Sickle Trait Guidelines

Sickle-cell disease is a blood disorder characterized by red blood cells that assume an abnormal, rigid, sickle like shape. This deformation decreases the cells' flexibility and results in their restricted movement through the body's blood vessels depriving downstream tissue of oxygen.

Sickle-cell disease occurs more commonly in people (or their descendants) of African, Mediterranean, Spanish and Polynesian descent.

All incoming athletes are required to complete the Sickle Cell Patient Screening portion of the athletic physical packet. Those from high risk descents as well as those with family history of sickle cell must complete the sickle screen blood work before they are cleared. If an athlete has passed his physical pending blood work, he/she may be cleared to lift but not to practice or condition until their sickle status is determined.

For the athlete with sickle cell trait, the following guidelines should be adhered to:

1) Build up slowly in training with paced progressions, allowing longer periods of rest and recovery between repetitions.
2) Encourage participation in preseason strength and conditioning programs to enhance the preparedness of athletes for performance testing which should be sport-specific. Athletes with sickle cell trait should be excluded from participation in performance tests such as mile runs, serial sprints, etc., as several deaths have occurred from participation in this setting.
3) Cessation of activity with onset of symptoms [muscle 'cramping', pain, swelling, weakness, tenderness; inability to "catch breath", fatigue].
4) If sickle-trait athletes can set their own pace, they seem to do fine.
5) All athletes should participate in a year-round, periodized strength and conditioning program that is consistent with individual needs, goals, abilities and sport-specific demands. Athletes with sickle cell trait who perform repetitive high speed sprints and/or interval training that induces high levels of lactic acid should be allowed extended recovery between repetitions since this type of conditioning poses special risk to these athletes.
6) Ambient heat stress, dehydration, asthma, illness, and altitude predispose the athlete with sickle trait to an onset of crisis in physical exertion.
    a. Adjust work/rest cycles for environmental heat stress
    b. Emphasize hydration
    c. Control asthma
    d. No workout if an athlete with sickle trait is ill
    e. Watch closely the athlete with sickle cell trait who is new to altitude. Modify training and have supplemental oxygen available for competitions.
7) Educate to create an environment that encourages athletes with sickle cell trait to report any symptoms immediately; any signs or symptoms such as fatigue, difficulty breathing, leg/ low back pain, or leg/low back cramping in an athlete with sickle cell trait should be assumed to be sickling (1).

References:

1. Eichner ER. Sickle cell trait. *J Sport Rehab*, 2007 (May), in press.
2. Excerpts taken from the NATA Consensus Statement entitled "Sickle Cell Trait and the Athlete" and from the University of Colorado Sports Medicine Sickle Cell Patient Screening portion of the athletic physical packet.

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