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FACT SHEET:
"PREVENTING SUDDEN DEATH IN COLLEGIATE CONDITIONING SESSIONS: BEST PRACTICES RECOMMENDATIONS"

OVERVIEW: The National Athletic Trainers' Association (NATA) released the following recommendations from an inter-association task force consensus statement on "Preventing Sudden Death in Collegiate Conditioning Sessions." The statement was advance released at the association's 63rd annual meeting in St. Louis on June 27, 2012, and will be published in the July/August issue of the *Journal of Athletic Training*. For a copy of the complete statement, visit http://www.nata.org/sites/default/files/preventingsuddendeath-consensusstatement.pdf.

STATS: Since 2000, 21 National Collegiate Athletic Association (NCAA) football players have died during conditioning workouts; 75 percent of these fatalities were Division I players. Introducing full-intensity workouts too quickly is especially high risk. Eleven out of 21 deaths occurred during day one or day two workouts.

INSIGHTS: Maximizing strength and conditioning sessions has become fundamental in sport. The right combination of strength, speed and cardiorespiratory fitness can enhance performance for all athletes. Yet, in a culture that values making athletes tough, instilling discipline and focusing on success at all costs, the health and safety of the individual athlete is sometimes overshadowed.

The recommendations are designed to provide physicians, athletic trainers, coaches and athletic staff with the best practices for preventing sudden deaths, especially those associated with the following:

Exertional sickling and sickle-cell-trait (SCT):

- Athletes should know their SCT status. Athletes who do not should be encouraged to undergo testing.
- Strength and conditioning coaches (SCCs), coaches and medical staff should be aware of the SCT status of each athlete.
- The supervising staff should know the common prevention, recognition and treatment strategies for exertional collapse in athletes with SCT.
- Athletes tested for SCT should be made aware of the health implications of both positive and negative tests and be provided genetic counseling and education regarding the prevention and recognition of exertional sickling.

Exertional heat stroke:

- An exertional heat stroke cooling plan (using a cooling modality with proven effectiveness) should be developed for each venue.
- A heat acclimatization plan should be in place for transitional period practice sessions that take place in warm or hot environments.
- Appropriate work-to-rest ratios based on intensity of activity, environmental conditions and individual factors should be implemented to allow the body to cool and provide ample time for rehydration.
- All SCCs, sport coaches and medical staff should be well versed in common prevention, recognition and treatment strategies.

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Cardiac conditions:

- Initial management of sudden cardiac arrest includes early activation of the emergency medical services system, early CPR and early defibrillation.
- Sudden cardiac arrest of traumatic or atraumatic origin should be suspected in any collapsed and unresponsive athlete and an AED should be applied as soon as possible.
- A collapsed athlete experiencing seizures should be treated as having sudden cardiac arrest until proven otherwise.
- Prompt resuscitation of young athletes with sudden cardiac arrest results in a high survival rate.
- Exertional rhabdomyolysis should also be comprehensively addressed. This condition can have serious health ramifications, but it is easily prevented when basic precautions are followed.

GUIDELINES: The task force's consensus statement provides the following specific conditioning recommendations, which are intended to prevent conditioning-related injuries and deaths of collegiate athletes:

1. Progressive acclimatization is the cornerstone of safety – The first four to 10 days of any new conditioning cycle are referred to as the transitional periods. A written, progressive program of increasing volume, intensity, mode and duration should be instituted during this time. A qualified SCC should work cooperatively with medical staff including athletic trainers and team physicians or both when developing these plans.

2. Introduce new conditioning activities gradually – Any new exercise introduced into a strength and conditioning program should be added in a deliberate, gradual fashion by a qualified strength and conditioning coach (SCC). This guideline is true for any aspect of the regimen but is particularly important during the early stages of a conditioning program.

3. Do not use exercise and conditioning activities as punishment – Physical activity should not be used as retribution, for coercion, or as discipline for unsatisfactory athletic or academic performance or unacceptable behavior. No additional physical burden that would increase the risk of injury or sudden death should be placed on the athlete under any circumstance.

4. SCCs require proper education, experience and credentialing – All SCCs must obtain an undergraduate degree to sit for the examination and become credentialed. In addition, they should have adequate mentoring and experience to independently design and implement individual and team conditioning programs. Finally, all SCCs should be required to pass a certification examination by an independent accreditation agency.

5. Provide appropriate medical coverage – An SCC should be present during all strength and conditioning sessions and be prepared to provide first aid as soon as an athlete shows signs of distress. An athletic trainer or team physician should also be present during each high-risk collegiate conditioning session (e.g., sprinting, timed sessions, mat drills and stations).

6. Develop and practice emergency action plans (EAPs) – Strength and conditioning venues should have EAPs specific to the venue, sport and circumstances. The EAP should be developed by the sports medicine staff with the input of all concerned parties, approved by the head team physician, and most importantly, reviewed and rehearsed at least annually by all staff involved. A conditioning session should not take place if those supervising the session are not familiar with the EAP.

7. Be cognizant of medical conditions – The most prevalent medical conditions associated with sudden death during collegiate strength and conditioning sessions are atraumatic cardiac conditions, exertional collapse associated with sickle-cell trait (SCT), exertional heat stroke and asthma. Institutional, governing and credentialing agencies for SCCs, coaches and sports medicine professionals should require ongoing continuing education covering these major health concerns.

8. Administering strength and conditioning programs – A strength and conditioning coach and a sports medicine staff member (athletic trainer or physician or both) should be part of the institution's athletics administration, in order to encourage institutional ownership of the sports performance and sports medicine programs and effectively manage health- and safety-related concerns for the student athlete.

9. Ensure partnership of recognized professional organizations – The key organizations responsible for athletes' safety during strength and conditioning sessions should formalize a partnership to periodically review these best practices. These organizations include relevant athletic, coaching, sports medicine and strength and conditioning organizations.

10. Require adequate continuing education for the entire coaching and medical teams – The task force strongly recommends that key professionals, including SCCs, sport coaches, athletic trainers and team physicians adopt requirements for education and training and require individuals to demonstrate knowledge in the area of preventing sudden death in sport. Each reporting cycle should require a continuing education component on managing emergencies and preventing sudden death in athletes.

TASK FORCE: The task force was spearheaded by the National Athletic Trainers' Association, in collaboration with the National Strength and Conditioning Association. The task force members represented numerous organizations including the American College of Emergency Physicians, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, Canadian Athletic Therapists Association, Collegiate Strength and Conditioning Coaches association, National Collegiate Athletic Association and United States Olympic Committee, among other groups.

About NATA:

National Athletic Trainers' Association (NATA) – Health Care for Life & Sport

Athletic trainers are health care professionals who specialize in the prevention, diagnosis, treatment and rehabilitation of injuries and sport-related illnesses. They prevent and treat chronic musculoskeletal injuries from sports, physical and occupational activity, and provide immediate care for acute injuries. Athletic trainers offer a continuum of care that is unparalleled in health care. The National Athletic Trainers' Association represents and supports 35,000 members of the athletic training profession. Visit www.nata.org

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