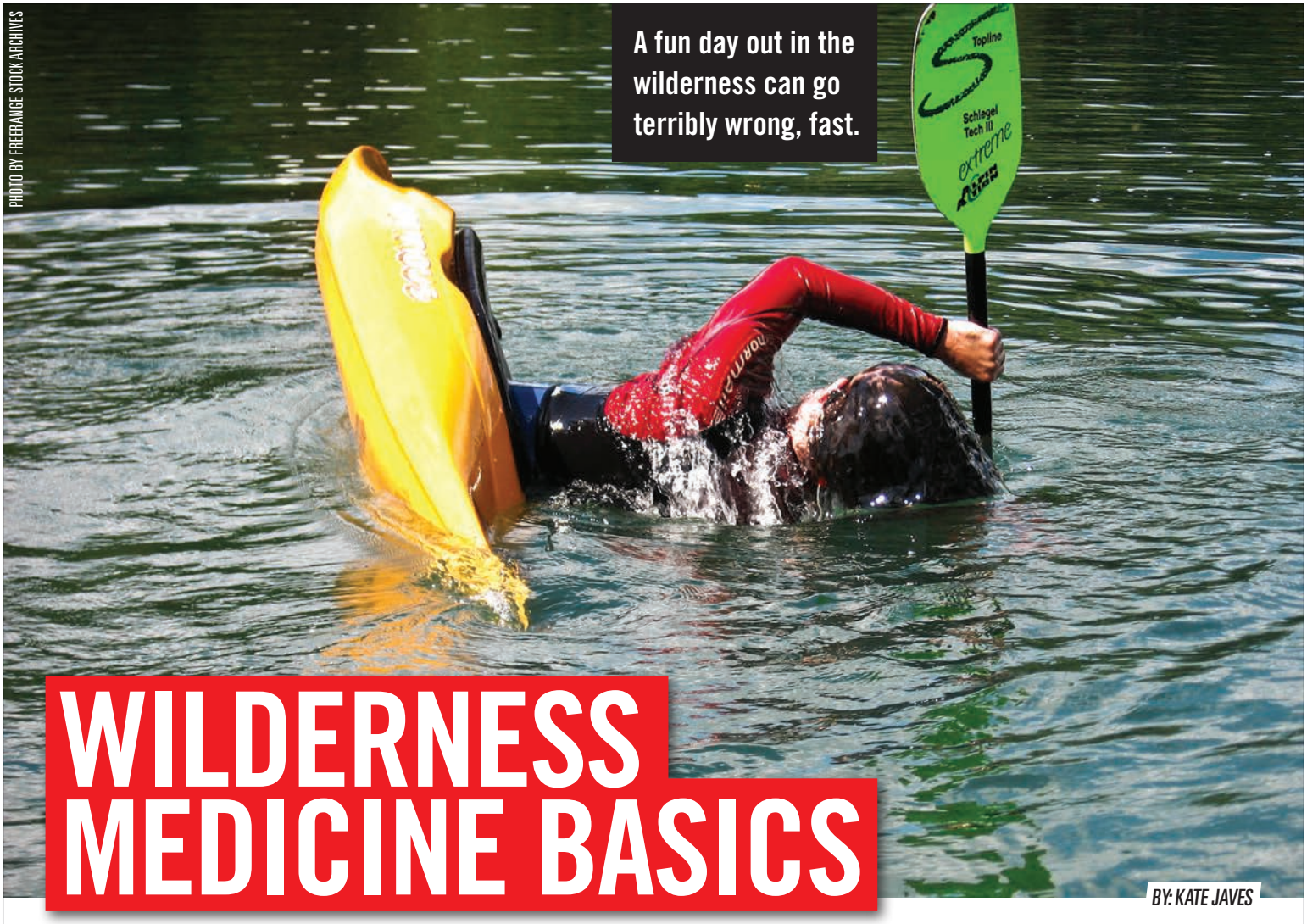

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A fun day out in the wilderness can go terribly wrong, fast.

WILDERNESS MEDICINE BASICS

BY: KATE JAVES

Most of us enjoy heading out into the wild for an adventure now and then.

Activities such as mountain biking, climbing, fishing, kayaking and hiking can be fun, but all have inherent elements of risk that need to be considered. Depending on your location, help may be minutes, hours or even days away. Are you prepared with both the equipment and knowledge required to get yourself and your friends back home safely?

This article is intended as a broad introduction to the concept of Wilderness or Remote Medicine and will provide a few ideas for approaching some common emergencies. It will not make you an expert medical provider. Additionally, you must always be familiar with applicable local laws and regulations. In the United States, Good Samaritan laws protect most lay people who render aid in a reasonable manner. If you have more advanced medical training, Good Samaritan laws may not apply and, as a medical professional, it is your responsibility to know and comply with all statutes.

WHAT IS WILDERNESS MEDICINE?

The concept of Wilderness Medicine was created in the 1970s by a group of outdoor enthusiasts who also happened to be Emergency Medical Technicians (EMTs). They recognized the shortcomings of traditional EMT protocols and training in an austere environment and through trial and error, devised some improvements. Although there is no single national standard curriculum or certifying agency, the core content of the established wilderness medicine providers is similar. In a 5-10 day course, you learn how to recognize and treat everything from a broken femur to a stroke with what you have in your pack. No matter your knowledge or skill level, I highly recommend spending the $500 or so on a class. My initial WFR class consisted of a doctor of internal medicine, two 3rd year residents, a paramedic (me), several former military members and a wide variety of outdoor enthusiasts ranging age from 18-65. We all learned something new.

So, when does front country medicine give way to "wilderness" medicine? In general, if you find yourself in a situation where trained help is at least 30-60 minutes away, you are in the "wilderness" and need to react appropriately. A dislocated finger, when

Adventure Medical Kits makes excellent first aid kits that you can add on to for your own needs.

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you're a short drive to the hospital, can stay dislocated until you get to an x-ray and doctor. If you're 30 miles from the trailhead and on foot, failure to relocate a joint may end in amputation. Do you have the skills and knowledge necessary for this?

When you're going to be playing in the great outdoors, you need to think about packing more than just water and some trail mix. A medical kit doesn't have to be extravagant. What you bring depends on the activities and length of time you plan to be out, but it does need to cover a few basics. Benadryl, for example, can help turn a life-threatening situation into a minor irritation. Do you carry it in your pack? You don't need an entire ambulance worth of equipment, but you should have enough to deal with a significant hemorrhage or a simple fracture.

PHOTO BY SAM SPLINTS

SAM splints are handy, moldable splints that you can add to your first aid kit. If you don't have one, one can be fashioned from just about anything.

RESPONDING TO AN EMERGENCY:

What can you do when disaster strikes? Regardless of your level of training or equipment, there are a few very basic things you can do to make a huge difference. Number one is to stay calm. Step back and breathe. Figure out what needs to be done and get to work. Talk to your patient, even if they are unconscious and you don't think they can hear you. Very often, they can and they will remember hearing your voice. Tell them what you're doing, reassure them that the situation is under control. For conscious patients, conversation is a great distracter and is a very effective method of pain control when nothing else is available. Keep the patient warm and dry. Get them off the ground and at least on an isomat as soon as possible. If medically appropriate, make sure they continue to eat and drink. Proper hydration is critically important for the sick and injured, so don't neglect it and don't neglect yourself. We all need food, water and sleep.

DEALING WITH TRAUMATIC INJURIES:

Traumatic injuries are common in the wilderness setting and range from simple lacerations to multi-system traumas. This article cannot teach you how to treat every injury. However, I would like to provide you with a few alternative and improvised methods for caring for some common injuries.

Wounds: The most important thing with open wounds is to keep them clean. In the hospital, doctors typically use syringes of sterile water or normal saline to irrigate the wound and remove debris, then an iodine scrub. What if you don't have a syringe? A plastic bag full of water with a small hole cut in the corner makes an excellent substitute, as does a CamelBak. The water doesn't have to be sterile, but cleaner is better. Simple soap and water is the best choice for further cleaning. Don't use alcohol or peroxide, they can do more harm than good.

Fractures: If there is obvious deformity or angulation, you want to attempt to place the extremity back into its proper anatomical position before splinting. The same goes for dislocations. [Realigning bones requires additional knowledge and training and should not be attempted if you do not have both.] Pull gentle in-line traction and carefully re-align the bones as best you can. Be aware that there will be jagged bone fragments in close proximity to major arteries and nerves. They are pretty tough, but be gentle. Make sure the patient has pulses in the extremity after re-alignment. If not, you may have to try again. Restoring circulation is your number one priority. Once that step is complete, the limb must be splinted in place. This requires something rigid. Some people carry a simple moldable splint (like a SAM splint) in their med kit. However, improvised splints can be easily made from just about anything. An isomat, folded in half long-ways can be fashioned into a wonderful lower leg or knee splint. An air mattress can be wrapped around a limb and then partially inflated to provide support. Trekking poles or even sticks will work. When fashioning the splint, remember that the injured person is likely to be wearing it for an extended period. You want to make it as comfortable as possible. Pad the splint with whatever you have in your pack. Sweatshirts, jackets and towels are perfect. The padding goes against the patient's skin in as uniform a way as possible and the rigid portion of the splint goes outside. Use whatever you have to tie the splint together. Cravats are very versatile and perfect for this purpose. 550 cord, tape or other clothing can also work. Tie it tight enough to provide support, but make sure not to impede circulation (particularly with thinner cords). For upper extremities, a sling/swath will further immobilize the injury.

Burns: Burn treatment differs greatly depending on the severity and location of the burn. In general, stop the burning process

ARE YOU PREPARED WITH BOTH THE EQUIPMENT AND KNOWLEDGE REQUIRED TO GET YOURSELF AND YOUR FRIENDS BACK HOME SAFELY?

and clean the area. The major complications of burns involve the fact that the body's main defensive organ, the skin, has been compromised. Anything you can do to create a barrier between body and environment will help. Saran-wrap is simple and effective and takes up little space in a med kit. Whatever you use, make sure to loosen it as the area swells so that circulation is not compromised. Remember, even with something as simple as sunburn, daily fluid requirements increase substantially. Burn patients need to drink plenty of fluids and maintain proper nutrition.

Drowning: Drowning victims need air, pure and simple. Keep yourself safe, but get their face above water as rapidly as possible. If they are breathing/coughing on their own, let them. If they aren't or you can't quite tell, you need to do it for them. In the back country, that probably means mouth-to-mouth resuscitation. Don't worry about trying to drain water from their lungs, there probably isn't that much in there anyway. Go straight to rescue breaths. If they don't have a pulse, start CPR. [Compression-only CPR will NOT help a drowning victim. Their blood has zero percent oxygen left. It doesn't matter how fast it goes round-and-round in the body, their brain needs oxygen. Compressions do NOT create enough air flow into the lungs to be effective. Ignore anyone who tries to tell you otherwise.] There is always some risk of contagious disease if you are not using a barrier device, but it is actually quite low. Ultimately, it is your call, but you can choose to take the risk or let them die.

PHOTO BY DEFENSEIMAGERY.MIL

While you may not have a portable litter to drag your injured buddy along, you can always make one with tree branches and that handy 550 paracord you keep in your bag.

Ice: At home, one of the best ways to treat most injuries is with ice. Depending on the situation, ice may be hard to come by in the wilderness. Use your imagination. Cold water compresses or even just damp earth can be effective.

PHOTO COURTESY CAMELBAK

THE CAMELBAK MIL TAC M.U.L.E. IS IDEAL FOR SHORT TRIPS; IT CAN CARRY MEDICAL ESSENTIALS AND ENSURE YOU HAVE FRESH WATER ON HAND.

TREATING MEDICAL EMERGENCIES:

Medical emergencies can sometimes be extremely difficult to detect and treat in an austere environment. If you are going out in a group or with friends, ask ahead of time if anyone has any preexisting medical conditions that you should know about. Allergies, seizure disorders and diabetes are big ones to be prepared for. If you or a friend has an allergy for which they are prescribed an epi-pen, make sure you have one available. You would be amazed how many people leave it at home.

Allergic reactions: Have diphenhydramine (Benadryl) in your med kit. When someone starts showing signs of an allergic reaction (hives, red skin, scratchy throat), give them the appropriate dose of Benadryl immediately. If the airway becomes involved, use the epi-pen, but most allergic reactions can be easily controlled with Benadryl and removal of the allergen.

Seizures: There isn't much you can do for a seizure except try to keep the person from injuring themselves. Move them away from dangerous areas (cliffs, fires, water) and watch them closely. Most seizures only last a few minutes. Once complete, roll the person into a recovery position and protect them from the elements. When they wake up, they will initially be very confused and lethargic. This should resolve in time (sometimes a few minutes, sometimes an hour or more).

Diabetes: Your main concern in the wilderness is hypoglycemia (low blood sugar). If you suspect hypoglycemia and the patient is still responsive, have them eat or drink something with a high sugar concentration (Gatorade or candy work well). If they are unconscious or unable to follow instructions, simple table sugar or sugary drink mix, rubbed between the cheek and gum (gloves are suggested) will bring them around eventually. If you do this, just make sure to place them in the recovery position first so that nothing ends up in their airway. Never put your fingers between their teeth in case they bite!

PACKAGING AND MOVING PATIENTS:

One of the most difficult problems to solve in an austere setting is how best to get your patient back to definitive care. Are they ambulatory and able to walk out with some minor assistance? Is it reasonable to hunker down and wait for help to come to your position? Sometimes the only solution is to walk out and carry your patient with you. More than likely, you didn't pack a litter or stokes basket in your bag. Improvised litters can be fashioned from tree branches or trekking poles lashed together with rope or cord. Depending on the terrain, an A-frame drag litter may be a good option. If the patient is conscious and able to sit, a good method is to use a sturdy tree limb suspended between the packs of two hikers as a seat. Simply place each end of the limb between the hiker's back and pack (supported by the waist or shoulder straps). The limb will sit horizontally, supported on each end by one hiker, and works perfectly as a seat for the injured person. Whatever method you choose, realize that your pace will be substantially slower than it was on the way out.

Depending on the mechanism of injury, you may or may not be concerned with damage to a patient's cervical spine. If you suspect spinal injury, there are several methods to provide stabilization. First, if the patient is conscious, tell them to keep their head still. The patient's own neck muscles are the most effective splinting device ever devised. Place packs, water bottles or whatever you can find on either side of the head as a reminder. Later, you can improvise a c-collar. SAM splints work very well. Wrap the splint around the back of the patient's neck and cross the ends at the patient's chest like a scarf. Another simple method is to trace the outline of a commercial collar onto your iso mat. In case of emergency, simply cut along the outline and you have an instant collar (secure with tape). Towels, blankets and jackets can also be used.

Remember, an actual emergency is the wrong time to start thinking about what to do. Preparation is the key. Pack a simple med kit, carry it and always have a plan for when things go wrong. If you haven't taken a CPR course in the last few years, sign up. If you have no medical training, take a basic first aid course at the very least. Better yet, sign up for an EMT course at your local community college and then Wilderness First Responder course. Regardless of your profession, you will never regret knowing the fundamentals of emergency medicine. Have fun and stay safe. ✓

BIO

Kate Javes is a Paramedic for New Hanover Regional EMS and is a part time EMT instructor for The National Center for Outdoor Adventure & Education in Wilmington, NC. She is a former Marine and outdoor enthusiast. NREMT-P, NC EMT-P, W-EMT

ROLL A SEIZURE VICTIM INTO RECOVERY POSITION AND PROTECT THEM FROM THE ELEMENTS.

PHOTO BY JUSTASS