



BASE LAYERS, WICKING, AND BACKPACKING

 **BACKPACKINGLIGHT[®]**
MEMBERS Q&A

1 • KEYNOTE

2 • Q&A

THE PROBLEM

- We sweat (perspire) when we hike.
- Our clothing gets wet - doesn't insulate as well.
- Perspiration saps body heat (conduction, evaporation).

THE CONSEQUENCE

- We get cold, uncomfortable, hypothermic.

THE SOLUTION

- Move moisture away from the skin (wicking).



- 1. What do we mean by a "base layer?"**
- 2. What is wicking?**
- 3. What role does wicking play in overall moisture management?**
- 4. How is this relevant for backpacking vs. other outdoor sports?**
- 5. To wick, or not to wick?**
- 6. Do manufacturer claims reflect reality?**
- 7. What do we do about the merino wool dilemma?**

Also: What am I using right now, and why?

1. What do we mean by a "base layer?"

- negligible thermal insulation
- knit layer, not woven
- primary attribute: allows moisture to pass through easily; next to skin comfort
- secondary attribute: "wicking" (?)



2. What is wicking?

<https://backpacklight.com/how-do-moisture-wicking-fabrics-work-testing/>

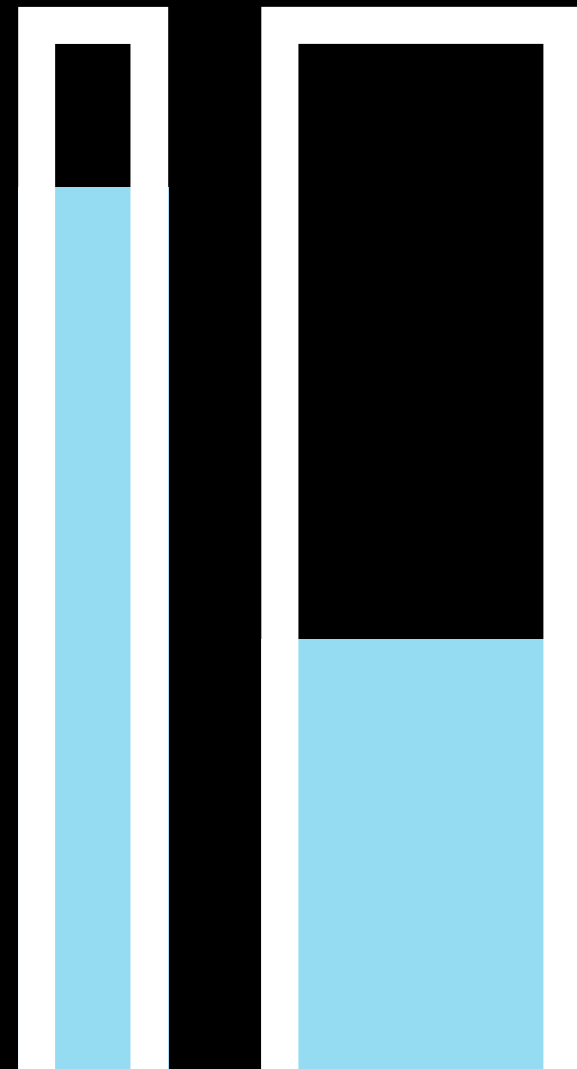


Do moisture-wicking fabrics work?

Gear Testing & Research January 7, 2022

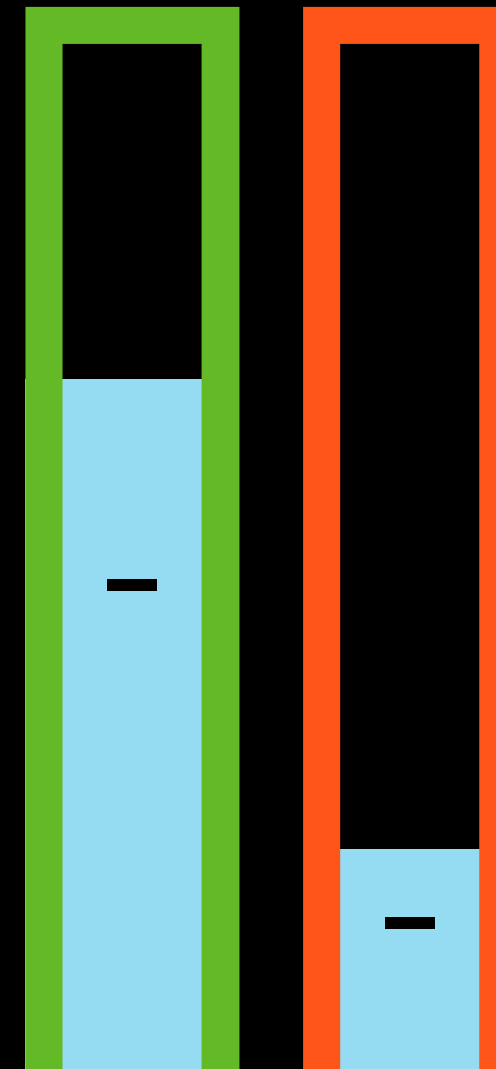
Moisture-wicking fabrics (base layers and underwear) are designed to move sweat away from the skin. In this study, we test if Polartec and other base layer fabrics meet manufacturer claims.

2. What is wicking?



**capillary
size**

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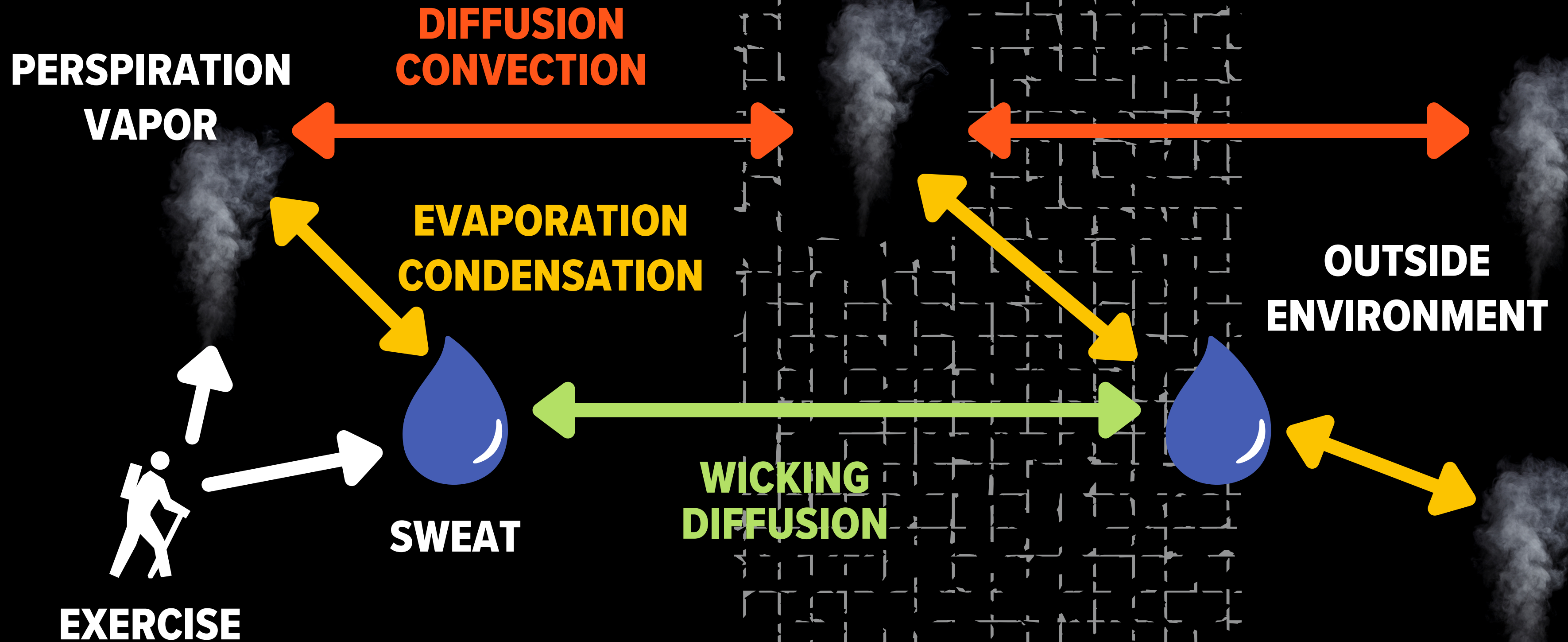


**fiber
hydrophilicity**

+



3. What role does wicking play in overall moisture management?



4. How is this relevant for backpacking vs. other outdoor sports?

- **multi-day trips in wet weather**
- **more exposure throughout the day**
- **hiking clothing may be used while sleeping**
- **insulation layers may be used at rest over hiking clothing**

5. To wick, or not to wick?

WICKING: rapid dispersion of moisture into clothing (increase in surface area); advantage - NTS comfort; disadvantage - flash-off

NON-WICKING: slow or no movement of liquid moisture into clothing; advantages - less evaporative heat loss; easier to sense overexertion; disadvantage - clamminess at high exertion levels



6. Do manufacturer claims reflect reality?

POLARTEC POWERGRID 9077

"The next-to-skin surface is hydrophilic to absorb sweat vapor and transfer it outside. Then the outer surface disperses* moisture for more efficient evaporation."

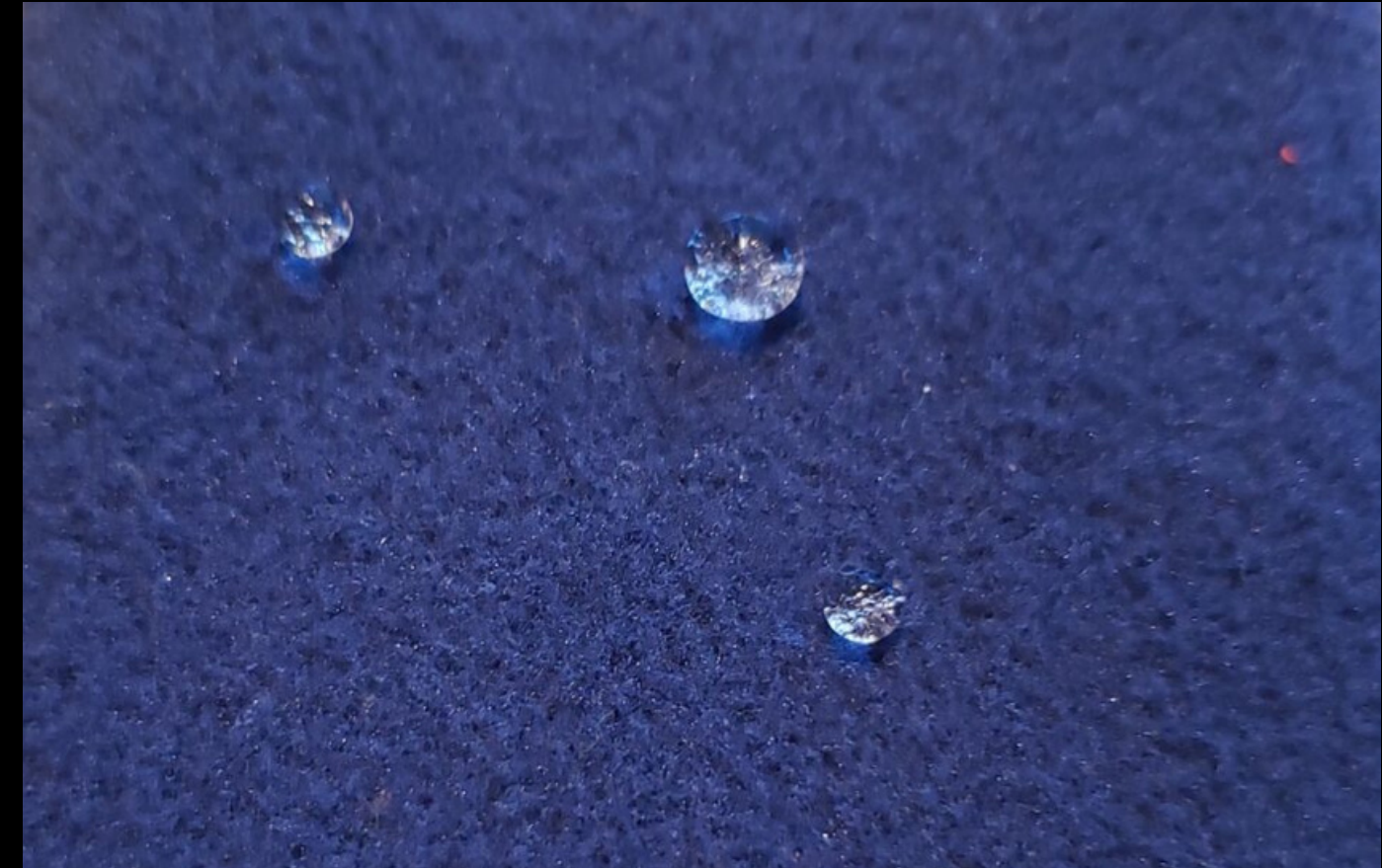
POLARTEC POWERSTRETCH 9445SQ

"...absorbs moisture from the skin while continuously wicking it to the outer layer for fast evaporation."

6. Do manufacturer claims reflect reality?



POLARTEC POWERGRID 9077



POLARTEC POWERSTRETCH 9445SQ

7. The merino wool dilemma

Q&A

"I have very active underarm glands. I always have wetness on my shirt by my underarms. What would be the best base layer for me?" - Joe (email)

**"Good choice for someone who sweats no matter what?" -
adventure_603 (Instagram)**

"How does alpaca (e.g., Appalachian Gear products) fit into the discussion tonight?" - Meg (email)

"What about fishnet base layers?" - Tim (email)

"Wouldn't good wicking be contingent upon a solid fabric sheet rather than a fishnet?" - Monty (email)

"For winter use (requiring one or more layers over the baselayer, and with the goal of preserving a fair bit of heat), what is the point of a wicking baselayer?"

After all, if the skin is producing a mixture of liquid and vapor water, where the liquid is then wicked through the baselayer and spread over its surface, from there, it has to evaporate, and move through the insulation and shell fabrics as vapor.

Why would we even wear a (wicking) baselayer in this case? What function does it provide? Since on the surface of the baselayer, there is once again, a mixture of liquid and vapor water, just like the skin, we are back at square one." - Tjaard (email)

LEARN MORE

- **BACKPACKING LIGHT PODCAST, EPISODE 55: MANAGING PERSPIRATION IN LAYERING SYSTEMS (1.FEB.2022)**
- **STEPHEN SEEBER'S WICKING SERIES @ [BACKPACKINGLIGHT.COM](https://backpackinglight.com)**
- **INCLEMENT CONDITIONS MASTERCLASS + UPDATES TO "ULTRALIGHT BACKPACKING BOOT CAMP"**

