

# Sickle Cell Anemia

Sickle cell anemia (SCA) is a disease passed down through families. It causes the red blood cells to form a sickle shape instead of the normal disc shape. These sickle shaped cells block the blood vessels which causes a decrease in blood flow to the body tissues and organs. The amount of sickling can increase under times of extreme stress, intense physical exertion and dehydration leading to a Sickle Cell Crisis.

Symptoms of Sickle Cell Crisis include:

- Muscle cramping
- Pain
- Swelling
- Weakness
- Difficulty breathing
- Fatigue

## SCA and Athletes

Some people with SCA have been shown to be more likely than those without SCA to experience heat stroke and muscle breakdown when doing intense exercise, such as competitive sports or military training under unfavorable temperatures (very high or low) or conditions. This problem can be reduced by avoiding dehydration and getting too hot during training.

People with SCA who participate in competitive or team sports (i.e. student athletes) should be careful when doing training or conditioning activities. It is important that you:

- Set your own pace
- Participate in a slow and gradual preseason conditioning regimen
- Allow for adequate rest and recovery between repetitions
- Do not urge all out exertion beyond 2 to 3 minutes without a breather
- Stop activity immediately if struggling
- Exclude performance tests such as mile runs, serial sprints
- Stay well hydrated at all times
- Maintain proper asthma management
- Refrain from extreme exercise during acute illness, if febrile
- Have access supplemental O<sub>2</sub> at high altitudes as needed
- Seek prompt medical care if experiencing unusual distress

Ambient heat stress, dehydration, asthma, and altitude predispose the athlete with sickle cell trait to an onset of crisis in physical exertion

- Adjust your work/rest cycles for environmental heat stress
- Maintain your hydration
- Control your asthma
- Do not work out if you are ill
- Watch yourself when at a new altitude. Modify your training and have supplemental oxygen available for competitions

Web links for more information:

Web MD: <http://www.webmd.com/a-to-z-guides/sickle-cell-disease-directory>

CDC: <http://www.cdc.gov/ncbddd/sicklecell/index.html>

National Heart, Lung and Blood Institute: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001554/>

If you are a registered Millersville University student and you have questions or you need to make an appointment, please call Millersville University Health Services at 871-5250.

