

## Heat Emergencies

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While working a 4th of July Parade outside of Baltimore, on a sunny, hot (100 degrees F) and humid day, I was asked to respond to a possible medical emergency outside of the bingo hall. I encountered a cadet sitting in a chair, intermittently losing consciousness, and sweating profusely.

### **What heat emergency category was this and what was the appropriate treatment?**

This article will review the various heat emergencies and the appropriate treatment options. First, we must discuss what happens to the human body when it is faced with elevated temperatures and fails to adequately provide fluid replenishment. The human body will sweat to remove heat from the body, as this occurs, the body loses sodium, potassium, other electrolytes as well as water.

**The first stage of a heat emergency is heat cramps**, this is the result of losing salt and water from the body. Treatment for ALL HEAT EMERGENCIES begins with the airway, breathing, circulation and with moving the person to a cool area if possible. You can give the patient sips of any fluid slowly, water with a small amount of salt or electrolyte replacement such as Gatorade or Powerade, but do not give anything by mouth if the patient has nausea.

**The second stage of a heat emergency is heat exhaustion**, in this case, the patient displays signs and symptoms of shock. The patient may have periods of loss of consciousness, profuse sweating, and rapid pulse and breathing. Again, initial treatment begins with moving the patient to a cool environment. You can place a cooling towel over the forehead of the patient. If possible and in a private area (only if safe and appropriate for yourself and the patient) remove some of the patient's clothing to allow heat to dissipate. If the patient is conscious and does not have nausea, allow them to drink small sips of fluids. However, if the patient's condition does not improve, they should be transported to the emergency room and preferably by EMS.

**The third and most dangerous stage of a heat emergency is a heat stroke**, in this case, the patient will no longer be sweating. The pores of the skin close, not allowing the heat to be released. As a result, the person's temperature rises as high as 110 degrees F, the person will lose consciousness and their skin will be hot and dry. This is the primary way of distinguishing heat cramps and heat exhaustion vs. heat stroke. Treatment includes moving the person to a cool area, removing some clothing (again only if safe and appropriate for yourself and the patient), and placing ice packs on the forehead, neck, armpits, groin and under the ankles. Cool towels can be used for the rest of the body. This person must also be taken to an emergency room immediately and if possible, by EMS as well.

Some common tips to prevent a heat emergency include keeping yourself hydrated, drinking plenty of fluids, knowing when your body is telling you that you have reached your limit of being out in the heat. Know where the cooling centers are located and seek medical attention when fluid replacement isn't working. Keep in mind, sometimes old air conditioning systems can also contribute to putting people at risk for heat emergencies as well. In this specific heat emergency all protocols were followed, and thankfully this cadet responded very well to treatment.

### **Reference:**

Emergency Care, 13th Edition - Brady Books - Section 5.7 Environmental Emergencies