Socks: How to Choose

Outdoor activities are tough on feet, so a pair of high-tech socks is your first line of defense for dry, comfortable and blister-free feet. While "technical socks" might sound funny, there's no denying the big improvement they make over your old all-cotton tube socks.

This article compares your choices.

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Socks by Activity

When shopping for socks at REI, you'll find them organized by intended activity. Here are the key differences of each.

Athletic/multisport socks: This broad category ranges from traditional white gym socks (updated with moisture-wicking fabrics) to technical socks intended for cross-training and running. Most provide some sole cushioning but have minimal bulk overall.

Running socks: These range from thin liner socks with very little padding to those with dense cushioning in the heel and ball of the foot. Some runners prefer less padding for a better fit in their shoes; others like more padding for added cushioning and reduced foot fatigue.

Walking socks: These offer cushioning and moisture-wicking properties for fitness walkers.

Casual socks: Though distinguished by their casual styling (colors, stripes, etc.), these lightweight socks, at least those found at REI, are usually made from performance fabrics such as merino wool.

Lightweight hiking socks: These relatively thin socks provide a good fit for hikers with high-volume feet (i.e., feet that are wide or have a high instep). They wick away moisture and offer modest cushioning in the heel and ball of the foot. They are thinner, especially on the top, than midweight socks and can be worn with or without liner socks.

Midweight backpacking socks: Their additional thickness gives a good fit to hikers with low-volume feet (i.e., feet that are narrow or have a low instep). They offer more padding in the heel and ball of the foot than do lightweight hiking socks, plus cushioning on the top of the foot and leg for comfort on long trails. They can be worn with or without liner socks.

Mountaineering socks: These heavyweight socks are your thickest option, with extra bulk and padding to withstand rugged conditions.

Ski and snowboard socks: These are padded in the shin area and usually underfoot as well. They are thin and not intended to provide significant warmth; rather they are meant to protect your feet from pressure points and rubbing inside the boots. Their design also serves to not interfere with the energy needed to make quick turns.

Shop REI's selection of socks.

Specialized Socks

Here are some multi-activity sock options to consider.

Liner socks: These are worn next to your skin, under a pair of regular hiking socks (or slightly thinner than usual depending on the shoe fit). Typically made of synthetics such as CoolMax® polyester, they pull moisture away from the feet to the outer sock where it can evaporate. Liner socks are popular because they can be washed and dried easily on long trips. They're usually used with hiking boots rather than walking or running shoes, since boots often have extra volume to accommodate them.

Waterproof socks: You have 2 choices. Waterproof/breathable oversocks are great for backpacking in rainy weather, when keeping your regular socks dry is a real necessity. Or, choose waterproof/breathable socks worn in place of regular socks. These feature a thick exterior, a moisture barrier and a fleece interior. They provide warmth for paddlers or surfers in cold water.

Toe socks: Like gloves for your feet, seamless "toe socks" help prevent between-toe blisters. (Note: Between-toe blisters can also be the result of too-tight shoes.) Typically made of synthetic fibers, toe socks are intended for running or hiking.

Fleece socks: These are a cozy choice with shoes or sandals, or by themselves as house slippers. The fabric wicks moisture but does not conform to the foot as much as a hiking sock.

Heated socks: These use low-amperage battery power to provide fast, shockproof heat. Popular for sedentary pursuits (e.g., fishing, spectator sports) in cold weather.

Understanding Sock Materials

Each of your feet are densely covered with about 250,000 eccrine sweat glands, making feet one of the sweatiest places on your body. Performance fabrics help absorb and disperse all that moisture. Here are your most common choices:

Merino wool: The fine, itch-free fibers of merino wool have virtually replaced the scratchy ragg-wool socks your parents may have used. Their biggest advantage is that they are thermostatic (temperature-regulating), so your feet stay comfortable in a wide range of temperatures. Wool can absorb up to 30% of its weight in water, which means your feet remain dry longer.

- Pros: Comfortable in cool or warm conditions, absorbs and wicks moisture, cushions, doesn't itch like ragg wool.
- Cons: Dries a bit slower than synthetics, more expensive.

Synthetics: Several materials are often combined or used in select areas of the sock for greater comfort and fit. Nylon and Lycra® spandex help socks retain their shape, create a snug fit and, in some sock styles, provide arch support. CoolMax® polyester, Wickspun™ acrylic and Isolfil® polypropylene are commonly used fibers that wick away moisture to keep your feet dry and prevent blisters.

- Pros: Durable, dries fast, wicks moisture, cushions.
- Cons: Less comfortable in hot conditions, insulation reduced when wet.

Ingeo™: Pronounced *IN-gee-oh*, this corn-based polylactic acid (or PLA) fiber acts similarly to polyester but is an eco-friendly alternative.

- Pros: Made from a renewable resource, recyclable, wicks moisture, controls odors.
- Cons: Less durable than other fabrics; can only be commercially composted.

Silk: This natural insulator is used in some liner socks. It wicks moisture and offers a smooth texture against the skin.

- Pros: Lightweight, wicks moisture, comfortable against skin.
- Cons: Less durable than other fabrics.

Cotton: Cotton is not recommended for active uses, so you'll find few or no such styles at REI. The problem with 100% cotton socks is that they absorb sweat, saturate quickly and dry slowly, which is a perfect recipe for blisters.

- Pros: Comfortable for non-active uses, inexpensive.
- Cons: Not recommended for active wear.

Sock Features

Padding: Look for padding on the heel and ball of the foot for cushioning and protection. Be sure the amount of padding does not make your shoe too tight. Padding is created either by increasing the density of the weave in those areas, or in some cases by weaving long-wearing materials like acrylic into those areas. This extra padding can be a real foot-saver on hard trips over rough terrain.

Arch reinforcements: Some socks offer a tighter, reinforced weave in the arch to improve support. This is primarily helpful if you have high arches, but can be useful for those with regular arches or flat feet as well. Without proper support, arches can develop arch pain or even plantar fasciitis, which can cause severe pain in your heels. Keep in mind, though, that your footwear is the key factor for arch support.

Height: In many cases, this is merely a personal or style preference. However, crew and quarter socks do offer abrasion protection from your boot tops, so we recommend socks at least this tall when you're wearing mid- or high-cut boots.

Fit: To get the right size, look for manufacturer-specific size information on any REI.com product page. When you try on socks, pay attention to how they fit in the toe and the heel. Correct length is the key criteria. If a sock is too long, it will bunch up over your toes. If it's too short, the sock will slide down into the shoe and feel tight. For heavily padded socks, try them on with your shoes to ensure they fit comfortably without making your shoes too tight.

Sock FAQs

Q: I hike in a hot climate. What socks should I wear?

A: Fit is your #1 criteria, so it depends on your footwear. But keep on mind that midweight socks actually absorb more water than lightweight ones, which allows the foot itself to stay cool and dry despite the extra bulk. Synthetics get saturated faster than wool, but are easy wash/dry—a great choice for travel.

Q: How thick should my socks be?

A: As noted above, proper sock thickness depends on the fit of your footwear. If you have a low-volume foot, you'll probably want thicker socks; high-volume feet usually require thinner socks. Always try on socks with your shoes to make sure they fit comfortably.

Q: Does wearing a liner sock under my regular sock prevent blisters?

A: Not necessarily. The most important factor is having your footwear fit right. An REI footwear specialist can help you with this. Consider liner socks whenever additional volume is needed, or wear liner socks with slightly thinner regular socks.

Q: What socks should I bring on a weeklong backpacking trip?

A: To save space, bring several pairs of liner socks and 1 pair of backpacking socks. Your sweat gets absorbed by the liner socks, while your backpacking socks stay relatively clean. With this approach, you need only to replace the liner socks every day with fresh ones. Wash out your liner socks as needed (they will dry much faster than typical backpacking socks.)

Summary

- Quality socks can help prevent blisters and keep your feet dry, cushioned and comfortable in a variety of conditions, regardless of your activity. Look for performance materials such as merino wool or CoolMax® polyester.
- Padding in the heel and ball of the foot provides cushioning, which is a nice feature for high-impact activities such as running and backpacking.
- Fit is the most important criteria. The proper thickness of your socks is directly related to the fit of your shoes or boots.

Contributors: Lauren Reynolds, REI footwear information specialist; Pete Smith, REI Seattle footwear specialist.

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I have never understood why synthetic materials are considered to "wick moisture" and “keep your skin dry.” I have found no scientific studies to back up this claim.

Consider this- these synthetic materials: polyester, nylon, spandex, polypropelene, etc, are polymers, ie. different forms of plastic. Put a plastic bag over your foot and what happens? Your foot sweats and the bag keeps the moisture trapped against your skin. Even if the bag

has thousands of pinholes in it you will never get it to wick moisture.

I have conducted my own experiments with these so-called wicking materials and found that they kept my feet wetter and my shoes/boots drier than with natural materials like cotton. This means they held the moisture against the skin. I get much worse athlete's foot when wearing these synthetics and have found that many of my friends have the same experiences.

So lets looks at what these fabrics claim to do. "Wicking" is the process of moisture being absorbed and transferred through a material. Put the end of a piece of wood in a bucket of water and the wood will absorb and transfer the moisture up it's length until saturated - wicking the moisture up. The water level in the bucket will decrease as the wood moves the water up its length away from the bucket. This is what we want to happen to our feet. We want the moisture from our feet to be moved outward away from the skin.

Now put a piece of plastic in water and what happens? About as much as putting a piece of aluminum in water. Plastic has the same wicking properties that aluminum does.

The advice that cotton socks are bad for athletics and synthetic/plastic ones are good is unfounded. If you search athletic forums you will find many people having the same kinds of issues I have had, leading to their discovery that synthetic fabrics make poor sports apparel. They tram moisture next to the skin causing issues with blisters and athletes foot.

What I don't understand is the contradictions found in this article and elsewhere in the sports apparel industry about good fabric materials. This article claims that Merino Wool is great for athletics because "Wool can absorb up to 30% of its weight in water, which means your feet remain dry longer." But then the article claims that "the problem with 100% cotton socks is that they absorb sweat." Why is it good for Marino Wool to absorb moisture but in cotton it is bad. Cotton can absorb 25% its weight in water, only slightly less than wool. If cotton was not good at absorbing moisture, they would not use it in cloth diapers. Interesting that I have never seen synthetics used in a cloth diaper for their wicking properties. I assume because parents would quickly discover that synthetics/plastics do not wick moisture and would cause issues with diaper rash.

Synthetics are inexpensive to manufacture. Companies have marketed these product materials without testing their claims (that I have found) for the past 40-50 years. The market is so saturated with it that everyone believes it.

I would love to see a company like REI invest in some real scientific studies that would compare fabric performance for athletics.

Posted by Church Without Balls on Nov 21, 2013 13:27 PM

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Hello "Church Without Balls",
I don't work for RIE or any sock/fabric etc company so I am just a long time backpacking geek. I can appreciate your comment but would like to explain a little so folks can understand the science of this subject of socks and the fabrics you mentioned. There is solid scientific research on this subject here are twie white papers.

http://www.jeffjournal.org/papers/Volume3/JEFF08-00007R1Benltoufa.pdf
http://www.sid.ir/en/VEWSSID/J_pdf/856201001A10.p

The concept is not so complicated as to need all that to understand so I am going to try to break it down for folks. So yes you are correct when you say that synthetics are polymers or forms of plastic and

plastics have the same wicking properties that aluminum does. So visualize a table made of aluminum. If you pour a bit of water on the smothe surface of this aluminum table what will happen? Yes a pool in the center of table. Now what would happen if you had scratched the table thus making it not so smooth how would that effect the path of the water you poured on it? Right it would follow the scratched in one direction or the other.
These polymers or plastic fabrics have micro scratches or grooves in the treads of the fabric which allows moisture to wick (through capillary spaces) away from your body. Wicking or capillary action will attract water from locations where it is abundant and move it to areas where it is less abundant. When all parts of a fabric are equally wet wiking stops. The point here is to move water away from you body. Here is a video of wicking demo: http://youtu.be/tptCl1bSiBI
My personal experience as someone who has hiked 3000+ mikes and been in the woods for over 200 days in one stretch is that synthetic do work. I wont hike without a fleece sweater. As for socks I think you have to see what works your you and your feet but cotton is not an option if you want to avoid blisters. Cotton absorbs moisture and does not wick well.
I also wanted to address the diapers analogy in your comment because this speaks directly to the concept here. I have 4 kids 2 in diapers we use cloth diapers for reasons that I will not go into here but modern cloth diapers today are almost all synthetic or a combination of synthetic and hemp. Hemp is even more absorbent than wool. These diapers are synthetic on the baby skin side to keep baby dry and hemp on the outer layer to act as a reservoir for the liquid. Same concept as the wool sock over a thin synthetic liner sock. I hope this helped. Please don't think I am bashing anyone I just want to help educate hikers. You can visit me at http://thecampingpro.com if you like.

Thanks,
Larry

Posted by Larry AT'93 on Nov 21, 2013 13:27 PM

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So where does this leave children who hike and bike and react strongly to synthetics? With blisters?

Posted by TheHoustonClan on Nov 21, 2013 13:27 PM

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If socks and jackets and other garments truly 'wick' moisture, why wouldn't they just as readily wick external moisture inward?

In other words, a little dampness outside could just as readily be 'wicked' by your socks into your feet, by your shirt onto your skin, by your hat onto your head?

The beauty of wool is not that it 'wicks' but that it retains heat even when wet.

Posted by ronin on Nov 21, 2013 13:27 PM

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If you usually keep going for hiking so its preferable that you go for cotton socks.
Wholesale Socks Suppliers

Posted by ErniePunto on Nov 21, 2013 13:27 PM

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It's always better to wear cotton socks.
Wholesale Socks Suppliers

Posted by ErniePunto on Nov 21, 2013 13:27 PM

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Which socks/materials should i choose that won't make my feet sweat, but that also won't fall down into my boots?
They shouldn't be TOO thin either, because i have really bony feet.
I'm not an athlete, or even a hiker. But I walk a lot.
I used to always buy Wigwam All-Sport socks. They were a little taller than necessary, but they were comfortable enough, and they didn't fall down, and they didn't make me sweat.
But the quality of their All-Sports changed at some point, and they became kind of baggy towards the toe, and i think they also got a lot sweatier.
And now, i think Wigwam has discontinued their All-Sports completely.
So i need a new brand that has a sock that suits me.
Suggestions?

Posted by Sun-King on Nov 21, 2013 13:27 PM

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