

# 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)**

