

OPERATIONS MANUAL

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STANDARD INSTRUCTION 01, SECTION 16

REHABILITATION / HEAT STRESS PREVENTION

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I. PURPOSE

Rehabilitation (Rehab) is a means to ensure the physical and mental readiness of personnel operating at the scene of an emergency or training exercise. This Rehab policy offers guidelines to Company Officers and Chief Officers to ensure the well being of the personnel under their command. Rehabilitation services will be established to provide members with the means to: rest, rehydrate, check routine medical vital signs checks and to handle medical emergencies.

While there are no officially recognized standards regarding hydration of fire fighters at incidents, there are general guidelines that should be followed to prevent or reduce the potential effects of heat stress. The reactions to heat stress can range from dizziness, nausea, weakness, heat cramps, heat exhaustion, heat stroke, and lead to death.

This policy is intended to keep Fire-Rescue personnel rested and hydrated before, during and after physically demanding incidents or training sessions.

II. SCOPE

This policy shall apply to all San Diego Fire-Rescue personnel.

III. AUTHORITY

The Fire Chief authorizes the information within this policy.

IV. POLICY

A. Pre-incident Guidelines

1. Firefighters should participate in continuous fitness programs to increase their body's resistance to the effects of heat stress
2. Pre-hydration with large quantities of water prior to fire fighting is not recommended. Hydration experts recommend fluid replacement before, during and after exertion. Anticipate conditions that will increase the need for hydration including high temperatures, humidity, use of personal protective equipment, and difficulty of work.
3. When practical, drinking 8-10 ounces of water prior to strenuous activity is a good idea

B. Incident Guidelines

1. Company Officers, Division/Group Supervisors and Incident Commanders should monitor personnel frequently for reaction to heat stress
2. Immediately remove personnel exhibiting symptoms of heat exposure and have them medically evaluated
3. Rotate personnel as conditions warrant
4. Hydration with water or isotonic solutions is recommended. When possible, fire fighters should drink 8-10 ounces of fluid every 15-20 minutes during active working conditions

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5. Supplies for the rehabilitation of Fire personnel are available from Logistics. Officers can make the request for:

- a. Chairs
- b. Shade covering
- c. Hydration fluids
- d. Personnel cooling devices

6. Officers should advise FCC of the number of personnel at scene (or that is anticipated). Logistics will make the necessary adjustments to the amount of equipment and supplies that are brought to scene.

C. Symptoms

1. All department members should be aware of the signs and symptoms of adverse heat stress including:
 - a. Dry mouth, thirst, loss of appetite, and muscle cramps
 - b. A headache, change in behavior, and decreased urinary output
 - c. Shortness of a breath, rapid pulse, decreased blood pressure and decreased level of consciousness
 - d. If these symptoms are not properly addressed, fire and rescue personnel could become prime targets for heat disorder.

D. Rehabilitation Guidelines

1. Implementation
 - a. The Incident Commander (IC) shall be responsible for the implementation of rehabilitation operations. Rehabilitation should be considered early in an incident. The hotter the weather and the longer personnel are exposed to extreme conditions the earlier rehabilitation should be set up. The IC shall establish rehabilitation services at:
 - 1) Rehab on 1st Alarm fires shall be initiated by the IC and may be managed by the 1st Alarm assignment at the discretion of the IC.
 - 2) The IC may request a Rehab Resources such as: (DMS), Logistics, Mobile Canteen and an ALS / BLS transport unit) if needed.
 - b. Hazardous Materials incidents requiring Level “A” entry and extended Level “B” entry
 - c. Multiple alarm incidents (automatic as part of the second alarm dispatch)
 - d. Any departmental activity, which requires prolonged strenuous physical exertion (i.e. major training exercises).
2. Fire Communications

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- a. Any time the IC believes that Rehabilitation Resources would be beneficial; a request shall be made through the Fire Communications Center (FCC). When Rehabilitation Resources are requested, the FCC shall notify the following:
 - 1) Duty Medical Support (EMS Staff Paramedic)
 - 2) Mobile Canteen
 - 3) Logistics
 - a) FCC will provide the Logistics Officer with the number of anticipated personnel.
- b. A standby ALS / BLS transport unit or fire unit shall be requested to assist with rehab operations.
- c. Additional standby ALS / BLS transport ambulances or fire companies may be requested during large scale operations.
 - 1) This is in addition to the ambulance assigned to an incident as part of the initial dispatch.)

E. Rehabilitation Procedures

1. Personnel Responsibility
 - a. It is the responsibility of all support personnel and each Company Officer to report with their entire crew to Rehab when directed by the IC , Operations Section Chief or Division/Group Supervisor.
 - b. When it is not possible for the entire crew to report to Rehab simultaneously, the Company Officer shall ensure that those crew members not reporting initially are evaluated in Rehab prior to reassignment or before leaving the scene.
 - c. Upon arriving at Rehab, fire and rescue personnel shall comply with the following procedure:
 - 1) The Officer or designee shall report to the Rehab Officer.
 - 2) The Rehab Officer will indicate the time of arrival of the crew at rehab.
 - 3) Company Officers shall provide the Rehab Officer with the unit ID and names of the crew.
 - 4) Personnel shall relax, rehydrate, and recuperate for a minimum of 15 minutes before the medical screening.
 - 5) Water or other suitable liquids will be provided for hydration of fire and rescue personnel.
 - 6) Implement cooling measures: (during hot weather)
 - a) Cooling towels will be supplied.

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- i. Personnel should remove the towels from the ice water buckets
 - ii. The towels should be placed over the head or around the neck for optimal cooling
 - iii. Soiled towels should be placed in a separate used bucket.
 - iv. Towels shall be cleaned before the next use
- b) Personnel shall remove fire fighting gear, when practical due to climactic conditions.
- c) Removing PPEs will allow personnel to shed accumulated body heat.
- d) The removal of soiled PPEs will decrease exposure of contaminates to non firefighting personnel.
- 7) Prior to medical screening, personnel should not:
 - a) Drink caffeinated beverages
 - b) Smoke or chew tobacco products
 - c) Eat large amounts of food
 - d) All of these items may alter the fire personnel's vital signs.
- 8) The Rehab Officer will summon the company Officer to report to medical screening with the entire crew.
- 9) Personnel shall report any medical complaints/injuries to the Medical Officer upon arriving at Rehab
- 10) Once released, the Rehab /Medical Officer, shall contact the Staging Officer, Operations Section Chief or IC; updating the status of the unit.
- 11) If personnel are reassigned to prolonged, physically strenuous activities, they shall return to Rehab prior to leaving the scene.
- 12) If the rehab evaluation reveals vital signs or any conditions that fall outside of established medical assessment parameters, personnel will remain in Rehab to allow time for additional rest, hydration, further assessment, treatment and possible transport.
- 13) If the Rehab/Medical Officer determines that fire or rescue personnel should not return to duty at that time, the supervisor and the Incident Commander shall be notified.
- 14) Personnel removed from duty shall obtain appropriate medical clearance before returning to duty.

F. Vital Sign Evaluation Procedures

- 1. Vital signs shall be taken on all personnel rotating through Rehab, regardless of incident assignment or rank.

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2. Personnel are to rest and re-hydrate 15 minutes before medical screening in Rehab.
3. If any vital signs are determined to be outside of the established parameters, additional rest and hydration will be instituted.
 - a. After a minimum of 15 additional minutes, personnel will be re-evaluated.
 - b. If the vital signs are still outside of the guidelines, an additional 15 minutes of rehab will be provided.
 - c. After a third and final evaluation, a determination of firefighter disposition will be established.

G. Vital Sign Parameters

1. Any of the following symptoms and vital signs requires additional time and / or assessment in rehab:
 - a. Symptoms that suggest a need for further medical evaluation include but are not limited to:
 - 1) Light-headedness
 - 2) Headache
 - 3) Dizziness
 - 4) Confusion
 - 5) Altered level of consciousness
 - 6) Chest pain
 - 7) Abdominal pain
 - b. Vital Signs that require or suggest a need for further medical evaluation include:
 - 1) Symptomatic bradycardia
 - 2) Irregular heartbeat
 - 3) Pulse > 100 / minute

Note: All pulse acquisitions shall be palpated manually
 - 4) Respirations > 30 / minute
 - 5) Blood Pressure:
 - a) Systolic > 160 or
 - b) < 100 or diastolic >100
 - c) Although the County Zone Ops Policy does not include BP reading in the rehab assessment, SDFD Wellness Physicians and the City Medical director opine that this vital sign is an important assessment tool and should be assessed.

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d) All SDFD Personnel will have their B/P assessed during rehab.

6) Carbon Monoxide readings (SpCO blood monitors) > 15%

7) Temperature (oral or tympanic) > 101 F

2. These assessment parameters are only indicators which may or may not indicate that a medical problem exists.
3. Parameters are established to aid rehabilitation evaluators and to increase the level of protection for personnel.
4. Medical decisions are made on a case-by-case basis with the medical welfare of the individual firefighter always the priority.

H. Personnel with a Chief Complaint or Vital Signs Outside of Established Parameters

1. If fire personnel have a chief complaint, they become a “patient”. The following should occur:
 - a. Medical management of the patient shall be under the direction of the Rehab/Medical Officer until the responsibility is transferred to appropriate personnel.
 - b. An appropriate level transport unit will be requested by the IC if ambulance transport is most appropriate.
 - c. The patient will be transported to the most appropriate medical facility.
 - d. An appropriate facility may include hospital, trauma center, burn center; the City’s contracted industrial health facility or the employee’s “physician of record”.
2. The Rehab/Medical Officer or designee shall contact a Base Hospital to receive direction if a medical decision is required. This direction may include:
 - a. Consultation to allow fire personnel to return to active duty if they have a pre-existing benign condition and they do not request medical attention
 - b. Medical guidance if the patient has an obscure chief complaint or vital signs are not consistent with the established parameters
 - c. County of San Diego EMT-P Base Hospital Contact Policy compliance
3. Medical decisions are on a case-by-case basis with the fire and rescue personnel’s welfare in mind. The IC shall also be informed of consultations with a Base Hospital.
4. Once determined medically “unfit for duty” by the Medical Officer and IC, clearance from a city-contracted industrial health physician or the employee’s physician of record must be received prior to the SDFD personnel/patient returning to duty.

I. Rehabilitation (Rehab) Officer

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1. Position Description

- a. The Rehab/Medical Officer, normally filled by an EMS Staff Paramedic (Duty Medical Support) subject to callback, shall respond when requested.
- b. Upon arrival at scene, the Rehab/Medical Officer reports to the Command Post and at the direction of the IC shall establish “Rehab” and assume the role of Rehab/Medical Officer.
- c. If a medical branch/division is established a second Duty Medical Support (DMS) person should be requested.
- d. The Rehab/Medical Officer responsibilities include:
 - 1) Request medically trained personnel, equipment, and supplies to rehabilitate on-scene fire and rescue personnel.
 - 2) Select a suitable site: safely away from the scene, free of exhaust, smoky conditions and large enough to accommodate personnel and equipment.
 - 3) Rehab/Medical Officers can utilize a gas detector to monitor the air quality in the rehab area.
 - 4) Establish the location for mobile canteen or other agencies assisting with rehab operations.
 - 5) Medical screening locations should be far enough away from the rehab location to offer fire personnel privacy and confidentiality.
 - 6) Officers shall ensure that their personnel are orderly and abide by these privacy guidelines.
 - 7) Obtain a list of all companies and support personnel at the scene and advise the IC of the condition of the emergency personnel. All companies and support personnel shall be assessed at “rehab” after labor intensive work, prior to being reassigned or released from the scene.
 - 8) Record of fire and rescue personnel assignment information and vital signs to include:
 - a) Time in and out of Rehab
 - b) Company/Unit Number
 - c) Name
 - d) Pulse
 - e) Respirations
 - f) Blood Pressure
 - g) Temperature (as required)
 - h) SpCO readings (blood carbon monoxide)
 - i) Signs or symptoms which determine a need for further medical evaluation
 - j) Injuries or medical complaints and patient disposition

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- e. Generate a post-incident Rehab Report which includes:
 - 1) Date and location of the Incident
 - 2) The name of the IC
 - 3) A complete list of all individuals who were assessed as part of rehab operations and their vital signs
 - 4) Copies of this report shall be sent to the Human Resources Division and other agencies whose personnel participated in rehab operations
- f. Provide medical equipment (ALS and BLS) and adjunct supplies to conduct rehabilitation functions.
- g. Coordinate and supervise the assessment of fire and rescue personnel in rehab.
- h. Assume responsibility for medical management of personnel with medical complaints and/or with vital signs not within established vital sign parameters. This includes the determination of referral for further medical evaluation at the appropriate medical facility.
- i. Coordinate treatment, hydration, and transport of personnel.