Rapid Lesson Sharing

Event Type: Rhabdomyolysis

Date: April 23, 2026

Location: Idaho Panhandle National Forest

The Story and Lessons from this Rhabdo Incident

"We're used to being uncomfortable."

—Phillip, Jack's immediate supervisor,

in conversation surrounding the events that led to this case of Rhabdomyolysis

What is Rhabdo?

Rhabdomyolysis is a condition characterized by the rapid breakdown of skeletal muscle, leading to the release of muscle breakdown products into the bloodstream, which can be harmful to the kidneys and may result in acute kidney injury. Common symptoms include muscle pain, dark urine, and weakness. The condition can be caused by various factors, including trauma, extreme exercise, and certain medications. Annually, approximately 26,000 people in the United States develop this condition.

Narrative

A Coeur d'Alene Helitack Squad Leader, Jack, participated in rappel recertification in Bend, Oregon during the week of April 13 to April 19, 2026, returning to his home unit on Monday, April 20.

He arrived at work on Tuesday the 21st and facilitated an intense circuit workout for his crew that morning. That afternoon, the crew participated in a four-mile run as a normal, early season, double-day workout.

The next morning, Jack felt very sore from the previous day's workouts, but discounted the significance of how he felt because the week of Rappel Recertification had not been as strenuous as he was accustomed to exercising. Because of the feeling of fatigue, he elected not to participate in that afternoon's circuit PT.

The following morning, Thursday the 23rd, he participated in another PT run and felt unusually tired.

Jack stated:

"Thursday morning, I was still feeling sore but felt well rested and decided to participate in that morning's rookie workout. Around noon I noticed my urine was a concerningly dark color. I hoped I was simply dehydrated but knew it was something to monitor. I intentionally drank a lot of water that afternoon and evening. Despite this, I was not needing the restroom as often as I thought I should be."

After the end of shift that day, Jack continued to monitor his urine color and consult with an EMT-qualified friend. He also thought about how the crew had discussed Rhabdomyolysis during training, and how he had repeatedly emphasized the need for all the rookies to know the difference between discomfort and injury. Based on these considerations and the continued dark color of his urine, Jack elected to seek medical care.

Jack continues:

"At home, around 7 p.m. that night I noticed my urine was still a dark tea color. I was concerned about my kidneys and suspected I had Rhabdo. So I decided to seek medical care. At around 8 p.m. I went to the ER where I was diagnosed with Rhabdomyolysis. My Creatine-Kinase (CK) levels were greater than 90,000 U/L."

(A Creatine Kinase (CK) test measures the amount of CK, an enzyme mainly found in skeletal muscles and the heart, in your blood. High levels typically indicate that muscle tissue has been damaged or is under extreme stress.)

Jack was admitted to the hospital from Thursday night until the following Tuesday morning. Follow-up blood tests did not show that his CK levels had dropped back to the normal range until 15 days later—on May 8.

Reporting

Due to how late Thursday evening he was diagnosed and admitted, Jack did not report his situation to his immediate supervisor until the next morning, which he did via text message. His normal work schedule is Monday thru Thursday—10 hours a day.

Because he was on a day off and his immediate supervisor had very limited cell service at the time, formal reporting to the Forest Duty Officer was not accomplished until 1500 hours on Friday, May 24. While Jack was alert, had no mental impairment, and did not wish for a Hospital Liaison, he did receive support from his friends, supervisors, and the Forest Safety Manager.

Jack also stated:

"In hindsight I feel a handful of small things contributed to my developing Rhabdo:

I do not think I got enough sleep in the days leading up to the rookie start week.

During the workouts, my focus was mostly on the rookies and not enough attention given to my own body.

I hydrated according to my immediate thirst but should have been more intentional and aggressive about my hydration and recovery.

My hobby exercise this winter was less than years past due to the poor ski season and with it being my first winter as a Permanent/Full-Time employee, I dedicated less time to Jiu-Jitsu and other physical hobbies that I normally spend the bulk of my winters pursuing. While I had workouts, in hindsight, I didn't adequately make up for the missed activity.

I think having participated in similar training programs over the years, I came into this season with a level of complacency—expecting to perform at the same level as years prior without issue simply because I always have."

Lessons

- Raised awareness of Rhabdo symptoms helped Jack get medical treatment in a timely manner. His experience as an EMT and through first aid conversations with the crew had recently refreshed his awareness.
- Crew culture of speaking up when something isn't right also contributed to Jack getting the medical care he needed. Crew leadership had clearly emphasized the importance of speaking up when something was beyond "uncomfortable."
- While the exact cause of Rhabdo is not known, it seems to be affecting wildland firefighters more frequently than it has in the past.
- You should be aware of its symptoms: severe muscle cramping and/or dark-colored urine.
- If you suspect Rhabdo, ask medical personnel to test for it specifically. It is not a well-known condition. Medical personnel who are unfamiliar with Rhabdo have misdiagnosed and mistreated it in the past. Bring the attached Rhabdo informational flyer with you to present to the medical provider.
- <u>Seek medical attention regardless of normal work hours and tour</u> if symptoms manifest after hours or on a normal day off. While timely reporting of injuries and illnesses is important, don't let it delay your medical care.

This RLS was submitted by:

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Do you have a Rapid Lesson to share?

(https://lessons.wildfire.gov/submit-a-lesson)

Share Your Lessons

Exertional (Non-traumatic) Compartment Syndrome and Rhabdomyolysis in Wildland Firefighters

This wildland firefighter is presenting to your Emergency Department for evaluation of muscle pain along with possibly heat illness. Our wildland firefighters have an increased risk for exertional non-traumatic compartment syndrome as well as exertional rhabdomyolysis because of the prolonged exertion during fire response duties and training, carrying heavy loads (up to 110 lbs) and arduous exertion for long periods of time across steep terrain. Several cases have become permanently disabling.

These firefighters tend to be stoic in regards to their injuries and pain, and don't normally complain of much until they can't deal with it. As a result, the pain tends to be an acute onset complaint. These two diagnoses are rare, often initially misdiagnosed, and difficult to identify, but please consider them high in your differential, so that we can keep these firefighters doing a job they love.

For those not experienced with exertional rhabdomyolysis,

Classic signs/symptoms:

- Muscle pain/cramping
- Swelling of affected area of limb
- Weakness/decreased ROM of affected limb
- Dark, tea colored urine in rhabdomyolysis

Consider:

- Check serum CPK for severe muscle pain or dark urine or any combination of above symptoms associated with exertion
- Value is considered positive if 25X's greater than the upper limit of that assay's reference range or above 5000 IU/L[2]
- If normal or slightly elevated but high suspicion, admit for observance and serial CPK's q6hr x 12-24 hr[1]

1. Criddle LM [2003], Rhabdomyolysis: Pathophysiology, Recognition, and Management. Crit Care Nurse 23(6):14-30.

2. SEPT 2025 Clinical Practice Guideline for the Management of Exertional Rhabdomyolysis in Warfighters – A Collaborative Effort of United States Military Joint Service Medical Providers. https://www.hprc-online.org/resources-partners/whec/clinical-care/clinical-practice