

What Are the Health Benefits of Sweating?

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Concentrations of the heavy metals nickel, lead and chromium may be 10 to 30 times higher in sweat than in blood and urine, and some toxins may be preferentially excreted in sweat

Sweating may offer support for chronic diseases, including cardiovascular, respiratory and joint diseases

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Sweating is often viewed as a nuisance — something unpleasant that humans try to avoid and cover up. Yet, this natural and important body process occurs for good reasons. In addition to regulating body temperature, sweating helps maintain homeostasis in your body, including removing waste products and toxins.¹

Sweating can also be used therapeutically to support well-being and reduce chronic disease.² If you're unable to sweat normally, sweating either too much or too little may signify significant health concerns, another clue of its wide-reaching importance.

Why Humans Sweat

Sweating, also known as perspiration, describes the release of liquid from your sweat glands, which number anywhere from 2 million to 4 million. During puberty, your sweat

glands become fully active, with glands in men tending to produce more sweat than sweat glands in women.³

As a method of thermoregulation to help keep your body cool, sweating ramps up if the weather is hot or you're exercising. However, you may also sweat if you're feeling angry, stressed, anxious or afraid. Medical conditions, such as cancer and low blood sugar, can also trigger sweating, as can menopause and fever.

Consuming certain medications, including thyroid hormone and morphine, may also make you sweat, as can drinking alcohol or caffeinated beverages or eating spicy foods, a condition known as gustatory sweating.⁴

When your body temperature rises, sweat glands release water at your skin's surface, which quickly evaporates and cools your skin and the blood underneath. "This is the most effective means of thermoregulation in humans," according to researchers with the University of Mississippi Medical Center.⁵ Beyond cooling you off, sweating also has "important homeostatic functions," such as:⁶

- Clearing excessive micronutrients from your body
- Removing waste products produced by metabolic processes
- Eliminating toxins
- Support for chronic diseases, including cardiovascular, respiratory and joint diseases

Health Risks of Excessive or Inadequate Sweating

Your body depends on its ability to sweat normally, such that when this balance is thrown off disease states can result. Hyperhidrosis is the medical term for excessive sweating, believed to affect about 4.8% of U.S. adults, or 15.8 million people.⁷

Hyperhidrosis is known to interfere with self-esteem, social interactions, relationships and career choices, with many affected reporting problems with work, school, social functioning and emotional health. Close to half — 48% — say their quality of life is poor or very poor as a result of hyperhidrosis.

The condition can also cause dehydration and skin infections.⁸ A link to systemic conditions is also possible, as sweating disorders may signal dysfunction of the autonomic nervous system, particularly the sympathetic nervous system.⁹

Hypohidrosis, which is inadequate sweating, and pathologic anhidrosis, an inability to sweat, are also potentially damaging to your health and may lead to dry skin, heat exhaustion, heatstroke and death.¹⁰

Sweating to Help Prevent and Relieve Chronic Disease

In traditional Persian medicine, sweating is used for both preventive care and disease treatment.¹¹ According to a review published in Galen Medical Journal:¹²

“Reviewing historical medical manuscripts indicates that traditional Persian medicine (PM) scientists have described several methods for the treatment of diseases. Sweating is one of them which has an important role in both prevention and treatment of diseases.

PM physicians were well aware of the health benefits of sweating and believed that sweating removes waste products, maintains the body health, and balances body temperature.

Based on the principles of PM, any disturbances in the excretion of metabolic and dietary waste products can cause disease; therefore, the use of several sweating methods and even diaphoretic herbs have been considered in maintaining human health and as one of the therapeutic method since many centuries ago.”

Indeed, from Roman baths and Scandinavian saunas to Aboriginal sweat lodges, sweating for health has been embraced by cultures worldwide. Researchers writing in the Journal of Environmental and Public Health explained:¹³

“Sweating with heat and/or exercise has been viewed throughout the ages, by groups worldwide, as ‘cleansing’ ... Sweating offers potential and deserves consideration, to assist with removal of toxic elements from the body.

... Sweating is not only observed to enhance excretion of the toxic elements of interest in this paper, but also may increase excretion of diverse toxicants, as observed in New York rescue workers, or in particular persistent flame retardants and bisphenol-A ... Optimizing the potential of sweating as a therapeutic excretory mechanism merits further research.”

The researchers noted the following promising roles of sweat in detoxification:

- Sweat may be an important route for excretion of cadmium when an individual is exposed to high levels
- Sweat-inducing sauna use might provide a therapeutic method to increase elimination of toxic trace metals
- Sweating should be the initial and preferred treatment of patients with elevated mercury urine levels

Sweat glands also secrete antimicrobial peptides that help restrict the growth of various microbes on the skin, potentially helping to reduce infection or atopic dermatitis. The sweat gland-derived antimicrobial peptide dermcidin is also thought to play a role in regulating the innate immune system’s response to infection and injury.¹⁴

Many Toxins May be ‘Preferentially Excreted Through Sweat’

Because sweat is 99% water, it’s sometimes said that sweating doesn’t provide a meaningful avenue for detoxification. In the journal Temperature, it’s noted, “The role of sweating to eliminate waste products and toxicants seems to be minor compared with other avenues of excretion via the kidneys and gastrointestinal tract.”¹⁵

However, research shows that toxins are, in fact, excreted via sweat. According to research

in Archives of Environmental Contamination and Toxicology:¹⁶

“Many toxic elements appeared to be preferentially excreted through sweat. Presumably stored in tissues, some toxic elements readily identified in the perspiration of some participants were not found in their serum. Induced sweating appears to be a potential method for elimination of many toxic elements from the human body.”

For instance, concentrations of the heavy metals nickel, lead and chromium may be 10 to 30 times higher in sweat than in blood and urine.¹⁷ It’s also noted in the International Journal of Environmental Research and Public Health, “Physiologists have long regarded sweating as an effective and safe means of detoxification, and heavy metals are excreted through sweat to reduce the levels of such metals in the body.”¹⁸

That study found levels of nickel, lead, copper and arsenic in sweat were higher when the sweating was induced via dynamic exercise as opposed to sauna usage, although mercury levels in sweat were the same regardless of sweating method.¹⁹

Another systematic review found that in people with higher exposure or body burden of arsenic, cadmium lead and mercury, “sweat generally exceeded plasma or urine concentrations, and dermal could match or surpass urinary daily excretion ... Sweating deserves consideration for toxic element detoxification.”²⁰

Bisphenol A is another chemical contaminant often detected in sweat, in some cases even when no BPA was found in serum or urine samples.²¹

Health Benefits of Sauna Usage

Inducing sweating via sauna usage has been linked to many health benefits, including for the heart, respiratory system, joints, chronic pain and brain.²² One mechanism for this effect is thought to be related to the fact that heat stresses your heart and body similar to that of exercise, thus prompting similar effects.²³ However, sweating is also part of sauna bathing’s therapeutic effects.

Researchers in Finland — where sauna use is common — found that men who used a sauna four to seven times a week for an average of 15 minutes had a 66% lower risk of developing dementia, and 65% lower risk of Alzheimer’s, compared to men who used the sauna just once a week.²⁴

Waon therapy, a form of dry sauna treatment that warms the entire body, is also linked to improved heart health, including in people with chronic heart failure.²⁵ Separate research published in JAMA Internal Medicine revealed that men who used a Finnish-style, dry heat sauna seven times per week also cut their risk of death in half from fatal heart problems compared to those who used it only once a week.²⁶

This held true even after confounding factors such as smoking, blood pressure and triglyceride levels were factored in. In regard to time, the greatest benefits were found among those who sweated it out for 19 minutes or more each session.

As noted by the study, “Sauna bathing leads to skin sweating — induced fluid loss and increase in heart rate, which are physiologic responses to warm temperature ... Our results suggest that sauna bathing is a recommendable health habit.”²⁷

How to Induce Sweating

Regular sauna usage is one way to induce sweating, but it’s not the only one. Virtually any type of intense exercise will lead to sweating, as will exercising in warm temperatures or in a heated room, such as in Bikram yoga. If you choose to use a sauna for sweating, there are several options, including a Finnish sauna, far-infrared saunas and near-infrared saunas.

The difference between the infrared saunas and the traditional Finnish sauna is the Finnish-style heats you from the outside in, whereas the infrared heats from the inside out. Near-infrared saunas have additional benefits as they penetrate your tissues more effectively and at wavelengths not absorbed by water.

The near-infrared range affects your health primarily through interaction with chromophores, light-absorbing molecules found in your mitochondria and water molecules. Near-infrared light also has healing and repairing properties, helping optimize other biological functions.

Remember, if you sweat heavily, you’ll also lose valuable fluids and electrolytes. So, be sure to drink plenty of pure water and replace your electrolytes. Coconut water is one option to replace electrolytes naturally. You can also mix one-quarter teaspoon of Himalayan salt with a gallon of pure filtered water for electrolyte replacement.

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Notes

^{1, 2, 6, 10, 11, 12} [Galen Med J. 2020; 9: e2003](#)

^{3, 4} [Medline Plus, Sweating](#)

⁵ [National Library of Medicine, StatPearls, Anatomy, Skin Sweat Glands October 10, 2022](#)

^{7, 8} [Am J Clin Dermatol. 2023; 24\(2\): 187–198](#)

⁹ [Br J Dermatol. 2018 Jun;178\(6\):1246-1256. doi: 10.1111/bjd.15808. Epub 2018 Apr 25](#)

¹³ [Journal of Environmental and Public Health Volume 2012 \(2012\), Article ID 184745, 10 pages](#)

¹⁴ [Shock. 2016 Jan; 45\(1\): 28–32](#)

¹⁵ [Temperature \(Austin\). 2019; 6\(3\): 211–259](#)

- ¹⁶ [Arch Environ Contam Toxicol. 2011 Aug;61\(2\):344-57. doi: 10.1007/s00244-010-9611-5. Epub 2010 Nov 6](#)
- ^{17, 18, 19} [Int J Environ Res Public Health. 2022 Apr; 19\(7\): 4323](#)
- ²⁰ [J Environ Public Health. 2012; 2012: 184745](#)
- ²¹ [J Environ Public Health. 2012;2012:185731](#)
- ²² [Galen Med J. 2020; 9: e2003., Introduction](#)
- ²³ [Complement Ther Med. 2019 Jun;44:218-222. doi: 10.1016/j.ctim.2019.05.002. Epub 2019 May 2](#)
- ²⁴ [Age and Ageing, Volume 46, Issue 2, March 2017, Pages 245–249, doi: 10.1093/ageing/afw212](#)
- ²⁵ [Am J Cardiol. 2012 Jan 1;109\(1\):100-4. doi: 10.1016/j.amjcard.2011.08.014. Epub 2011 Sep 23](#)
- ²⁶ [JAMA Internal Medicine 2015;175\(4\):542-548](#)
- ²⁷ [JAMA Internal Medicine 2015;175\(4\):542-548, Introduction, Conclusions](#)

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