



# **SAFETY STAND DOWN 2008-3**

**(Documentation of Completion Required on CAL FIRE IIPP-6)**



Since the beginning of the current California Fire Siege, June 20<sup>th</sup>, 2008, almost 250 firefighters have suffered injuries ranging from minor to severe. There have also been two firefighter deaths; one as a result of an apparent heart attack and one as a result of drowning while swimming on an R&R day. As of July 7<sup>th</sup>, 2008, we had sustained as many wildland firefighter fatalities nationwide as we did during all of 2007. So far, nine (9) wildland firefighters have lost their lives and will not return to their families, friends and loved ones. Their tragic loss should serve as a stark reminder that we are all subject to the risks of our chosen profession.

The majority of injuries suffered to date statewide can be classified as “preventable.” Preventable means that proper preparation before, during and after work duties is key to keeping you injury free. Every individual is responsible for their own safety and well being first, the personnel they serve with second and the citizens they serve third. Constant Situational Awareness is a necessity in order to determine protection, hydration and rest needs. All personnel must ensure their needs and the needs of those they are working with are being met in these areas.

ALL appropriate Personal Protective Equipment (PPE) is provided to ALL personnel and must be worn at ALL times during fire suppression operations. PPE is cumbersome, often difficult to work in and hot! As such, personnel must adjust accordingly by staying hydrated, taking frequent rest breaks as needed and communicating limitations to Supervisors. Incident Commanders and Supervisors must take these affects and limitations into consideration during operational planning. Production rates can be drastically reduced during times of extreme heat, low or high humidities (resulting in high Heat Indexes), fatigue and resource drawdown.

Hydration is equally as key to protecting yourself from injury or illness. Drinking a minimum of one (1) quart of water or more per hour in extreme conditions or arduous work is critical. Fatigue, lack of concentration and impaired decision making can all be side effects of dehydration. If you are not urinating at least every three (3) hours you are in a dehydrated state. Thirst is not an indicator of impending dehydration but rather a sign that dehydration already exists. Prepare yourself by drinking water or electrolyte replacement beverages early and often. Limit caffeinated drinks (coffee, tea, soda, etc) and so called “Energy” drinks. Their dehydrating affects far out weigh the perceived energy they provide.

The following pages, from a variety of dependable resources, are intended to serve as guides for heightening your awareness to the issues described above. Review them, become familiar with their information, and implement a strategy that best protects you from becoming the next “victim” of a preventable injury or worst.

# California

## Heat Related Illness Advisory

**Discussion:** The [Severe Weather Center](#) lists the excessive heat warnings in effect across much of California and the Desert Southwest. Temperatures will be soaring above 110 degrees. Due to record breaking high temperatures experienced across the west, numerous cases of heat related illness have been reported. There is a concern that personnel are unaware of the seriousness of a heat-induced illness.

### **Concern to Firefighters & employees:**

Heat-induced illness is a result of the body's inability to cope with heat. This condition can manifest itself as a minor symptom or a life-threatening emergency. While recognition and treatment are important, prevention is the key. **HEAT RELATED ILLNESS IS PREVENTABLE.**

Becoming acclimated to working in a hot environment takes time. If a person is physically fit, it takes four to eight days to adapt to these conditions. This acclimation process continues for several weeks. Fatigue or alcohol consumption can delay the acclimation process and may put a person at risk for a heat illness if an intense activity is conducted following either of these conditions. Firefighters must be informed of potential factors affecting physical activity during hot weather. Individuals not acclimated or physically fit can suffer a heat-induced illness at lower levels of heat and work activity.

### **Mitigation Measures:**

Water is the primary form of fluid replacement. Firefighters should be reminded to hydrate before, during and after strenuous work activities. Before engaging in work activities drink 20 ounces of cool water or a sports drink. During the operational period take frequent rest breaks and drink 8 ounces of water every 15 minutes. (1 Qt. /hour) If cold water is available it is preferred. Consider a carbohydrate/electrolyte sports beverage such as Gatorade or equivalent as a portion of fluid replacement – this will help retain fluids and maintain energy and electrolyte levels.

### **Area of Concern:**

Consuming a sports beverage as part of re-hydrating will assist in avoiding a condition known as **Hyponatremia**. Hyponatremia develops when the concentration of sodium is diluted in the bloodstream. Exercise induced hyponatremia occurs when this phenomenon is caused by an excess of water intake during exercise or work.

**Rhabdomyolysis.** Exertional activity may cause rhabdomyolysis in the pediatric population, especially in untrained individuals. Such events often occur under extremely hot or humid conditions and are related to exertional heat stress and heatstroke. Factors that increase the risk of exertional rhabdomyolysis and renal failure in adolescents include dehydration, use of nutritional supplements, drug use, sickle cell trait, and malignant hyperthermia. The management of rhabdomyolysis primarily consists of correction of fluid and electrolyte anomalies.

Avoid performance beverages such as **Red Bull, Rock Star etc.** Energy drinks should not be used while exercising as the combination of fluid loss from sweating and the diuretic quality of the caffeine can leave the user severely dehydrated. Keep track of your urine output. As a rule of thumb if you haven't urinated in three hours you may be becoming dehydrated. **Chocolate Milk is the #1 sports recovery drink.**

**Regardless of the job performed heat-induced illness prevention is a concern. Additional information about preventing this illness can be found at the following web sites**

MTDC Heat Stress - [http://fswweb.mtdc.wo.fs.fed.us/php/library\\_card.php?p\\_num=9851%202841](http://fswweb.mtdc.wo.fs.fed.us/php/library_card.php?p_num=9851%202841)

OSHA Heat Stress Card - <http://www.osha.gov/Publications/osha3154.pdf>

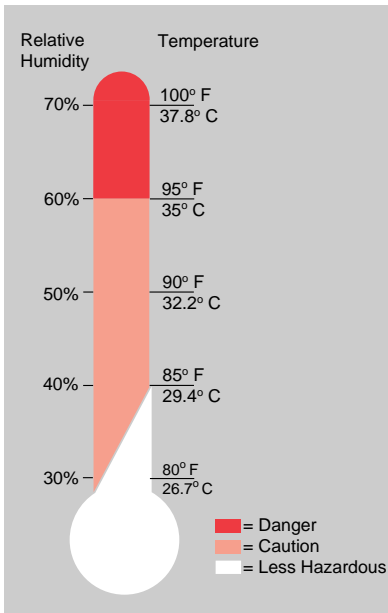
6 Minutes for Safety – [http://www.nifc.gov/sixminutes/dsp\\_discussion.php?id=67](http://www.nifc.gov/sixminutes/dsp_discussion.php?id=67)

Good Article & Video- <http://www.ocregister.com/articles/heat-blood-county-2087632-seniors-water>

# THE HEAT EQUATION

**HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK  
= HEAT ILLNESS**

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are **heat exhaustion** and **heat stroke**. If actions are not taken to treat heat exhaustion, the illness could progress to heat stroke and possible **death**.



# HEAT EXHAUSTION

## *What Happens to the Body:*

HEADACHES, DIZZINESS/LIGHT HEADEDNESS, WEAKNESS, MOOD CHANGES (irritable, or confused/can't think straight), FEELING SICK TO YOUR STOMACH, VOMITING/THROWING UP, DECREASED and DARK COLORED URINE, FAINTING/PASSING OUT, and PALE CLAMMY SKIN.

## *What Should Be Done:*

- Move the person to a cool shaded area to rest. Don't leave the person alone. If the person is dizzy or light headed, lay them on their back and raise their legs about 6-8 inches. If the person is sick to their stomach lay them on their side.
- Loosen and remove any heavy clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if they are not feeling sick to their stomach.
- Try to cool the person by fanning them. Cool the skin with a cool spray mist of water or wet cloth.
- If the person does not feel better in a few minutes call for emergency help (Ambulance or Call 911).

*(If heat exhaustion is not treated, the illness may advance to heat stroke.)*

## HEAT STROKE—A MEDICAL EMERGENCY

### *What Happens to the Body:*

DRY PALE SKIN (no sweating), HOT RED SKIN (looks like a sunburn), MOOD CHANGES (irritable, confused/not making any sense), SEIZURES/FITS, and COLLAPSE/PASSED OUT (will not respond).

### *What Should Be Done:*

- Call for emergency help (Ambulance or Call 911).
- Move the person to a cool shaded area. Don't leave the person alone. Lay them on their back and if the person is having seizures/fits remove any objects close to them so they won't strike against them. If the person is sick to their stomach lay them on their side.
- Remove any heavy and outer clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if they are alert enough to drink anything and not feeling sick to their stomach.
- Try to cool the person by fanning them. Cool the skin with a cool spray mist of water, wet cloth, or wet sheet.
- If ice is available, place ice packs under the arm pits and groin area.

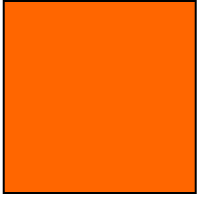
## **How to Protect Workers**

- Learn the signs and symptoms of heat-induced illnesses and what to do to help the worker.
- Train the workforce about heat-induced illnesses.
- Perform the heaviest work in the coolest part of the day.
- Slowly build up tolerance to the heat and the work activity (usually takes up to 2 weeks).
- Use the buddy system (work in pairs).
- Drink plenty of cool water (one small cup every 15-20 minutes)
- Wear light, loose-fitting, breathable (like cotton) clothing.
- Take frequent short breaks in cool shaded areas (allow your body to cool down).
- Avoid eating large meals before working in hot environments.
- Avoid caffeine and alcoholic beverages (these beverages make the body lose water and increase the risk for heat illnesses).

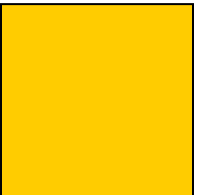
## **Workers Are at Increased Risk When**

- They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you when working in hot environments).
- They have had a heat-induced illness in the past.
- They wear personal protective equipment (like respirators or suits).

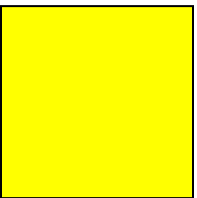
## How Dehydrated are You?



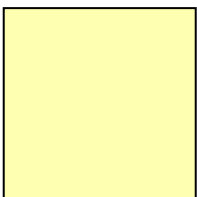
**You are highly dehydrated.** Go immediately and drink a large bottle of water or a sport drink. You should be urinating at least every three hours!



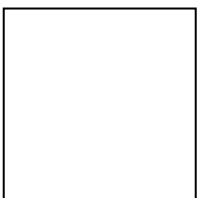
**You are seriously dehydrated.** Drinking more water now will help you hydrate. Plan to drink at least a quart an hour.



**You are moderately dehydrated.** Drink a bottle of water or a sport drink.



**You are almost hydrated.** Get a little more water into your system to stay hydrated and healthy.



**You are totally hydrated.** Great job! Drink at least 8 large glasses of water each day to stay hydrated.

**\*\*NOTE:** This is meant to be a guide and colors are not exact. Several factors effect urine color. Drink plenty of water before, during and after you work shift.