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# How to Dress in Layers

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Layering your clothing is a tried-and-true way to ensure your comfort in the outdoors. The beauty of this simple concept is that it allows you to make quick adjustments based on your activity level and changes in the weather.

### Quick Read

1. Each layer has a function: the innermost layer (against your skin) manages moisture; the middle layer insulates you from the cold; the outer layer shields you from wind and precipitation.
2. Your choices in an outer layer range from high-performance waterproof/breathable shell to a basic water-resistant wind jacket.
3. As a layering alternative, soft-shell outerwear, insulated shells and windproof fleece jackets offer characteristics of two or more layers in one garment.

## Your Base Layer: Moisture Management

This is your next-to-skin layer. More than any other layer, the base layer helps regulate your body temperature. If you've ever worn a cotton T-shirt under your raincoat while you hiked, you probably remember feeling wet and clammy, even though you weren't getting wet from the rain itself.

Trapped inside your clothing, perspiration can leave you chilled or damp, no matter how well your outer shell fends off rain and snow. Cotton is an example of a fabric that retains perspiration and can leave you vulnerable to unwanted chills.

If you're active, your next-to-skin layer should be materials such as silk, wool or synthetic fabrics such as REI MTS®, Patagonia® Capilene®, Polartec® PowerDry® and CoolMax® polyester. Rather than absorbing moisture, these fabrics transport (or "wick") perspiration away from your skin, dispersing it on the outer surface, where it can evaporate. The result: You stay drier even when you sweat, and your shirt dries faster afterwards.

**Examples:** Keeping dry is important for maintaining a cool body temperature in the summer and avoiding hypothermia in the winter. Base layers can be anything from briefs and sports bras to long underwear sets (tops and bottoms) to tights and sport shirts. Thermal underwear is available in light-, mid- and expedition-weights. You can select the right weight to match your activity and the temperature.

Some base-layer garments are designed to fit snugly for better performance, range of motion and easier layering. For hot weather, the wicking layer often consists of a loose fitting, mesh garment.

## Your Middle Layer: Insulation

The insulating layer helps you retain heat by trapping air close to your body. Polyester fleece vests, jackets and tights are classic examples of insulation ideal for outdoor activities. They not only trap air but are also made with moisture-wicking fibers to help keep you dry.

**Natural fibers** such as wool and goose down are excellent insulators. Wool sweaters and shirts (especially the new generation of merino wool

products) offer soft, reliable warmth and keep on insulating even when wet. For very cold and dry conditions, goose down is still an excellent choice. It

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offers an unbeatable warmth-to-weight ratio and is highly compressible. Down's one drawback is that it must be kept dry to maintain its insulating ability.

**Classic fleece** such as Polartec® 100, 200 or Thermal Pro polyester and synthetic insulations such as Thinsulate® provides warmth for a variety of conditions. These are popular insulators because they're lightweight, breathable and insulate even when wet. They also dry faster and have a higher warmth-to-weight ratio than even wool. Classic fleece's main drawbacks are wind permeability and bulk (it's less compressible than other fabrics).

Like thermal underwear, fleece garments are available in 3 weights for different uses:

- Lightweight for aerobic activity or mild climate
- Midweight for moderate activity or climate
- Expedition-weight for low activity or cold climate

**Examples**– For high-energy activities such as cross-country skiing, biking or running, choose lighter-weight fleece to avoid overheating. Tights or tops made of Polartec® 100 or Polartec PowerDry® are excellent for this. For very cold conditions, try thicker fleece such as Polartec® 200 or 300.

**Wind fleece** such as Polartec® Wind Pro polyester or Gore WindStopper® adds a high level of wind resistance to fleece. It accomplishes this via a hidden membrane that does not affect breathability or the other things we love most about fleece.

## Your Shell Layer: Weather Protection

The shell (outer) layer protects you from wind, rain or snow. Shells range from pricey mountaineering jackets to simple windproof jackets, but most are designed to block precipitation and hold in your body heat while allowing water vapor to escape. This is an important piece when you're active, because if wind and water are allowed to penetrate to your inner layers, you begin to cool off. Furthermore, without proper ventilation, perspiration can't evaporate but instead condenses on the inside of your shell.

Fit is another consideration. Your shell layer should be roomy enough to fit easily over other layers and not restrict your movement.

Shells can be lumped into the following categories:

**Waterproof/Breathable Shells**–These are usually the most functional (and more expensive) choices. They'll keep you comfortable in any weather, and are especially suited to wet, cold climates and alpine activities. Fabrics (usually a laminated membrane or sometimes a fabric coating) include Gore-Tex®, REI Elements® and a wide variety of other branded choices. These shells are categorized by REI as **rainwear**, which emphasizes low weight and packability, or **mountaineering wear**, which is more abrasion-resistant and has additional features.

**Water-Resistant/Breathable Shells**–These are best for mild weather, light precipitation and high activity levels. They're usually made of tightly woven fabrics (such as mini ripstop nylon) that block the wind and treated with a Durable Water Repellent outer finish to make water bead and roll off.

**Soft Shells**–While many offer good wind and rain resistance, soft shells emphasize breathability. They are usually designed to offer both shell and insulative properties, so they in effect combine two layers into one. Most feature stretch fabric or fabric panels for added comfort during aerobic activities. As this category has grown in popularity, styles have become specialized by season, so you'll now find cold- and mild-weather options.

**Waterproof/Non-Breathable**—Typically made of a durable, polyurethane-coated nylon, which is water- and windproof, these economical shells are

ideal for rainy days with light activity.

**Insulated Shells**—Some outer shells have a layer of insulation built in, making them suitable for cold conditions, but not as versatile for layering in a variety of temperatures.

Contributor: Steve Tischler, REI Expert Advice editor.

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