



July 2, 2014 - HYPERthermia – How to Recognize, Treat and Prevent

By Ben Komar

My bout of hyperthermia on last year's Chicago Mac was something I never experienced before. I'm active, in good shape and know how to hydrate since I'm an avid cyclist. For me hydration wasn't the issue. I spent too much time in the sun without a hat and covered up too much at night due to the biting flies. My core temperature peaked AFTER the race on the delivery trip back to Chicago. I got to the point where I couldn't think clearly so I handed the boat over to another for the return trip. It took 2 days and a cold hotel room before I felt normal again. I had no idea what I was experiencing until after the event. That's why I wrote the article. No one should ever have to experience hyperthermia armed with a little knowledge and preparation.

Definition - Hyperthermia is elevated body temperature due to failed thermoregulation that occurs when a body produces or absorbs more heat than it dissipates. Extreme temperature elevation then becomes a medical emergency requiring immediate treatment to prevent disability or death. The most common causes include heat stroke and adverse reactions to drugs (such as antihistamines and diuretics <http://en.wikipedia.org/wiki/Hyperthermia> - cite\_note-Harrisons-8). The former is an acute temperature elevation caused by exposure to excessive heat, or combination of heat and humidity, that overwhelms the heat-regulating mechanisms.

Signs & Symptoms - Hyperthermia is defined as a temperature greater than 99.5–100.9 °F. Body temperatures above 104 °F can be life-threatening. Other symptoms include muscle cramps, fatigue, dizziness, headache, nausea, vomiting, and weakness. The heart rate may be elevated, and the skin is reddened. The skin may be moist if sweating is still occurring, or it may be dry if sweating has stopped. Confusion and mental changes may develop, and seizures can occur with brain damage. In severe heat stroke the person may be confused, hostile, or exhibit seemingly intoxicated behavior. Heart rate and respiration rate will increase as blood pressure drops and the heart attempts to maintain adequate circulation. The decrease in blood pressure can then cause blood vessels to contract resulting in a pale or bluish skin color in advanced cases. Eventually, organ failure, unconsciousness and death will result.

Treatment - Treatment for heat exhaustion includes recognizing the symptoms, stopping the activity, and moving to a cooler environment. Rehydration with water or a sports drink is the cornerstone of treatment for heat exhaustion. Move out of the sun. Make sure the person is adequately hydrated. Keep water on the head using a soaked cloth or wetted sweat band. Rest in a cool place. Remove excess clothing. Cool the person with air movement and water

mist. Active cooling methods, such as sponging the head, neck, and trunk with cool water, remove heat from the body and thereby speed the body's return to normal temperatures. If symptoms get worse, apply ice or cold compresses to the neck, armpits and groin. Immerse in tepid or cool water if the condition is extreme.

Hyperthermia that results from drug exposure requires prompt cessation of that drug, and occasionally the use of other drugs as counter measures. Fever-reducing drugs such as acetaminophen and aspirin have value in treating hyperthermia. Always consult with a physician before cessation or administration of drugs.

When the body temperature reaches about 104 °F, or if the affected person is unconscious or showing signs of confusion, hyperthermia is considered a medical emergency that requires treatment in a proper medical facility.

Prevention - Stay adequately hydrated with cool water combined with an electrolyte balancing drink. Avoid drinks containing caffeine, alcohol, or large amounts of sugar and energy drinks because they will actually cause you to lose more fluid. Avoid hot, heavy meals. Avoid direct exposure to the sun. Wear a vented wide brimmed hat, a sweat band and cooling cloth over the neck. Wear lightweight, light-colored, loose-fitting clothing. Wear sunscreen to protect skin from the sun's harmful rays. Sunburn affects your body's ability to cool itself and causes a loss of body fluids. Use mosquito netting or a light sheet when sleeping with biting flies.

#### References:

<http://www.sailingcourse.com/cruising/emergencies.htm>  
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*Note: The purpose of this article is to highlight some of the Mac Safety Regulations and how your crew can race the Mac as safely as possible. As always, ultimate responsibility for the safety of the crew and the decision whether to race or to stop racing is that of the skipper (RRS4, MSR2). This email is meant as a courtesy only and you should always refer to the Race Documents section of the website for the Notice of Race, Sailing Instructions and Mac Safety Regulations, which govern the race.*