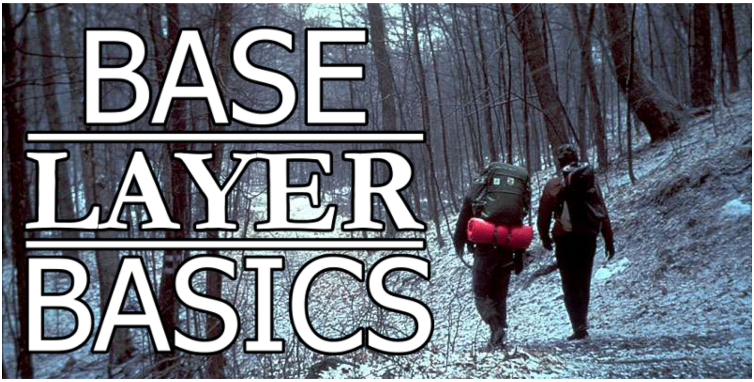

JAN 1, 2016 : JORDAN BOWMAN

ADVICE

Base Layers for Backpacking: What You Need to Know

The leaves have shifted from green to yellow to fiery red to—well, dead. The morning dew has been replaced by a white frosting of ice and snow. The Cleveland Browns are continuing their annual tradition of inviting opposing teams to inspect their end zones. That's right, everyone, winter has once again descended upon us all. **For backpackers, that means it's time to more heavily consider the base layers you wear as you head into increasingly chilly woods.**

While a cozy pair of cotton long johns might keep you warm when you're out for a single night with clear skies, the same cannot be said on a multi-day trip full of sweat and unpredictable weather. In truth, even the nicest cool weather romp can be made all the more enjoyable when you are equipped with breathable, quick-drying materials.

And don't leave if you're reading this when the heat has returned: **wearing an appropriate base layer for warm temperatures is just as important**, helping to keep you dry, cool, comfortable, and chafe-free.

Choosing a great base layer can make the difference between an amazing hiking trip and a miserable misadventure.

Don't get caught in the backcountry without a proper base layer—it may make the difference between a terrific trek and a hellish hike.

Wait, what the heck is a base layer?

Put simply, your base layer is the clothing that will sit closest to your skin. Base layers are designed to help move moisture away from your body to quickly evaporate off of the surface of the fabric, a process formally referred to as **"wicking."**

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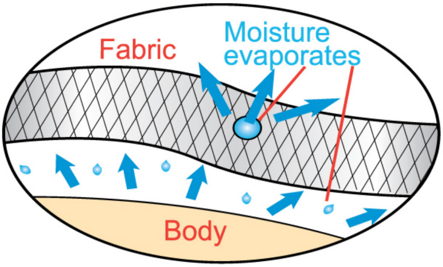
Moisture Wicking Clothing Explained
Watch on YouTube

Clothes that wick properly are important in both warm and cold weather. When the air is chilly, having water close to your skin is a very bad idea: water steals away your body heat, as anyone who has had the pleasure of wearing a wet sock can attest. Fabrics that wick poorly—like our good friend cotton—may be excellent at holding in heat when dry, but become practically useless when wet. Wicking fabrics move water away from your skin, allowing you to hold onto your precious body heat and avoid hypothermia.

Conversely, wicking fabrics help you stay cool when temperatures begin to soar: when wicking layers move your sweat away from your body and allow it to evaporate, your excess body heat travels along with it.



Wicking fabrics pull moisture away from your skin to the outside of the garment, where it can effectively evaporate into the atmosphere. Image courtesy of Krowmark.com.

Wet clothes also create more friction than dry clothes, increasing the likelihood of chafing and blisters; if you think a wet sock sounds uncomfortable, just wait until the chafing around your beltline begins. High-friction areas—such as the inside of your thighs, your feet, and the places where your backpack rests—are especially important to keep dry and chafe free, so make sure to wear wicking fabrics in those areas (and possibly a dash of Gold Bond for extra protection).

Choosing a solid base layer is as important as having shoes that fit and a comfortable pack—it's one of the key components of staying dry, warm, comfortable, and safe in any weather condition.

Let's put it this way: have you ever seen a shivering camper attempting to dry out his stylish flannel clothes and cotton socks over a campfire? If you decide to wear cotton into the backcountry, the person with the sock rotisserie will probably be you.

The Flannel Shirt

Don't let the advertisements fool you: wearing only flannel and blue jeans on your hiking trip is not a good idea—no matter how great your hair is. Image courtesy of Ralph Lauren.

Alright, cotton is out. What fabrics should I wear instead?

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Tips for Safe and Steamy Tent Sex

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ADVICE

The Trek

There are three categories of fabric you should consider for your base layers:

Synthetic Fabrics

Pros:

Synthetic athletic clothing—polyester, spandex, nylon, etc.—can be found pretty much everywhere and is typically cheaper than other wicking fabrics, making it an easy choice if you need a quick replacement on the trail. Synthetics dry quickly and are some of the toughest fabrics on the trail, surviving pretty much anything short of sharp metal edges. Synthetics typically hold less heat than the other fabrics, making them great for warm, wet weather (read: summer in the Appalachians).

Cons:
Untreated synthetic clothing retains body odors even after multiple washes—prepare for that well-earned hiker stench to linger. Synthetic fibers also tend stain easily.

Synthetic base layers, like The North Face Women's Light Long-Sleeve Crew Neck, are light, quick-drying and tough, but typically don't hold in heat as well as other wicking fabrics. Image courtesy of The North Face.

OVERCOMING THE STANK

Many brands of synthetic clothing incorporate antimicrobial agents (such as silver filaments, coconut particles, or merino wool) to help ward off foul odors. Other brands treat their clothing with various chemicals (such as Polygiene or Aegis Microbe Shield) to help reduce the amount of stench that collects in the material. These treated clothes will typically be clearly labeled as a selling point—and the price tag will reflect this added feature. Still, if you want both the durability of synthetic fibers and the lack of a "hike-a-week reek," these features are worth the price of entry.

Popular Brands:
Under Armour, Arc'teryx, ExOfficio, Patagonia, The North Face, Montbell, REI

Silk

Pros:
The softest and most luxurious of the base layer fabrics, silk wicks water away more slowly than synthetic fibers but is better at keeping in heat. Silk is also extremely light and easily-layered, adding very little bulk to your clothing while still holding in a substantial amount of heat. Be sure to look for silk that has been chemically "treated" to help wick away water more quickly than the standard fare (this should be listed on the label).

Cons:
Silks are prone to preserving your stench and must be washed regularly; however, some silks must be washed by hand or else they will shrink. Silk is also much less durable than synthetics, as abrasion (read: friction caused by moving around) and sunlight (read: being outside) can significantly weaken the strength of the fabric. Thus, silk may be a better base layer for low-mileage areas (your head, hands, or chest). In my experience, most hikers only wear silk base layers at camp in order to preserve the longevity of the fabric.

Silk base layers, like these REI Silk Long Underwear Bottoms, are adept at holding in heat and are lightweight, but they dry more slowly and wear down quickly due to abrasion and sunlight exposure. Image courtesy of REI.

Popular Brands:
REI, WinterSilks

Merino Wool

Pros:
While merino wool is typically considered to be the best for cool conditions, it really is an all-season fabric: it holds in warm air when the air is cold, but is also breathable enough for warm weather. And unlike silk or synthetics, wool retains its heat *even when wet*. Wool has a reputation for being itchy, but *merino* wool has "ultrafine" fibers that are considerably softer and less irritating than you might expect—while not as soft as cotton, it isn't too far off either. Lastly, since it is naturally antimicrobial, merino wool can be worn for days on end without building up significant body odor. That alone may be a selling point for many.

Merino wool base layers, like the Icebreaker Oasis Long Sleeve Half Zip Hood, are breathable, odor resistant and retain their warmth even when wet, but are more prone to abrasion than synthetics. Image courtesy of Moosejaw.

Cons:
Merino wool does not dry as quickly as synthetics and is also prone to abrasion, though not as much as silk. Wool is also more expensive when compared to both synthetics and silk.

FIGHTING THE FRICTION
While merino wool is significantly less abrasion prone than silk, wool fibers do eventually begin to fray after extended use. To help combat this, many brands have laced some synthetic fibers into the wool to offer additional support. Patagonia has gone so far as to eliminate 100% merino wool from its product line, instead implementing an 80%/20% split between merino wool and Capilene polyester. For hikers who want the benefits of merino wool with the increased durability of synthetics, these products may hit mark.

Popular brands:
SmartWool, Icebreaker, Patagonia, Montbell

How thick/heavy should my base layers be?

Base layers are typically divided into four categories of thickness:

Ultralightweight/Microweight

It wouldn't be backpacking if there wasn't an ultralight category, right? Ultralight base layers are most appropriate for warm to moderately cool conditions, meant to provide some warmth and protection while quickly wicking away sweat and moisture.

Lightweight

A slight step up in thickness, lightweight base layers still provide excellent wicking speed while offering warmth suitable for cool to moderately cold temperatures. These base layers (along with ultralight layers) are also the most suitable for high-intensity activities such as hiking, though you may want to pair them with an additional midlayer if the temperatures expected to drop.

Microweight and lightweight base layers are best suited for high-intensity activities and/or moderately cool temperatures. Pictured above: SmartWool Men's NTS Micro 150 Crew (**microweight**, left) and Patagonia Men's Capilene Lightweight Crew (**lightweight**, right).

Midweight

When the temperatures really start to drop, midweight base layers will provide warmth and light wind protection. They still offer significant wicking capabilities, though due to their thicker insulation, you will likely start sweating quickly if you do much more than moderately intensive activities.

Heavyweight

The thickest of the base layers, these are meant to lock in heat and keep it there. While they will still wick moisture away more effectively than, say, blue jeans or a down jacket, it takes more time for water to work its way through the amount of material in these layers. Thus, heavyweight base layers should typically be reserved for stationary or low intensity activities. If you are going to be in low temperatures, high winds, and/or frigid weather conditions, these should be your go-to layers for camp.

Midweight and heavyweight base layers are best suited for low-intensity activities and/or cold temperatures. Pictured above: SmartWool Men's NTS Mid 250 Crew (**midweight**, left) and Arc'teryx Men's Phase SV Zip Neck LS (**heavyweight**, right).

As noted in the above descriptions, **make sure the base layer weight you choose is appropriate for both the weather *and* the activity** you are about to perform. Many hikers will don a midweight base layer before setting off down the trail, only to change out of their sweat-soaked pullover a mile down the trail. A good rule of thumb: if you are still comfortable after fifteen minutes of hiking, you are likely wearing the appropriate base layer.

HOW SNUG SHOULD A BASE LAYER BE?

While not as big of a factor as the weight and material, the snugness of your base layer can help further your comfort level on the trail. Generally, a snug fit ensures that your heat is held closer to your skin and moisture is quickly wicked away. Thus, a snug-fitting base layer is ideal for colder weather. Likewise, a loose-fitting base layer allows for heat to easily escape and absorb into the air around your skin while still providing ample wicking. If you know it's going to be hot, wear a loose base layer that will blow in the breeze.

Should I carry extra base layers?

While some ultralight hikers might disagree, carrying an extra set of base layers is always a good idea for one big reason: **it allows you to reserve one set for the trail and another set for camp.**

Your trail base layers should be chosen with the conditions of the trail in mind. These layers should be thinner and tougher in order to deal with a high level of physical activity. They will also collect all of the sweat and dirt from your days of hiking, leading to a buildup of filth that will last until the next trip to the laundromat (or at least a wash in a spring). Aside from a hot dinner, there isn't much that's more uplifting than changing into a relatively clean set of base layers after a long, sweaty day of climbing mountains.

While many base layers are antimicrobial and/or odor resistant, it's still wise to have a clean, dry set of base layers saved for the campsite. Image courtesy of Tales of a Mountain Mama.

More important, however, is having the ability to quickly switch out of wet clothes when your activity level lowers and the temperatures drop. Even fast-drying base layers will retain moisture for a little while, and it doesn't have to be rainy to end up soaking wet by the end of the day: a sweat-soaked shirt can be just as dangerous in freezing temperatures, as moisture can quickly cool to levels that will, at best, make you uncomfortable, and at worst lead to hypothermia.

Therefore, **it's typically a good idea to have a thicker set of base layers reserved only for camp**. Keep them in a waterproof bag to ensure their usefulness, and no matter how tempting it might be to stay in a cleaner/dryer/less stinky set of clothes, always change back into your dirty layers before you set off down the trail.

What about my feet?

While they may look like plain ol' socks at first, sock liners are like base layers for your feet. Image courtesy of Fox River Socks.

Think all your feet need are a pair of wool socks? Think again: you can provide extra wicking for your feet as well by wearing **sock liners**. A base layer for your feet, these thin socks are worn underneath your normal socks to accelerate the wicking process and provide extra friction protection. Just like normal base layers, sock liners come in synthetic, silk, and merino wool varieties and are accompanied with the same strengths and weaknesses.

Most hikers I've spoken to opt for synthetic sock liners due to their longevity—silk and merino wool simply did not last as well due to the constant friction. Also, even the stench-resistant properties of merino wool can only do so much against the overwhelming power of foot stank.

Sample base layer setups:

Still confused about how to institute base layers into your hiking wardrobe? Here are a few sample setups to help cover your shame (and help keep it dry and blister-free).

REMEMBER, THESE ARE CALLED BASE LAYERS FOR A REASON

Despite extensive planning and preparation, any hiking trip can have unpredictable, varying weather. While base layers are one of the most important aspects of keeping you dry and warm, they are only one part of a clothing layering system that will help you keep your mind focused on the great outdoors. For a great example of how to layer your clothes for fluctuating temperatures, check out Allison Kieley's breakdown on layering hiking clothes.

"The Trail Setup"
Cool Weather / High Intensity Workout

1) SmartWool Men's NTS Micro 150 Tee
This 100% merino wool tee wicks away sweat quickly and is thin enough to prevent excessive heat build-up.

2) Brooks Men's Rush 7″ Short
Running shorts are built with long-distance hauls in mind, which means they prioritize low-weight materials that wick quickly.

Most dedicated running shorts have built-in brief liners to aid with wicking, compression and friction reduction, so you won't need an underwear base layer if you choose to wear these.

If you prefer wearing dedicated hiking pants or shorts, a great option for underwear is the Exofficio Give-N-Go Boxer Brief, which provides friction reduction, fast wicking AND anti-odor synthetics (treated nylon and lycra).

And you prefer the idea of "living free," there are options for you as well—such as the Mountain Hardware Elkommando Kilt.

Women's Options

Below are links to the women's versions of the above base layers:

Top – SmartWool Women's NTS Micro 150 Pattern Tee

Bottom – Brooks Women's Racey 7″ Short or Mountain Hardwear Women's Mighty Activa Skort

Underwear – Exofficio Give-N-Go Bikini Brief

“The Winter-Is-Here Setup”
Cold, Windy Weather / Medium Intensity Workout

1) Merino Wool Buff
Buffs and neck gaiters help provide extra warmth and wind protection, as well as protection for your face if the weather really starts to turn. These neck layers also provide an extra degree of wicking.

2) Patagonia Men’s Capilene Midweight Crew
A step up in thickness, this base layer allows you to hold more heat close to your torso while still maintaining breathability. While very cold/windy weather may require an additional mid- or puffy layer, a midweight base layer like this Patagonia shirt may be all you need once you have worked up a sweat.

3) Under Armour Men’s ColdGear Infrared Evo Leggings
These leggings are designed with cold-weather runners in mind, which means they will protect your lower half from arctic blasts and take a beating while doing it. The snug fit helps hold in heat and speeds up the wicking process.

However, not everyone likes their pants to be so form-fitting. If you prefer wearing normal hiking pants when the temperatures drop, wicking underwear—such as the aforementioned Exofficio Give-N-Go Boxer Brief or the Icebreaker Anatomica Boxers w/ Fly—will keep you comfy and dry without crushing in on your personal space.

Women’s Options

Below are links to the women’s versions of the above base layers:

Another Neck Option (Gender Neutral) – SmartWool NTS Mid 150 Neck Gaiter

Top – Patagonia Women’s Capilene Midweight Crew

Bottom – Under Armour Women’s ColdGear Infrared Evo Leggings

Underwear – Exofficio Give-N-Go Bikini Brief or Icebreaker Sprite Hot Pants

“The Campsite Setup”
Very Cold Weather / Low-to-Zero Intensity Workout

1) MontBell Men’s SPMW EXP. High Neck Shirt
MontBell’s “expedition weight” base layers have high altitude, low temperature adventures in mind, so this layer should help you stay toasty when the temperatures scoot below zero.

This top also has a collar to protect your neck from nippy weather, though you may still want to add a neck/face cover if the weather is really lousy—the SmartWool NTS Mid 250 Neck Gaiter would work nicely.

2) Arc’teryx Men’s Phase SV CZ Bottoms
These tights are rated to hold in heat even in “severe weather,” so bring these along if you suspect that the temps will be low and the weather disagreeable.

And don’t forget an extra pair of undies—those get just as wet and dirty as any other layer of clothing (potentially even more so). Previous suggestions, such

②

as the Exofficio Give-N-Go Boxer Brief or the Icebreaker Anatomica Boxers w/ Fly, will work fine here as well.

Women's Options

Below are links to the women's versions of the above base layers:

Top – MontBell Women's SPMW EXP. High Neck Shirt

Bottom – Arc'teryx Women's Phase SV Bottoms

Underwear – Exofficio Give-N-Go Bikini Brief or Icebreaker Sprite Hot Pants

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Jordan Bowman's Bio

If you yelled "Yo Teach!" on the A.T. in 2014, it wasn't long before I showed up to give a lesson. As a writer, teacher, hiker, and general know-it-all, I'm happy to talk your ear off about movies, books, running, Star Wars and, of course, hiking the A.T. I enjoy writing almost as much as a brisk mountainside afternoon and have professional experience writing for websites, magazines, and old-fashioned newspapers.

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MIG WHITT : APR 13TH

Great information. I am hiking the PCT in April 2017, got a year to train. Have my base weight down to 8 pounds. With everything including food and water will be around 20-25 or so. This has been great help. Thanks.

REPLY

FM : OCT 16TH

I have a Sportif, long sleeve, synthetic fleece shirt, 1/4 zip with collar, 13oz, that I picked up from STP in 2010 for my AT thru-hike. It worked well for me during early and late hours in camp, even now sleeping in it with only a reflective blanket and a balaclava in 50F weather. I have a hooded wind shirt, turning it into a jacket in really cold and windy conditions (think Mt Washington at night in early September–fine as long as I keep moving) . I'd like to replace it with an equivalent stretchy silk layer. I'm wondering how much weight I can save and still have the same warmth performance. Would you recommend a product? Thanks.

REPLY

WHAT DO YOU THINK?