

The Physiology of Hot Water

From the moment your body becomes immersed in a warm spa, it begins to experience mild changes that make you feel better...

Dipping your body into water of any temperature makes you feel weightless and, because of a change in hydrostatic pressure, can help dull any pain you may be feeling.

But what separates soaking in a hot spa from treading water in a pool -- or even soaking in a warm bath -- is the fact that the warm temperature is sustained. Medical experts say that, over time, this brings about changes in your circulatory system that affect other aspects of your body's operations.

Your body's first reaction to being immersed in hot water is to try to get back to its normal temperature by pumping the heart faster, so as to bring blood to the surface and, normally, disperse extra body heat into the air. This causes a temporary increase in blood pressure.

But because spa water is maintained at a high temperature -- and because water is one of the most effective conductors of heat - the blood being carried to the body's surface is warmed, rather than cooled. The longer the soaker remains in the spa, the more times the blood cycles through the body -- and the deeper into the body the warm temperature is carried. Studies have shown that immersion in a spa maintained at 104 degrees can raise the core body temperature to 102 degrees Fahrenheit in less than 20 minutes.

After a few minutes, the warm blood causes the blood vessels to dilate, lessening the resistance to blood flow and dropping the blood pressure. As the body goes through this process, several benefits are enjoyed -- most of which are enhanced further by the jet action:

Muscle relaxation: This occurs when the warm blood reaches deeper and deeper into the muscles, causing the vessels to expand. The muscle-relaxation effects of hot water also help deaden muscle pain by easing any pinching of nerves or blood vessels, and by helping the muscle rid itself of lactic acid and other metabolic wastes.

Temporary pain relief: As the body tries to register a temperature change, the central nervous system becomes depressed, contributing to muscle relaxation and temporarily relieving, or at least lessening, pain. This can happen with any drastic change in temperature -- hot or cold -- but most people are more comfortable sitting in warm water than holding an ice pack. (Remember, for recent injuries where there is swelling or broken skin, an ice pack is more suitable.)

Bodily cleansing: In trying to regain its normal temperature, the body will begin sweating so that moisture on the skin will evaporate and cool the body. But this process also helps rid the body of toxins.

Priming the muscles: By relaxing muscles, hot water helps increase their range of motion to allow for gentle exercise and stretching in the spa.

Promotion of healing: The jet action found in spas can promote healing by providing even more oxygen to the area than is provided by warm water alone. The heat and pressure from the jets can also raise the level of antibodies and white blood cells delivered to the area, promoting the destruction of bad cells and stimulating the formation of new tissue.

Help for insomnia: It has been found that sleep deepens as body temperature falls. As a result, some medical experts recommend that anyone wanting to induce sleep (especially those being kept up by pain) soak in water of approximately 103 degrees Fahrenheit about two hours before bedtime.

Please note: You can, of course, get too much of a good thing. Soaking in a spa raises your core temperature without discomfort. This isn't healthy for more than a brief period -- and for some people it's not OK at all. The hot-water industry recommends that you soak no longer than 15 minutes at a time, refrain from performing rigorous exercise in hot water, and, if you have a medical condition, consult your doctor before taking a dip.