

HOW TO CHOOSE A BACKPACK

Select Your Style: Internal or External

Long-haul backpacks (suitable for 2-day trips or longer) are known as frame packs, meaning a metal frame supports the packbag and helps focus the weight where your body can most effectively carry it — on your hips. Manufacturers offer 2 styles of frame packs: internal-frame packs and external-frame packs.

Internal-Frame Packs

Internals feature a narrow, tower like profile and integrate their framework inside the pack, behind the shoulder harness. The frame usually consists of "stays," or flat bars, about an inch wide and 1/8-inch thick. Stays are usually aluminum and are configured in a V-shape. Alternative frame materials (such as composites) and stay-alignments (parallel, X-shaped; U-shaped) are sometimes used. Stays are removable and can be shaped to conform to your torso.

Internals are popular packs with many advantages:

Flexibility. Stays make internals stiff, but not rigid. This allows the pack to more easily move in harmony with body movements, a big plus for climbers and skiers.

Balance. Internals hug your body. This holds your equipment closer to your natural center of gravity and helps you keep your balance when it counts — for example, while you're scooting across a log above a stream.

Stability. Compression straps are everywhere on an internal. You use them to cinch down your load and keep individual items bunched together. This keeps them from shifting and throwing you off-balance if you make any abrupt moves.

Maneuverability. Because internals feature a slimmer shape, it's easier to swing your arms freely — another reason why these packs are popular whenever they have to squeeze through tight spots or when they're bushwhacking through thick brush.

Adjustability. Internals use suspension systems (involving the shoulder harness and hipbelt) that can be adjusted more precisely than external-frame systems.

The downside of internals:

The black hole. Most internals have 1 cavernous main storage compartment, plus a separate section for a sleeping bag. Other than a lid pocket, nearly everything gets stuffed into that single, deep compartment.

So, if it's necessary to find 1 particular item during a rest stop, you may have to hunt a while to locate it.

Hot stuff. You'll sweat more wearing an internal because it rides so close to your back. The design offers little room for ventilation.

Cost. Internals typically cost more than externals of a similar size.

External-Frame Packs

Externals connect a packbag to a rigid frame made of aluminum tubing. Externals ruled the backcountry until internal-frame design was introduced in the late 1970s. Internals have surged in popularity, yet externals are still a great choice for transporting heavy loads along trails. With an external, the pack's weight sits more squarely on your hips; with an internal, the back, shoulders and hips share the load.

The advantages of externals:

Cooler to carry. An external's load does not sit flat against your back, allowing air to circulate.

Easier to pack. Externals feature at least 2 main compartments plus several side pockets. You can organize your gear into "zones" and locate it more easily.

Heavy loads won't sag. They might in an internal, depending how you pack it. Plus, since your center of gravity sits higher in an external, it's easier to walk upright.

Cost. You'll pay less for an external.

The shortcomings of externals:

Minimal agility. They tend to make you walk more stiffly, making externals cumbersome when you try to walk off-trail. Attempting to scramble up rocks or hop across a boulder field while wearing one is difficult, even unpleasant.

Poor traveling companions. Sometimes you can squish a loaded internal into a car truck or back seat; an external frame won't give an inch. Plus, in the luggage-transport systems of airports, externals sometimes can take a pounding.

Rucksacks

Rucksacks are a third category of overnight packs. These are usually frameless packs (some models include a single stay) that can store between 2,500 and 3,500 cubic inches of gear, enough for 1 or 2 nights — or more, if you are an ultralight specialist. These are essentially overgrown daypacks and often feature lightly padded backs. They are popular with skiers, trail-runners, rock scramblers and peak-baggers.

Which Is Best for Me?

The answer depends on your hiking style and the types of places you explore most often.

Which people are better suited for an internal?

- Climbers/mountaineers
- Scramblers/peak-baggers
- Skiers
- Off-trail (cross-country) hikers covering rough terrain

Why? The snug fit of an internal allows your load to move with you, helping you stay balanced and agile on uneven terrain. Recreational backpackers have also grown to prefer internals, valuing their comfort and versatility. Internals have emerged as very popular general-purpose packs, typically outselling externals by a sizable margin.

Which people are better suited for an external?

- Beginning hikers
- Hikers hauling heavy loads over easy to moderate trails and terrain

Why? Externals appeal to juniors and beginners because they cost less. For people toting monster loads, the frame becomes an efficient extension of your upper thighs and pelvic region — an area of stout bones and thick muscle groups that are well-suited to the task of bearing the weight of a backpack. Are externals becoming obsolete? Don't count on it. Tradition is on their side, and they're a great bargain.

What Features Should I Look For?

Hipbelt: Generously padded hipbelts (unlike the thin cloth waistbelts found on Sixties-era backpacks) represent a major advancement in pack design and greatly enhance your ability to carry tonnage into the backcountry.

Most consist of various grades of foam: open-cell foam for cushioning, closed-cell or molded foam for firmness. The hipbelt should straddle your "iliac crest" — the 2 prominent bones on the front of your hips. This is the area where your pelvic girdle begins to flare out, providing the hipbelt with a stable, fortified foundation.

Some packs offer interchangeable belts, permitting a more customized fit, and even belts where the angle of the fit can be adjusted. The hipbelt's padded ends should not touch; you need some space to be able to cinch the belt securely. On the other hand, don't tighten a belt excessively. Your hips could be irritated if you do.

Internal-frame models include a lumbar pad. This large pad should offer cushioning yet should not feel spongy. If it does, it could break down quickly under a load.

Framesheet: Some internal packs place a thin but stiff sheet of plastic between you and the packbag. Often this is a material known as HDPE, or high-density polyethylene. This adds stiffness to the frame without adding much weight. Plus, it prevents objects in your pack from poking you in the back.

Internals sometimes include some type of mesh or foam panel that rests near the middle of your back. This is an attempt to separate the pack from your back and encourage some air flow between the two. It offers modest help. Here is a trail-tested truth: Count on having a sweaty back if you tote an internal.

Suspension system: This involves the shoulder straps (padded and contoured), load-lifting straps, a sternum strap and belt-stabilizer straps. These items, and tips for adjusting them, are discussed in our clinic *Fitting a Backpack*. So-called ladder suspensions typically allow you to reposition the shoulder harness in 1-inch (or, preferably, smaller) increments. The more fine-tuning a pack permits, the better the fit.

Packbags: Common materials are packcloth (a sturdy grade of nylon) and Cordura, a burly fabric with a brushed finished. Both resist abrasion and are coated for water resistance. Cordura is tougher and a bit heavier. Ballistics nylon, a strong, lightweight material, has popped up in newer pack designs and seems to work well. Internals usually offer an "extendable collar" or "spindrift collar" — additional nylon with a drawstring closure that allows the main compartment to stretch higher and hold extra gear.

Detachable pocket: Many internals allow you to detach the "floating lid" pocket from the pack and convert it into a fanny pack or daypack. That's a handy feature when you choose to make day hikes from a backcountry basecamp.

Water-bottle holders/hydration pockets: Externals offer plenty of side pockets where you can stash a water bottle. Internals rarely do, although several now offer elasticized mesh "holsters" on the side where you can keep small bottles handy. Hydration systems (water reservoirs, or bladders, connected to a long sipping hose) have boomed in popularity. Many high-end packs now offer such systems.

Extras and attachments: Lash points allow you to attach even more gear to your pack if you feel the need. Climbers and early-season hikers should look for ice-axe loops, daisy chains (a series of small loops where you can dangle gear, such as carabiners) and crampon patches. A so-called shovel pocket holds items tight against the back of your pack; it's a good place to stash wet things. All of these extras, of course, add weight to a pack.

Loading options: Most internals are "top-loaders," where all gear passes through one big hole at the top of the packbag's main compartment. This requires you to keep quick-access items near the top. Some internals now provide zippered, slit-like openings on the sides of their main compartments. This allows you to stash smaller items (water bottles, for instance) lower in your pack but still have quick access to them. Most externals, meanwhile, are "panel-loaders." In this configuration, a zipper follows a U-shaped track along one side of a compartment. When unzipped, the compartment's side panel falls away like a flap to give you wide access to the compartment's interior.

Packs for women: Several packs, both internal and external models, have been modified with narrower shoulder straps, smaller hipbelts and shorter torso lengths.

Packs for travel: Travel packs offer you the ability to conceal and protect a pack's suspension system when using it on public transportation. Typically, the suspension systems are not quite as substantial as regular internal-frame packs.

How Much Can I Expect to Spend?

Some external-frame packs cost less than \$100; a few high-end internals sell for nearly \$500. Most internals cost between \$200 and \$300. Externals rarely exceed \$200.

If you regularly visit the backcountry and anticipate at least 1 overnight trip per year, invest in a quality pack with a capacity that matches your ambitions. Inexpensive discount-store backpacks are poorly made, rarely last, have inadequate padding and can be miserable to wear. An uncomfortable pack can ruin an otherwise beautiful outing.

Consider renting a pack before buying your first backpack. It will help you become better acquainted with how a pack fits and performs. A good rental shop such as A16 or REI will adjust a pack to conform to your body shape.

What's the Right Capacity?

As the phrase goes, your numbers may vary. But here's a general guide for internals:

Up to 3,000 cubic inches: Good for day hiking or a 1-night trip in warm weather where your supplies will be minimal.

3,000-4,000 cubic inches: Enough space for 1- or 2-night trip. You can go even farther if you team up with a partner who could help carry the load of shared items.

4,000-5,000 cubic inches: Generally good for up to 3 days of overnight camping.

5,000-6,000 cubic inches: Can accommodate up to 6 days of overnight camping. The lower end of this range is good for most backpackers. Don't buy too large a backpack, though, if you don't anticipate needing the space. The more compact and lightweight your load, the better.

6,000-plus cubic inches: For long hauls lasting a week or more.

Keep in mind: Capacity figures for internal and external packs vary significantly. Sleeping-bag storage accounts for the compartment behind the hipbelt, and synthetic bags can consume 2,000 or more cubic inches of a pack's stated capacity. With externals, bags are usually strapped to the underside of the packbag. This does not influence the pack's capacity figures.

By the numbers: Not every manufacturer measures cubic inches the same way. So one company's measurement of 4,000 cubic inches may differ a bit from another company's calculation.

Weight: Internals tend to be a touch lighter, but the differences are minimal. Large packs can weigh up to 8 pounds. That's 8 pounds on your back before you add any gear! This should only modest distances, you don't need a monster pack.

HOW TO FIT A BACKPACK

Forget about the color and the fancy logos. What really matters when selecting a new backpack is making sure that it's a good fit for your body.

You want to choose a pack well suited to your individual dimensions, then you need to customize it to your body shape. Here are some tips to help you accomplish that:

Determine Your Torso Length

Torso length is a crucial measurement. It is important to distinguish between your height and the length of your torso. Just because you are a certain height — say a 5' 9" female or 6' male — does not mean you automatically need a "large" or "tall" pack. Your torso length, not your height, determines your pack size. Here's how to measure yours:

Enlist the help of friend. Have that person locate the bony bump at the base of your neck, where the slope of your shoulder meets your neck. (It's known as the 7th vertebra.) Tilt your head forward to locate it more easily.

Using a flexible tape measure, ask your friend to start at that spot and measure down your spine, following the curves of your back along the way.

Place your hands on your hips so you can feel your iliac crest—the twin pointy protrusions on the front of your hips. (The iliac crest serves as the "shelf" of your pelvic girdle, the area that is gripped by your pack's hipbelt.) Position your hands so your thumbs are reaching behind you.

Have your friend finish measuring at the point where the tape crosses an imaginary line drawn between your thumbs. This distance is your torso length.

Generally, your measurement will fall into one of these frame-size categories:

Small: Up to 17 1/2".

Medium/Regular: 18" to 19 1/2".

Large/Tall: 20" and up.

Pack manufacturers typically use general terms (small, medium, large) to identify their frame sizes; look at each pack's technical specifications to find the actual numeric range. REI.com lists those numbers in a chart that accompanies each pack description.

A person with a measurement right on the border (say, 17 3/4") might want to visit a retail store to try on both a small and medium version of a particular pack. Manufacturer's product lines includes adult packs sized to fit torso lengths as compact as 14" (10" for children) and as long as 23". If your measurement lies outside that range, you might require a custom-built pack.

Determine Your Hip Measurement

While not as crucial as your torso length, your hip measurement is useful to know. It's very helpful if you are considering a pack that offers interchangeable hipbelts.

Take your tape measure and wrap it around the top of your hips, the "latitude line" where you can feel your iliac crest — those two pointy bones just above the front pocket on your pants. A properly positioned hipbelt will straddle your iliac crest, about an inch above and below that line.

Test Fit Your Backpack

A comfortable fit, is crucial to your satisfaction. Ideally, you should visit the store in person and try on some packs. If that's not possible, try the procedure described below at home with any pack you order. If it just doesn't feel right, send it back. We don't want you to try and lug an uncomfortable pack into the wilds. To be fair, you need to keep in mind that no fully loaded pack ever feels truly "comfortable." What you are seeking to avoid is any sharp or unreasonable discomfort.

A Good Fit, Step by Step

If possible, start with about 20 or 30 pounds of weight to place inside the pack: sandbags or weighted pillows supplied by the store; items of personal gear packed into stuff sacks; climbing ropes. (If you're able to visit a store, throw some things in a duffel bag and bring them with you.) Distribute these throughout a pack's interior, keeping the weight close to your body with the heaviest portion near your shoulder blades. Next:

1. Loosen the pack's shoulder straps, load-adjustment straps and hip belt.

2. Slip your arms through the shoulder straps.

3. Position the hipbelt so it basically straddles your hipbones (iliac crest); close the buckle and make the hipbelt straps snug.

Tip: The belt should completely, comfortably cover your hips, but its 2 ends should not touch. If the belt is too loose or too tight, reposition the buckle pieces on the hipbelt straps. If this doesn't give you a secure fit, you may have to try a different pack or hipbelt. Do not tighten your hipbelt excessively. Keep it snug, but if it's too tight or too long on the trail, you'll have sore spots on your hips the next morning.

4. Cinch the shoulder straps down tightly, then ease the tension slightly.

5. Look sideways in a mirror. Check the position of your shoulder straps:

For internal-frame packs: The padded sections of the shoulder straps should wrap around the crest of your shoulders comfortably and attach to the frame about 1" below that point. No gaps should appear. For external-frame packs without load-lifter straps: The shoulder straps should attach to the pack frame at a point slightly higher than the top of your shoulders. For external-frame packs with load-lifter straps: The padded sections of the shoulder straps should wrap around the top of your shoulders comfortably and attach to the frame about 1" below that point.

6. Check your load-lifter straps. These should attach to your shoulder straps at a point just above your collarbone and just below the top of your shoulders. From there, they should rise up to join with the frame at an angle of between 40 and 50 degrees. If the angle is higher than that, your frame is too long. Any lower and your shoulders will carry too much of the load.

7. Check the shoulder strap length and width: The buckle on the strap should be far enough below your armpit that it won't chafe. How far? Try a hand-width. The straps should be far enough apart that they don't squeeze your neck, but close enough together that they don't slip off of your shoulders during hiking. The width is sometimes adjustable.

Women need to pay special attention to the fit of shoulder straps. On some unisex packs, the distance between shoulder straps may be too wide, or the straps themselves are wide enough to gouge an armpit or breast. If you find a good fit is elusive, seek out a pack designed specifically for women.

8. Check for a good torso fit. If the pack fits you correctly, you should be able to redistribute the weight of the pack between your shoulders and your hips simply by loosening and tightening your shoulder straps slightly.

Tip: Make any adjustments by moving the shoulder harness up or down, using whatever means the individual pack provides. On a "ladder" system, for instance, you can rethread the webbing and fasten it at a new position on the ladder.

9. Adjust the sternum strap. Position it about 2" below your collarbone. You should be able to breathe comfortably when the strap is fastened. It is not essential that you keep your sternum strap fastened at all times. It is most helpful when you are negotiating uneven terrain.

10. Check for comfort:

Does the pack feel good on your back?

Does it pinch or bind or unusually restrict your movement?

Can you look up without hitting the pack with your head?

Can you squat down without cutting off the circulation to your legs?

This may seem like a lot to keep in mind, but all of the above will become automatic as you gain experience. Now walk around with your pack. Climb and descend a flight of stairs. Hop from spot to spot. Reach. Walk a line. If anything is pinching, try adjusting the various straps.

Additional Considerations

Bending the stays: The stays that serve as the frame of internal-frame packs are almost always removable and can be bent to conform to the contours of your torso. How meticulously and precisely should they be bent? It's a matter of choice. It's usually sufficient to give the stays a modest bending so they follow your spine's natural S-shape. To make sure your stays are not damaged when bending them, it's best to have a trained technician bend them for you.

Breaking in your pack: Ideally, make your first trip with your new pack a short one. You can make some modest adjustments during rest stops. Over time, with regular wear, items such as internal stays and the padded hip belt will conform to your body configuration.

What Else I Should Know?

People may be the same height yet have different torso lengths. Make a backpack purchase based on your torso length. If a pack feels burdensome while you walk, consider porters in Nepal who still transport large loads on their backs using a trump line — a long strap of fiber that wraps around the load, then is worn across the forehead.

Quick Review

Internal-frame packs, with their body-hugging design and low center of gravity, are ideal for any outdoor activity — mountaineering, skiing, scrambling and hiking on- or off-trail. They offer you good balance and more freedom of movement. Internal packs are the popular choice of most outdoor adventurers.

External-frame packs are good choices for carrying heavy loads over easy to moderate terrain, primarily trails. Their rigid design makes you walk more stiffly and is not the best for rock-hopping or other types of cross-country travel. They cost less than internals.

Rucksacks are, in essence, extra-large, frame-less daypacks that can accommodate enough gear for a lightweight overnight trip.

Fit is crucial. Review "Pack Fitting" and make the effort to have your pack customized for your torso.



BACKPACK JARGON:

Adjustable Torso Length

To accommodate a variety of torso lengths, some packs feature shoulder straps and/or a hipbelt that moves up or down on the pack frame. This allows you to fine-tune the fit. The adjustability comes at a price, though. The moveable components create a less-stable ride than you'd find on a fixed-suspension pack, because the adjustable straps aren't locked into the frame as securely as fixed straps are.

Back Padding

A contoured sheet of foam padding, often with a mesh lining, that forms the soft, breathable cushion between your back and the frame of an internal frame pack.

Built-in Bladder

Many hikers have forsaken water bottles in favor of a hydration system that is, a water bladder with an attached drinking tube that hangs near (or clips to) a shoulder strap for easy sipping while you hike. Some pack makers incorporate hydration systems into their pack designs. These packs feature special pockets to hold the bladder and small, reinforced holes through which to feed the drinking tube.

Compression Straps

Nylon webbing belts around the sides and bottom compartment of an internal frame pack that cinch the pack's contents tight to provide a smoother, more stable ride and eliminate load-shifting. Also, good place to store trekking poles, tripod, or hang extra clothes.

External Frame

For these, the packbag is mounted to the outside of a rigid frame, often made of aluminum tubes or molded plastic sheets. Externals hold the pack's weight higher than internals do, allowing you to walk in a more upright position. They also hold the packbag farther from your back, letting air circulate between you and pack to cool your sweaty back. Externals often feature multiple means of adjustment, letting you tweak the positions of the shoulder straps, hipbelt, and even the packbag on the frame (this latter adjustment gives you the opportunity to shift weight up or down for added comfort). Externals are generally less expensive than internal frame packs.

Frameless Rucksack

Take the frame out of an internal frame pack and you have a rucksack. (Note that the reverse process putting a frame into a rucksack was how the internal frame pack was invented.) Rucksacks are basically packbags with straps. They are best suited for dayhiking, ski touring, or climbing when you have little weight in the pack.

Heavy Duty, Coated Fabric

Turns back thorns and raindrops. Stress points reinforced with super strong ripstop cloth.

Hybrid-loading Backpack

Taking the best of both worlds and minimizing most of the drawbacks, hybrid loaders are increasingly common. You can cram in all your gear from the top, stuffing the pack completely full. Then, when you need to get something from the middle of the load, pull down an access zipper, reach in from the front (or side), and get what you need. Zippers do reduce the packbag's water resistance and create a weak spot in the packbag, so make sure the compression straps across the top of the zipper are adequate to relieve pressure.

Internal Frame

A frame mounted inside the packbag can be as simple as a pair of aluminum stays bent in the shape of your back or as complex as a molded sheet of rigid plastic supported by a carbon-fiber hoop. The advantages of internal frames include having a streamlined shape that resists getting hung up on brush when traveling off trail. They also ride closer to your torso and therefore resist twisting and turning when you're scrambling over rough routes. When you buy an internal frame pack, it's important to find one that fits your back well. Try on as many loaded packs as you can to find the most comfortable, stable fit.

Lid Pocket

Detaches and doubles as a hipsack or daypack.

Load-Lifter Straps

Webbing straps connecting the top of a pack and the pack's shoulder straps that pull your load higher for a closer fit, more load control, and better balance.

Mesh Pockets

Give you quick access to snacks and water bottles.

Panel-loading Backpack

If organization is important to you, you might like a panel loader. This type of pack features a large, horseshoe-shaped zipper that lets you peel back the front of the pack for fast, easy access to the entire main compartment. You can then meticulously organize your gear inside. The drawback: You won't be able to cram as much stuff into it as you would a similar-size top loader if you try, you risk bursting a zipper. Also, the lack of a floating top pocket makes it difficult to toss in last-minute items and things you might want in a hurry, such as raingear. An important feature to look for in a panel loader is lots of compression straps running over the zippers. These will let you relieve some of the pressure on the zipper, reducing the risk of having them burst midhike.

Shoulder Straps

Curved anatomically so they don't slide or pinch neck.

Shovel (or shove-it) Pocket

This is a panel on the exterior of the packbag that originally was designed to hold a snow shovel. Today, this common feature is frequently used as a convenient place to store clothing layers as you shed them.

Spindrift Collar

This is a broad ring of fabric that extends like a turtleneck collar above the main packbag compartment. It can be cinched down over the gear compartment to seal out the weather, especially blowing snow (i.e., spindrift).

Storm Collar

Extends the size of the pack for extra big loads.

Top-loading Backpack

Imagine a shopping bag: That's top-loading. One big opening at the top provides the only means of access to the main compartment of the bag, although many packs also have a zipper that accesses the sleeping bag compartment. Careful organization before you start loading the pack is essential so that you can stack your gear inside and keep the weight balanced properly. The lack of extensive side or front access zippers makes top loaders more durable and rugged than panel loaders or hybrids. They also generally are more expandable, thanks to the common addition of an extension tube at the top, which lets you increase the volume of the pack when you have extra gear to carry. A floating, pocketed lid usually covers the main compartment opening.

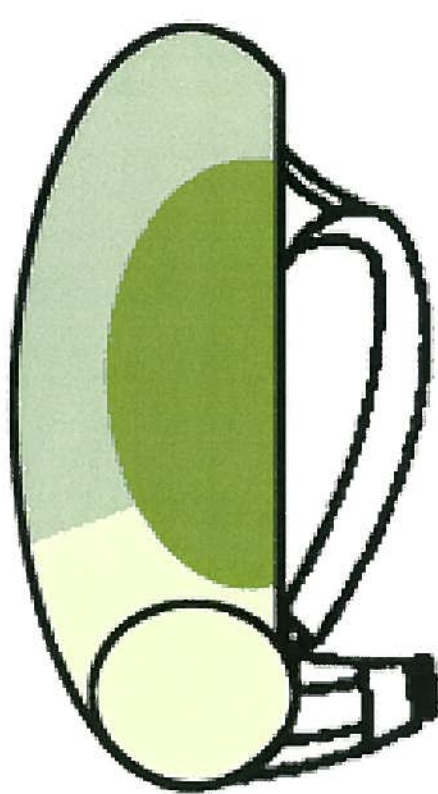
Water-bottle Holster

Lots of hikers prefer not to suck on a hydration-system tube. If you're one of them, a packbag that has side pockets to keep water bottles close at hand is a must.

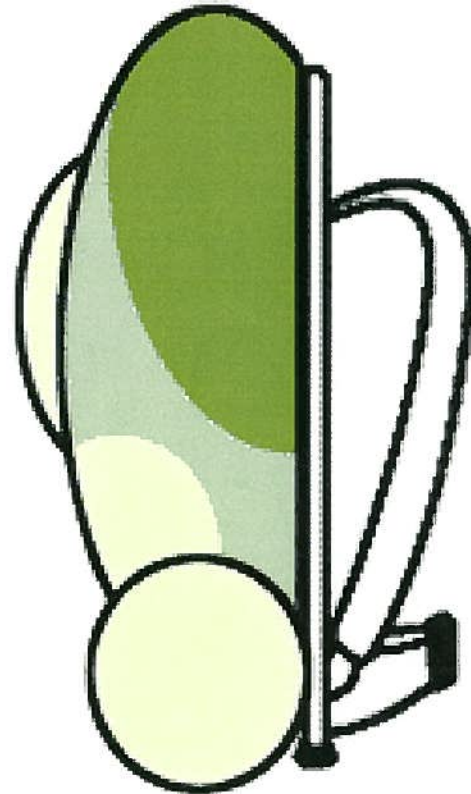
Wicking Synthetic Fabrics

Fabric that typically lines the back panel (padding), hipbelt, and shoulder straps to move perspiration away from skin.

Distributing Pack Weight



Internal-frame pack
(Rough terrain)



External-frame pack
(Moderate terrain)



Heavy



Medium



Lightweight

HOW TO PACK YOUR PACK

You've planned, shopped and prepared. Now it's time to load up and head out. What's the smartest way to get all that gear into your backpack?

It depends on what you're carrying (internal-frame pack or external?) and where you're going (on-trail or off-trail?).

Internal-Frame Packs

Whether you're traveling on- or off-trail, keep your heaviest items close to your back, centered between your shoulder blades.

For on-trail travel, keep heavy items higher inside your pack. This helps focus more of the weight over your hips, the area of your body best equipped to carry a heavy load.

For off-trail exploration, reverse the strategy. Arrange heavier items lower in the main compartment, starting again from the spot between your shoulder blades. This lowers your center of gravity and increases your stability on uneven terrain.

Stuff your sleeping bag into its lower compartment first. Squeeze in any additional lightweight items you won't need until bedtime (pillowcase, sleeping shirt, but nothing aromatic). This will serve as the base of the main compartment, which you'll fill next.

Tighten all compression straps to limit any load-shifting.

External-Frame Packs

As with an internal, keep your heaviest items close to your back, near your shoulder blades.

Externals are recommended for on-trail travel only. Load heavier items high inside your pack and close to your body. Doing so centers the pack's weight over your hips and helps you walk in a more upright position.

Pack your sleeping bag in its stuff sack. Finish loading your main packbag, then strap the bag to the lash points on the bottom of the packbag. If rain seems likely, consider stuffing your sleeping bag inside a second stuff sack or wrapping it in plastic.

Tips for Either Pack Style

Women and people of short stature often find they prefer to pack then weight low whether they're traveling on- or off-trail, regardless of which pack style they're carrying. You are the ultimate judge of what feels comfortable to you. Experiment with different load arrangements to determine what feels best.

Make sure some items are easily accessible, packed in places where they can be reached with a minimum of digging:

- Map
- Compass
- Sunglasses
- Insect repellent
- Snack food
- Flashlight/headlamp
- First-aid supplies
- Water bottles
- Rainwear
- Packcover (Hefty cinch sack)

Don't waste empty space. Cram every nook with something. Put a small item of clothing inside your pots, for example. Smaller items, such as food, pack more efficiently in individual units rather than when stored loosely inside a stuff sack.

If you are part of a group, split up the weight of large items (a tent, for instance) with other group members. Don't make 1 person become an involuntary packhorse.

Cluster related small items (such as utensils and kitchen items) in color-coded stuff sacks to help you spot them easily.

Minimize the number of items you strap to the outside of your pack. Gear carried externally may adversely affect your balance. Secure any equipment you carry outside so it doesn't swing or rattle.

Tips: How about long tent poles, for example? Stow them horizontally with your sleeping pad across the top of an external pack; with an internal, carry them vertically, secured behind the compression straps on one side of the pack with the ends tucked into a "wand pocket" at the pack's bottom. A daisy chain and ice axe loops are designed for specific mountaineering gear; feel free to improvise with them, but don't get so creative that you jeopardize your comfort or stability.

Make sure the cap on your fuel bottle is screwed on tightly. Position it below your food inside your pack in case of a spill.

Carry a packcover. Backpacks, though made with waterproof fabric, have vulnerable seams and zippers. After a few hours of exposure to persistent rain, the items inside your pack could become wet—and thus much heavier. A large trash bag can also work as a pack cover. Hefty cinch sacks are particularly good for this.

Quick repair tips: Wrap strips of duct tape around your water bottles in case a strap pops or some other disaster occurs, a quick fix could keep you going. Take along a few safety pins in case a zipper fails.

Do you aspire to be a truly organized adventurer? Then before you reach the trailhead you should:

Review a checklist before you leave home to make sure you have everything you need..

Double-check your older gear to make sure it's in good working order.

Pre-load your pack the night before your hike begins. Or, a few days before your departure date, rehearse packing for this trip. If you're missing something, it's better to discover this fact early.