

The Science of Saunas

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By Maria Grusauskas • December 10, 2013

More than just refuge in a cold snap, saunas stimulate some intense toxin-purging.

The darkness of winter can drive people to extremes. As soon as it creeps into the 4 o'clock hour, a small piece of my soul goes into paralysis, and remains dormant until spring. But not this year. It was a recent cold snap that drove me to seek refuge in the only comforting place I could think of: a 180-degree sauna.

Stepping into the small, cedar-walled room in my gym locker room is like entering a dry oven. Once inside, there are only so many options; sit, stand, pace, recline, think—and wait. About 10 minutes in, my bones began to thaw. By 15 minutes, a sheen of sweat had formed. Then little beads, and ever so suddenly, a catharsis: rivulets of sweat poured out of my skin at a wondrous rate. The left-for-dead piece of my soul stretched and stirred, then sang with warmth. At last, I was warm. And I was hooked.

The next blustery night, I found myself sitting naked among strangers, sweating bullets in Kiva Retreat's main sauna in downtown Santa Cruz, while rain drummed on the roof. The kiva is an impressive 12-sided structure with two levels of wooden seating. Having made a beeline for a shadow on the top level (where the temperature is a toasty 200 degrees, at least), I soon found that hosing down in the cold shower outside, and then returning to the cozy dark heat feels a bit like being reborn. Blood surges and skin rejoices at the enveloping warmth. I'll save the awkwardness of public nudity for a future column, because, really, these sweat-drenched humans are onto something.

"I do think that sweating is good, and we don't do enough of it," says Dr. Dawn Motyka of Santa Cruz when pressed for the physiological effects of perspiration. "It's great to get rid of stuff that otherwise is a lot of work for your body to excrete," she says.

Perspiration comes directly from our bloodstream; from fluid delivered via the capillary bed to the sweat gland. So then, exactly which toxins can we lose when we sweat?

"Effectively, anything smaller than a protein molecule will come out," says Dr. Motyka. And protein molecules happen to be fairly large, so there is a lot you can lose. Among those sweat-purged toxins, Dr. Motyka lists organophosphates, pesticides, some preservatives and anything that is "fat soluble" like heavy metals, which circulate in the bloodstream but are then stored in other areas.

According to Dr. Julian Whitaker, we have some two million eccrine glands covering our skin. On an average day, they pump out about a quart of sweat. In a sauna they can pump out that much in just 15 minutes.

"When you're really sweating at full blast, it's like you're almost sweating plasma," says Dr. Motyka. "If you sweat too much, you dehydrate and you lose a lot of electrolytes, which are really mission critical to healthy functioning." She recommends trying a far-infrared sauna, which can stimulate sweating at a lower temperature, and is preferable for detoxification because you can stay in it longer. Chugging water before and after your sweat is also crucial.

Of course, the origin of the sauna reaches further back than the invention of pesticides or the diagnosis of Seasonal Affective Disorder, and I can see why they were embraced as sacred by previous societies. While the word "sauna" comes from Finland, mankind has likely been taking sweat baths for over 20,000 years—the sweat lodge being an American Indian tradition for spiritual purification.

While "cold plunges" between sweats are believed to tone the skin and help get the gook out by giving your

capillaries a nice little shock, substantial evidence is hard to find. Nevertheless, the cold plunge is a tradition in Scandinavia and the Caucasus mountains of Georgia. Plunging from hot to cold stimulates the release of norepinephrine, a stress hormone and neurotransmitter, and epinephrine, also known as adrenaline—and both of those feel invigorating coursing through the body.

Beyond the benefits of detoxification, saunas may also be good for the heart, too. According to Dr. Whitaker, sitting in a sauna is akin to getting a mild workout, dilating the capillaries and improving blood flow, even though all you do is sit quietly.

So, if you've been spending a lot of time hugging a space heater and counting the days until spring, I recommend getting naked instead. Go to the nearest sauna this town has to offer (believe me, they are everywhere) and get warm. You might just learn to love winter.