

NOLS WILDERNESS MEDICINE

Curriculum Updates for WFR Recertification Courses

December 2017

Medicine is dynamic. We stay abreast of changes in practices and knowledge, and regularly update our curriculum. These are summaries of recent updates. NOLS Wilderness Medicine Curriculum Updates and resources are available at: <https://www.nols.edu/en/resources/wilderness-medicine-resources/>.

No more RICE (December 2017)

We no longer teach RICE as a treatment for musculoskeletal injury. Resting an injury makes sense in the short term evacuation context, but modern approaches to rehabilitation include early and judicious use of an injury. Ice is helpful as a short term OTC pain management tool, and we will continue to advise for its use in that context. We don't advise long term use of ice to suppress swelling, as this likely interferes with healing. There is no evidence that compression aids in healing. Elevation has limited usefulness, mostly to prevent throbbing pain that will interfere with sleep.

We are replacing RICE with the concept of managing the pain of a musculoskeletal injury with support through tape, braces or splints, short term ice as a non-pharmaceutical topical pain management tool, elevation to reduce throbbing and allow sleep and OTC pain management.

Syncope/Fainting (December 2017)

Syncope (fainting) is a brief loss of postural tone followed by a spontaneous and complete recovery. It is often caused by a decreased blood flow to the brain, usually from low blood pressure. It may be due to severe pain, strong emotion, urination, defecation, vomiting, swallowing, or carotid sinus stimulation. Syncope may also be a sign of underlying disease, especially if symptoms do not resolve.

The patient may report prodromal symptoms such as dizziness, vision changes, warmth, light headedness. A fainting episode may be accompanied by twitching or seizure-like activity, which is not a seizure.

Treatment is to lay the patient flat, elevate the legs, make the patient comfortable (shade, out of the cold, etc.) and to complete a PAS. Assess for residual signs and symptoms.

Most syncope is benign and resolves promptly without further symptoms. Sometimes syncope suggests an underlying medical problem and in these cases this patient should be evacuated. We want to evac syncope that occurs during exertion; that occurs without the presence of prodromal symptoms such as dizziness, light-headedness, pallor, diaphoresis, vision changes; and where there are residual signs and symptoms. Rapidly evacuate all events of syncope that are accompanied by chest pain, headache, SOB, abdominal pain, known pregnancy, or with signs and symptoms of shock.

Pain Management (February 2016)

Pain management reduces both physical and psychological stress. It helps support as comfortable an evacuation as possible. Inadequate pain management may cause a significant stress response as well as an increase in the risk of developing posttraumatic stress disorder. Patients may also become increasingly sensitive to painful stimuli the longer pain remains uncontrolled, making their pain more difficult to control.

Our pain management principles for the lay provider in the wilderness

Comfort Care

Simple techniques, such as using the patient's name, attending to basic needs such as hygiene, warmth, food and hydration, allowing the patient to place themselves in a position of comfort, as well as keeping the patient informed and involved in their care can be comforting, decrease anxiety and improve the patient's perception of pain.

Injury Management

Protection from further injury and providing stability in the form of taping, bracing, or splinting is an essential pain management tool.

Ice and elevation

Cooling the area with ice for 20-40 minutes may help manage pain; may continue ice every 2-4 hours or after use. Ice can decrease skin temperature to the point where nerve conduction is inhibited and pain decreases and can be an effective non-pharmacological pain intervention. Raising the injury above the patient's heart may reduce throbbing and allow for rest.

Medications (oral, non-opioid, non-prescription)

The combination of a non-steroidal anti-inflammatory (NSAID) medication with acetaminophen has been demonstrated in a number of studies to provide superior pain control to either drug alone or in combination with an oral narcotic. There are a number of sequences of acetaminophen and ibuprofen recommended in the medical literature. Our sequence is chosen because it is easy to remember and avoids exceeding the maximum daily dose: 1000mg acetaminophen every 8 hours administered with 800mg Ibuprofen every 8 hours. This gives daily doses of 3000 mg and 2400 mg respectively. This is for short term use during evacuation. These medications are not benign. As always, review the 5 rights of medication use before suggesting a medication to a patient.

Hydration and Heat Illness (June 2016)

We have put a lot of thought recently into our approach to heat illness and hydration. You will find the pages in the Wilderness Medicine Handbook revised to reflect our current thought.

Hydration is necessary for good health. It helps us tolerate exercise, heat, altitude, and cold. We continue to be wary of concepts like "hydrate or die" or "drink before you are thirsty and well after your thirst is satiated." This advice may promote over-hydration. We agree with researchers who think thirst is a sensitive indicator of fluid needs. This does not devalue the importance of hydration and self-awareness of our fluid intake and the signs or symptoms of dehydration.

We're focusing on **hyponatremia** as a water overdose problem. Salt loss in sweat, low salt intake and other medical conditions influence hyponatremia, but the primary cause in the wilderness context is probably drinking too much water. A history of excessive water intake, which we find at L in SAMPLE, is a key assessment. Salty snacks are acceptable as treatment for mild hyponatremia, along with no fluid intake. Don't expect salty snacks to correct significant hyponatremia.

Heat exhaustion is just what the term says, fatigue from the stress of coping with a hot environment. Heat exhaustion is not a volume problem, although it may occur simultaneously with dehydration. This change in definition does not change our treatment. We continue to rest, avoid further heat stress and make sure the patient is hydrated.

The terminology is changing from heat cramps to "**exercise-associated muscle cramps.**" Heat cramps is the traditional and popular term. The term exercise-associated muscle cramps reflect the understanding that these cramps are not directly related to an elevated body temperature. They can happen in any exercise, in warm and cold temperature, during warm-up, during the exercise, or after exercise. Their cause is not understood by the medical physiologists. They may be due to dehydration, electrolyte imbalance, central neuromuscular fatigue or any combination of these causes.

Exercise-associated muscle cramps are muscle spasms, twinges or tremors which can be intense and debilitating and occur typically in the legs, arms, and abdomen. Exercise-associated muscle cramps are associated with other forms of heat illness, but they do not predispose to other forms of heat illness.

Lack of fitness, lack of acclimatization to exercise in the heat and profuse sweating associated with sodium loss are characteristics of people who suffer from heat cramps.

Anecdotal reports and one small study support gentle stretching to interrupt muscle cramping in heat (and this is the recommendation of the National Association of Athletic Trainers). The empirical experience of most persons is that stretching and massaging helps to relieve cramps. These two interventions seem to be reasonable first aid treatment attempts for isolated heat or exercise-related muscle cramps. It is also reasonable to use electrolyte solutions in the exercise-associated muscle cramp patient although the only available evidence is case reports.