Prep School Performance Nutrition News

with

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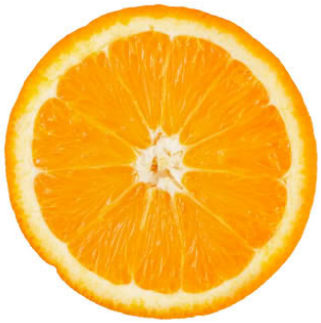

Nutritionist. Speaker. Consultant.

Sickle cell trait and student athletes is not a topic discussed often, but it is an important one to address, especially when you have a student with sickle cell trait. I hope you enjoy this special issue. If you have any specific questions or concerns, please do not hesitate to reach out and contact me.

– Kathleen Searles, MS, RD, CSSD, LDN

Student Athletes and Sickle Cell Trait

Sickle cell trait describes the condition in which an individual carries one gene for sickle cell hemoglobin. There are not usually serious health consequences associated with sickle cell trait. When two sickle cell

genes are present the individual has sickle cell disease. This is a serious disease characterized by hemolytic anemia and impaired blood flow under certain circumstances. (When hemoglobin cells "sickle" they change from their usual round shape to a C shape. The misshaped cells carry less oxygen and may clump together and block blood vessels.)

Although sickle cell trait is usually innocuous, it has been associated with negative consequences during intense physical training. A number of deaths and cases of rhabdomyolysis (rapid muscle breakdown) have occurred in military recruits and college football players with sickle cell trait. In the case of football players, the deaths have occurred during such activities as serial sprints or agility training. This situational sickling of hemoglobin cells has been called exertional sickling or exercise collapse associated with sickle trait (ECAST.)

The sickling of cells can start within several minutes of intense activity. The athlete may drop to the ground from muscle weakness. With rest, the cells regain oxygen and return to their usual, functional shape. The key point from a sports nutrition standpoint is that good hydration is very important in reducing the risk of ECAST. In addition to dehydration, the risk is increased by heat, asthma and altitude.

The NCAA now mandates sickle trait screening for its athletes. This program has stirred some controversy about privacy of health information, potential of genetic discrimination, equal access to advance in their sport for all athletes, cost and reliability of testing and whether genetic testing is appropriate without genetic counseling as well. In addition, there have not been enough well designed studies to clarify the mechanisms of ECAST and the best treatments.

Groups which support universal screening of athletes for sickle cell trait are the NCAA, National Athletic Trainers Association (NATA), College of American Pathologists (CAP), American Medical Society of Sports Medicine (AMSSM) and the American College of Sports Medicine (ACSM.) The Sickle Cell Disease Society of America (SCDSA) supports voluntary screening, but along with the American Society of Hematologists (ASH) is against universal screening. The position of the National Federation of State High School Associations (NFHS) and the American Orthopedic Society of Sports medicine (AOSSM) is that screening be recommended but not required. The Centers for Disease Control (CDC) does not make a recommendation about screening, but has risk reduction recommendations (see side bar.) A chart summarizing the positions of the various organizations can be found in this article: http://ow.ly/IlQtZ

In lieu of universal screening some schools and the military have opted for "universal precautions" around hydration and training practices to reduce the risk of exertional heat illnesses for all athletes. See the side bar for a summary of the NATA and CDC recommendations.

The NCAA has developed a useful fact sheet for athletes with sickle cell trait: http://ow.ly/ImoLD

If your school is developing policy the following documents may be useful:
Exertional Sickling: Questions and Controversy (cited above): http://ow.ly/IlQtZ
Screening US College Athletes for Their Sickle Cell Disease Carrier Status: http://ow.ly/ImiFC
National Athletic Trainers' Association Consensus Statement: Sickle Cell Trait and the Athlete:http://ow.ly/ImtuT

Being aware of the needs of your student athtletes is essential for a healthy and strong team. Proper nutrition and fueling education can help your team perform at it's best.Let's connect and discuss the needs of your athletes!

Summary of NATA Precautions for Athletes with Sickle Cell Trait

- Gradual progression in training with rest periods between repetitions
- Encourage pre-season conditioning; exclude participation in certain performance testing
- Stop activity with onset of muscle discomfort (pain, swelling, weakness or tenderness), inability to catch breath, fatigue
- Allow athletes to set their own pace
- All athletes should participate in a planned strength and conditioning program. Allow extended recovery period between repetitions for athletes with sickle cell trait
- Control for risk factors of heat stress dehydration, asthma, illness and altitude
- Adjust work/rest cycles for environmental heat stress
- Emphasize hydration
- Control asthma
- No workout if athlete with sickle cell trait is ill
- Modify training if athlete with sickle cell trait is new to altitude
- Educate to create environment encouraging athletes to report symptoms immediately

For complete recommendations see:http://ow.ly/ImtuT

CDC Recommendations for PreventingExertional Sickling

- Allow athletes to set their own pace
- Allow athletes to rest often between rounds in drills
- Stay hydrated throughout exercise
- Avoid overheating by misting athletes with water or going into air conditioning during breaks
- Promptly seek medical attention when feeling ill

Source: http://ow.ly/IlQtZ

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