

Why do my feet smell? And what can I do about it?

August 17 2022, by Caroline Robinson



Credit: AI-generated image ([disclaimer](#))

"Smelly" might be the first word that comes to mind when you think of feet.

Why do some people's [feet](#) have no smell, yet other feet are so pungent they could almost [knock you out](#)?

Let's go through what causes smelly feet, what you can do about it, and when to seek professional advice.

Sweaty feet

Sweaty feet can lead to smelly feet.

Feet can become sweaty in hot weather, especially if we wear a closed-in shoe or boot and the sweat doesn't evaporate.

Anxiety and [emotional stress](#) also increase the [activity](#) of sweat glands due to the release of stress hormones such as adrenaline, causing sweaty hands and feet.

Sweaty feet are common, but some people have an excessive sweating condition called "[hyperhidrosis](#)." It's very distressing and can lead to social awkwardness, reduced self-confidence and poor mental health.

But sweat usually doesn't have a smell by itself. It's the bacteria that feast on sweat that cause the bad smell.

Bacteria and sweat

Humans have around 1,000 species of [bacteria](#) living on our [skin](#). Bacteria thrive in moist environments such as our armpits, groin and also in between our toes. The bacteria living on our skin are mostly harmless (and some are even good for us), but they can also cause odor when they interact with sweat.

[Foot odor](#) is associated with several types of bacteria. When these bacteria eat the sugars and fats in sweat, they produce chemicals with a [noxious smell](#).

The most common chemical compounds are:

- "isovaleric acid," which has a distinctive cheesy, sweaty feet [odor](#)
- "propionic acid," which [smells sour](#).

A type of bacteria called "[brevibacteria](#)" also cause [foot](#) odor. They eat dead skin on our feet, producing a gas which has a distinctive sour smell.

[Cheesemakers](#) will often add this bacteria to the surface of cheese to develop texture and flavor. This explains why many cheeses smell like feet, and feet smell like cheese!

Biologist Bart Knols received an "Ig Nobel" Prize (for unusual scientific achievements) in 2006 for demonstrating that a type of mosquito known for transmitting malaria has an equal preference for [Limburger cheese](#) and the smell of human feet.

What else can cause smelly feet?

Foot odor is made worse by socks and shoes that don't allow sweat to evaporate from the skin. When sweat can't evaporate from the skin, the temperature and relative humidity rise inside footwear, particularly in shoes such as [work boots](#). Bacteria prefer a warm, damp environment.

A bacterial skin infection called "[pitted keratolysis](#)" may also cause bad foot odor. It typically affects the soles of the feet and in between toes, and makes the skin white and soggy, often with clusters of small punched-out craters or "pits." These pits are caused by bacteria digesting the skin and producing sulfur compounds.

It's more common in men than women and is associated with sweaty feet, poor foot hygiene, diabetes and [immunodeficiency](#). Pitted keratolysis will respond to [treatment](#) with antiseptic agents and topical

antibiotics.

Foot odor can also be caused by tinea, a fungal skin infection often called athlete's foot, which a podiatrist will be able to diagnose. It can be treated with an anti-fungal cream or lotion.

What you can do to manage sweaty and smelly feet

The first things to consider if you have smelly feet are foot hygiene and footwear.

Feet don't wash themselves in the shower. In fact, bacteria from the rest of your body are washed down to your feet. So, it's important to wash your feet with soap—including between your toes!

Drying your feet thoroughly after bathing is also important to prevent the build-up of sweat and bacteria.

It's ideal to alternate your footwear so that shoes and boots have a chance to dry out before you wear them again. Damp footwear is the perfect place for bacteria to thrive and create those smelly chemicals.

Regular washing and drying of anything you wear on your feet will remove bacteria and stale sweat.

Bamboo has a natural antimicrobial effect (meaning it may have some ability to slow [bacteria](#) or mold growing), and socks made from this fiber [may be helpful](#), but it's [unclear](#) whether the benefits [translate to bamboo clothing products](#).

There's [conflicting views on](#) the best material for shoes and socks to improve smelly feet, so more research is needed.

Treatments for sweaty and smelly feet

If your feet are stubbornly sweaty and smelly even with good foot hygiene and attention to footwear, you may need to consider some other options.

An expert opinion from a podiatrist will help you make an appropriate treatment choice and ensure more serious issues aren't missed.

Most of the available treatments for body odor target sweat production:

- a strong [antiperspirant](#) containing aluminum chloride hexhydrate, which can be purchased from a pharmacy without a prescription and applied directly to your feet
- "[iontophoresis](#)" is a procedure offered at specialist clinics to reduce sweating in the hands and feet. A mild electrical current is passed through skin soaked in tap water. [One study](#) found around 75–80% of participants had reduced foot sweating after 20 days of this treatment
- [Botox](#) treatments are highly effective in reducing foot sweating. Botox works by blocking the nerves that activate [sweat](#) glands. However, injections into the sole of your foot can be very uncomfortable
- a topical cream containing a small amount of "glycopyrronium bromide" [can help](#) to control excessive sweating.

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