

NAME:

How to choose and fit the right backpack TAKE HOME TEST for you - Please try to borrow one for camp Manitou as you get one included in your cost for the Algonquin Trip (FREE!!!)

1. BACKPACK TYPES

Backpacks fall into three basic categories:

- Daypacks
- Internal frame packs
- External frame packs

Daypacks

These packs are used for single-day hikes, climbs, runs or bike rides. In general, daypacks are soft-backed or frameless. Daypacks are lightweight and intended for light loads (10 to 15 pounds). Good daypacks have hipbelts to prevent the load from thumping on your back with each stride.

Internal Frame Packs

These packs are used for bigger, heavier loads (15 pounds and up). Frames--either aluminum stays, plastic framesheets, curved Delrin rods, or combinations of those things--are located within the packbag (as opposed to external frames; see below), and when properly fit, they hug the contours of your back, thereby cinching the load in close to your spine.

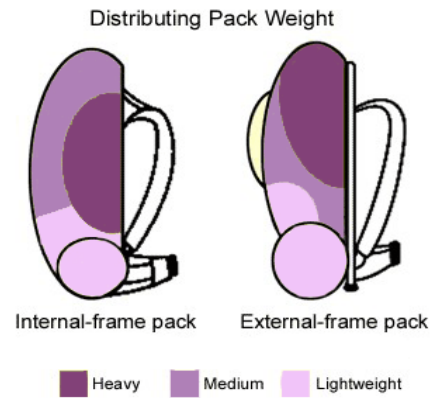
The main job of the frame is to facilitate weight transfer to the hip area, which is where we humans are most capable of bearing it. So a good, supportive hipbelt is also critical.

Because internal frames are generally narrower and closer fitting (than externals), they're the best choice for any sort of dynamic activities like climbing, skiing, or bushwhacking, where you need good arm clearance and a tight center of balance. If you typically hike in hot weather, look for an internal with a "trampoline style" back, which means that breathable mesh is suspended across the frame to allow air circulation without any major loss of stability.

Proper loading of an internal frame pack is key, not only in order to keep the weight well balanced and stable, but also to keep you well organized.

Backpacker Tip: Loading an Internal Frame Backpack

- Pop your sleeping bag (packed in a waterproof stuffsack or sturdy garbage bag) crosswise in the bottom of the pack. You won't need it until the end of the day and it provides a nice, stable base for your pack.
- Next, load heavy items like your food bag, tent (poles can be removed and strapped to the side of the pack), and your copy of *War and Peace*. Keeping heavy objects low and



close to spine will help you maintain the best balance on the trail.

- Stuff your puffy jacket and raingear down the sides of the pack, taking up the space left by the bulkier items. (Keep the rest of your clothes in a small stuffsack, and load that in next.)
- Use the top lid and other external pockets to stash items that you'll use during the day: snacks, maps, sunscreen, headlamp, and water treatment.

External Frame Backpacks

Also used for big, heavy loads, these packs are best for walking on trails (as opposed to skiing, climbing or bushwhacking). That's because the packbag is hung off a simple exterior frame, so the load is positioned farther away from your back. And though this might result in a wobble-fest for climbers or skiers, trail walkers who carry big loads often love them. (Tip: Use hiking poles for stability.)

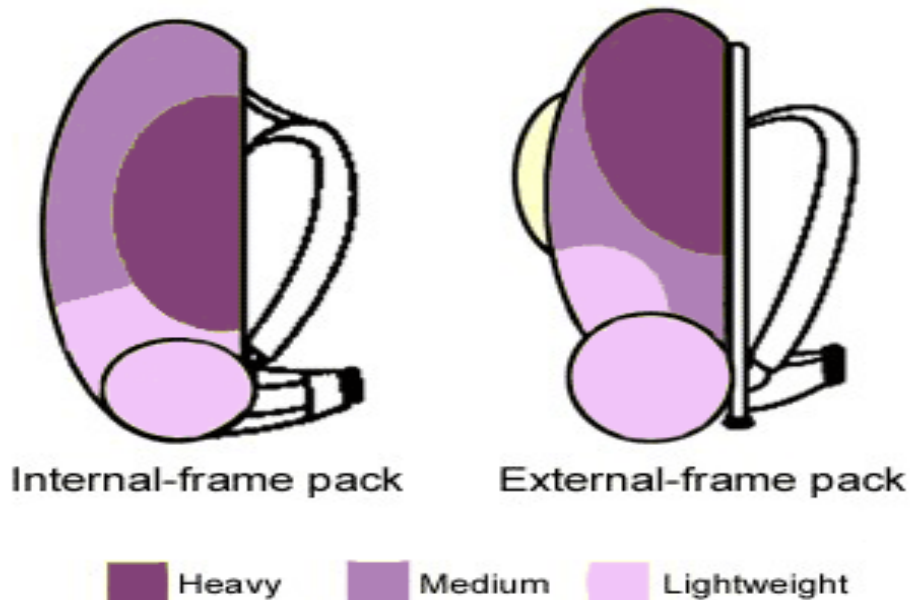
External frame packs have a higher center of gravity than internal frame packs, which has two advantages: It gives excellent weight transfer to the hips and it allows you to walk with a more upright posture (with big internals you have to lean forward to counterbalance the load). Plus, they offer lots of airflow between the pack and your back, great for long, sweaty days on the [Appalachian Trail](#) or anywhere that heat is a factor.

Externals are known for their plentiful pockets and ultimate trail-livability, but there are still a few tricks to loading them.

Backpacker Tip: Loading an External Frame Backpack

- Most externals assume that you'll strap your sleeping bag outside and under the packbag. That's why it's absolutely critical that you store your bag in a completely waterproof stuffsack. (Tip: External frame-pack wearers are rolling the dice if they rely on garbage bags for water protection. Walk too close to a branch and you're sleeping on a sponge. Spend a few extra bucks and get a waterproof sack with a roll-top closure.)
- Heavier gear (like your food and tent) belong higher up on the frame, but still close to your spine.
- Use any available side or front pockets to organize your gear. This allows you to skip the stuffsacks and save a few ounces.

Distributing Pack Weight



2. GETTING THE RIGHT FIT

Daypacks

Fitting a daypack is pretty straightforward, which is why many of them come in only one size. The shoulder straps should wrap comfortably around your shoulders, without pinching or digging under your armpits, and the hipbelt (usually just a length of webbing) should snug the bottom of the pack against your lumbar region to eliminate sway or thumping as you walk.

Multi-Day External and Internal Frame Packs

With bigger internal and external frame packs, fit is a key issue--the most important one you'll face. Fit is all about the "suspension system," which is the part of the pack responsible for bearing the weight and connecting it to your body: the shoulder straps, the hipbelt, the frame, the back padding, and the lumbar area. There are three types of suspension systems:

- **Fixed Suspensions:** Although they have no adjustability, fixed suspensions often come in a variety of torso lengths to accommodate different sized people. The main advantage of a fixed suspension is that, with fewer moving parts, there's a very solid connection between the wearer and the pack, which translates to stability. Downside: Make sure the pack fits you perfectly, because there's no wiggle room.
- **Adjustable Suspensions:** This system has a shoulder yoke that moves up or down a track in the center of the back panel. This lets you shorten or lengthen the space between the shoulders and hips to fit a wide variety of body types. It also gives you the ability to change the way your pack fits if you develop sore spots.
- **Interchangeable Suspensions:** This system has perhaps the best of both worlds. Some companies offer the ability to customize a pack by buying different size hipbelts and shoulder straps. This works particularly well for people who fall outside the range of "average" height and weight.

Backpacker Tip: Measure Your Torso

Before you even start shopping, determine your torso length, so you can find the proper size pack for your body. Nothing is more important in fitting a large-capacity backpack because without the proper measurement, your shoulders, back and hips will not bear the load correctly, causing discomfort and, potentially, injury. To do this, you'll need a friend and a soft tape measure or a length of string. Follow these three steps:

- Tilt your chin down so that the C7 vertebra at the base of your neck protrudes. This is the starting point of your measurement.
- Put your hands on your hips and use your thumbs to feel for the top of the iliac crest. Draw an imaginary line between your thumbs. Where this line intersects your spine is the end point of your measurement.
- Have your friend drape the string or tape measure along the contours of your spine between the two points. You now have your torso length. (Most adults have torso lengths that fall between 16 and 22 inches.)

A Note on Women's Packs

These aren't just smaller men's packs in pretty colors. Good women's packs have subtle but important fit differences that can really improve comfort for women: shoulder straps that are closer together, thinner, and more tapered to meld with narrower shoulders, and hipbelts that are canted to better cup women's hips.

3. CAPACITY

What size pack do you really need? Get a pack that's too big and you'll be sure to fill it with non-essential junk and end up tired and sore. But go too small, and you might not be able to fit the stuff you do need, like safety gear.

Backpack sizes are listed either in cubic inches or liters, which can make comparison-shopping a bit tricky, especially for online shoppers who aren't able to actually see the packs before they buy. That's why we've done the conversions and broken it all down for you. The below lists are very general rules of thumb, and will depend on the sizes of the items you're packing, of course.

Daypacks

Size: Less than 2,500 cubic inches or 40 liters

Will hold:

- Water
- Lunch and snacks
- Camera
- Shell and/or warm layer
- Several trinkets like emergency kit, small first aid kit, GPS

Weekend Packs

Size: 2,500 to 3,999 cubic inches or 40 to 65 liters

Will hold: All of the above, plus:

- Small tent
- Sleeping bag and pad
- Ultralight stove and cook kit
- A few more clothing items
- A weekend's worth of meals

Weeklong Packs

Size: 4,000 to 5,999 cubic inches or 65 to 95 liters

Will hold: All of the above, plus:

- Extra food, fuel and kitchen gear
- A few luxury items like camp chair, camp shoes, pillow
- A bigger tent
- A warmer sleeping bag and cushier sleeping pad

Expedition Packs

Size: Greater than 6,000 cubic inches or 95 liters

Will hold: Winter-worthy versions of all of the above, plus:

- Mountaineering gear

Bear canisters (essential for carrying food in bear country)

Short Answer

1. What are the three basic categories that backpacks fall into?
 - a.
 - b.
 - c.

2. What three things can daypacks be used for ?
 - a.
 - b.
 - c.

3. What is the main job of the internal frame and why is a good hipbelt critical

4. Why are the two advantages that internal frame packs have over external frame packs to make them the best choice for any sort of dynamic activities like climbing, skiing, or bushwhacking, where you need good arm clearance and a tight center of balance
 - a.
 - b.

10. For the multi-day external and internal packs what is the key issue – the most important one you will face

11. What are three types of suspension systems

a.

b.

c.

12. . Nothing is more important in fitting a large-capacity backpack because without the proper measurement, your shoulders, back and hips will not bear the load correctly, causing discomfort and, potentially, injury. What are the three steps to measure your torso

a.

b.

c.

13. How are women's packs different than men's packs? Why?

14. In liters how big is a day pack and what items does it usually hold ?

Liters: _____

Items:

a.

b.

c.

15. In liters how big is a weekend and what items does it usually hold ?

16.

Liters: _____

Items:

a.

b.

c.

17. In liters how big is a weeklong pack and what items does it usually hold ?

Liters: _____

Items:

a.

b.

c.

17. In liters how big is an expedition pack and what items does it usually hold ?

Liters: _____

Items:

a.

b.

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Word Bank

Delrinrods, Lumbar, breathable, contours, daypack, expidition, external, frame, hipbelt,
 internal, loading, spine, stuffsack, suspensions, torso, trampoline, weekend, weeklong,
 women, yoke