

Ten bags of ice: \$20

MARCH 29, 2012. HOME OF MATTHEW GANIO, FAYETTEVILLE, ARK.

It has been 18 months since Tyler died and UConn Kinesiology Professor Douglas Casa is sitting in the backyard of a house in Fayetteville, Ark., surrounded by a gathering of reps from the Arkansas high school athletic association, high school coaches, physicians, athletic trainers, and others. The house belongs to University of Arkansas Professor of Kinesiology and UConn alum, Matthew Ganio '09 Ph.D. Will James' and Logan Johnson's parents are there, as are Tyler Davenport's. Casa is one of the nation's leading experts on heat stroke and is the head of the University's Korey Stringer Institute (KSI), created by Kelci Stringer, wife of Minnesota Vikings lineman Korey Stringer, who died from complications of exertional heat stroke in 2001.

Plastic cold water immersion tubs, ice, rectal thermometers, advanced outdoor weather meters, automatic external defibrillators — for under \$2,000. That's a very small price to pay considering the amount of money that is spent annually on high school athletics in this country. And it's not like you need to purchase new equipment each year. These things all easily last 8 to 10 years."

Just the plastic tub and ice by themselves can make an extraordinary difference.

Additionally, he says, some of the most important life-saving measures are free. Adopting new practice and conditioning protocols — such as phasing in summer workouts to help athletes adjust to

the heat, providing plenty of fluids and periodic breaks, and modifying practice when heat and humidity are high — come at no cost at all. And there's knowledge, training, and simply being aware of what to do when a student collapses.

DOUG CASA'S STORY

The scholastic boys' 10,000-meter run started in the late morning of a hot and humid day. On the final lap, the third-place runner began staggering. He collapsed just as he was coming into the turn. He stood up, took a few more strides, and then collapsed again. He was lying unconscious not more than a hundred meters from the finish line. His coaches quickly warned the physician and athletic trainer not to touch this 16-year-old athlete because he would be disqualified and lose his chance at a medal.

Ignoring the coaches' request, they got the athlete to the nearby ambulance area, placed him in the shade, and put ice bags and wet towels on his neck, forehead, axilla, and groin areas while EMTs called the hospital. "I have nearly no memory of approximately six hours of my life, while I was in a coma due to severe exertional heat stroke," says Doug Casa. But "after being released from intensive care to a regular hospital room, I watched the local news at 11 p.m. and watched them tell the story of my exertional heat stroke. It was powerful to lie alone (Buffalo was 10 hours from my house on Long Island) in a hospital room — utterly exhausted yet peacefully thankful — and watch a news account about myself.

"On August 8, 1985, somewhere between 11 and 11:10 p.m. EST, the path of my life unfurled in front of me. For all the years since then, I have been on a quest to try to prevent and treat exertional heat stroke. My story is not overly complicated. My survival penance has been to save as many lives as possible from heat stroke and to prepare others who can do the same." Kent Scriber, professor of exercise and sport sciences at Ithaca College, was the athletic trainer who helped Casa that day. "I was impressed with Dr. Casa's research long before I realized our paths had crossed years earlier," says Scriber. "I still remain in awe of Dr. Casa's passion for the work he does, and I am proud to know that my actions many years ago have been a catalyst for the work that he has done since then."

Casa says his work with the Korey Stringer Institute is a way of "paying it forward." The current work of KSI related to heat stroke and sudden death is enhancing the safety, not only of athletes of all ages and levels, but also of our country's military, laborers, and anyone leading an active lifestyle.

"My story is not overly complicated. My survival penance has been to save as many lives as possible from heat stroke and to prepare others who can do the same."

SPOTLIGHT



SAMANTHA, E. SCARNEO
MS, ATC
DIRECTOR OF SPORT SAFETY
KOREY STRINGER INSTITUTE

Could you tell us about yourself?

I currently serve as the Director of Sport Safety for the Korey Stringer Institute. This is my fifth year in the Exercise Science program at the University of Connecticut. I received my Bachelor of Science degree in Athletic Training from the University of New Hampshire in 2011. During my time at UNH, I had the honor to work with Dr. Erik Swarz, Dr. Summer Cook, Dan Sedory, and several other athletic training faculty and staff; all of whom were extremely influential in helping me decide my future steps of my career. Dan Sedory, an influential athletic trainer and the program director at UNH, helped steer me to become involved with our profession at the district level with the Eastern Athletic Trainers' Association. My interactions with the EATA board of directors, including Mike Goldenberg, provided me the passion and desire to want to contribute to the profession of athletic training through research. I completed an undergraduate research study with Dr. Cook and Dr. Rick McAvoy, on the physiological effects of an acute bout of shallow water sprinting. This initial project led me to want to continue conducting research at a graduate program. I have now obtained a Master of Science degree from UConn in 2014, and am currently three years into my PhD program. My current passions include best practice policy development in athletic training, policy efficacy evaluation, and strategies to improve policy implementation.

Could you tell us about your first involvement/interaction with the Korey Stringer Institute?

My first interaction with KSI was during my Master's degree at UConn. I was working as an athletic trainer at Classical Magnet School, Hartford, CT, and walked into a sticky situation with no standing orders and an inadequate emergency action plan. I was able to converse with senior staff in KSI and gained advice on how to handle the situation. It took a few months, but eventually I had signed standing orders and a revised emergency action plan. From that point forward, I always had a passion for improving safety standards

In what ways has KSI impacted you?

KSI has helped fuel my passion for evaluating policies and creating dissemination strategies for the implementation of best practices. Three years ago, KSI sought to bring together and educate the representatives who direct the safety initiatives from youth sport governing bodies to discuss the promotion of health and safety for the youth athlete. I have been able to witness two of the governing bodies evolve and improve their health and safety policy firsthand following this three-year effort. From this meeting, we have also created a document specific for youth sports: "Inter-Association Task Force Document on Emergency Health and Safety: Best-Practice Recommendations for Youth Sports Leagues". This document will serve as the first of its kind to help direct efforts to improve safety for the youth athlete.

THE SPOTLIGHT SERIES WILL FEATURE THE PEOPLE OF THE KSI, AND THOSE WHO SHARE AND REPRESENT THE PASSION OF THE KSI.

Could you tell us about yourself?

I'm originally from Rochester New York, and grew up participating in cross country and track, which, in addition to my interest in the medical field, lead me to a career in athletic training. I started with my bachelors in athletic training at Duquesne University in 2006. I then continued my studies at the University of Connecticut under Dr. Casa as my advisor for both my masters and doctorate degrees. It was during my studies as a doctoral student that the opportunity for what would become KSI presented itself and allowed me to stay for a post doctoral position and eventually my full time faculty position.

Could you tell us about your first involvement/interaction with the Korey Stringer Institute?

I had the fortunate opportunity and timely luck of being at the University of Connecticut when KSI was first being developed. I have been able to see KSI rise starting from an idea to what it has become today. I began as a doctoral student helping to develop the website and services we offered, and now serve as the chief operating officer for KSI.

In what ways has KSI impacted you?

KSI has definitively influenced my career path in a way I could not have anticipated, as the position I currently hold is unique to any other opportunity I could have taken and was only developed during my studies at UConn. Having the opportunity to be involved with KSI from the very beginning has also given me a big sense of appreciation and connection to the institute. Certainly, in deciding to obtain a doctorate, I had particular expectations regarding what I would do upon graduation, and KSI completely altered that path. Having the opportunity to work in my role today has allowed me to serve in the full capacity and mission of KSI, which is vastly rewarding and whose impact continues to expand exponentially. In KSI's success, I have been fortunate to work with many influential stakeholders working in the realm of health and safety for the athlete, soldier and laborer. These professional connections and support have been priceless to KSI's achievements and my own personal development as a young faculty member. Though I could not have imagined this path for my career, I will be forever grateful for the opportunity to apply my education and skills in such a way to significantly impact the health and safety of the athlete, soldier and laborer.



REBECCA L. STEARNS

PHD, ATC

KOREY STRINGER INSTITUTE

FOUNDERS COUNCIL

**UNIVERSITY OF CONNECTICUT
ALUMNI CLASS OF 2012**

'...my role today has allowed me to serve in the full capacity and mission of KSI, which is vastly rewarding and whose impact continues to expand exponentially.'

Recent Publications

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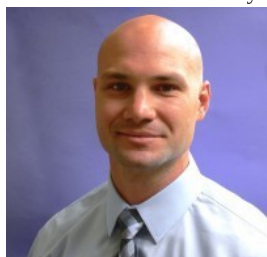
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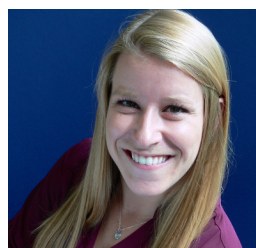
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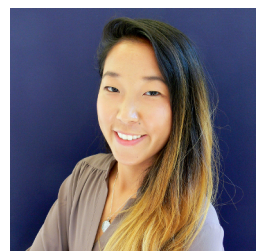
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