Emergency Action Plan
Sickle Cell Trait

This plan of action will coincide with Farmingdale State College Athletic Training Facility’s Emergency Action Program.

In sickle cell trait, strenuous exercise evokes four forces that in concert foster sickling, 1) severe hypoxemia, 2) metabolic acidosis, 3) hyperthermia in muscles, and 4) red-cell dehydration.
An athlete with Sickle Cell Trait can experience sickling collapse in 2-3 minutes of any all-out exertion in which then becomes a medical emergency.

Therefore this plan of action will be implemented in response to an athlete with sickle cell trait or suspected of such;

a. Adjust work/rest cycles for environmental heat stress
b. Emphasize hydration
c. Control asthma
d. No workout if an athlete with sickle trait is ill
e. Watch closely the athlete with sickle cell trait who is new to altitude.
f. Educate to create an environment that encourages athletes with sickle cell trait to report any symptoms immediately; any signs or symptoms such as fatigue, difficulty breathing, leg or low back pain, or leg or low back cramping in an athlete with sickle cell trait should be assumed sickling.

In the event of a sickling collapse, treat it as a medical emergency by doing the following:

a. Check vital signs
b. Administer high-flow oxygen, 15 lpm (if available), with non-rebreather face mask.
c. Cool the athlete, if necessary.
d. If the athlete is obtunded or as vital signs decline, call campus police 420-2111 to start EMS system, attach and AED, and do not delay transport to the hospital.
e. Advise medical personnel to expect explosive rhabdomyolysis and grave metabolic complications.
f. Proactively prepare by having an Emergency Action Plan and appropriate emergency equipment for all practices and competitions.

Donald Haworth EMT
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SICKLE CELL INFORMATION AND EDUCATION

-Acute Exertional Rhabdomyolysis is part of Top 4 killers in High School and College deaths

-Acute Exertional Rhabdomyolysis (explosive muscle breakdown) from sickle cell trait

-Sickle cell trait is the inheritance of one gene for sickle hemoglobin and one for normal hemoglobin. During intense or extensive exertion the sickle hemoglobin can change shape of red cells from round to quarter moon or “sickle”

-Those with the trait experience normal healthy lives. Only in situations where the body is pushed to extreme conditions, as athletes do, can the trait sometimes cause red blood cells to sickle and block blood vessels, denying oxygen to muscles and organs (rapid break down of muscles starved for blood which could threaten life). But in most cases, carriers of the trait live normal, healthy lives without incident.

-The sickle cell trait is common in people whose origin is from areas where malaria is widespread. 8% of the African-American population in the US carries the trait. It is also present in Mediterranean Middle Eastern, Indian, Caribbean and South and Central American ancestry. It is present in athletes at all levels, from high school through the professional ranks.

What can bring on rhabdomyolysis?

-Heat, dehydration, altitude and asthma can increase the risk for and worsen sickling.
- A significant and sudden increase in exercise intensity
- A lack of acclimatization before starting an intense exercise
- Experiencing distress while at altitude in the heat or poorly hydrated
- Exercising with acute illness such as fever
- Drug, alcohol or stimulant use

- Sickling can begin 2-3 minutes of any all-out exertion and can reach serious levels soon thereafter if the athletes continues to struggle.

- Sickling collapse is a medical emergency

- There are no restrictions with athletes with sickle cell trait

Some tips for someone who has sickle cell trait:

-Hydration 8-10oz every 15 minutes
-Replace fluids after activity
-Acclimatize gradually to heat, humidity and altitude
-Condition carefully and gradually for up to several weeks, before engaging in exhaustive exercise regimens
- Do not exercise at a level significantly higher than current conditioning level
- Refrain from extreme exercise during or while recovering from an illness, especially one involving fever

Signs and Symptoms:
- A collapse very similar to a cardiac arrest
- Heat cramping/without pain
- Athlete slumps to ground with weak muscles

**Here at Farmingdale State we recommend confirming sickle cell trait status in all athletes during pre-participation physical examinations. To find out if you carry the sickle cell trait a blood test is warranted. When you go to health and wellness to complete the clearance process they will give you the option to waive the test. If you decline the testing it is mandatory for us to educate you on this illness. If any of you are interested in getting tested please let health and wellness know. We can point you in the right direction on getting tested**