



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 an REI store to try on both a small and medium version of a particular pack. REI's product line 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

At REI, we acknowledge that shopping for a backpack online is not the same as examining the packs firsthand. How do you know if it's going to feel good without first trying it on? A comfortable fit, after all, is crucial to your satisfaction.



Ideally, you should visit an [REI 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.

Tip: What's the best way to hoist a heavy pack on your back, you ask? [Click here](#).

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 hipbelt will conform to your body configuration.