

SICKLE CELL TRAIT & ATHLETES

Sickle cell trait and sickle cell anemia are blood disorders that can be harmful for athletes. Sickle cell anemia is when the body produces abnormal hemoglobin, causing red blood cells to change from round to crescent shape, known as sickling. The abnormal blood cells can “logjam” blood vessels, blocking proper blood flow, which can cause serious complications.

While those with sickle cell anemia are often discouraged from playing sports altogether because the health risk is too great, athletes who have sickle cell trait are able to participate as long as they take proper precautions.

✦ SICKLE CELL TRAIT & ATHLETES

Sickle cell trait (SCT) occurs when someone inherits one sickle hemoglobin gene and one normal hemoglobin gene.

Unlike sickle cell anemia, SCT doesn't disqualify someone from participating in sports activities.

Athletes with SCT do need to be aware of exertional sickling, and the potential for collapse, which is the result of the red blood cells changing shape during extensive periods of exertion.

During sickling collapse, the blood vessels can become blocked, restricting blood flow and oxygen to the muscles.

Sickling collapse is a medical emergency; someone suffering a sickling collapse should seek medical attention immediately.

✦ HOW TO PREVENT SICKLING COLLAPSE

An athlete's sickle cell status should be confirmed during his/her preparticipation physical exam. SCT athletes can stay active and healthy by adhering to these guidelines:

- Follow a pace-progression training program with longer periods of rest and recovery between repetitions.
- Set his/her own pace.
- Avoid performance tests such as mile runs, serial sprints, etc.
- Stop activity at the onset of symptoms and report them immediately to the athletic trainer or coach.
- Adjust work-rest cycles to accommodate environmental factors such as heat or change in altitude.
- Check with your athletic trainer about the availability of oxygen in the event of an emergency.

✦ SIGNS OF EXERTIONAL SICKLING

Sickling can begin within 2 or 3 minutes of any all-out exertion and can reach a dangerous level quickly if the athlete continues to struggle. Sickling collapse can be mistaken for cardiac or heat collapse, so it's important to know how the symptoms for sickling are different:



Collapse can happen during the first 30 minutes of exertion.



Athlete is unable to catch breath.



Unlike heat cramping, muscles will not visibly twinge or spasm. They will feel normal to the touch.



Muscles feel weak, causing the player to slump to the ground.



Pain, tenderness and swelling occur.



Core temperature isn't greatly elevated.

Not all athletes with SCT will present the same symptoms. If a player simply says, “I can't go on,” let them rest—this self-limiting feature saves lives. As the sickle red cells regain oxygen, most of them will return to normal shape and the athlete will feel better and be able to return to activity.

Factors can increase an SCT athlete's vulnerability to collapse, including:

- Heat
- Dehydration
- Altitude
- Asthma