



# Ohio Wesleyan University- Athletic Training Athletic Training Newsletter

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## Intro— Todd Miller

The last issue of the AT Newsletter for 2012-13 is going to be focused on one topic: Sickle Cell Trait in Athletics. The NCAA has put legislation into effect for the 2013-14 academic year that all Division III institutions will be required to either confirm Sickle Cell Trait (SCT) status or have a written and signed waiver by all incoming (freshmen and transfer) student-athletes. If you are about to graduate, you are correct, this will not effect you. If you are a

currently a junior, it also will not effect you. However, everyone else (Classes of 2015, '16) will need to go through this process. The NCAA has yet to send out the necessary information for the Ohio Wesleyan University Department of Athletics to finalize our SCT policy, but we are starting to put together drafts on how we are planning to handle this topic. We hope you find this information helpful and ask that if you are in the class of 2015 and 2016,

you go over this information with your parents over the summer and consider how you want to handle confirming or waiving your SCT status. If you have further questions, please follow links given in the article to the NCAA website for more information.

We hope you have a safe trip home, a great summer, and we look forward to seeing you in August.

## What's New at the Wellness Center?

Fall Sport Returner Physicals will be completed at the Wellness Center on Monday April 29th and Thursday, May 2nd from 1-3:30pm. Sign up sheets are located in the Selby Stadium Athletic Training Room.

## Recommended Reading:

### Gang Leader for a Day: A Rogue Sociologist Takes to the Streets

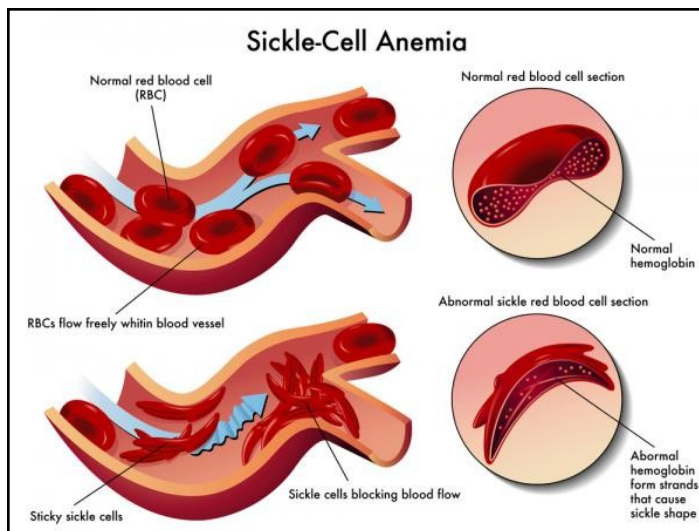
By Sudhir Venkatesh

If you have ever woken up and asked yourself, "What would happen if a Sociology PhD. Student from Chicago University walked into a housing project to pass out questionnaires and ends up meeting and befriending one of the top gang leaders in the city?" If this has happened, this is the book for you. The author details his behind the scenes look into gang life, crack dealing, and the inner-workings of government housing. If you are a sociology major, this is definitely a good read. I will warn that themes and language reflect the subject matter of the book.

## Sickle Cell Trait in Athletics—OWU Medical Staff

Sickle Cell Trait (SCT) is the inheritance of one gene for sickle hemoglobin and one for normal hemoglobin. SCT is a genetic condition based on inheritance. It is most commonly found in persons with ancestry from Mediterranean, Middle Eastern, Indian, African, Caribbean, and South and Central America. Due to the United States being a "melting pot" society, SCT is a required screen for every newborn. Statistics for carriers is one in 12 African Americans, whereas only one in 2,000-10,000 Caucasian Americans.

During intense or extensive exertion, the sickle hemoglobin can change the shape of red blood cells from round to quarter-moon, or "sickle" (as demonstrated in photo to the right). The change, known as "exertional sickling", can pose a grave risk for some athletes. The sickled cells can create a "logjam" in the blood stream and lead to Ischemic Rhabdomyolysis (Rhabdo), which is covered later in the article. Heat, dehydration, altitude, and asthma can increase the risk for and worsen sickling, even when exercise is not "all-out".



Most SCT related deaths have been associated to football and these cases are very similar:

- Sickling athletes may be on-field for a brief period of time, sprinting only 800-1600 meters, and often occurs early in the season.
- During repetitive running of hills or stadium steps, during intense sustained strength training, if the tempo increases at the end of the

training session, or at the end of a practice when athletes run wind sprints

- Sickling can begin in only 2-3 minutes of sprinting, or in any other all out exertion, and sickling can quickly increase to grave levels if the stricken athlete struggles on or is urged on by the coach.

However, other sickling cases have been documented in sprinting, mid-





distance, and distance training. Therefore, all sports at Ohio Wesleyan University have conditioning programs that allow participants to be susceptible to exertional sickling.

### Signs and Symptoms

Person suffering from exertional sickling will complain of severe muscle pain in both upper and lower extremities. Sickling collapse has been mistaken for cardiac or heat collapse. However, cardiac collapse tends to be instantaneous, has no muscle cramping, and when an athlete with ventricular fibrillation hits the ground they no longer talk. Heat collapse normally occurs at the end of practice and the athlete has an elevated core temperature. As stated above, sickling collapse normally occurs within the first 30 minutes of a workout. Sickling is also commonly confused with heat cramping. Athletes who have experienced both syndromes know the difference, as described in the text box on the upper right of this page.

Granted, not all athletes who sickle present the same way. Some players stop exercising and simply take a rest. This allows for their body to regain oxygen in the lungs which causes most red blood cells to then revert back to normal shape. When this occurs the athlete soon feels better and is ready to continue. This simple self-limiting treatment can save lives.

### Exertional Rhabdomyolysis

Exertional Rhabdomyolysis is the breakdown of muscle fibers resulting in the release of its contents into the bloodstream. This causes an increase in protein which can cause kidney failure and/or cardiac complications. This increase in protein also will result in discoloration of urine that is different from dehydration. A person suffering from Rhabdo will present with urine being more of a brownish tint (tea or cola colored) as opposed to a deeply yellow or amber color of one experi-

encing dehydration.

Although anyone who performs strenuous exercise can develop Exertional Rhabdo, research shows that individuals with the SCT may be at an increased risk of suffering from complications. There have been recent documented Rhabdo outbreaks at colleges and universities that involve multiple sports, genders, and student-athletes with different ethnic backgrounds.

Signs and Symptoms of Rhabdo include:

- Muscular Weakness
- Muscular Swelling
- Muscular Pain and/or Cramping
- Darkened Urine, 24-48 hours post workout.

### Athletics Participation

A student-athlete with SCT is not disqualified from participating in athletics, because simple precautions seem to be adequate. These center around proper conditioning techniques and making slight modifications if necessary. These precautions are listed in greater detail to the right.

### Treatment

In the event of a sickling collapse or exertional rhabdo episode treat it as a medical emergency perform the following steps:

- Check vital signs
- Cool the athlete if necessary
- If the vital signs decline, Call 911, follow the posted Emergency Action Plan and attach an AED.
- When EMS arrives, tell them that the student athlete has SCT and they need to expect rhabdomyolysis.

### Additional Information

If you are interested in learning more about Sickle Cell Trait, please visit the NCAA website ([www.ncaa.org](http://www.ncaa.org)). Follow the Health & Safety link to the Sickle Cell Trait page. There are numerous resources including a short video and fact sheets for both coaches and student-athletes.

## Differences Between Heat Cramping and an Exertional Sickling Episode

- Heat cramping often has muscle "twinges", whereas sickling has none.
- Persons suffering from heat cramps complain of muscles "locking up", while sickling players slump to the ground with "weak" muscles
- Heat Crampers will writhe and yell in pain, with muscles that are visibly contracted, whereas sicklers lie fairly still, do not yell in pain, with muscles that both look and feel normal.
- Sickling players caught early and treated correctly will recover faster than players with major heat cramping.

## Precaution Guidelines for a Student-Athlete with Sickle Cell Trait

- Slowly build the intensity while training.
- Have fitness tests scheduled late in the training program. Use a program that is progressive and periodized and evaluate the student-athlete's performance once they are acclimated to the stress that will be placed on them.
- Allow them to set their own pace while conditioning.
- Provide adequate rest and recovery periods between repetitions, especially post practice wind sprints.
- Student Athletes should be given alternatives for performance testing, rather than serial sprints or times mile runs, especially if these activities are not related to sports.
- If the student-athlete begins to experience symptoms such as muscle pain, abnormal weakness, undue fatigue, and/or breathlessness, remove them from the activity.
- Stay well hydrated at all times, especially during hot and humid conditions.
- Refrain from consuming high caffeine energy drinks and 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.
- Modify training when experiencing an altitude change that is as little as 2,000 feet.
- Seek prompt medical care when experiencing unusual physical distress.