

Natural Therapies  
in Focus

# Thermaltherapy

BY SUDHA HAMILTON

**“HORSES** sweat and people perspire, my dear.” Sweating is that sticky, prickly and often unsightly condition that signals overheating, excitement and sometimes fear. Many of us have an aversion to one of the body’s most natural and important functions, especially in public places. In the right circumstances, though, perhaps with the lights out, most of us would agree that sweating can be fun and that we often feel good afterwards.

Whether you are exercising, working strenuously or experiencing a particularly hot and humid day, your body perspires to cool you down. Sweating is an essential physical process, as it regulates the critical internal temperature of the body at around 37° Celsius. At the same time, it removes toxins and impurities from the body via the skin.

The skin has greater complexity in its make-up than any other bodily organ except the brain. It comprises blood vessels, nerve endings, pigmentation, lymph vessels, oil glands, hair follicles, cells that waterproof and prevent entry to bacteria, and many sweat glands. The skin is so vital that death will occur within hours if the pores and sweat passages are smothered.

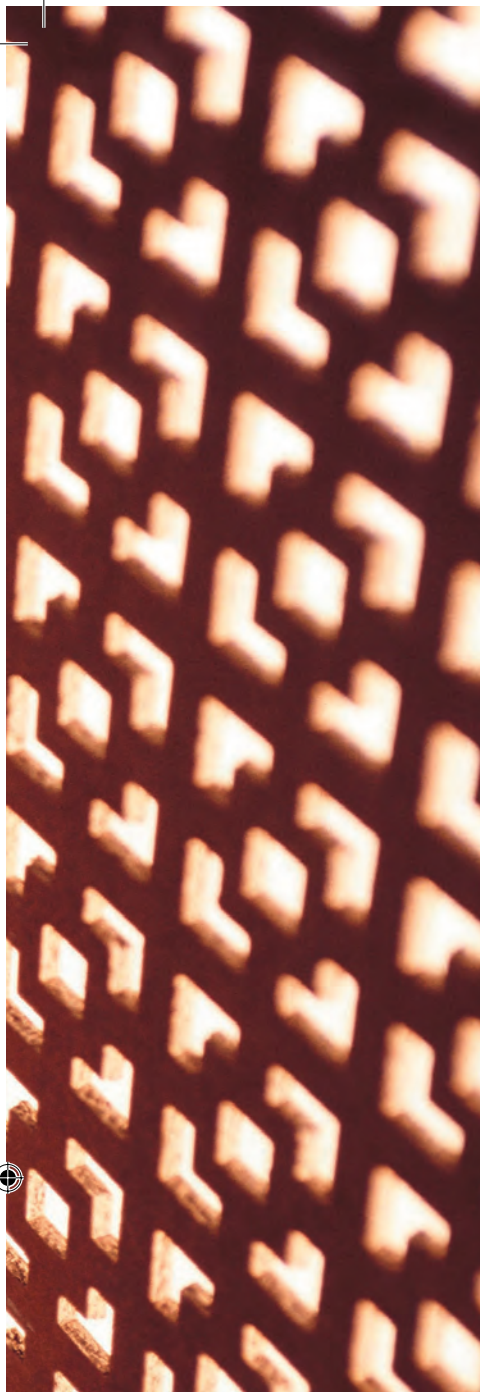
Embedded in our skin are 2.3 million sweat glands, which are activated by heat-sensitive nerve endings that produce the chemical acetylcholine as an alerting agent. The apocrine sweat glands, located in the pubic and armpit areas, are activated only by emotional stimuli; they carry a faint scent which supposedly arouses the sex drive. The eccrine sweat glands, by far the most abundant, respond to heat.

## Sweaty ancient devotees

Intentional heating of the body with saunas, hot springs and steam rooms has been with us for as long as history. Spanning most cultures from east to west, thermal therapy has a rich and varied past. The ancient medical document, the *Ayurveda*, which appeared in Sanskrit in 568 BC, considered sweating so important to health that it prescribed the sweat bath and 13 other methods of inducing sweating.

The baths (*thermae*) of ancient Rome and their importance to that civilisation are well documented. Bathing rituals that involved heating the body to cause the participants to perspire, and then scrubbing and massaging the skin were deeply embedded in the culture. Perhaps the origin of these rituals

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had something to do with how good the participants felt afterwards and how that feeling impacted positively on their health.

*Thermae* is from the Greek word for heat, and Roman engineers devised the hypocaust method to heat the air in their baths to temperatures exceeding 100° Celsius – so hot that bathers had to wear special shoes to protect their feet from blistering on the floor. The bather would journey through three distinct chambers, beginning with the tepidarium, the largest and most luxurious in the *thermae*. Here, the bather relaxed for an hour or so while being anointed with oils. Then he moved into the little bathing stalls of the *caldarium*, which provided a choice of hot or cold water for private bathing. They were usually built on the periphery of the main bathing room, under which the central fire burned. The final and hottest chamber was the *laconicum*, where scraping of the skin and vigorous massage were executed, amid much healthy sweating.

### Dawning of a new era

Sauna rituals and techniques vary from culture to culture – how hot, how wet or dry and whether oils or inhalations are employed. In the Turkish bathing tradition, for example, the body sweats more profusely in the hotter (80-100° Celsius) and drier atmosphere of the Turkish bath. In Finland and Russia, immersion in very cold water usually follows the sauna experience, viewed as particularly good for heart function and the pores of the skin. The sweat lodges of Native Americans involve hot rocks and steam and an intensely communal experience.

I remember my own sweat lodge experience, in the wilds of Bermagui in southern NSW, with a seemingly sadistic Scottish medicine wheel guide. Sixty stark-naked bodies crawled inside the hottest, stuffiest bush oven known to man. Amid chanting, with eyeballs feeling like they were cooking in their own sockets, we sweated like the citizens of hell – for far longer than humanly possible, in my humble opinion. Slithering over half a dozen hot bodies, I found the only entry/exit and fled, plunging into a shallow creek and steaming relief.

Happily, the advent of the infrared-ray sauna has greatly improved the efficiency and accessibility of the sauna experience. This dry sauna uses infrared heating elements

enclosed in a lightweight timber box, creating a small room or closet of varying size. Now available for self-assembly and needing only a domestic powerpoint, it has ushered in the era of the home sauna.

Where once saunas were a communal experience, the infrared sauna is a relatively affordable private health option. No longer do you need to spend vast amounts of money

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on plumbing or building structures. Rather, the sauna is now available in flat-pack, erect-it-yourself-and-then-just-plug-it-in mode. It has become a home health tool for the time- and space-poor big-city inhabitant.

How does the infrared sauna work? It utilises infrared radiation, defined as electromagnetic radiation with wavelengths longer

than visible light but shorter than radio waves, and which we experience as heat. Far infrared radiant heat is a naturally occurring energy that heats objects by direct light conversion, meaning it warms the object but not the surrounding air. This is the main point of difference between traditional saunas and the infrared sauna: the air within the chamber is not heated, so breathing is easier and the heating is more energy-efficient.

### Health benefits

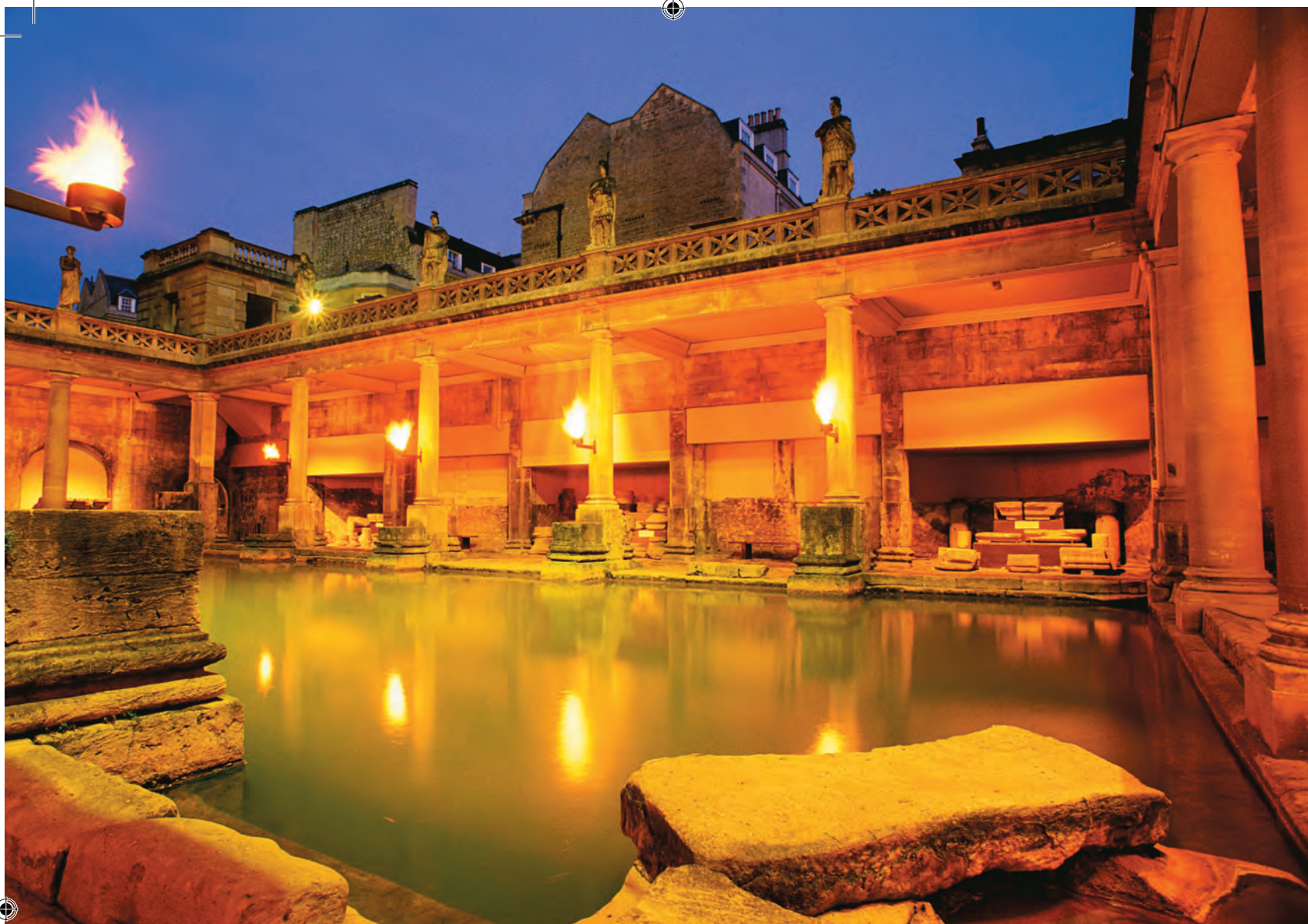
What exactly are the health benefits of infrared thermal therapy? We've known for some time, through the use of infrared ray lamps, that infrared heat can relieve pain and accelerate healing. It achieves this by expanding the blood vessels and increasing the circulation of blood and thus oxygen to the injured area of the body. Considering our increasingly polluted city environments and sedentary lifestyles, the therapeutic value of the infrared sauna has become more acute.

### Detoxification

Recently, hyperthermic (sweat) therapy has been studied quite extensively and a body of research papers has been published in the scientific press. Through these studies it has been established that saunas can assist in the elimination of accumulated toxins from the body. Toxic heavy metals, synthetic organic chemicals such as PCBs (polychlorinated biphenyls), which are probable human carcinogens, and pesticide residues are excreted in high quantities during the sweating induced by the sauna experience.

The heat causes toxins to be released from the cells. The toxic molecules then move temporarily to the lymph fluid and, because sweat is derived from this lymph fluid, the toxins are then carried out of the body. As the liver and kidneys are not involved directly in this process, it can allow detoxification to occur in those with impaired kidney or liver function.

During a 15-minute sauna, sweating can perform the heavy-metal excretion that would take the kidneys 24 working hours. Ninety-nine per cent of what sweat brings to the surface of the skin is water, but the remaining one per cent is mostly undesirable wastes. The carrying away of excessive salt is generally believed to be beneficial for cases of mild hypertension.



Sweating is such an effective detoxifier that some doctors recommend home saunas to supplement kidney dialysis. Sweating also draws out excess lactic acid that causes stiff muscles and contributes to general fatigue. It flushes out toxic metals such as copper, lead, zinc and mercury, which the body absorbs in polluted environments.

Even in Australia, a hot-climate country, many of us simply don't sweat enough, as we lead relatively sedentary lifestyles and tend to move between our air-conditioned homes, offices and cars. Antiperspirants, synthetic clothing, physically idle lifestyles and exposure to artificial environments, pollution and toxins all conspire to clog skin pores and inhibit the healthy production of sweat.

When you have a sauna, your skin temperature may increase by as much as 10° Celsius but your body's internal temperature will increase by only 1-3° Celsius. Still, the sauna induces the body to mimic a feverish state, which can kill off harmful bacteria and also provide a workout for your organs, as if you were jogging or stretching. During a 15-minute sauna you can excrete, on average, a litre of perspiration; this sweat from the eccrine glands is usually clear and odourless. Any odour is from bacteria.

#### Regulating weight

Recently in Japan, a team at the Department of Cardiovascular, Respiratory and Metabolic Medicine, Graduate School of

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Medicine, Kagoshima University, tested systematic thermal therapy on patients with congestive heart failure caused by lifestyle-related illnesses. The patients were exposed to 15 minutes of infrared sauna at 60° Celsius for two weeks and the results showed considerable improvement in a number of areas. Heart function was

positively stimulated for those unable to exercise, and obese patients experienced weight loss and decrease in body fat – without any physical exercise during the study period.

The study also tested the effects of thermal therapy on levels of the food intake-related hormone ghrelin, which stimulates appetite, increases food intake and reduces fat utilisation. It was noted, "In normal-weight patients with appetite loss, repeated sauna therapy increased plasma ghrelin concentrations and daily caloric intake and improved feeding behaviour. In obese patients, the body weight and body fat significantly decreased after two weeks of sauna therapy without increase of plasma ghrelin concentrations." (*Experimental Biology and Medicine* 228 (2003): 1245-1249)

#### The balcony workout

I was fortunate enough to trial an infrared sauna for 10 weeks at my home. I had a daily 20-minute sauna. After initial experimentation, I had the temperature between 55° and 60° Celsius during the 20-minute periods. As with all new things, there was a time of adjustment and at the very beginning I

found the infrared heat quite intense and had to get used to the enclosed feeling. I made a few mistakes, like not drinking enough water, and trial and error gave me a headache or two.

Reading the recommendations and instructions posted inside the sauna with a greater degree of care was a definite move in the right direction. There it was: "Always drink plenty of water prior to your sauna, during your sauna and after your sauna." I had seriously underestimated the amount of water required, but now with practised familiarity I take in a 1.25-litre bottle of purified water, along with my morning newspaper and a towel.

When you consider you are sweating out a litre of water in 15 minutes, it's essential to re-balance the body's H<sub>2</sub>O levels. Quite often, a quick trip to the toilet post-sauna will result in a cleansing that reminds me of the effects of a colonic irrigation; obviously, the heat speeds up the body's processes. If I have drunk enough water, I feel fantastic after this expunging of wastes and ready to meet the day.

Another no-no is to use the sauna under the effect of alcohol. This can have dire consequences in relation to thinning of the blood. There went my fantasy of sipping champagne naked in my own sauna on my balcony! In fact, the discipline of not drinking around the sauna has been an unexpected health benefit as well. Living in an inner-city suburb, I find I often turn to a glass of wine after work to unwind, as it's such a hassle to find a park or go to a gym to exercise. However, with the sauna, I found I could speed up my heart rate and detoxify – on my own balcony.

I took a niggling physical injury – a strained Achilles tendon – into the sauna and was surprised to find it

disappeared within a few days. Also, since the regular thermal therapy treatments, I have not experienced any strains from my sporadic forays onto the tennis court. My skin is cleaner and seems to have a healthier glow or colour to it, and the many comments by friends on how well I look have made me think I probably really needed this. All in all, I am feeling more alive and positive about things.

I have lost weight and, although I could do with losing some more, I am not that fussed about this aspect of it. I am not going to go the way of the jockey and stay in the sauna forever. Besides, the instructions state: "Do not exceed 40 minutes inside the sauna." I find also that the sweating process continues long after I have departed the box and that a shower and more liquid replenishment are required afterwards.

A hot shower or bath is recommended before a sauna to get things moving quickly. When you first turn on the infrared sauna, it will begin at room temperature and the five infrared heating elements soon increase this. There is a temperature control button so you can set the limit, and a timer so you know how long you've been in there. The timer automatically shuts everything down when it reaches the end of its cycle (for safety reasons, I presume).

My wife also took part in a daily thermal therapy regime and reported that her skin felt cleaner and more toned and that she loved the resultant relaxation of her muscles. When she was pre-menstrual, in particular, she felt the sauna relieved water-retention problems. She also lost weight and was generally more relaxed. In fact, the sauna has become one of our indispensable healthy lifestyle accessories. ☺

## Get healthy this winter with SaunaGem

### Why sauna?

Natural way to detoxify, cleanse your skin, clear cellulite, improve blood circulation, relieve aches and pain, boost body's immune system, and melt away tension.

### Why infrared sauna?

Functions exactly like a traditional steam sauna and is :

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- More Effective – Radiant heat works on your body and not the air
- More Economical – Consumes only 10 cents worth of electricity per 30min session
- Easy D-I-Y Installation – Plugs into normal AC outlet and without plumbing
- Easy to Operate – User friendly Digital Controller

### Why SaunaGem infrared sauna?

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