**Purpose:** *This policy will govern the type of training, the environment, gear to be used for training, and outside non-emergency activities for the Okolona Fire Protection District.*

**Procedure:**

*FIREFIGHTER SAFETY IS A HIGH PRIORITY. THEREFORE IT IS IMPERATIVE, ESPECIALLY IN HOT ENVIRONMENTS, THAT WE MONITOR CLOSELY OUR FELLOW FIREFIGHTERS. REMIND ALL PERSONNEL ON THE DANGERS OF HEAT AND THE ACTIVITY(S) ABOUT TO BE PERFORMED. INSTRUCT PERSONNEL THAT ONLY THEY CAN DETERMINE THEIR OWN PHYSICAL LIMITS, AND ALWAYS ALLOW PERSONNEL TO STOP PARTICIPATING IF REQUESTED.*

**GENERAL PROCEDURE:**

Excepted as noted below, before any outside activity can begin, a determination must be made of the Temperature and the Relative Humidity at the training or work site. To determine the Heat Index (HI) for that specific site, a digital sling psychrometer shall be utilized. Media-related temperature readings (The Weather Channel, local TV and radio, etc.) shall not be permitted as the official reading of the Heat Index for that specific site. All readings must be at the actual site where the activity is to occur.

*Exceptions:*

*1. At the scene of an emergency incident HI determination may be delayed a reasonable amount of time so as to implement initial scene activity. The operator of the second arriving apparatus shall be responsible for obtaining the HI determination.*

*2. If the activity will be classified as “Easy” (as shown below) and the time estimated to accomplish the activity is less than 50 minutes.*

*3. If the media-related forecast high temperature does not exceed 80 degrees.*

**PROCEDURE FOR TESTING:**

1. Thirty (30) minutes before the start of any activity, temperature and humidity readings must be taken at the site.
2. Temperature and Humidity readings provided by the digital sling psychrometer shall be applied to the Heat Index Chart to determine the Heat Index for that site.
3. If a reading above 85 degrees is found, then a reading shall be recorded every thirty (30) minutes if planned activity continues. These readings will determine if the HI increases and further activity is to be decreased or eliminated.
4. The decrease in or elimination of activity will be based on the chart below:

**Permissible Heat Exposure Threshold Limit Values in Fahrenheit**

|  |  |  |  |
| --- | --- | --- | --- |
| Heat  Index | Easy  Work/Rest | Moderate  Work/Rest | Hard  Work/Rest |
| <80 | NL | NL | NL |
| 81 – 82 | NL | NL | 40/20 |
| 83 – 85 | NL | 50/10 | 30/30 |
| 86 – 88 | NL | 40/20 | 30/30 |
| 89 – 90 | NL | 30/30 | 20/40 |
| 91 – 99 | 50/10 | 20/40 | 10/50 |

>100 = Classroom only

NL = No Limits

**Notes:**

Rest means removing any protective gear, minimal physical activity (sitting or standing) and should be accomplished in shade. If necessary, cooling methods as discussed in the policy should be instituted.

Wearing full protective clothing including SCBA adds 5 degrees F to Heat Index.

Wearing full protective clothing without SCBA adds 3 degrees F to Heat Index.

**Easy Work:** May be performed in uniform of the day. No turnout gear is necessary or required. Eye or hearing protection may be required however consistent with other safety practices.

**Moderate Work**: Requires a minimum level of protection to include helmet and gloves.

**Hard Work**: Requires full turnout gear and SCBA.

**EXAMPLES OF WORK ASSOCIATED WITH HEAT INDEX:**

EASY WORK: Equipment Maintenance/Daily duties in non-air-conditioned area

Pump Operations/Drivers training

Ropes and Knots

MODERATE WORK: Auto Extrication

Ladder Raise and Climb

Search and Rescue

Hose Line Advancement (non-fire)

Physical Training (with or without minimum gear)

HARD WORK: Burn Building Extinguishment

Live Fire Training

Car Fire Prop

FLAG Prop

Flashover Simulator

SCBA Maze

Any Easy or Moderate Work using full turnout gear

**Fluid Intake per hour (Individual water needs will vary)**

|  |  |  |  |
| --- | --- | --- | --- |
| Heat Index | Easy Work | Moderate Work | Hard Work |
| 81 – 82 | 16 Ounces  (1/2 Quart) | 24 Ounces  (3/4 Quart) | 24 Ounces  (3/4 Quart) |
| 83 – 85 | 16 Ounces  (1/2 Quart) | 24 Ounces  (3/4 Quart) | 32 Ounces  (1 Quart) |
| 86 – 88 | 16 Ounces  (1/2 Quart) | 24 Ounces  (3/4 Quart) | 32 Ounces  (1 Quart) |
| 89 – 90 | 16 Ounces  (1/2 Quart) | 24 Ounces  (3/4 Quart) | 32 Ounces  (1 Quart) |
| 91 – 99 | 16 Ounces  (1/2 Quart) | 24 Ounces  (3/4 Quart) | 32 Ounces  (1 Quart) |

The work/rest time and fluid replacement volumes will sustain performance and hydration for at least four hours of work in the specified heat category. Hourly fluid intake should not exceed 1-1/2 quarts and daily intake should not exceed 12 quarts.

**Non-Emergency outside activities:**

Members shall not be required to participate in outside non-emergency activities of strenuous physical nature (strenuous shall be determined by the individual) when the HI is above 100 degrees. Members participating in non-strenuous physical activities should ensure they are well hydrated and will recognize and treat the signs and symptoms of heat-related illness as written in this policy.

**SIGNS & SYMPTOMS OF HEAT-RELATED ILLNESS:**

**HEAT EXHAUSTION**- is a form of shock due to depletion of body fluids. During the acute phase, blood pressure is low while heart and respiratory rates are high and the patient is sweaty, pale and ashen.

1. Profound weakness and exhaustion
2. Dizziness
3. Syncope
4. Muscle cramps
5. Nausea
6. Rapid, weak pulse
7. Pale, flushed skin
8. Chills
9. “Heat Sensations” on the head or neck
10. Vomiting
11. Diarrhea

\*\* On especially humid days, heat exhaustion can occur rapidly due to the high humidity. This occurs because the body is not as efficient in cooling through evaporation.

**FIRST AID FOR HEAT EXHAUSTION:**

1. Rest in a cool, shaded environment or an air-conditioned area
2. Excess clothing removed
3. Fluids given orally
4. Supine position with legs elevated
5. Blood pressure, central nervous system, heart and respiratory rates shall be monitored
6. Rapid recovery is not unusual in this case; however, all activity shall be stopped for the patient for the rest of the training. A physician may need to determine if the need for electrolytes and additional medical care is warranted.
7. Anyone with these signs and symptoms who does not improve should be transported to the hospital
8. Treat every heat exhaustion case as having the potential to develop into heat stroke

**HEAT STROKE-** is a very serious medical condition that requires prompt medical care. *Any delay in treatment can be fatal*. Signs and symptoms include any or all of the symptoms above plus:

1. Very high body temperature
2. Usually (but not always) hot, dry skin (this is an indication that the temperature-regulating mechanism in the body, sweating, has failed).
3. Confusion or incoherence
4. Unusual behavior
5. Irritability
6. Loss of balance or inability to walk
7. Inappropriate comments
8. Disturbance of vision
9. Seizures or coma

**FIRST AID FOR HEAT STROKE:**

1. Immediate cooling of the body (methods discussed below)
2. Do NOT give fluids
3. Victim should be hospitalized immediately

**COOLING METHODS:** Early institution of body cooling is the most effective method of decreasing mortality in Exertional Heat Stroke (EHS). Prolonged EHS can lead to multiple organ failure.

1. Whole-body immersion in water and ice is the best, most effective way to combat EHS
2. If whole-body immersion is not practical, then ice water-soaked towels placed on the head, trunk and extremities and ice packs placed on the neck, armpits, and groin is best.
3. Rotate towels and ice packs frequently to cool as quickly as possible
4. Always disrobe the patient as much is practical to enhance the cooling method
5. A shower, hose line, or garden hose can employed to help with cooling if practical
6. If no other life-threatening issues are present, cooling should take place BEFORE transport to the hospital.

**TIPS FOR PREVENTING HEAT-RELATED ILLNESS:**

1. Drink more fluids (nonalcoholic), regardless of your activity level. Don’t wait until you’re thirsty. (Consult your health care provider if you’re on water pills)
2. DO NOT drink liquids that contain caffeine, alcohol, or large amounts of sugar. These cause you to lose more body fluid.
3. Drink 16-32 ounces of fluids per hour when working in a hot environment. Fluid intake should take place before, during, and after any activity in a hot environment.
4. Replace lost salts and minerals. Sports drinks can help replace these. Consult your doctor if you’re on a low-salt diet.
5. Very cold drinks can cause stomach cramps.
6. Wear light-weight, light-colored, loose-fitting clothing.
7. Wear sunscreen. Sunburned skin can reduce the body’s ability to cool itself.
8. Pace yourself during physical activity.

**FACTORS THAT MAY INCREASE SUSCEPTIBILITY TO HEAT STRESS:**

1. Environmental factors include; ambient temperature, relative humidity, wind speed & solar radiant heat
2. Inadequate acclimatization to the environment
3. Aerobic fitness
4. Excess body fat
5. History of heat illness
6. A febrile condition (any condition or illness that has caused a fever or increase in body temperature)
7. Inadequate hydration and/or rehydration
8. Diet
9. Always pushing oneself to the point of exhaustion
10. Prescription and/or over-the-counter medications taken for depression, insomnia, allergies, or poor circulation, etc.