

Scientist offers 6 tips for keeping your workout clothes from smelling permanently bad

26 June 2018, by Mark Witten



Textile scientist Rachel McQueen (right) and research assistant Lauren Degenstein put athletic wear to the smell test. To fight lingering odours in your workout gear, McQueen recommends choosing cotton or wool over polyester. Credit: Faculty of ALES

When Rachel McQueen's husband was training for a marathon, she noticed the smell emanating from his running clothes was much stronger and lingered longer in his polyester tops than if he had run in a merino wool top.

"I was repulsed," said the textile scientist. Even freshly laundered, her husband's [polyester](#) running tops still stunk. "The smell was as strong as if they had just been worn and I realized you can get perma-stink."

McQueen, who has made it her mission to find the causes of perma-stink, conducted a study in which she compared the relationship between [body odour](#) and different fabrics. She had male volunteers wear test T-shirts, which had swatches of polyester, cotton and [merino wool](#) stitched to the underarm regions. They wore the shirts for two consecutive days and then the swatches were removed for testing. Smell tests using sensors

were conducted on each [fabric](#) after one day, seven days and 28 days of storage.

"Polyester was by the far the most odorous," she said. "Wool was the least smelly, and cotton was low to medium."

The chemical odour-binding sites within fibres are key in determining the stink level, so McQueen focused her attention on the chemical makeup of fibres and how it affects odour retention.

She found that wool and cotton are hydrophilic and absorb more water than polyester.

"Wool is a fibre with an amorphous structure," explained McQueen. "It has open spaces and is more porous than a synthetic fibre, so it can absorb a lot of sweat."

That means that if odour molecules are trapped within wool or cotton, we can't smell them as readily as we can with polyester, which has fewer chemical odour-binding sites.

To keep perma-stink at bay while being active, McQueen suggests the following:

Choose fabrics that have higher cotton or wool content.

"People are generally attuned to their own body odour. If you're concerned, go with natural fibres," said McQueen.

Be wary of anti-odour claims

McQueen tested different fabrics treated with antimicrobials such as silver chloride. She found the so-called anti-odour fabrics worn by test participants were just as smelly as the untreated

ones. She also cautions against possible harmful effects. "You don't want the antimicrobial materials to leach from the textiles onto your skin and upset the balance of your natural skin microflora."

Wash your clothes less often

It saves money, water and electricity. "Washing clothing too often degrades the textile and shortens the life of your garment," she says. "It's also harmful to the environment."

Wear cotton; it's cool for the office

McQueen has an affinity for merino wool but recognizes that cotton is more readily available. For office wear, she suggests easy-to-find [cotton](#) shirts for men and natural, breathable fabrics or blends with high natural [fibre](#) content for women.

Go merino for a post-run latte

McQueen hasn't entirely banned polyester from her life. While training for a half-marathon, she would sometimes wear polyester tops if she planned to go directly home to shower and change. "But if I'm going to meet someone in a café after running, I feel more comfortable in [wool](#)."

Don't be jealous: some people are odour-free

According to a University of Bristol study, about two per cent of Europeans carry an inactive form of a gene associated with body odour. Known as ABCC11, the gene produces a chemical in sweat that reacts with bacteria in the armpits to make pits smelly. In the vast majority of East Asians, this stink-making gene is turned off. Are you one of the lucky?

Provided by University of Alberta

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