Coastal Carolina University
Athletic Training Department
Policy and Procedure Manual
Sickle-Cell Disease and Trait

Revised/Reviewed 7/2011

INTRODUCTION:

Sickle cell disease is an inherited blood disorder that affects red blood cells. People with sickle cell disease have red blood cells that contain mostly hemoglobin*S, an abnormal type of hemoglobin. Sometimes these red blood cells become sickle-shaped (crescent shaped) and have difficulty passing through small blood vessels.

People with sickle cell conditions make a different form of hemoglobin a called hemoglobin S (S stands for sickle). Red blood cells containing mostly hemoglobin S do not live as long as normal red blood cells (normally about 16 days). They also become stiff, distorted in shape and have difficulty passing through the body's small blood vessels. When sickle-shaped cells block small blood vessels, less blood can reach that part of the body. Tissue that does not receive a normal blood flow eventually becomes damaged. This is what causes the complications of sickle cell disease. There is currently no universal cure for sickle cell disease.

Sickle cell trait is not a disease. It is the inheritance of one gene for normal hemoglobin (A) and one gene for sickle hemoglobin (S), giving the genotype (AS). Sickle cell trait will not turn into a disease. However, it is possible to have symptoms of the disease under extreme conditioning of physical stress or low oxygen levels. In some cases, athletes with the trait have expressed significant distress, collapsed and even died during rigorous exercise.

People at high risk for having sickle cell trait are those whose ancestors come from Africa, South or Central America, Caribbean, Mediterranean countries, India, and Saudi Arabia. Sickle cell trait occurs in about 8% of the U.S. African-American population and rarely in the Caucasian population.

ATHLETES WITH SICKLE-CELL TRAIT:

1. Athletes with sickle cell trait can participate in all sports
2. Red blood cells can sickle during intense exertion, blocking blood vessels and posing a grave risk for athletes with sickle cell trait
3. Screening and simple precautions may prevent deaths and help the athlete with sickle cell trait thrive in his or her chosen sport
4. Efforts to document newborn screening results should be made during the pre-participation exam
5. In the absence of newborn screening results, institutions should carefully weigh the decision to screen based on the potential to provide key clinical information and targeted education that may save lives
6. Irrespective of screening, institutions should educate staff, coaches, and athletes on the potentially lethal nature of this condition
7. Education and precautions work best when targeted at those athletes who need it most; therefore, institutions should carefully weigh this factor in deciding whether to screen. All told, the case for screening is strong

8. The athlete should remain well hydrated during and after athletic activity
9. Any student athlete with a family history of sickle cell disease or trait should get screened for sickle cell
10. Any student athlete that is high risk (see above) that experience any of these symptoms; limb pain, cramping, dehydration, dyspnea, and persistent skin ulcers, should be evaluated by the Team Physician for possible sickle cell screening
11. Sickle cell screening (bloodwork) should be done prior to athletic participation in those at risk

In the event of a sickling collapse, athletic department staff, coaches and medical staff should treat it as a medical emergency by doing the following:

- Check vital signs.
- Administer high-flow oxygen, if available, with a non-rebreather face mask.
- Cool the athlete, if necessary.
- If the athlete appears to have slowed mental responses, or as vital signs decline, call 911, attach an AED, start an IV, and get the athlete to the hospital fast.
- Proactively prepare by having an Emergency Action Plan and appropriate emergency equipment for all practices and competitions.

Screening procedures:

Per NCAA guidelines, all student-athletes are required to provide sickle cell status to the appropriate athletic training staff and that information must remain on file during the student-athlete's participation in intercollegiate athletics. It is the position of Coastal Carolina University to require that all student-athletes provide their sickle cell screen results prior to participation. If the student-athlete cannot obtain such results, then they will be provided an opportunity to have the sickle cell screen performed at no cost to them by Solestas Labs in Conway, SC. In the event a student-athlete demonstrates a positive sickle cell screen result, then they will be referred for additional confirmation testing again at no cost to student-athlete. Any positive sickle cell results will require meeting with athletic training staff member and possibly Athletic Medical Director to discuss results and implications for athletic participation. Signed documentation of such meeting will be maintained in student-athlete's file.

Student-athletes will be screened at soonest possible date prior to the beginning of their participation in intercollegiate sports. Every effort will be made to obtain results prior to the beginning of the student-athlete's respective sport first date of organized activity. However, in an effort to protect the student-athlete it may be necessary to restrict their participation until such time that the blood testing results are available and reviewed by the Athletic Medical Director.