K-State Research and Extension News for July14, 2021
Submitted by Franny Eastwood, Extension Agent

Exercise/Work Safely in the Heat

The harder you are working, the higher your body temperature becomes. When you exercise in average indoor or outdoor conditions, the body is usually able to adjust to the increase in body temperature. However, during hot summertime conditions, the body loses its ability to release heat. In fact, when the air temperature exceeds body temperature (above 98 F), the body actually gains heat from the environment. In this case, evaporation of sweat, becomes the body's only defense against overheating. Serious problems can arise because high air temperatures stimulate large amounts of sweat production, which can lead to a dehydrated state. Dehydration leads to higher body temperature. Heat illness is divided into three incremental stages: heat cramps, heat exhaustion and heat stroke.

Heat cramps are involuntary muscle spasms that can occur during or following exercise. Generally, heat cramps result from an electrolyte imbalance due to excessive loss of salts through sweating. Direct pressure, massage and simple stretching of the cramped muscle should help lessen the cramping. Heat cramps are the first sign of heat illness and are a signal to drink more water and/or decrease the intensity of the work/exercise.

Heat exhaustion is a more serious state of heat illness that usually occurs when a person has not become accustomed to exercising in the heat. Heat exhaustion especially can occur in someone who is not used to exercising in the heat if he or she has not consumed enough water before or during a workout. Symptoms include excessive sweating, cold, clammy skin, normal or slightly elevated body temperature, paleness, dizziness, weak and rapid pulse, shallow breathing, nausea and headache. Anyone experiencing these symptoms should immediately stop working/exercising and get into the shade, or better yet, get inside an air-conditioned building. An abundant amount of fluid should be consumed. If the situation seems severe enough, elevate the feet and seek medical help.

The most advanced stage of heat illness is called heat stroke. In simple terms, heat stroke is a breakdown of the cooling mechanisms of the body because of high body temperature. Someone who is experiencing heat stroke may stop sweating altogether and the skin will appear dry and hot. The pulse is usually strong but rapid. The person may have labored and difficult breathing. Body temperature can exceed 106 F. Heat stroke is an emergency that requires immediate medical attention! Transport the person to the hospital as quickly as possible, ideally in wet sheets. In the meantime, cool the person by any means possible (hose down, apply ice packs, submerge body completely in cold or icy water). Remove as much clothing as possible and treat for shock by elevating the feet slightly.

The most effective way to manage heat illness is to prevent it. The following guidelines offer simple steps for the prevention of heat-related illness:

- Recognize that any form of physical exertion, not just exercise, can result in heat-related problems.
- Recognize that unfit people are more likely to suffer a heat-related illness.

- Recognize when temperature or humidity conditions might require you to lower the intensity of your physical activity.
- Before strenuous physical activity, drink plenty of water and other fluids.
- Drink more fluids during the activity, even if you do not feel thirsty. It is difficult to drink too much.
- Drink plenty of fluids after your workout.
- As outside temperatures and humidity increase, gradually decrease your physical activity in the short term before increasing your activity back to the previous level over seven to 10 days. In other words, take it easy the first several times you are exposed to a hot environment before increasing your intensity level.
- Consume adequate amounts of carbohydrates, especially fruits and vegetables, because they contain large amounts of water.
- Expose as much skin as possible to increase cooling through sweat evaporation. Don't forget to wear sunblock.
- Plan your physical activities for the cooler parts of the day.
- Recognize the early warning signs of heat illness, such as heat cramps, excessive sweating, cold, clammy skin, normal or slightly elevated body temperature, paleness, dizziness, weak and rapid pulse, shallow breathing, nausea and headache.

Source: Exercising in the Heat, Stephen D. Ball, University of Missouri Extension, https://extension.missouri.edu/publications/gh1900 For more information on nutrition, food safety, health, or family and child development contact the Marais des Cygnes Extension District, or write to fmeastwo@ksu.edu or check out our website: www.maraisdescygnes.k-state.edu