



WHAT STRUCTURAL FIRE FIGHTERS NEED TO KNOW ABOUT RHABDOMYOLYSIS



Rhabdomyolysis (often called rhabdo) is the breakdown of damaged muscle tissue that releases proteins and electrolytes into the blood. These things can damage the heart and kidneys, result in permanent disability, and can even be fatal! Rhabdomyolysis can be caused by exertion and becoming overheated. Early treatment can prevent serious medical problems.

Because exertion in a hot environment is such a fundamental part of the job, fire fighters need to know the signs and symptoms of rhabdo to be able to quickly recognize the potential danger and get medical attention right away if they are not feeling well.

What can increase your risk for rhabdo?

- + Prolonged, intense physical activity
- + Increased core body temperature
- + Some cold and allergy medications
- + Certain antibiotics
- + Dietary supplements, such as creatine
- + Common prescription medications such as statins that lower cholesterol etc.

There are many risk factors for rhabdo and we still don't know all of them. You should check with your healthcare provider to ensure you don't have any of the known risk factors for rhabdo.

People with no known rhabdo risk factors can get rhabdo. It can happen after activities you have done in the past without a problem. Even fire fighters and athletes who are in



Centers for Disease Control and Prevention
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excellent physical condition can develop it. Always be on the lookout for signs and symptoms of rhabdo. Seek medical evaluation right away if you have any of the following signs and symptoms of rhabdo:

- + Muscle cramps, aches, or pains that are more severe than expected with the amount of exertion
- + Inability to complete a workout routine due to feeling unusually tired
- + Tea- or cola-colored urine

Sometimes rhabdo symptoms do not appear until several days after the muscle is damaged. If you have any of these symptoms at any time, do not ignore them. Talk to your chief and seek immediate medical treatment. Be sure to tell your healthcare provider about your job so they are aware of your increased risk for rhabdo.

How do I know if I have rhabdo?

The only way to know for sure if you have rhabdo is to see a licensed healthcare provider who can do a blood test for a protein called creatine phosphokinase (also called CK). CK is a muscle protein that is released into the blood when muscle tissue is damaged. Like the appearance of symptoms, the rise in CK may be delayed. Repeat blood tests are needed to determine if CK levels are going up or down.

Rhabdo may be confused with dehydration or heat-related illnesses since these conditions can have the same symptoms. The only way to know if you have rhabdo is to have your CK checked.

How is rhabdo treated?

Less severe rhabdo can be treated with drinking more fluids, getting out of the heat, and resting. Serious cases of rhabdo need hospitalization to monitor heart and kidney function and to quickly treat any problem. Blood tests and EKGs help determine the severity of rhabdo.

Treatment of severe rhabdo includes intravenous (IV) fluids to flush out the muscle proteins and electrolytes. This treatment can prevent dangerous heart rhythms and loss of kidney function. If you do not get proper treatment quickly, the kidneys can become damaged and short-term dialysis is sometimes needed. If kidney function does not recover, then a lifetime of kidney dialysis or a kidney transplant is required. You might need surgery to release pressure on damaged muscles to prevent permanent disability. If treated early, most rhabdo patients return to work in a few days without any lingering effects.



Photo by NIOSH
Fire fighter having blood drawn.

What can I do to increase my chances of a full recovery from rhabdo?

Listen to your body! Do your muscles hurt more than expected after a fire response or workout, are you unusually fatigued, or is your urine unusually dark? If you have any of these symptoms, you should:

- + Stop your current activity right away, cool down, and start drinking fluids
- + If symptoms occur while at a fire, tell your chief and an on-site Emergency Medical Services personnel about your symptoms
- + If your symptoms start away from work, contact your healthcare provider or go to the nearest medical center immediately
- + Tell the healthcare provider you are a structural fire fighter or give them this fact sheet
- + Ask to be checked for rhabdo

Reporting your symptoms could save your life and your career! If you hear about or know of these signs or symptoms in a coworker, encourage them to report their symptoms and seek immediate medical care.

To receive information about other occupational safety and health topics, contact NIOSH:

Telephone: 1-800-CDC-INFO (1-800-232-4636)

TTY: 1-888-232-6348

CDC-INFO: www.cdc.gov/info

or visit: www.cdc.gov/niosh

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