SICKLE CELL TRAIT IN ATHLETES

Sickle cell trait and sickle cell anemia are blood conditions that can pose risks for athletes. In sickle cell anemia, abnormal hemoglobin causes red blood cells to change from round to crescent-shaped, a process called sickling. These cells can clog blood vessels, interrupt normal blood flow and lead to serious complications.

People with sickle cell anemia are often advised against sports because of the substantial health risks. Athletes with sickle cell trait can still take part when they follow appropriate precautions.

✚ SICKLE CELL TRAIT IN SPORT

Sickle cell trait (SCT) means inheriting one sickle hemoglobin gene and one normal hemoglobin gene.

SCT does not bar someone from sports, as sickle cell anemia can.

Athletes with SCT should recognize exertional sickling and the risk of collapse. During sustained effort, red blood cells may change shape and cause an athlete to collapse.

In a sickling collapse, blocked blood vessels can reduce blood flow and oxygen reaching muscles.

A sickling collapse is a medical emergency and requires immediate medical attention.

✚ PREVENTING SICKLING COLLAPSE

Confirm sickle cell status at the athlete's preparticipation physical exam. Athletes with SCT can stay active and healthy with these steps:

- Use progressive training, with longer rest and recovery periods between repetitions.
- Let the athlete set their own pace.
- Skip tests such as mile runs and repeated sprints.
- Stop at the first symptoms and immediately tell the athletic trainer or coach.
- Adapt work-rest cycles for conditions such as heat or changes in altitude.
- Ask your athletic trainer whether oxygen will be available in an emergency.

✚ EXERTIONAL SICKLING SYMPTOMS

Sickling may start within 2 or 3 minutes of all-out effort and quickly become dangerous if an athlete keeps pushing. Since sickling collapse can resemble cardiac or heat collapse, learn how its symptoms differ:



Collapse may occur in the first 30 minutes of exertion.



An athlete cannot catch their breath.



Unlike heat cramps, muscles do not visibly twitch or spasm and feel normal to touch.



Weak muscles can cause an athlete to sink to the ground.



Pain, swelling and tenderness develop.



Core temperature does not rise greatly.

Symptoms of SCT vary between athletes. If a player says, "I can't continue," allow them to rest. Honoring this limit can save lives. As sickled red cells receive oxygen, most return to their usual shape, helping the athlete feel better and return to activity.

The risk of collapse in athletes with SCT can rise with these factors:

- Heat
- Dehydration
- Altitude
- Asthma

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References: National Athletic Trainers' Association; Cure League: Tackling Sickle Cell.
Infographic supplied by the National Athletic Trainers' Association.