

# SICKLE CELL TRAIT



## WHAT IS SICKLE CELL TRAIT?

Sickle cell trait is not a disease. Sickle cell trait is the inheritance of one gene for sickle hemoglobin and one for normal hemoglobin. Sickle cell trait will not turn into the disease. Sickle cell trait is a life-long condition that will not change over time.

- ▶ During intense exercise, red blood cells containing the sickle hemoglobin can change shape from round to quarter-moon, or "sickle."
- ▶ Sickled red cells may accumulate in the bloodstream during intense exercise, blocking normal blood flow to the tissues and muscles.
- ▶ During intense exercise, athletes with sickle cell trait have experienced significant physical distress, collapsed and even died.
- ▶ Heat, dehydration, altitude and asthma can increase the risk for and worsen complications associated with sickle cell trait, even when exercise is not intense.
- ▶ Athletes with sickle cell trait should not be excluded from participation as precautions can be put into place.

## DO YOU KNOW IF YOU HAVE SICKLE CELL TRAIT?

People at high risk for having sickle cell trait are those whose ancestors come from Africa, South or Central America, India, Saudi Arabia and Caribbean and Mediterranean countries.

- ▶ Sickle cell trait occurs in about 8 percent of the U.S. African-American population, and between one in 2,000 to one in 10,000 in the Caucasian population.
- ▶ Most U.S. states test at birth, but most athletes with sickle cell trait don't know they have it.
- ▶ The NCAA recommends that athletics departments confirm the sickle cell trait status in all student-athletes.
- ▶ Knowledge of sickle cell trait status can be a gateway to education and simple precautions that may prevent collapse among athletes with sickle cell trait, allowing you to thrive in your sport.

## HOW CAN I PREVENT A COLLAPSE?

- ▶ Know your sickle cell trait status.
- ▶ Engage in a slow and gradual preseason conditioning regimen.
- ▶ Build up your intensity slowly while training.
- ▶ Set your own pace. Use adequate rest and recovery between repetitions, especially during "gassers" and intense station or "mat" drills.
- ▶ Avoid pushing with all-out exertion longer than two to three minutes without a rest interval or a breather.
- ▶ If you experience symptoms such as muscle pain, abnormal weakness, undue fatigue or breathlessness, stop the activity immediately and notify your athletic trainer and/or coach.
- ▶ Stay well hydrated at all times, especially in hot and humid conditions.
- ▶ Avoid using high-caffeine energy drinks or supplements, or other stimulants, as they may contribute to dehydration.



- ▶ Maintain proper asthma management.
- ▶ Refrain from extreme exercise during acute illness, if feeling ill, or while experiencing a fever.
- ▶ Beware when adjusting to a change in altitude, e.g., a rise in altitude of as little as 2,000 feet. Modify your training and request that supplemental oxygen be available to you.
- ▶ Seek prompt medical care when experiencing unusual physical distress.

For more information and resources, visit [www.NCAA.org/health-safety](http://www.NCAA.org/health-safety)