Caring for Firefighters
Rehab Operations

- Explain the need for firefighter rehabilitation.
- Describe CERT’s role.
- Describe the “formal rehab” process.
- Explain hydration strategies and dehydration concerns associated with rehab.
- Select appropriate fluids and foods for rehab operations.
Why Firefighters Need Rehab

- Firefighter rehab ensures that the physical and mental well-being of responders does not deteriorate, negatively affecting their safety.
- Firefighting is inherently dangerous and any additional physical or mental stress increases the danger significantly.
- Research indicates a firefighter's body core temperature often reaches 104 degrees Fahrenheit during a fire even for short periods.
What will CERT do?

- Ashland CERT has illustrated it is a reliable manpower resource.
- Rehab is manpower intensive and distracts firefighters to conduct, making it a good fit for CERT.
- CERT conducted rehab during the Oak Knoll fire very well with little training and illustrated the need for a rehab pre-plan to include CERT’s involvement.
- CERT will be partially mobilized on an emergency incident projected to last over two hours, or when environmental conditions require formal rehab.
- CERT will establish the “Rest and Refreshment Unit” that provides “formal rehab” for firefighters described later.
**NFPA* 1584 Guideline #2**

**Formal Rehab**

- Must enter a formal rehab area, drink appropriate fluids, be medically evaluated, and rest for a minimum of 20 minutes after any of the following:
  - Depletion of two 30-minute SCBA cylinders
  - Depletion of one 45- or 60-minute SCBA cylinder
  - Following 40 minutes of intense work without an SCBA

- **Formal Rehab** is conducted by the Rest / Refreshment Unit, which is CERT’s responsibility.

*National Fire Protection Association - Advocates for fire safety*
Number of Personnel Needed to Run the Rehab Area Depend On…

- The number of personnel requiring rehab services
- The duration of the incident
- The environmental conditions at the time of the incident
- Responder’s condition when they arrive at the rehab area.
Entry Point/Initial Assessment Area

- Everyone must go through this entry point and be signed in (CERT ICS Form 211).

- Remove SCBA and PPE, if appropriate (outside only)

- Check vital signs (EMT) and be observed for other problems (everyone)

- May be sent to additional treatment or rest.
Send to Treatment if...

- Pulse is in excess of 120 bpm
- Body temperature is elevated
- Showing signs of chest pains, shortness of breath, altered level of consciousness, extreme fatigue, poor skin color, and similar symptoms.
Rest/Refreshment Unit Responsibilities

- Provide rest
- Assist EMTs
- Provide shelter
- Provide fluids
- Provide nutrition
- Report status
- Maintain sign in / out (ICS Form 211)
CERT Resources for Rehab

- People
- Electric generation
- Pop up shade structures
- Blankets, tables, chairs
- Beverage containers, ice chests
- Trash receptacles
- Communications with Incident Command
Time Needed in Rehab

- The responder’s level of physical conditioning
- The atmospheric conditions
- The nature of the activities the responder was performing before entering rehab
- The time needed for adequate rehydration and/or eating
- NFPA 1584 says 10 minutes after the initial assessment and 20 minutes if two SCBAs have been used or 40 minutes of heavy work performed
The Three Dispositions for Responders Sent to The Treatment Area

• The responder responds appropriately to rest and rehydration and is able to return to action or return to quarters.

• Standard, basic EMS treatment procedures are initiated and the firefighter is monitored.

• Advanced medical treatment, followed by transport to a medical facility.
Traumatic Injuries

- These include cuts, sprains, strains, debris in eyes, etc.
- Person should not return to the incident if their injury could be made worse
Stress-Related Illnesses

- May be psychological and physiological
- Decreased ability to mobilize the fight-or-flight response
- Increases or decreases in the firefighter’s appetite
Signs of Overstressed Firefighters

- Inappropriate levels of anger or aggressive behavior
- Obvious emotional symptoms such as crying, yelling, or a sense of panic
- Signs of being withdrawn, in a state of shock, or being depressed
Two Common Types of Physiological Injuries

- Heart Attacks
- Strokes
Classic Cardiac Symptoms

- Shortness of breath, beyond that of someone who simply has been working hard and is tired.
- Tightness in the chest or chest pain, often radiating to the back, abdomen, or down one or both arms.
- Unusually rapid, slow, or otherwise irregular pulse and/or the sensation of heart palpitations.
Common Signs of Stroke

- Severe headache
- Difficult, slurred, or lost speech ability
- Facial droop
- Weakness or paralysis on one side of the body, typically on the opposite side of the body from any present facial droop
Lung Toxin Symptoms

- May include a cough, breathlessness, wheezing, and excessive bronchial secretions.
- Symptoms may start relatively soon after exposure to the smoke and continue to develop for up to 36 hours.
- Adult respiratory distress syndrome or delayed pulmonary edema may occur in severe cases.
Carbon Monoxide (CO)

- CO is an asphyxiant.
- Preexisting medical conditions increase susceptibility to CO poisoning, including hyperthyroidism, obesity, bronchitis, asthma, heart disease, and alcoholism.
- Minor exposure symptoms include headache, nausea, vomiting, drowsiness, red/flushed skin appearance, and poor coordination.
- Moderate or severe CO poisoning causes confusion, unconsciousness, chest pain, shortness of breath, and coma.
Hydration is the Key!

- 60% of the human body is water
- The human body loses water in urine, in stool, during exhalation, and through sweating.
- During extreme work or exposure to high atmospheric temperatures, the majority of water lost from the body is from sweating.
Individual Sweat Factors

- The individual’s metabolism and physical fitness
- The level of exertion
- The atmospheric temperature
- The amount of clothing and PPE being worn
Electrolytes

• Include sodium, potassium, calcium, and magnesium
• Lost in the same way as water
• Replace with sports drinks.
Redydration

- Should drink 2-4 oz minimum during self-rehab
- May drink 12 to 32 oz in formal rehab
- Do not drink too much
- Severely dehydrated personnel may require an IV
- Must continue to rehydrate even after leaving the scene
Fluids for Rehab

- Dispensed from individual or bulk storage containers.
- Individual serving containers are best suited for small incidents; bulk containers for large incidents.
- Drinking cups will be needed if using bulk containers.
- Have trash receptacles available.
Considerations for Choosing a Rehab Fluid

- Must be tasty
- Must be easily tolerable to the digestive system.
- Should be nutritionally sound and replace electrolytes, carbohydrates and water.
Suitable Drinks for Rehab Operations

• Water is always good; does not replace electrolytes and carbohydrates.
• Coffee, tea, soda, hot chocolate, dairy products, fruit juices, and high energy drinks (like Red Bull) are not good.
• Sport beverages replace water, electrolytes, and simple carbohydrates and are preferred.
• Some agencies mix these 50/50 with water.
Food Service in Rehab

- Usually only needed at incidents that exceed 2-3 hours.
- May be needed sooner at late night/early morning incidents.
- Short- to medium-duration incidents typically only require prepackaged foods.
- Long-duration incidents may require meal-like support operations.
Food Providers

- Independently operated canteen units (Red Cross, Salvation Army, etc.)
- Brought to the scene by department / CERT members, church groups, or civic organizations
- Commercial caterers, restaurants that deliver.
Simple and Complex Carbohydrates

- **Simple carbohydrates**: Sugars such as glucose, sucrose, dextrose, lactose, and fructose.
- Found in fruits, milk, processed sugar, and honey.
- **Complex carbohydrates**: Molecules made up of three or more sugars.
- Found in starchy foods, such as bread, pasta, and potatoes.
- The body has a limited ability to store carbohydrates.
- Medium to long duration incident will require carbo replacements.
Food for Rehab

- Fast food that is better than nothing.
- Seek a balance of carbohydrates, fats, and proteins.
- Fruits, doughnuts, candy bars, and energy bars are useful at short incident with no canteen.
- Commercial suppliers may serve hot dogs, hamburgers, egg sandwiches, cold cut sandwiches, soups, and stews.
- Long term caterers typically provide three full meal services per day at major incidents.
Food Serving Principles

• Wash your hands before eating.
• All food serving equipment must be sanitary and fully compliant with local health department regulations.
• All foods should be fresh and stored appropriately.
• Have pre-established agreements with local grocery or food providers.
• Provisions must be made for collecting and disposing of trash.
• For medium and long term operations rotate out personnel and volunteers who are serving food.