

## **Hot Stuff: The Promise of Far-Infrared Treatment**

By Andrew Rader, LAc, MS

If you like the warmth of the sun, you have to appreciate far-infrared light. The sun puts out electromagnetic energy that ranges from X-rays and gamma rays on one end, to radio waves on the other.

Visible light is in the middle, with violet on the X-ray end and red on the radio end. Just beyond visible red is infrared light. The only difference between these forms of energy is the wavelength and frequency.

Infrared light, which we experience as heat, runs from 0.76 - 1,000 microns in wavelength. Below 1.5 microns is considered near-infrared: above 5.6 is considered far-infrared. The earth radiates infrared rays in the 7-14 micron band. Humans radiate close to nine microns of infrared heat. The army uses far-infrared binoculars to see humans at night. Since we radiate heat at this wavelength, it would make sense that we should absorb it at the same wavelength. Hence the beauty of far-infrared heating devices, such as lamps and saunas, as therapy. These devices put out heat in the range of 2-50 microns, hence far-infrared.

Think of far-infrared as a type of moxibustion, without the smoke and smell, but with a whole lot more. There are two basic types of therapy one can use: local treatment, using infrared lamps, and whole-body treatments, using infrared saunas. Many practitioners have far infrared saunas in their offices, including myself. The FDA has approved the use of far-infrared for treatment of pain relief, and some insurance companies honor in-home saunas.

Because of the nature of the wavelength, this type of heat penetrates much more deeply than other forms of heat. This deep penetration enables a more thorough and extensive stimulation of local circulation. With circulation comes blood and *qi*, bringing in nutrients and removing toxins.

Japanese and Chinese researchers have conducted much work in the far-infrared field over the past 30 years. In Japan, there is an "Infrared Society" of medical practitioners and researchers dedicated to furthering this therapy. German physicians, as well, have been using whole-body infrared treatment for over 80 years. If

you use heat as one of your therapy modalities, you must consider far-infrared, as it is the most resonant form of heat for the human body.

For full-body treatments, the infrared sauna is invaluable. ("Far-infrared" and "infrared" are synonymous in this case.) One could make comparisons with conventional saunas, but there are a few significant differences. Due to the type of wavelength, heat is absorbed directly by the body preferentially over the surrounding air. What this means is that one can get in a "cool" sauna, 75° F, and immediately start absorbing the heat. After 20 minutes, one is sweating profusely while the ambient temperature won't be over 115° F. Because it relies on convection - heating the air - then conduction - air to skin - to heat the body, a conventional sauna normally operates in the range of 180-200° F. The infrared sauna can run off a conventional 110 amp circuit, and uses minimal amounts of energy, while a traditional sauna has a big appetite for energy.

The amount of sweat an infrared sauna can induce is 2-3 times what a conventional sauna will induce without drying out the sinuses and causing undue stress on the cardiovascular system. Each gram of sweat requires 0.586 kcal. Someone not used to saunas can easily sweat 500 grams and consume 300 kcal, the equivalent of swimming or jogging for 30 minutes. One who is acclimated to the sauna can burn up to 800 kcal without difficulty. NASA in the early 1980s concluded that infrared therapy would be an ideal way to stimulate cardiovascular function during long space missions.

The benefits of infrared therapy are extensive and impressive. Research from Sweden, Finland, Japan, China, and Germany lists numerous conditions that can be successfully treated. This list includes, but is not limited to: arthritis; acne; cancer; soft-tissue injury; menstrual pain; eczema; upper respiratory infections; wound healing; Bell's palsy; neurodermatitis; GI problems; cardiovascular diseases; hypertension; and ear, nose and throat disorders such as sore throat, chronic middle ear inflammation and infection. The success with hyperthermia infrared treatment on tumors is very exciting. Klinik St. George, in Germany, uses infrared hyperthermia treatment to increase the permeability and receptivity of tumor cells to chemotherapy. In this way they can administer low-dose chemotherapy locally. The result is more effective tumor destruction, with much less negative impact on the immune system. Side-effects also are minimized.

The beauty of far-infrared therapy is that it is safe, efficient and low-tech. A patient can use a sauna or lamp at home for chronic conditions. Self-help is empowering and enables patients with long-term chronic conditions to get off that wheel of dependence from the medical community for relief of their suffering.

Other forms of heat therapy such as hot water soaking and hot water bottles are profound healing practices that are readily available and often neglected. Since water radiates heat at similar wavelengths as humans, we are composed of approximately 70 percent water; these simple methods also are forms of infrared treatment. I do not recommend heating pads due to electromagnetic radiation concerns and burn possibilities if one falls asleep with it, and the unevenness of heat distribution.

We can easily forget that "*zhen jiu*," which commonly is translated as "acupuncture," more accurately means "acumoxotherapy." Heat therapy is a simple and powerful tool that often is treated as a poor cousin to the more glamorous needling. Let's turn up that heat!

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