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CATS NEWSLETTER

The Bi-annual Publication of the
College Athletic Trainers' Society

IN THE SPOTLIGHT: DARRYL CONWAY, UNIVERSITY OF MICHIGAN

By: Kristen Mostrom, MPA, LAT, NREMT, Assistant Athletic Trainer, North Carolina State University

Current Position/Job Title: Senior associate athletic director of student-athlete health & welfare, University of Michigan

Number of Years Worked at the University of Michigan: Beginning year five

Years as an Athletic Trainer: 25

Were you Born in Michigan: No

Education History:
1993 – University of Delaware (BS - PE Studies / Athletic Training)
1995 – Adelphi University (MA - Sport Management / Sports Medicine)

Can you please tell us a little about your current position and your career path to this role?

My current position is senior associate athletic director of student-athlete health & welfare. In this role, I oversee all aspects of athletic medicine, performance nutrition, performance science and equipment operations, and assist with the oversight of strength and conditioning, performance psychology and athletic counseling. I also serve as the NCAA athletics health care administrator and chief liaison to the University Health Services, Michigan Medicine, U-M Police, Ann Arbor Police and various campus emergency and crisis management groups.

I came into this position five years ago from the University of Maryland where I previously served as assistant athletic director-sports medicine and athletic trainer for the University of Maryland football program. The position was created to develop a comprehensive and cohesive interdisciplinary health care team responsible for the health and welfare of student-athletes.

You were recently awarded the Quality of Life Award at this year's 2018 CATS Annual Symposium. What has this meant to you and how have you incorporated this into your daily work-life among your staff?

I was deeply honored and humbled to receive the Quality of Life Award from CATS. It meant a lot to be nominated and honored by my peers for such a prestigious award. It has been great to know that my work has positively affected others. I try every day to work toward a stress-free work-life balance with my team. I try to practice what I preach regarding putting family first and including everyone on the team. Everyone needs to take time for themselves to avoid burnout.

In This Issue

In this profession, we frequently do not take enough personal time and subsequently miss critical life and family events. I believe that no one should miss major family events because of a practice, treatments or rehab. At University of Michigan, I always try to make sure there is back-up coverage for everyone on the team so they can live a balanced life.

Your hard work has not gone unrecognized. What or who do you credit with your work ethic and lifestyle?

My parents have always led by example regarding work ethic, values and lifestyle. They were both elementary school teachers and made sure their students achieved their best. I was also blessed with several incredible mentors throughout my career that taught me how to be a dedicated and caring professional. They shared the importance of having work-life balance and the importance of teamwork. Mentors like Joe Patten, Pepper Burruss, Bob Reese, Tony Decker, Mike "Coach" King, Frank Walters, Bernard James, Billy Hill, Phil Horton, Rene Shingles and many more always stressed leadership, communication and preparation as fundamentals for teamwork.

What are a few attributes that you try to instill in your current staff daily?

I emphasize the importance of communication, preparation and teamwork daily. I also try to stress creativity and the importance of customer service to create "lifetime customers." I promote professionalism, ethical behavior and, most importantly, remembering these foundations to become role models in this profession.

During your many years of service as an athletic trainer, what obstacle(s) have you had to cross to get you where you are today?

One of the biggest obstacles I have faced in my career is being black in a profession where I was the minority at all levels of athletics.

When faced with adversity what advice would you give others?

My advice would be to persevere, continue to work hard, network and seize opportunities when they are presented. Never get down, and take every opportunity to learn and demonstrate your skill set. I also encourage people to have strong mentors in their personal and professional lives, and also serve as a mentor to others within the profession.

Is there anything that you would have changed or done differently?

The biggest thing I would have changed in my journey is following my own advice and taking time out for myself. I have always been concerned with making sure my team has everything they need, and subsequently, I have neglected my own free time as well as my family's.

What has been the most rewarding experience you have had when working as an athletic trainer thus far?

The most rewarding experience I have had in my career is seeing former team members and other mentees succeed at high levels and become leaders in the profession. It sends chills down my spine when I see a colleague I helped guide become a head athletic trainer, finish his or her doctorate, become a program director, etc.

Another rewarding experience is having student-athletes I worked with become successful and perform at their highest levels. I look forward to when my students come back to visit and remind me of how much I have impacted them. That is the definition of the "lifetime customers" that I strive to achieve daily.

NEWS AND NOTES

2018 CATS Family Scholarship Recipients

CATS is proud to announce the 2018-19 CATS Family Scholarship recipients.

CATS Family Scholarship recipients show great success academically, demonstrate qualities of a leader and are actively involved within their communities. Many even assist their parents with the financial responsibilities of a college education. We wish the new recipients great success and hope they continue to work hard in their respective studies, achieve their goals with great success and make their parents proud.

Moose Detty Scholarship sponsored by PRO Orthopedics

Mitchell Graff will be a freshman at Oregon State University and will be pursuing a degree in nursing. He is the son of Debra Graff, Oregon State University, and the late Barney Graff.

Otho Davis Scholarship sponsored by CDM Sport

Jessica Venis will be a freshman at American University and plans to study neuroscience. She is the daughter of Larry Venis, Boston University.

Dan Gorman Scholarship sponsored by CDM Sport

William Hardin will be a junior at University of Virginia and is majoring in accounting at the McIntire School of Commerce. He is the son of Allen Hardin, The University of Texas, Austin.

Follow CATS on Twitter for the latest updates: @college_ATs

Hydroworx CATS Family Scholarship

Grace Gentile will be a freshman at Xavier University and has an interest in business marketing. She is the daughter of Karyn Gentile, Baldwin Wallace University.

Gatorade CATS Family Scholarship

Emily Pike will be a sophomore at LeMoyne College and has entered into the physician assistant program. She is the daughter of Brad Pike, Syracuse University.

Litecure CATS Family Scholarship

Sarah Hazen will be a senior at Ball State University and is majoring in Spanish with a minor in teaching English to speakers of other languages (TESOL). She is the daughter of Neal Hazen, Ball State University.

Is your child college bound? Does he or she qualify for our scholarship? To find out if your child qualifies for the CATS Family Scholarship visit www.collegeathletictrainer.org/CATS-Family-Scholarships.html

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CATS Newsletter Mission Statement:

Provide an insider's view of the life and work of CATS members and facilitate the sharing of knowledge to help ensure high-quality care of student-athletes.

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EVOLVING TO MEET THE CHANGING NEEDS OF OUR ATHLETES, OUR PRACTICE AND OUR PROFESSION

By: Mark Laursen, MS, ATC, Director of Athletic Training Services, Boston University

Budgets, campus life and year-round training are just a few of the unique challenges collegiate athletic trainers face. As health care, patient expectations and athletics continue to evolve, athletic trainers must adapt and remain dedicated to providing the best care possible to each athlete. This article will examine the new generation of patients and the dynamic face of health care, and how they are impacting our practices, our patients and our profession.

College athletes bring a unique set of challenges for athletic trainers. Often they come from environments where sports specialization is encouraged and overuse injuries are common, where mental health has been either over- or under-treated and where parents, coaches, teachers, administrators and fellow athletes have all been available for support at any given time. They arrive on campus often alone and unsure of where to turn for help, especially when it comes to their health.

The administration of health care in the college setting has transformed significantly over the last two decades, shifting from an infirmary-care system to a comprehensive wellness system. These changes have resulted in an increased focus on collaborative care, prevention and wellness. During this same time, athletic training has changed tremendously as well.

In addition to the elimination of the internship requirement and the addition of the master's degree requisite, we have also witnessed a significant expansion of the educational material for entry-level athletic trainers. Also of note is the significant expansion of treatments that athletic trainers are providing to patients, including evidence-based interventional strategies, increased surgical rehabilitation, collection of performance data and medical informatics through electronic health records, and expansion of non-orthopedic and behavioral medicine services. And while a wealth of high-quality research has helped improve the care we provide, it has also placed increased pressure on practitioners to remain current on the latest practices, techniques and science.

The structure and demands of college athletics have also transformed significantly over the last 20 years. Many student-athletes now remain on campus and train year-round. There have also been greater demands on frequency, length and distance of team travel. These changes have caused coaches and administrators to expect more from team staff, especially athletic trainers. While in some cases this increased workload results in the hiring of additional athletic trainers, in others – especially where budgets are tighter – the increased workload is passed down to existing staff. In these situations, schools are often forced to hire graduate assistants to support the athletic training staff, which is less ideal for athlete care.

So, collegiate athletic trainers now stand at the crossroads of heath care innovation, patient care transformation and workload expectation. However, with change comes opportunity.

Collegiate athletic trainers have the opportunity to embrace the changes we are facing and work collaboratively to improve the care we provide our patients, the atmosphere in which we work and the profession as a whole – ultimately paving the way for future generations of athletic trainers to be recognized as essential to all sports teams.

We must place greater attention on wellness and prevention by not only identifying past injuries and possible underlying conditions such as cardiac or genetic disorders, but also screening for movement faults, training load, nutritional status and sleep hygiene.

We must recognize the importance of behavioral medicine screening and programming to support patients with pre-existing risk characteristics and those that need ongoing stress management.

We must stay informed on the latest research and practices in athletic training to ensure we are providing state-of-the-art care to every athlete no matter their condition – whether behavioral, non-orthopedic, biologic or traumatic.

While this may seem like a daunting task, we must band together as a profession to support each other and dedicate ourselves to remaining on the cutting edge of athlete care. We must provide care as part of a team, which means referring our patients to the most qualified colleague for proper treatment. We must work collaboratively to not only provide better patient care but to better know our athletes and coaches. With this improved care and awareness comes trust from the athletes, coaches and ultimately administration, which in turn positions athletic trainers to better advocate for themselves and those that will come after them.

THE ROLE OF THE PRECEPTOR IN ATHLETIC TRAINING

By: Gregg Boughton, MS, ATC, CSCS, EMT-B, Head Athletic Trainer-Football/ Women's Lacrosse, George Fox University

Athletic training education continues to evolve and change. The didactic portion of the education program revolves around evidence-based practice. In the clinical education portion, preceptors play a vital role in the athletic training education program. This article will discuss the role that a preceptor should play in the athletic training education program.

The primary role of the preceptor in the clinical experience is to facilitate critical thought and expose the athletic training student to as much "real life" experience as possible. In our program at George Fox University, the level of clinical experience and number of clinical experience hours depend on what portion of the program the student is in currently. As a preceptor, we need to be aware that a sophomore who is with us for eight hours per week has far less experience and exposure to real-life working conditions than a senior who is averaging 20-25 hours per week. By the time a student is a senior, he or she is assigned the role of "head athletic training student" of a sport for the season. In that role, the preceptor is expected to allow the athletic training student to begin to take the lead of the day-to-day sports medicine operations of that sport to provide a more realistic clinical experience.

When you take on the role of the preceptor, you must understand that you now will have a dual role – one as a practicing health care provider, the other as a clinical educator. Balancing these roles can be very challenging. As noted by Dodge, role strain is a well-documented concern for the preceptor.[1]

It is important that the athletic training student approaches each clinical experience day with a willingness to learn. I am a believer in allowing athletic training students to be "hands-on." I believe that if students do not like "hands-on" work, then this might not be the best career choice for them. The only diagnostic tools that we as athletic trainers have are our eyes, our hands and our minds. We do not have an MRI, x-ray or labs readily at our disposal in the field. Students need to understand this and I make it a point to allow my athletic training students to be as hands-on as possible.[2]

It is just as important, as a preceptor, to allow students to make mistakes. Sometimes students will not act to avoid making mistakes. As a preceptor, allow them to make mistakes (as long as the mistake does not put a patient in danger) and then gently correct.

Preceptors must also communicate effectively and provide timely feedback with students. There needs to

be consistent communication, whether at the end of each day or once a week, when you have an individual conversation with your student to discuss performance and necessary corrections, to talk about different cases that have been seen, go over any proficiencies or competencies, etc.

Preceptors must also provide a reciprocal relationship. It is important to keep an open mind regarding the education of the clinical athletic training student. In other words, as much as your athletic training student is learning from you, you could be learning from him or her. For 20 years I have been working with the Justin Boots Sports Medicine Team, who provides athletic training services to the professional cowboys at select PRCA Rodeos. I have learned from the contestants as they often have a different way of doing things, and each time I work a rodeo, I pick up something new. Keep an open mind and there will certainly be opportunities to learn something from your students.

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FAD DIET FACTS

By: Amanda Poppleton, MFN, RD, LDN, Performance Nutrition Coordinator, University of Alabama

There is no single definition for a fad diet, but in general, a fad diet promises to change body weight quickly by eliminating at least one essential food group, or may recommend a food, food group or nutrient in excess. Fad diets are alluring because they often promise quick results and the rules may seem easy to follow. However, the vast majority of fad diets quickly fail because they are too restrictive or difficult to follow. The following article will discuss current fad diets and how, for results to last, a person should not take drastic measures, but rather take a slow and gradual approach and the diet should not be overly restrictive.[1]

While meeting nutrient requirements is essential for everyone, it is especially true of a high-level athlete because an athlete's nutrient demands are higher than those of an average person.[2] The focus should be on improving the athlete's performance, not only changing his or her body weight since a lower body weight or different body composition does not necessarily result in better performance.

In addition to being difficult to adhere to, there are many potentially negative effects of following a fad diet, including:

- Inadequate vitamin/mineral intake, specifically:
  - Inadequate iron, which impairs oxygen delivery to the muscle, causing fatigue, slow recovery and higher risk of injury
  - Inadequate calcium, which may inhibit optimal bone growth and lead to an increased risk of stress fractures if bone cell turnover is not optimal
  - Inadequate sodium, which increases risk of cramping due to decreased water retention. Poor sodium replenishment may also cause impaired muscle function
- Low carbohydrate consumption, causing:
  - Poor energy levels
  - Increased risk of cramping due to depletion of glycogen stores
  - Poor focus, mood and cognition
- Long fasting periods/inadequate calorie intake, causing:
  - Poor focus, mood and cognition
  - Lean tissue breakdown
  - Poor energy levels
  - Depletion of glycogen stores
  - Inadequate calories, which may lead to weight and/or lean tissue loss
  - Slowed resting metabolism and fat storage

	KETOGENIC DIET [3]	GLUTEN FREE DIET [4]	INTERMITTENT FASTING [5,6,7]
SUMMARY:	• A low-carbohydrate, high-fat diet that aims to use ketones for energy rather than glucose • <20-50g of carbohydrates per day • <1g/kg of protein per day • More than 50% of energy from fat • Variable amounts of protein • Claims to be glycogen sparing	• Medical nutrition therapy used to treat Celiac disease or gluten sensitivity. This should only be used if Celiac disease or gluten allergy/sensitivity is confirmed • Those with Celiac disease must avoid gluten-containing foods such as bread, pasta, cereals, soups, some sauces, baked goods, certain seasoning packets, malt, etc., to protect the small intestine from a damaging autoimmune response	• Periodic fasting aimed at reducing hunger • Often restricts calories by limiting eating to shortened timeframe • There are many different definitions and variations (e.g., drawing out the overnight fast for a specified period, such as 16-36 hours, or narrowing the feeding window to 4-12 hours)
POTENTIAL BENEFITS:	• May decrease body weight and/or body fat percentage • Reduces the amount of processed foods/sweets eaten • Promotes nutrient-dense foods like nuts, seeds • Promotes leafy greens and a variety of proteins	• Alleviates symptoms of individuals with Celiac disease • May decrease body weight and/or body fat percentage • Eliminates many refined grains and flour-based sweets (i.e., cookies, cakes, etc.)	• May decrease body weight and/or body fat percentage • A short-term fast (day) may help people be more in tune with internal hunger cues
POTENTIAL DRAWBACKS:	• Metabolic changes hinder building muscle mass • Favors low carbohydrate consumption, which may lead to low energy levels • Favors high fat consumption, which may contribute to sluggishness during activity • Metabolic changes may encourage early fatigue • Very restrictive and difficult to follow • Discourages most fruit, which may affect nutrient intake	• May be difficult to meet carbohydrate needs through limited gluten-free food choices • Possible nutrient deficiencies if not replacing nutrients found in whole grain/gluten-containing foods • Research is limited to support any physiological improvements for those on a gluten-free diet without Celiac disease	• Training while fasting can be unsafe due to dehydration, inability to support muscle recovery, risk of syncope • Athletes that have trouble eating large amounts at once may find difficulty meeting their overall needs

What should I do if one of my athletes is interested in a fad diet?

1. Do not immediately discourage the athlete's interest in improving his/her nutrition. Encourage the interest and probe him/her more about what he/she is trying to accomplish with these changes. Encourage the athlete to have a performance-focused goal rather an appearance-focused goal.
2. Point out the positives in the nutrition pattern of the diet and communicate the benefits to help build rapport.
3. Educate the athlete on the negative aspects of the diet and encourage him/her to perhaps only adopt some of the beneficial nutrition aspects of the diet.
4. Refer the athlete to a sports dietitian if he or she has any body composition goals or if you think the athlete is under-fueling, whether intentionally or unintentionally.

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THE IMPORTANCE OF VITAMIN D FOR ATHLETES

By: Kimberly Stein, PhD, Senior Principal Scientist, Gatorade Sports Science Institute

Vitamin D remains a hot topic, both for general health and for athletes looking to gain an edge. This article will provide an overview of vitamin D, data related to performance and recovery and a guide on testing and supplementation.

Background

Vitamin D isn't technically a "vitamin" – it is a hormone, with receptors found in many different body tissues, including muscles. Traditionally studied in relation to calcium absorption and bone strength, vitamin D is now associated with health outcomes, such as cardiovascular health, inflammation, immune function, joint health, fatigue, body composition and muscle function, all of which could also support the athletic body.

Vitamin D, Athletic Performance and Recovery

The ability of vitamin D to act as a steroid hormone on skeletal muscle and support hypertrophy and muscle function has led to the theory that maintaining sufficient vitamin D status may improve athletic performance. Small studies in young individuals, but not athletes, have shown vitamin D to be associated with VO_2max,[1,5] jump height, power, force[7] and peak power output.[2] Recently, in a large study of military recruits, vitamin D status was associated with improved 1.5 mile run time but not strength or power. However, in an intervention with this population, supplementation did not result in improved performance of any measure.[8]

Specifically using an athletic population, an intervention with vitamin D supplementation has been found to improve 10m sprint time and vertical jump.[4] However, another study found that supplementation did not improve 1-RM bench press or leg press.[3] Overall, while there is indication that vitamin D supplementation helps to maintain an adequate vitamin D status, vitamin D supplementation may also improve muscle function. But more intervention studies are needed in athletic populations with appropriate outcome measures to determine if vitamin D supplementation truly improves athletic performance.

Athletic performance is also driven by effective recovery, and maintaining adequate vitamin D status may support recovery due to the association with inflammation, immune function and muscle fatigue. Research in animals suggests a role of vitamin D in the repair of damaged muscle tissue via satellite cell activation.[9] In athletes, two different intervention studies have found supplementing athletes with 4,000IU/day resulted in improved indices of recovery, such as recovery of peak isometric force and peak torque following eccentric exercise.[9] While more research is needed, maintaining adequate vitamin D status may help collegiate team sport athletes recover and endure the demands of their seasons.

Should You Test and Supplement Your Athletes?

Individuals obtain vitamin D precursors either from sun exposure or through diet. These forms are converted by the liver to 25-hydroxyvitamin D, or 25OHD, which is then converted to the active form of vitamin D when needed. The level of 25OHD in the blood determines "vitamin D status." Unlike other vitamins, dietary intake assessment does not indicate if an individual is getting enough vitamin D. In most cases, the only way to truly know if your athletes are getting enough is from a blood test. A 25OHD value less than 20ng/mL is considered "deficient," 20-30ng/mL "insufficient" and above 30ng/mL is "sufficient." Because of the emerging research on vitamin D's impact on physiologic systems other than bones, there is some question on what level might be considered "optimal." It is possible that higher blood levels may be beneficial to support outcomes such as muscle function.

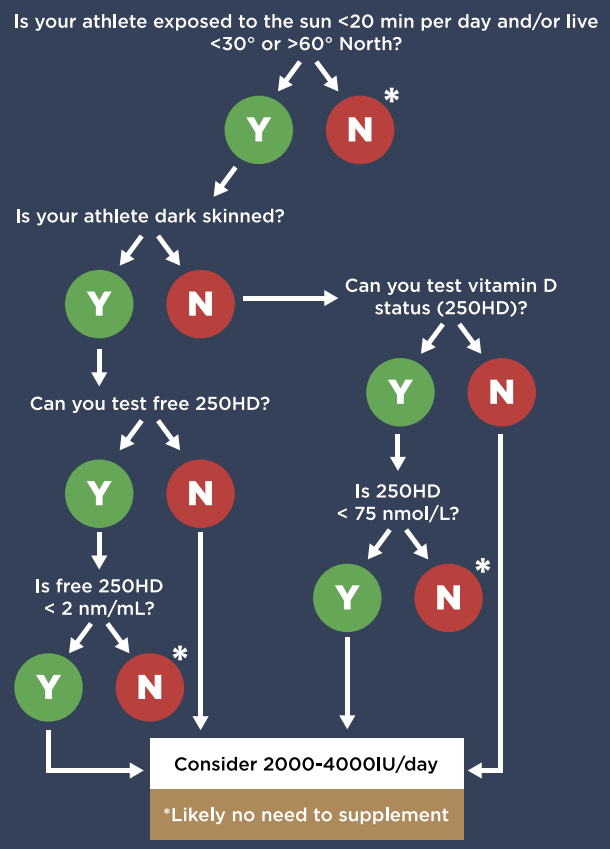
While the only way to truly assess vitamin D status is through a blood test, newer research suggests using 25OHD may not be beneficial for all ethnic groups.[10] For example, African American athletes often have low vitamin D status, but do not display expected physiologic detriments, such as a decrease in bone mineral density.[10] This may be due to genetic differences resulting in greater levels of "free" vitamin D in these groups. In this scenario, assessment of free – or bioavailable vitamin D – should be tested rather than vitamin D status, although standards and "ideal" ranges still need to

be set.[10] Regardless, because of the seasonality of vitamin D production from sunlight, testing of 25OHD or free 25OHD should ideally be conducted periodically over the course of a year.

The prevalence of vitamin D deficiency, or low vitamin D status, is high in the United States and across the globe. This is prevalent even in climates where deficiency is unexpected. Your athletes are equally as likely as the general population to be deficient. If you do choose to supplement your athletes, with or without testing, the recommended amount for adults under age 50 was recently increased from 200 to 600IU/day (although some would argue it should be higher), especially for individuals with darker skin and/or those who avoid sun exposure, or use sunscreen.[6] However, it has been suggested in the literature that even the new RDA is not enough, and 2,000-4,000IU/day is more appropriate.[10] What is clear is that megadosing with less frequent, high doses of vitamin D, a common practice to improve compliance, is not beneficial.[10] The best practice is to work with your team doctors and dietitians, if available, to decide the best course for each individual athlete. The below figure, adapted from Owens et al. (2018), provides a decision tree for the proper time to test and supplement your athletes.

How to decide whether or not to supplement your athletes.

From: Owens et al. doi: 10.1007/s40279-017-0841-9



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