

Ropes

to the Rescue:

Climber Evacuation Techniques

By R. Bryan Simon, RN, FAWM, DMM (UK)

No matter how far you are from care or how barren the landscape, a climber can create a litter out of nothing more than a climbing rope to evacuate an ailing partner. There are numerous techniques for moving an injured patient in the wilderness, but the following three types of carries and litters use only your rope. These are perfect for almost every climbing environment from alpine to crag, with the only notable exception being boulderers.

Prior to using any of these carries/litters make sure to follow through with a primary and secondary assessment, and treat all injuries to the best of your ability. The one and two person split coil carry described below are ideally used for patients with lower extremity injuries who are conscious.

One Person Split Coil Carry

The name says it all. This carry is perfect for the two person climbing team. Coil your rope in a single-strand butterfly or backpack coil starting with one end of the rope running over your shoulder and touching the ground (*Step 1*). Coil the remainder of the rope in a single strand, taking care to make each coil as uniform in length as possible (ideally just slightly shorter than the full wingspan of the rescuer). Continue coiling until there is between one and two meters of rope left (*Step 2*). Carefully lay the rope on the ground. Loop the initial portion of the rope back to the center of the coil (*Step 3*). Loop the last portion of the rope to the middle of the coil, and complete the butterfly coil by doing a tight finishing wrap several times around the center of the coils and tucking the tail back through these wraps to tighten and secure everything (*Step 4a-d*). This wrap will become the patient's 'seat.'

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It is important to make each strand of the coil as equal as possible in order to distribute the patient's weight evenly along all portions of the rope and onto the rescuer's shoulders. The rescuer should slip his arms through each set of loops so one end of the coil is wrapped around each shoulder, with the center wrap sitting above and centered on the buttocks.

Pad the coils around the shoulders for comfort with whatever clothing or gear is available. You can also use a sling and

carabiner or a quickdraw to secure the two sets of coils at your chest. Pull the sling beneath the coils at the chest, wrap it around each set of coils, and clip the ends with the carabiner. This acts like the chest strap of a backpack, taking some of the weight off of the shoulders and better securing the patient within the system.

If it is possible, the patient should be positioned upon a rock, stump, against a tree, or any other object that will allow easier threading of the coil below their buttocks. The patient's legs go to each side of the rescuer, with the patient's inner thighs directly against the rescuer's flanks, as if they were being carried 'piggyback.'

Two Person Split Coil Seat Carry

This carry employs the same concept as above, but with two rescuers. Again, arrange your rope in a single strand butterfly or backpack coil but this time with larger loops in your rope. One way to accomplish this is to place two rocks at the desired length and start coiling around them. The wrap in the middle is again the patient's 'seat.'

Throw a loop over the head and on top of the outside shoulder of each person, and have the injured climber sit. Again: padding the coils with whatever is available will increase the comfort for the two people who are carrying the injured climber.

Have the rescuers stand side-by-side with each set of coils slung over their outside shoulder and head, leaving the "seat" hanging between them. The patient sits in the middle of the rope while the rescuers extend their inside arms and grasp each other's elbows to form a seatback for the patient. Remember, a climbing rope is dynamic in nature and will stretch with time. Do not make the split coil too long as you want to protect the patient's lower extremities from touching the ground.

Multi Person Rope Litter

The most difficult and manpower intensive of these three techniques, the rope litter or daisy chain litter, allows a group of rescuers to carry a severely injured climber who must be transported while in the supine position. This litter is uncomfortable for the patient and the rescuers, but it is effective when resources are limited.

Start by laying out the climbing rope in 15-20 180-degree loops alongside of the patient. To determine the width of the loops you must consider the climber's size, how much padding will be used, and the amount of clothing being worn (*Step 1*). If you have sleeping bags, mats, or if there are long tree branches available, lay these over the loops to make the litter more comfortable and stable for the patient and the rescuers. At the bottom of the litter (and end of the rope) tie a figure-8 knot on a bite (*Step 2*). After placing the patient on top of the loops, begin to cinch the daisy chain tightly around the patient by pulling the opposing loop through each bite of rope (*Step 3a-d*). Keep the coils tight throughout this process and tie the end off near the patient's head (*Step 4*). To make the head more stable and secure, often a backpack is placed under the patient's upper body to give the litter additional rigidity. This litter can be used in conjunction with a hypothermia wrap for cold environments. Additionally, rescuers can attach slings to the rope litter to ease the carry of the patient. Simply girth hitch a sling through an outer strand of the litter, pad with available material, and position on outside shoulder.

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Additional Notes

- There are many ways to build out the carries and litters described above. These are just three examples.
- Each of these techniques is also terrain dependent. A two person carry would be very difficult on a narrow trail or if the two rescuers are of vastly differing heights.
- Remember that in cold conditions the injured climber needs to be well insulated, as they will not be active during the evacuation.
- Ropes used for climbing are almost always dynamic ropes. Keep this in mind as you use the techniques described above as these ropes do stretch.
- None of these techniques adequately immobilize the spine, if that is desired.
- It is highly recommended that persons interested in implementing these techniques enroll in a formal course teaching them and permitting supervised practice in their application.



R. Bryan Simon, RN, FAWM, DiMM, is a native of West Virginia and graduate of the United States Military Academy at West Point. He is a former U.S. Army infantry officer and a graduate of the U.S. Army Ranger School. After sustaining an injury in 2003, R. Bryan left the military to pursue other goals.

R. Bryan is a partner in the firm Vertical Medicine Resources (<http://vertical-medicine.com>), is a founding member of the board of directors for the non-profit Appalachian Mountain Rescue Team and serves on the membership committee of the Wilderness Medical Society. He writes on a variety of subjects related to wilderness and climbing medicine and adventure sports and his work has been featured in *Climbing*, *Dead Point Magazine*, *Wilderness Medicine*, and *Nursing* among others. He recently completed his first book, *Hiking and Biking in the New River Gorge: A Trail User's Guide*, published by Wolverine Publishing.

R. Bryan met his wife, Deb, on Mount Kilimanjaro in Tanzania in 2001, and since that time they have climbed and trekked together around the world. When not on the road, trail, or rock, R. Bryan can be found at his home on the rim of the New River Gorge, W. Va.