

Backpacks

How to Pick a Backpack.

Prefer tough, waterproof, non-ripping materials. Zippered closures are better than drawstrings, which are better than flaps, as zippers are less likely to let bugs crawl in, and small objects fall out when inverted. Look for big-toothed overkill zippers, not cheap easily damaged ones. Buckles & ties are better than (yuck) Velcro. Look for high-strength seams and reinforcements. Zippers should not be load bearing. Multiple compartments are good in a large pack (say one or two main, a few smaller ones), but too many pockets and hiding places are a gimmick and impediment.

A backpack must be sized and properly adjusted for the wearer, starting with wide, padded, adjustable shoulder straps. Day packs (rucksacks) are fine for 72 hour kits and lessor loads, if well constructed and with reinforced waterproof bottoms. Avoid too many things sticking out--dangling straps, outboard pockets, and tie-ons--that will tend to snag on trees and brush. A package that is fairly smooth on the outside is generally better.

Internal frame packs are good, though they tend to be more expensive. These have stiff supporting structures sewn inside the wall of the pack, sometimes accessible for modification. The larger of these have padded waist belts that carry most of the weight, sparing your shoulders, and the belts, too, must fit the hiker's hips correctly.

External frame packs, or pack frames, are for maximum load capacity and versatility; the frame and the pack bag can be purchased separately, or modified separately. Using mesh, the frame can also provide some ventilation between your back and the load, and just about anything you can strap to the frame can be carried. [I suspect the military does not use these much any more because the external frame is more awkward crawling around in tight quarters; being metal it has the potential of being noisier, and treated as cargo they are not as conformable to available space as all-fabric packs. Canvas duffel bags are still favored by the troops for this reason. The internal frame or frameless packs may also be significantly less prone to damage with rough handling.]

With internal frame packs a sleeping bag would go inside, taking up much of the volume, whereas with pack frames the sleeping bag usually is attached to the frame underneath the pack bag, leaving the pack bag entirely available for smaller items.

For ergonomics in hiking, if a pack having greater volume is needed, it is better that it be large in length and width, not in the direction that moves the center of gravity away from your spine. Climbers and skiers, o.t.o.h., prefer a long, narrow pack that doesn't restrict their arm movement.

Remember to ask: Does it have the capacity I need and can wisely carry? Does it fit me comfortably? Is it well made and durable? Is it well designed regarding features, weather and security? What is going to break or come apart first on it? Can I repair it when that becomes necessary? Is it reasonably priced?

How to Pack a Backpack.

Modularize contents by activity (cooking, repair, hunting, medical, food, etc.), by chemical compatibility (foods away from fuel or soap, etc.), by time of day, or by frequency of access.

Place all small items in a module or Ziploc bag. These are cheap, lightweight, transparent, and waterproof. Don't have any small loose items in the pack that can hide from you or work their way to the bottom of the pack. "Freezer" bags are somewhat more durable than the ordinary grade. When you have to retrieve something deep in your pack, seven or eight modules are easier to repack than a hundred individual items. Inventorying and re-supplying are more convenient by module too.

Keep all clothing, clean or used, in Ziploc bags or other plastic bags, to keep them dry, and prevent contamination. All food, also, in sealed containers.

Provide easy access (side pocket, top flap, or on top inside) for items accessed frequently (water, map, compass), for items needed quickly (rain gear, first aid kit, snake bite kit, rope/rescue

equipment, or defensive items), and for convenience (tissue, jacket, snacks, notebook, camera, insect repellent, flashlight, water disinfection chemicals.)

Work out your own (evolving) scheme of what goes where, and stick with it: 'A place for everything, and everything in its place.' Balance weight left and right, avoiding back strain.

Place soft, flat items against your back, or at least avoid things that will knead you.

To reduce fatigue, place heavy (dense) items **high and forward** in the pack. This requires less leaning forward to place the center of gravity (c.g.) of the pack over your hips. Alternately, to maximize stability under difficult walking conditions or on a bicycle, place heavy items low and forward. This moves the center of gravity closer to the hips for better control of balance.

Prefer not to attach objects to the outside of the pack, as they tend to snag on things, get wet, dirty, flop around, or come loose. Otherwise, make sure all external attachments are secure, and not dangling or swinging. Like a self-winding watch, loads that are swinging, sloshing, bouncing, shifting or otherwise moving around, extract energy from you. Except for making it tolerably soft against your body, keep the pack and its contents compressed and rigid.

Take only the needed quantities of anything, saving weight and space. Reduce the weight of your pack, even by grams, any way you can. Use space well, minimizing voids. Scrupulously avoid breakable containers. Package to prevent one thing damaging another. Use compression straps to prevent shifting of contents, and keep the c.g. as close to your spine as possible.

Repair kit for backpack might include cord, one or two large sewing needles, nylon upholstery thread or dental floss, matches (to fuse thread ends), safety pins, a few inches of duct tape, steel or copper wire and long-nosed pliers, patches, 5-minute epoxy, an extra waist belt buckle, etc. (Punctures and fraying, tearing of seams and grommets, and accidentally stepping on the nylon buckles are common causes for repair.)

Care of your pack.

Like any tool, backpacks have their physical limits, and fail when misused or abused. With proper care and maintenance it will last a lifetime (or 40,000 miles, whichever comes first.)

In camp, prop or hang it up out of the dirt, and away from ants and rodents. At night secure it even better. In bear/coyote/skunk country (all of rural Arizona) assume it will smell like food, even if you have removed such, and suspend it out of reach, especially during the night. These scavengers are nocturnal. Squirrels wait for daylight, but they are sneaky, and they'll cut themselves a door in it faster than

Even when made of water repellent fabric, rain can penetrate seams and zippers. In wet weather make judicious use of a pack cover, whether commercial or improvised.

Keep your pack clean, dry, and in good repair. A good backpack is a strong ally, your space ship, your home away from home. For most adults, considering all the money we spend on things less serviceable, it makes no sense to be without this effective, simple, ancient tool.

Besides Buying One

There are many ways to improvise a backpack from household materials. For example, fold a blanket in half along its short meridian, distribute a few small items (e.g. a change of clothes) along the center 1/3 of the fold, and roll them up. Tie the ends of the roll with a cord, then bend it into a horseshoe and tie the ends together. Slip your head through and wear it across your chest like a bandoleer. Or, tie two pillowcases together at their openings and sling them over one shoulder as you would a pair of saddle bags. Make them ride as high as you can.

A good pack is not a high-tech item, nor inherently expensive. There are many ways to make a high quality backpack in your home workshop from common materials. Design for comfort, strength and durability, light weight, and functionality.