

Heat Illness Prevention Program

1703.1 PURPOSE AND SCOPE

The purpose of this policy is to promote member health and safety by establishing a heat illness prevention program requiring member participation and implementing an effective training program (see Heat Illness Prevention Training Policy).

This policy is in no way intended to diminish initial fire attack aggressiveness. The intent is to establish a procedure to lessen the risk of illness or injury due to exposure to high-heat working conditions and to establish fireground rehabilitation guidelines to ensure the physical and mental condition of members does not deteriorate to the point that it negatively affects emergency operations (8 CCR 3395).

1703.1.1 DEFINITIONS

Definitions related to this policy include:

Fireground rehabilitation - A system for on-scene management of firefighter heat stress, dehydration, and fatigue. The primary goals of rehabilitation are rehydration, rest, and cooling; assessment of remaining work capacity, and recognition and treatment of heat strain injuries.

Heat exhaustion - A condition caused by the loss of large amounts of fluid by sweating. A worker suffering from heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea, or headache. In more serious cases, the victim may vomit or lose consciousness. Skin may be clammy or moist, pale, or flushed. Body temperature is normal to slightly elevated. Mild heat exhaustion will respond to copious water and a cool environment. Those with severe cases may require extended care for several days.

Heat stress - The aggregate of environmental and physical work factors that constitute the total heat load imposed on the body. Heat load is derived from two major sources:

- Internally generated metabolic heat, which is a by-product of chemical processes that occur within the cells, tissue, and organs of firefighters exerting themselves in turnout clothing
- Externally imposed environmental heat, which influences the rate at which body heat can be exchanged with the environment and consequently the ease with which the body can regulate and maintain a normal temperature

Heat strain - The series of physiological responses to heat stress. These responses reflect the degree of heat stress. When the strain is excessive for the individual, a heat disorder (heat exhaustion or heat stroke) will follow.

Heat stroke - A condition where the body's temperature regulatory system fails, sweating becomes inadequate, and the body's only effective means of removing excess heat is compromised. Early recognition and treatment of heat stroke is the only means of preventing permanent brain damage or death. Signs and symptoms of heat stroke may include mental

Santa Clara County Fire Department

Fire Policy Manual

Heat Illness Prevention Program

confusion, convulsions, an altered level of consciousness, and skin that is hot, usually dry, and red or spotted. Temperature is usually 104 or higher.

1703.2 POLICY

It is the policy of the Santa Clara County Fire Department to require member participation in the heat illness prevention program and the accompanying training. The training provided shall comply with all state mandates (8 CCR 3395).

New members shall receive this training prior to being assigned work that is reasonably anticipated to result heat illness. Supervisory personnel shall receive specific heat illness training prior to being assigned any supervisory duties (8 CCR 3395).

1703.3 RESPONSIBILITIES

1703.3.1 DEPARTMENT HEALTH AND SAFETY OFFICER - DEPUTY CHIEF OF TRAINING

The Deputy Chief of Training is the Department Health and Safety Officer and is responsible for the development, administration and day-to-day implementation of the department Heat Illness Prevention Program. Responsibilities include:

- Administer the Heat Illness Prevention Program, including auditing the effectiveness of the program on a recurring basis.
- Evaluating the adequacy and consistency of training.
- Provide information and training on heat illness and managing heat illness.

1703.3.2 MANAGERS AND SUPERVISORS

Managers and Supervisors are responsible for the day-to-day operation of Santa Clara County Fire Department Heat Illness Prevention Program.

Each Manager, Supervisor is responsible for monitoring/managing:

- Hydration during the shift.
- Providing fresh, pure suitably cool water.
- Acclimation.
- Closely supervises their employees during periods when it is predicted that the high temperature for the day will be 80 degrees and higher. New employees must be closely observed for their first two weeks on the job.
- Reports, any signs or symptoms of heat illness in any employee, and shall take immediate action commensurate with the severity of the illness.
- If the ambient temperature is above 80 degrees, providing shade is required.
- When a "High-Heat Alert" (High-Heat Procedures - 90°) goes in effect;
 - Supervisors will hold a short tailgate meeting to review the important information with their employees.
 - Cardiovascular activity (running) shall be limited to a maximum of 30 minutes.

Santa Clara County Fire Department

Fire Policy Manual

Heat Illness Prevention Program

- Consider switching physical fitness to indoor afternoon activities and do outside activities in the morning.
- Limit outdoor training to morning hours if possible.
- Ensure that effective communication is maintained so that employees can contact a supervisor when necessary.
- Makes sure employees use the buddy system on incidents
- Work/rest cycles--request a relief company and assignment to rehab after crew has consumed two bottles of air.
- At an incident if you see the need for Rehab, request it to your supervisor.
- During Rehab your crew will remain intact until resigned or released.
- Having your crew evaluated for signs of heat illness in Rehab.
- Evaluating your company activity and request additional resources as necessary.
- Request to be relieved from duty if crew is unable continue to function safely.
- Follow Santa Clara County EMS BLS/ALS Field Manual for treatment and transportation of an employee with a heat illness.

1703.3.3 EMPLOYEES

Employees will be responsible for:

- Maintaining proper fitness, rest and nutrition regiment.
- Observing appropriate work and rest cycles.
- Hydrating before, during, and after each work period, a minimum of 64 ounces (2 quarts) of water or electrolyte solution should be consumed during the 24-hours. (Minimize coffee, energy drinks, tea, and cola products).
- Informing his/her supervisor of any ill effects to heat or the need for rehab.
- Understanding the Heat Illness Prevention Program and Department policies that related to Heat Illness.

1703.3.4 INCIDENT COMMANDER

The Incident Commander is responsible for:

- Establishing Rehab (formal or informal), at all working fires or long duration incidents.
- At an incident, if Rehab is requested you must provide it. You determine formal or informal.
- Utilizing the practice of first Company in, first Company out routine.
- If the ambient temperature is above 80 degrees, providing shade is required.
- Requesting additional resources as necessary.
- When "High-Heat Alert" (High-Heat Procedures - 90°) is in effect.

Santa Clara County Fire Department

Fire Policy Manual

Heat Illness Prevention Program

- A formal Rehab will be established on all working fires or long duration incidents.
- Requesting Code 2 ambulance to staging during all working fires or long duration incidents.
- Assigning companies to Rehab as needed or requested (companies shall remain in rehab for a minimum of 20 minutes and be evaluated for heat illness before leaving).
- Considering relieving crews from duty that are unable to function safely due to heat illness.

1703.4 EMERGENCY OPERATIONS AND TRAINING EXERCISES PROCEDURE

This procedure shall apply to all emergency operations and training exercises where personnel are exposed to heavy physical exertion and/or extreme heat conditions.

A rehabilitation group will be established by the Incident Commander (IC) when conditions dictate that rest and rehabilitation are needed at an emergency scene. Rehabilitation considerations should include but are not limited to the following:

- **Length of the operation** - The two-bottle rule should generally be observed. After the use of two self-contained breathing apparatus (SCBA) air bottles, or 30 to 60 minutes of strenuous activity, a firefighter should be evaluated in the rehabilitation area. Rehabilitation should generally be considered for second-alarm fires or greater. Prolonged motor vehicle incidents and heavy rescues in hot weather are other examples.
- **Amount of exertion** - Company officers should maintain an awareness of the exertion/exhaustion level of crews. The degree of exertion can vary greatly in each incident. Individuals who are under-hydrated or are on the first day back after any gastrointestinal illness are particularly susceptible to early onset of heat illness.
- **Adverse climatic conditions** - Temperatures in excess of 90 degrees have historically produced early onset of heat exhaustion and/or collapse. Rehabilitation efforts should generally be established when ambient air temperature is over 85 degrees and there is a potential for extended operations. High humidity also plays a role and should be considered.
- **Communication** - It may be difficult for the IC to assess the exertion or exhaustion level of the firefighters. If a firefighter needs rest, he/she is responsible for communicating his/her needs to a supervisor. If one individual is experiencing heat exhaustion, supervisors should be aware that there may be additional firefighters in need of rehabilitation.

It is the responsibility of the IC to make an early determination of situations that may require a rehabilitation group and institute the appropriate rehabilitation efforts accordingly.

It is the responsibility of every company officer to monitor the condition of all firefighters for signs of heat stress or fatigue. When these conditions are noted, the officer shall advise the IC and request assignment of the company to the rehabilitation group.

Santa Clara County Fire Department

Fire Policy Manual

Heat Illness Prevention Program

It is the responsibility of all personnel operating at an incident to report to their immediate supervisors if they are feeling the strain of overexertion. There is a point at which even the most physically fit individual becomes a liability rather than an asset due to intense physical exertion in turnout clothing. Taking a minimum of 20 minutes in rehabilitation to cool down and rehydrate can prevent illness and injury.

1703.5 ACCESS TO SHADE

ICs should attempt to locate rehabilitation in shaded areas when the temperature exceeds 80 degrees for members operating on emergency scenes or participating in training exercises. Shaded rehabilitation areas should be located in a safe zone near where the members are working and allow for members to sit without being crowded. Even when the temperature does not exceed 80 degrees, rehabilitation should be located in a shady area during warm-weather operations and should be readily accessible upon request of a member (8 CCR 3395).

Members should be allowed and encouraged to take a preventive cool-down rest and report to rehabilitation to protect themselves from overheating. A member who takes a preventive cool-down rest should be monitored by Emergency Medical Services (EMS) personnel assigned to rehabilitation and should be asked if he/she is experiencing symptoms of heat illness; should be encouraged to remain in the shade or cooling area; and should not be ordered back to work until any signs or symptoms of heat illness have abated (at least 5 minutes) (8 CCR 3395).

If a member exhibits signs or reports symptoms of heat illness during a preventive cool-down rest period, EMS personnel assigned to rehabilitation should provide appropriate first aid or emergency response (8 CCR 3395).

If rehabilitation has not been established, the member should be moved to a shaded area or area where alternative cooling measures and hydration can be safely administered, along with appropriate first aid or additional emergency medical response.

Safe alternative cooling measures, such as misting machines, should be considered when providing shade is not feasible or is unsafe (8 CCR 3395).

1703.6 EMERGENCY RESPONSE PROCEDURES

Emergency response procedures related to heat illness should include (8 CCR 3395):

- (a) Ensuring that effective communication by voice, observation, or radio is maintained so that members at the emergency scene or training evolution can contact a supervisor and have access to EMS when necessary.
- (b) Responding to signs and symptoms of possible heat illness, including but not limited to first aid measures and how EMS will be provided.
- (c) Contacting additional EMS and, if necessary, transporting members to a place where they can be reached by an emergency medical provider.

1703.7 ACCLIMATIZATION

Members should be monitored during a heat wave. Consideration should be given to changing temperatures and how that may affect members over time (8 CCR 3395).

Santa Clara County Fire Department

Fire Policy Manual

Heat Illness Prevention Program

1703.8 HEAT ILLNESS PREVENTION PROCEDURES

The Fire Chief or the authorized designee should develop a heat illness prevention plan to supplement this policy as needed. The plan should be made available at each station. The plan should contain supplemental information regarding (8 CCR 3395):

- (a) Procedures for the provision of water and access to shade.
- (b) Emergency response procedures.
- (c) Acclimatization methods.

1703.9 REFERENCES

- Santa Clara County Fire Department Policy 1202 "Heat Illness Prevention Training".
- Santa Clara County Fire Department Policy 900 "Heat Illness Prevention Procedures".
- Santa Clara County Fire Department Policy 922 "Firefighter Rehabilitation During Training or Emergency Response".
- Santa Clara County Fire Department Supplemental Employee's Manual, Health and Safety 401 "Heat Illness Prevention Program"