

# National Multi-Agency Coordinating Group

3833 South Development Avenue; Boise, ID 83705

NMAC Correspondence 2017-12

June 19, 2017

To: Geographic Area Coordination Group Chairs

From: National Multi-Agency Coordinating Group

Subject: Wildland Firefighter Heat Related Injury Prevention, Awareness, and Rhabdomyolysis

The wildland firefighter community has experienced an alarming increase in heat related and other physiological injuries in the last few days. Heat related injuries and Rhabdomyolysis are not the same, but can occur at the same time. Extreme weather conditions are predicted to continue across western states for the next week. The National Weather Service is issuing Heat Warnings for the SWCC, GBCC, RMCC, OSCC, and ONCC (<http://www.weather.gov/>).

Working in the current and predicted weather conditions, **regardless of hydration frequency, type and volume**, resources will be exposed to an environment where they are at a much higher risk for severe and extreme heat related illnesses. Firefighters unable to offload the heat produced by their working muscles will see an increase in internal temperature, and can quickly reach critical levels, even death!

We need to consider alternatives to meet objectives that minimize time exposed to the extreme conditions. Bottom line! Therefore, the following information should be shared with ALL personnel working in this extreme heat! All resources, IMTs and Fire Managers should understand the signs and symptoms of heat-related injuries and Rhabdomyolysis, be able to assess their risk within their assigned incidents and tasks, and understand their responsibility to mitigate exposure to the extreme heat.

## Risks associated with Heat Related Illness:

- ✓ **Physical work is the biggest producer of body heat.** Physical exertion at the start of work shifts sets the body's core temperature for the day. Air temperature generally increases from the beginning of normal shift work, thus giving little opportunity to lower body core temperature.
- ✓ **Hydration alone will not prevent a heat-related injury.** Hydration must be combined with good physical fitness and adequate recovery time from physical tasks in order to reduce the likelihood of heat-related injuries.
- ✓ Performing physical tasks, such as hiking up hills, as well as PPE weight (including tools and packs) contributes to high physical demands and thus higher body temperatures - to possibly near-critical levels.
- ✓ Having had a prior heat illness (moderate to severe heat exhaustion or heat stroke) puts firefighters at increased risk for repeat heat illness.

## Mitigations:

- ✓ Utilize shifts, including split, to avoid crews working in the heat of the day.
- ✓ Plan for operations utilizing strategies and tactics necessary to operate during extreme temperatures, including not engaging until temperatures subside, unless absolutely necessary to protect critical values at risk.
- ✓ Consider resource type and home unit and their appropriate levels of physical exertion at the incident.
- ✓ Have resources 'shade up' after the morning hike to lower body temperature prior to beginning work for the day.
- ✓ Frequent breaks! Allowing body core temperature to normalize is important. These breaks should include:
  - Where possible, keep vehicles close to line resources and rotate them through air conditioning.
  - Provide "iced" hydration drinks whenever possible.



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**Key Points for Rhabdomyolysis:** The most significant risk concerns with Rhabdo are related to the buildup of risk factors, lack of recognition of symptoms, and delays in reporting and treatment.

- ✓ Risk Factors that increase Rhabdo potential:
  - ✓ Overexertion, poor conditioning
  - ✓ Heat stress/stroke
  - ✓ Dehydration, excessive caffeine intake
  - ✓ Prescription medications (cholesterol-lowering statins and antidepressants), use of dietary supplements, or over-the-counter medications (antihistamines, non-steroidal anti-inflammatory medications such as Ibuprofen)
  - ✓ Use of alcohol or amphetamine
  - ✓ Medical conditions such as sickle cell trait, lupus, and concurrent acute viral illnesses such as influenza
- ✓ Symptoms:
  - ✓ Muscle pain, cramping, swelling, weakness, stiffness, decreased range-of-motion
  - ✓ Pain generally develops in the hours after exercise and peaks between 24 and 48 hours post exercise
  - ✓ Nausea or vomiting, fever, rapid heart rate, confusion or lack of consciousness
  - ✓ Dark (tea or cola-colored) and minimal urine

**Reporting:** [Rhabdo, Heat Stress NTDP Reporting](#) (there is no PII collected on this form)

**For additional information:**

- ✓ Heat Related Illness – 2013 Firefighter Refresher Video: <https://www.youtube.com/watch?v=s0bMrQANY-E>
- ✓ [NTDP Wildland Firefighter Heat Stress Study RLS](#)
- ✓ [Seed Orchard Run Heat Related Illness FLA](#)
- ✓ [Rhabdomyolysis Educational Video](#)
- ✓ [Medical Provider Info Sheet](#)

/s/ Dan Buckley  
Chair, NMAC

