

Response During Heat Emergencies

From Mike McEvoy
NYS AFC EMS Chairman

Over the next few days, the heat index (calculated temperature and humidity) will create very uncomfortable conditions and can be extremely dangerous if not life-threatening to firefighters responding to calls whether wearing PPE or not. To assure that all of us go home, here are some very important things to keep in mind over the next few days for your personal safety:

1. Drink water. Firefighters are usually dehydrated when compared to the general population. In weather such as this, you will be more dehydrated than normal. Make every attempt to double the amount of fluids you normally drink each day (not alcohol). Keep an extra bottle of water in your vehicle or put a bottle in your one of your boots with your turn out gear. When responding to an alarm, make every effort to drink 1 bottle of water during your response to the alarm. This will help to improve your energy level, performance, and lessen chances of injury on scene. Don't over do it! One bottle of water is enough - more than that and you will get sick.

2. Keep cool. For safety, you need to wear PPE. Also for safety during hot weather, you need to take off PPE that is not necessary. During response and size-up, if the officer determines that full PPE is not necessary to perform the work required, members should be instructed to doff unnecessary gear.

3. Continue drinking. Water is best for the first 2-3 hours on a scene. You can lose up to 2 liters of water per hour sweating. You also lose electrolytes like potassium, sodium and magnesium but during the first few hours of intense work, you reabsorb lost electrolytes through your skin. The water you lose in sweat needs to be replaced. You can safely drink 1 liter of water per hour (2 bottles). If you drink more, you will probably puke. The best practice is to drink small amounts of water all the time you are on scene and continue drinking after you return to service. After 2 or 3 hours, you might want to replace electrolytes with a sports drink (like Gatorade). Your stomach cannot handle more than one bottle of sports drink per hour - drink more and you will probably get sick. Don't mix water and sports drinks: drink one or the other but never both in the same hour.

4. If you overheat. Stop what you are doing, get to a safe area, sit down, and remove your PPE. Not just your SCBA and your coat - all of your PPE including your bunker pants and boots. Find some way to actively cool down: an air conditioned truck cab or room, a cool wet towel, whatever...no one method is better than another. Keep in mind that misting fans do not work in weather like we have now (high heat and/or high humidity) - if you use a misting device, it will heat you more, not cool you off. If you can find cold water to drink, that will cool you and help rehydrate at the same time.

5. Check a pulse. The best way to find out if you are ready for more action is by heart rate. If you've rested and feel better, find a pulse oximeter and see what your heart rate is. If it is less than 100, you are ready for more action. Pulse oximeters are the most accurate way to measure heart rate (better than EMTs). If you have one of our RAD-57 CO-oximeters, check your CO (carbon monoxide) level as well. If your SpCO is 5% or less, you haven't been affected by CO in fire smoke and can return to duty. Should we measure any other vital signs besides heart rate, pulse ox, and CO? Not in my opinion - you have better things to do than waste your time with useless measurements. If you drink water, cool off, rest until you feel recovered, and stick your finger into the RAD-57 for 60 seconds, that's everything you need to return to

action. The important numbers are heart rate less than 100, O2 sat 92% or greater, and CO 5% or less. The rest is trash (unless you're laying on the ground looking like garbage).

6. Ask for help. If you don't feel well, tell someone. Let an officer or EMS person know you are not right. Stop what you are doing. This is serious business. Your safety is job number one.

Mike McEvoy

Medical Advisor - West Crescent Fire Department

Co-Author: Firefighter Rehabilitation: Guide to Best Practices (IAFC)

mcevoymike@aol.com