



Heat and Exertion Injury & Illness Prevention and Education

The following information is provided by the Centers for Disease Control (CDC) and National Institute for Occupational Safety and Health (NIOSH). Share this information with the physician for any employee treated for symptoms which could indicate heat and/or exertion related injury or illness.

Rhabdomyolysis in Firefighters

Rhabdomyolysis can have deadly and debilitating consequences if not correctly identified in a timely manner. The symptoms of rhabdomyolysis can mimic those of heat stress and dehydration.

Share this with Your Healthcare Provider

Due to the prolonged exertion wildland firefighters may undergo during training and fire response activities, they are at increased risk for rhabdomyolysis. Carrying heavy loads (e.g., pack weights up to 110 lbs.) across steep terrain, heat stress, and dehydration are exacerbating factors encountered by firefighters as they do their job. Recently, several cases of rhabdomyolysis have been diagnosed in firefighters with some becoming permanently disabled.

Clinicians should have a high index of suspicion for rhabdomyolysis in firefighters who present for treatment for heat stress and dehydration, muscle pain, or exercise intolerance. **A serum creatine phosphokinase (CK or CPK) should be performed in wildland firefighters to ensure early diagnosis so that aggressive treatment can start as soon as possible.** Urinary dipsticks to check for myoglobin in the absence of red blood cells are not an accurate screening tool for rhabdomyolysis. Only a serum CPK can confirm or exclude this diagnosis.

Help keep our firefighters safe by asking all patients about their work. Have a high suspicion for rhabdomyolysis among those who are firefighters.



Note to Treating Physician: Please strongly consider repeat CPK level in 1-3 hours if initial value is elevated or if rhabdomyolysis is strongly considered. CAL FIRE's Medical Consultant is available at any time if you would like to discuss concerns about the employee you are treating prior to their release from your care.

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Heat and Exertion Injury & Illness Prevention and Education Information for Employees and Supervisors

Rhabdomyolysis (often called rhabdo) is a medical condition resulting from the breakdown of damaged muscle tissue. Due to prolonged physical exertion, firefighters are at increased risk for rhabdomyolysis. If not recognized and treated early, rhabdomyolysis can cause permanent disability and may be fatal.

What can increase your risk for rhabdomyolysis?

- Over-the-counter medications such as decongestants and antihistamines
- Certain antibiotics
- Dietary supplements such as creatine
- Some weight loss products
- Cholesterol lowering drugs known as statins
- Excessive caffeine intake

What are the signs and symptoms of rhabdomyolysis?

- Muscle aches or pains out of proportion for the amount of exercise done
- Muscle cramping
- Tea-colored or cola-colored urine

Rhabdomyolysis is often mistaken for heat stress and dehydration. It can occur in well-conditioned athletes doing their usual workouts, so DO NOT ignore these symptoms.

What Firefighters Need to Know

How do I know if I have rhabdomyolysis?

The only sure way is to seek medical care. A licensed healthcare provider will determine if you need to have a serum creatine phosphokinase (CK or CPK) test to look for muscle proteins in the blood. You cannot tell by symptoms alone if you have rhabdomyolysis.

Severe cases of rhabdomyolysis require hospitalization to monitor the heart and kidneys and to provide emergency treatment for dangerous heart rhythms and loss of kidney function. High rates of intravenous fluids are needed to flush out the muscle proteins and electrolytes without damaging the kidneys. If the kidneys fail, immediate dialysis is needed. Sometimes kidney function does not recover, requiring a lifetime of dialysis.

Rhabdomyolysis can be treated without complications if it is recognized early.

What should I do if I have symptoms?

Listen to your body! If your muscles hurt more than expected, if you can't tolerate exertion that you previously could, or if your urine turns unusually dark you should:

- Stop your current activity
- Tell your supervisor or trainer about your symptoms
- Seek immediate care at the nearest medical center
- Ask to be checked for rhabdomyolysis

Reporting your symptoms is not a sign of weakness.

Early detection could save your career and your life!

