

Rain-ON THE TRAIL

Organize gear. Segregate snacks, shell, map, camera, filter—anything you'll need while hiking. Use your pockets, pack compartments, or lash on a waterproof stuffsack for this stuff; never expose other gear to rain.

Stay cool. Even the best waterproof/breathable shells can cause overheating if you're working hard, making you wet from sweat on the inside. Moderate your pace, keep the hood off, and even wear the jacket like a vest: Stick your arms through the pit zips and tuck the sleeves into pockets. Wear just a baselayer in mild temps and a light drizzle; your body heat will keep you comfortable.

Avoid raising your arms. In a downpour, water will enter at your cuffs and seep up your sleeves. Use trekking poles? Shorten the length to minimize wrist exposure. Rest when the rain stops. Forget your schedule; in extended bad weather, take advantage of dry spells to eat.

Wear wet stuff. If your inner layers get soaked, don't risk getting dry clothes wet. Hiking will keep you warm.

Tap body heat. Dry wet socks and gloves while you hike. Stow them between your layers, not balled up in a pocket.

Wait it out. If the shower is likely to be temporary—like a passing mountain storm—30 minutes of patience can prevent a day of soggy clothes. Hunker down under a rock overhang or trees.

Beware of wet brush. Even after the storm, wet vegetation can soak you. Keep your raingear on while bushwhacking or if the trail is overgrown.

Make the last hour count. When you have about 30 to 60 minutes of hiking left for the day, assess your comfort and the conditions. Chilled? Increase your pace so you warm up before stopping (otherwise you'll get cold fast in camp). Overheated? Slow down, so you start drying on the trail and don't reach camp with sweaty (read: cold) inner layers.

Rain-IN CAMP

Keep your inner tent dry. Pre-pitch it in a sheltered area without staking it, drape the fly over, then move it as needed. Or use your kitchen tarp as set-up shelter, then move the tent. In extremely wet conditions, pitch the tarp over the front of your tent to create an extended vestibule for changing clothes and stowing soaked boots, shells, and gear.

Pre-rig your fly. At home, rig your fly's guy loops with 15-foot lengths of nylon cord. Use an adjustable trucker's hitch so you can easily retighten guy lines on a sagging fly.

Keep the tent's interior dry. Spread the footprint inside the tent to protect your sleeping pad and bag from ground-level moisture, which can accumulate from condensation, doorway drips, and leaky floors. Use an absorbent camp towel to soak up excess moisture.

Pack tent clothes. Store dry socks and an extra set of baselayers (top and bottom) in a waterproof stuffsack or zip-top bag. Never let these items get wet.

Keep your feet dry. Wet skin is more prone to blisters. If you must walk around camp in soaked boots, protect dry socks by slipping plastic bags over them, then putting on boots. Sprinkle talcum powder on your feet before bed. Remove wet insoles and dry them on your quads while in your sleeping bag.

Wear a baselayer dry. Too wet for a fire? Keep a damp (not soaked) shirt on under your insulation while you perform camp duties.

Stow a wet tent in stages. Detach the rainfly, but leave the tent covered while you disassemble poles and (quickly!) stuff the tent. Shake the fly as dry as you can and store it in a separate waterproof stuffsack or garbage bag.

Rain-KEY GEAR

Rainshell Duh, right? Just don't skimp on these key features: unlined cuffs (read: no wicking) that cinch tight with Velcro; a three-way adjustable hood with bendable brim for better protection and visibility; and a cinchable hem that covers your butt.

Hat A waterproof lid offers better visibility and breathability than a hood.

Gaiters Rain pants should cover the tops of your boots, but gaiters add critical protection, especially if you step in unexpectedly deep water. Wear them under, not over, your rain pants.

Neoprene socks They're steamy in mild temps, but waterproof socks will keep your feet warm in the wettest conditions.

Gloves Pack both quick-dry liners and water-resistant gloves; for cold rain, add waterproof shells. In a pinch, use a pair of dishwashing gloves; trim the cuffs.

Umbrella Lightweight models are great for hiking when temps are warm and wind is nil. A NOLS instructor, swears by a golf umbrella, which is heavier but provides beaucoup "sanity space" in prolonged rain.

Water bottle "Put hot water in it and rub it against your wet clothes. It dries them like an iron," says a NOLS instructor. Stow hot bottles in wet boots overnight to speed drying.

Waterproof sacks Get lightweight stuffsacks in multiple colors, so you know what's stored in each. Trash compacter bags are tough: Put one over a wet pad to shield a sleeping bag. Pack covers are good for reducing water weight absorbed by your pack, but limit access and tend to flap in the wind.

HEAT-ON THE TRAIL

Stay hydrated. You know this, but every year dozens of hikers get into trouble.

1. Store water in multiple containers, so you can never lose your entire supply.
2. Keep water accessible and sip often.
3. Use drink mixes to replace the electrolytes you lose through sweat.
4. Shoot for at least one liter of liquid per hour; your urine should be clear.
5. Eat salty snacks to avoid dangerously low sodium levels, a condition called hyponatremia caused by overhydration.

Hike north. Plan your route so the sun is generally at your back. Your pack will absorb heat instead of you.

Adjust your schedule. Start before dawn to take advantage of the coolest time of day (after sunset, heat from the day still lingers). Get your miles done before noon, or take a long lunch layover in the shade and continue hiking after dusk. "There's a reason why people all over the tropics take siestas during the hottest part of the day," notes a veteran NOLS instructor in Mexico. If you're climbing out of a canyon, time your ascent so that the trail will be shaded. Note: Avoid night hiking in rattlesnake habitat; they come out when the temperature cools.

Shade your legs. Sun at your back? Hang a shirt from the bottom of your pack so that it shields your legs.

Air out your feet. Take off your boots and socks during rest breaks.

Protect your head. If you don't wear a hat (or opt for a visor), put sunscreen in the part of your hair.

Eat light. Your appetite might decrease in hot temps, but you still need fuel. Replace greasy summer sausage with a chicken pouch, and have smaller, more frequent meals.

HEAT-IN CAMP

Sleep low. Cool air sinks, so look for shaded, north- or east-facing sites in valley bottoms.

Skip the stove. When you have to ration water in camp, save what you have for drinking—not cooking and pot cleaning. Pack dried fruit, bread with pesto, or backcountry sushi rolls made with cream cheese, pouch tuna, wasabi, and carrots on nori (or a tortilla).

Scrub down. You'll sleep better if you wipe off sweat and grime. Pack wet wipes, or use a moistened bandanna.

Sleep in a mesh tent. If you can't sleep en plein air because of bugs, use a well-ventilated shelter. Leave the fly off of any tent when the sun is out so that solar heat doesn't collect inside.

Protect your pad. In the desert, shine your flashlight horizontally across the ground to locate pad-puncturing cactus spines. Sweep the area thoroughly before laying your pad down. Alternatively, pack a puncture-proof, closed-cell foam pad.

KEY GEAR

Protective clothing Minimize exposed skin with a light-colored, long-sleeve, collared shirt and lightweight pants. "You may feel warmer initially," says a Death Valley National Park backcountry ranger, "but once you start moving, creating a breeze, and sweating, you'll be much cooler."

Sun hat Best: A wide-brimmed sun hat Cheaper: Tuck (or sew) a bandanna under the back rim of your cap, Lawrence of Arabia-style.

Sleeping sack In jungle-worthy weather, pack a lightweight cotton model instead of your sleeping bag. (And use it to line your bag for extra warmth in cold weather.)

Mist bottle Fill one at the trailhead and spritz yourself regularly on hot, dry hikes.

Cotton shirt Yep, you read that right. Cotton's slow-drying properties make it perfect for scorching temps: Soak a shirt in a stream, then put it on for sweet relief. "Warmth moves to a cooler area to equalize, so the cool water from a bandanna or T-shirt draws heat off your body," explains Iris Saxer, an instructor with the Wilderness Medicine Institute.

Portable shade Bring a backpacking umbrella for protection on the move or a light-colored tarp for lunchtime.

Cold-ON THE TRAIL

Lose layers. If you overdress at the trailhead, you'll soon be sweaty. Instead, do jumping jacks or jog in place so you're not chilled for the first 10 minutes.

Stay dry. In extreme cold (below zero), manage your layers and pace with this legendary Arctic adage in mind: You sweat, you die.

Keep layers handy. You'll take them on and off frequently. When you're not wearing a hat or gloves, stow them in pockets, down your shirt, or clipped to a shoulder strap. Stash your puffy jacket and a shell in the top of your pack.

Breathe through your nose. In temps below 20°F, some hikers experience chest pain from cold air. Inhale through your nose and the air will warm up before it hits your lungs.

Take short breaks. Maintain the body heat you've already generated by resting briefly (and more frequently if needed). At breaks, put on an extra layer right away—don't wait until you're chilled.

Eat fast. Stash snacks in each pocket of your puffy jacket, so that when you put it on during breaks you can refuel without digging around. Keep energy bars from freezing by storing them with a hot-water bottle or hand warmer.

Sit on your pack. Conserve energy during rest stops: Sit on your pack (read: insulation) with your back to the wind.

Keep your feet warm. Prone to cold toes? Cut a square from a closed-cell foam pad (light and cheap) to insulate your feet during breaks. Always change into dry socks if your feet get sweaty.

Use chemical hand warmers. These have myriad uses beyond saving cold digits: Stuff them in interior pockets to increase core temp; pre-warm a sleeping bag by tossing one in an hour before bed; thaw frozen boots in the morning; boost stove output by taping one to the canister.

Cold-IN CAMP

Change and sip first. When you hit camp, swap wet layers for dry to limit heat loss. Then brew a hot, sweet drink to refuel, rehydrate, and reheat.

Limit breezes. Dig or stomp a tent platform six inches deep, so the edge of your rainfly is below the snow's surface. Then cinch the fly as low as it will go.

Wear your bag to dinner. You're suddenly sedentary, and temps are falling: Bring your sleeping pad and bag to the kitchen area, or retreat to the tent while your rice is cooking.

Cook before you camp. In extreme cold, break up your sedentary evening hours by stopping for dinner an hour from camp. Cook and eat, then warm up again as you finish the miles to camp.

Bring an extra pad. Double up on ground insulation: Put a closed-cell foam mat under a full-length, inflatable pad.

Go to bed warm. Do sit-ups inside your bag to generate body heat. Wear a hat and make sure your bag is sealed.

Add insulation. 1. Spread extra layers over you in the bag instead of wearing them, says Fierer. That way, you won't crush their insulating power. 2. Drape a puffy jacket or vest around your shoulders, like a giant neck gaiter. 3. Wrap a shell around the foot of your bag for extra warmth and condensation protection. 4. Really cold? Cover the bag's hood opening with a puffy jacket.

Have a midnight snack. Wake up cold? Eat a candy bar (store it in your bag).

Prevent condensation. Open fly vents or crack the door to allow a cross breeze. Pack a camp towel to wipe any frost and water droplets and frost that do form on the tent ceiling.

Cold-KEY GEAR

Face shield Balaclavas are often overkill when you're on the move. Alex Van Steen, a 21-year veteran of Rainier Mountaineering, Inc., advises a neck gaiter that you can pull up over your nose as needed; cut a dime-size hole over your mouth to keep your breath from fogging goggles.

Gloves On Rainier, Van Steen takes thin liners for dexterity, ski gloves for moderate warmth, and waterproof mittens for the worst weather. In extreme cold, never take the liners off.

Boots Whether or not you're using insulated boots, make sure the fit allows wiggle in the forefoot when you're wearing winter-weight socks. A tight fit can restrict circulation, causing dangerously cold toes.

Zipper pulls Extend zipper tabs—pants fly zipper included—by attaching three-inch lengths of cord. Now you can keep your thick gloves on while adjusting gear and layers.

Hot-water bottles Fill two, put them in socks (to avoid burning your skin), and nestle them at your feet and between your thighs, where the latter can warm the blood in your femoral artery.

Sleeping bag Too big and it's chilly, but make sure it has extra space (about six inches at the foot) for clothes.

Hooded parka A mountain must, it's way warmer than a hoodless parka and hat.

Cold-WHERE TO CAMP

Sites to seek out—and avoid—for maximum comfort in any weather

Set up camp on ridgelines, passes, or hilltops to catch a breeze when it's muggy. But avoid these exposed sites in stormy weather.

In thunderstorms, uniform stands of mature trees provide the best cover. Avoid clearings, washes, and tight canyons that are prone to flash floods.

Camp behind natural windbreaks, such as on the lee side of boulders, or build your own out of rocks or snow.

Avoid low-lying areas in meadows and along rivers when it's wet and cold. Lower ground tends to get soggy, and the coldest air settles there. But in hot weather, a riverside camp is often breezy and cool.

Branches growing on only one side of the trees indicate frequent, strong winds. Check for widow makers (dead trees or branches that could blow down) before pitching your tent. Also, wind typically moves down-valley in the evening and up-valley in the morning. Choose a site that's sheltered from both directions.

Sheltered sites under alcoves and in dense stands of living trees protect from rain, cold, and heat. In winter, the cover reflects radiant heat back at you; in summer, overhangs and trees provide shade. Look for spots with good eastern exposure to catch the morning sun. In a canyon, sleep on a ledge to escape the cool ground breezes (just six feet can make a difference).

Fail to Plan = Plan to Fail

- Always bring a bit more than what you think you'll need – water, food, clothes.
- Make sure that you have a good knowledge of the signs of frostbite and hypothermia. You should be able to recognize it in others and in yourself. Tell someone right away if you or another scout is showing signs of cold-related problems.
- Stay hydrated. It's easy to get dehydrated in the winter. Eat and drink plenty of carbs.
- Keep out of the wind if you can. A rain fly for a tent can be pitched to serve as a wind break. The wind chill factor can often be considerable and can result in effective temperatures being much lower than nominal.
- Bring extra WATER. It's easy to get dehydrated in the winter. You aren't visibly sweating, so you don't think to drink water, but since the air is so dry, you lose a LOT of water through breathing. Drink lots of water!
- Bring extra food that doesn't need to be heated or cooked. Granola bars, trail mix, etc.
- Keep a pot of hot water available for cocoa or Cup-a-Soup – these warm from the inside.
- Always eat hot meals (breakfast, lunch, & dinner.) Dutch ovens are the best – they keep the food hot longer. It doesn't need to be fancy DO cooking. Meals should be 1-pot meals to keep cleanup to a minimum. Don't get too fancy with the meals - it's hard to chop onions & carrots at -10°F with gloves on. Prep all meals at home in the warmth of the kitchen.
- Shelter the cooking area from wind (walls of tarps, etc.)
- Fill coffee/cook pots with water before bed. It's hard to pour frozen water, but easy to thaw it if it's already in the pot.
- Remember **C O L D**:
 - C** Clean - dirty clothes lose their loft and get you cold.
 - O** Overheat - never get sweaty, strip off layers to stay warm but no too hot.
 - L** Layers - Dress in synthetic layers for easy temperature control.
 - D** Dry - wet clothes (and sleeping bags) also lose their insulation.
- COTTON is not good! If possible , Do not bring cotton. Staying dry is the key to staying warm. Air is an excellent insulator and by wearing several layers of clothes you will keep warm.
- Remember the 3 W's of layering - Wicking inside layer, Warmth middle layer(s) and Wind/Water outer layer. Wicking should be a polypropylene material as long underwear and also sock liner. Warmth layer(s) should be fleece or wool. The Wind/Water layer should be Gore-Tex or at least 60/40 nylon.
- If you're camping in the snow, wear snow pants over your regular clothing
- Bring extra hand covering - mittens are warmer than gloves(work gloves for medium cold).
- Bring 2 changes of socks per day.
- Everyone must be dry by sundown. No wet (sweaty) bodies or wet inner clothing.
- Use plastic grocery bags or bread bags over socks. This keeps your boots dry and you can easily change those wet socks.
- Keep your hands and feet warm. Your body will always protect the core, so if your hands and feet are warm, your core will also likely be warm. If your hands or feet are cold, put on more layers, and put on a hat!
- Dress right while sleeping. Change into clean, dry clothes before bed. Your body makes moisture and your clothes hold it in - by changing into dry clothes you will stay warmer and it will help keep the inside of your sleeping bag dry. Wearing wool socks and long underwear (tops and bottoms) in the sleeping bag is OK.
- Put on tomorrow's t- shirt and underwear at bedtime. That way you won't be starting with everything cold next to your skin in the morning.
- Wear a stocking cap to bed, even if you have a mummy bag.
- Put tomorrow's clothes in your bag with you. This is especially important if small of stature. It can be pretty hard to warm up a big bag with a little body, clothes cut down on that work.

Special Scoutmaster note about Hammock Camping:

- Staying warm in a hammock presents a set of challenges not encountered by ground sleepers, and the methods aren't always intuitive. However, once a few basic principles are understood, a hammock camper can easily conquer these challenges and it's possible to sleep comfortably during all 4 seasons with little to no weight penalty over a ground setup.
- Regarding hammock insulation, three issues must be addressed:
Wind resistance the wind will rob your heat by convection, so you must have some sort of wind block under the hammock
Loft the thickness of the insulation that traps your body heat
Wind resistance is rather self explanatory; it works like a windbreaker jacket. Protect yourself from the wind and you'll conserve heat.

Loft's function is not as intuitive. Here's how it works to keep a person warm in a sleeping bag:

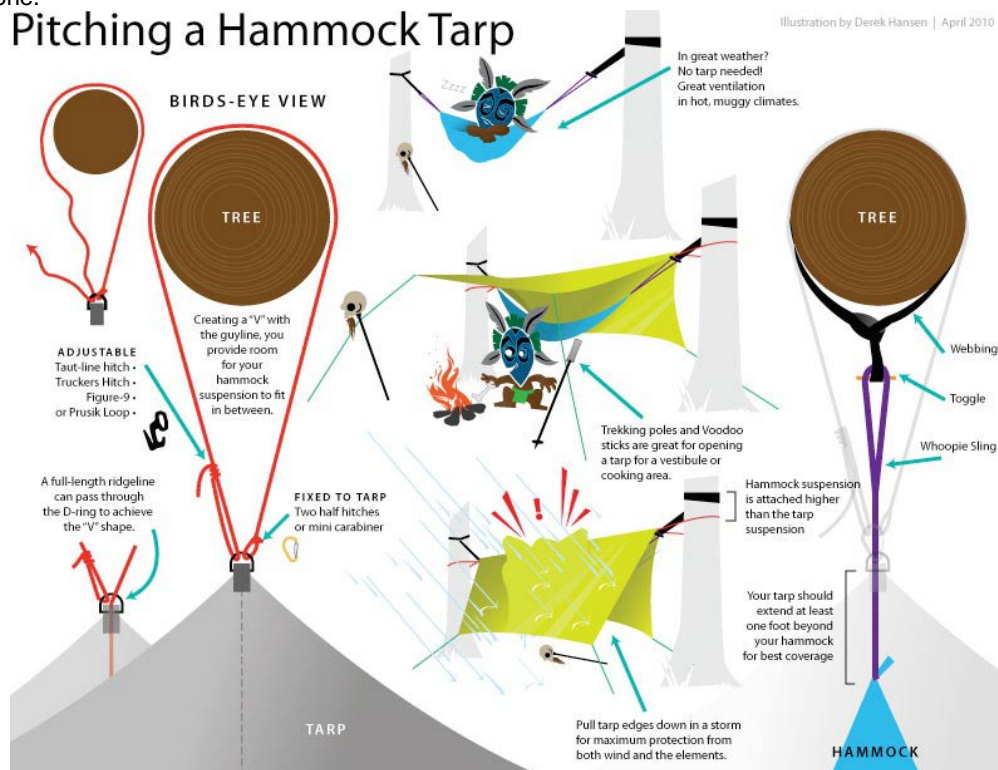
Basically, wrapping yourself in insulation creates a tiny little climate around your body. The amount of warmth this "micro climate" is able to hold is a function of a few factors, and one of the most important is the loft, or thickness, of the sleeping bag. When you climb inside and your body generates heat, the bag will trap tiny pockets of warm air inside the insulation. These pockets are what keep your body heat from escaping, and a bag with more loft (i.e. a thicker bag) will have more air pockets to protect you from the cold. Conversely, a thinner bag will provide less protection.

That's common sense...a thicker bag gives more protection than a thinner bag. But here's how this principle applies to hammock campers. When you sleep in a hammock, your body compresses the sleeping bag's insulation under you, so a bag that's normally 5" thick now provides about half an inch or so of insulation to your bottom side.

When you sleep on the ground, your pad provides a layer of insulation that prevents the cold ground from stealing your body heat. That's actually a pad's primary purpose...not to cushion you from the ground. In a hammock, on the other hand, you now have no insulation except a flat sleeping bag between you and the wind blowing under you that's robbing your heat. The first night I slept in my Hennessy, it was mid30s and windy. I was in a 40° bag, believe it or not, and I was freezing on my butt and shoulders and sweating on my chest. So what's the answer? Find a way to better insulate underneath you! So how do you do that?

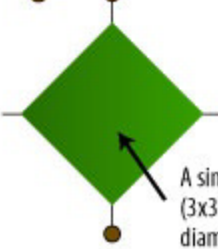
There really isn't a perfect or universally accepted method of insulating a hammock...everything is a tradeoff and what works for me may not work for you. However, hammock campers generally agree that underquilts are the most comfortable and expensive, while closed cell pads are the cheapest and easiest, and still way more comfortable than sleeping on the ground. Walmart sells a really good blue one.

Pitching a Hammock Tarp

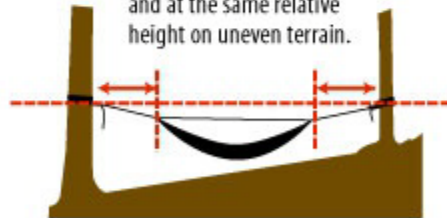




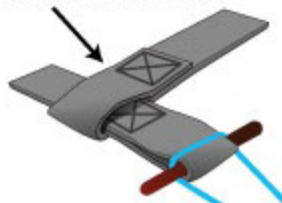
Birds-eye View



Generally speaking, the hammock should be hung evenly between the trees and at the same relative height on uneven terrain.



Looped webbing can be threaded through each other to attach to a tree.



The tarp ridgeline should be tied below the hammock straps so the tarp will be close when the hammock sags while occupied.



More information about hammock camping at hammockforums.net

Illustration by Derek Hansen