



# 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.



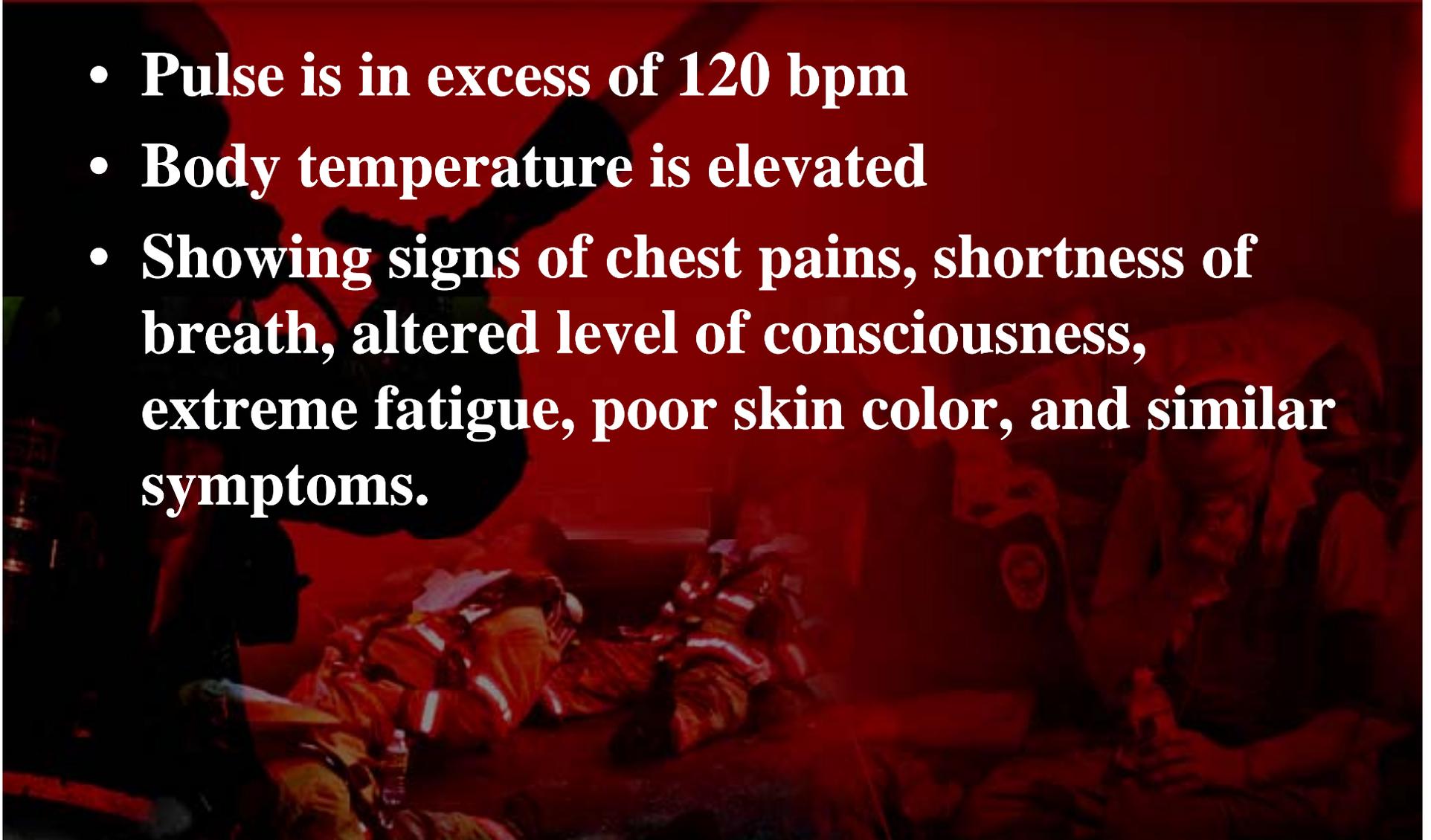
# Entry Point/Initial Assessment Area

- **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

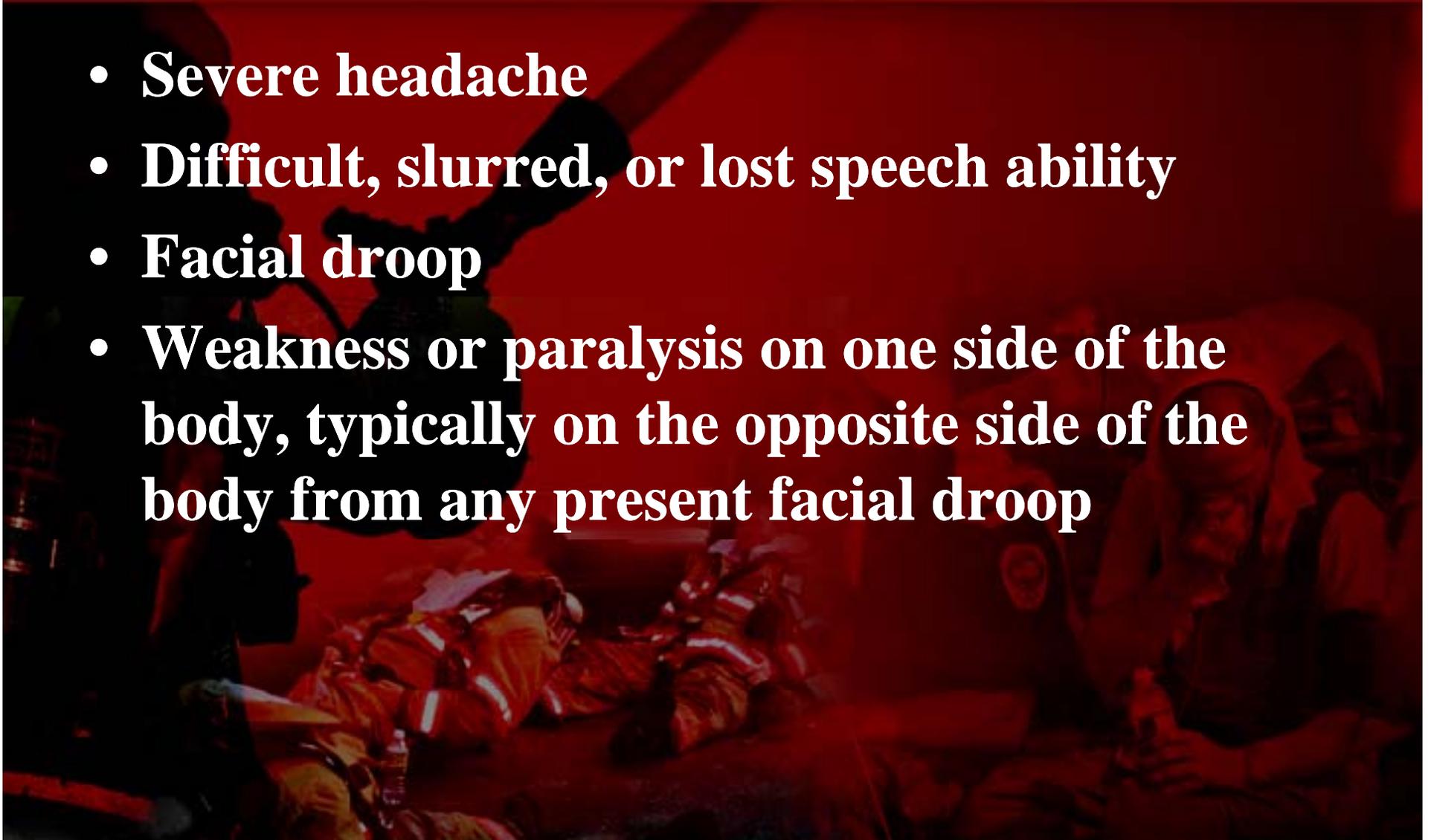


# Classic Cardiac Symptoms

- **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)

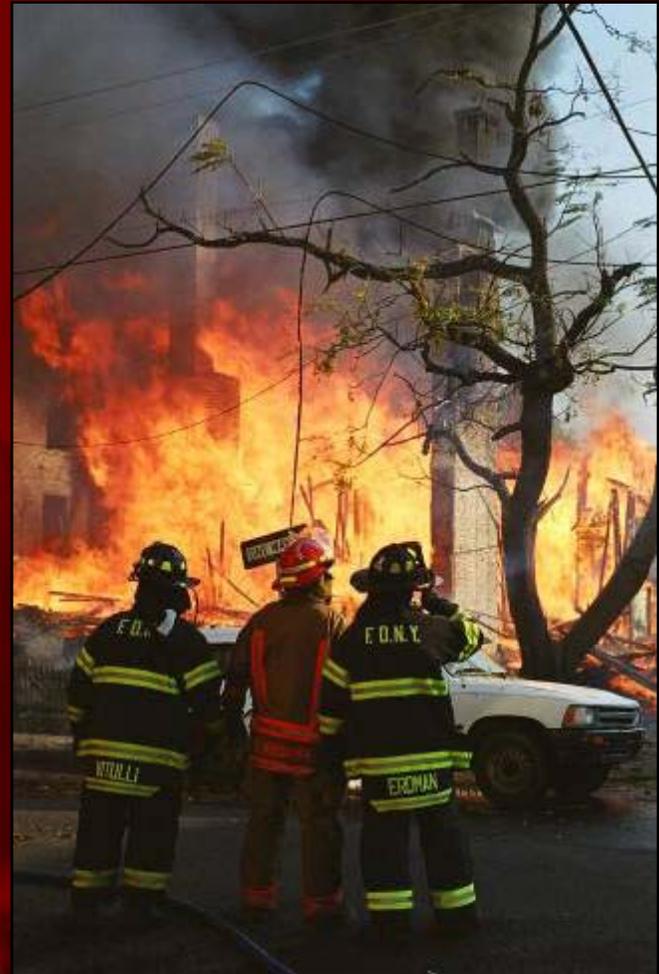
- **CO is an asphyxiant.**
- **Preexisting medical conditions increase susceptibility to CO poisoning, including hyperthyroidism, obesity, bronchitis, asthma, heart disease, and alcoholism.**
- **Minor exposure symptoms include headache, nausea, vomiting, drowsiness, red/flushed skin appearance, and 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.**

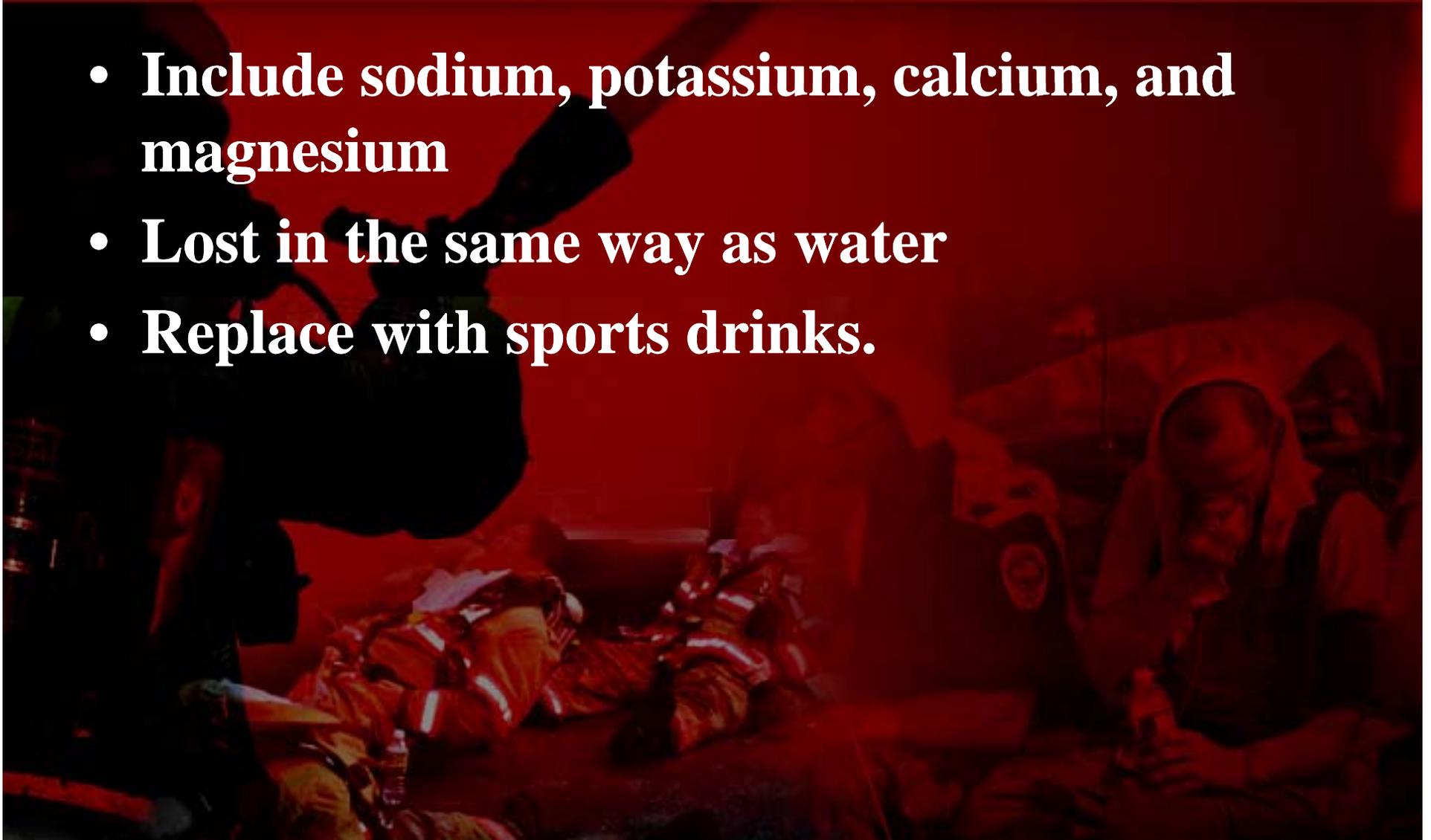
# Individual Sweat Factors

- **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.**