

Studies published in peer-reviewed medical-science journals have consistently identified that hot water immersion and hydromassage produce different effects on various systems of the body. So while researchers have not necessarily been able to determine all of the various mechanisms by which hot tub use improves certain medical conditions, they have linked their use to improved health outcomes, particularly relief from, bone and joint pain, muscle soreness, and stress-induced ailments.

RELIEVING BONE & JOINT PAIN

Aquatic therapy has been shown to help with all kinds of musculoskeletal conditions including arthritis, fibromyalgia, and back pain. A study by Annals of the Rheumatic Diseases (ARD) found that "hydrotherapy is often recommended to patients with arthritis as water provides a range of benefits, including the reduction of edema, pain relief, and reduced loading on damaged arthritic joints." By soaking in warm water, the heat helps to reduce the force of gravity which can place additional stress on joints, decrease swelling, and increase blood circulation.

Dr. Murray Grossman of the Grossman Institute adds that the warmth brings fresh circulation which carries healing elements to help soothe and relax the muscles. With relaxation, there is less tightness on the muscles and the mind is able to release any stress (which can hinder healing). Ann Vincent, MD, Medical Director of the Mayo Clinic

Fibromyalgia Clinic in Rochester, Minnesota, noted that patients who soaked in warm water and did mild exercises felt even better after soaking.

SORE MUSCLE RELIEF

Aching or stiff muscles are usually caused by strenuous physical activity, sleeping wrong, or stress. For some, the muscle pains they experience may be due to certain medical conditions, such as fibromyalgia, thyroid problems, hypokalemia, and other ailments.

According to a report on the Effect of Hydrotherapy on The Signs And Symptoms of Delayed Onset Muscle Soreness, "The effect of cold application through various mediums has been shown to simulate an analgesic effect, resulting in a decreased perception of pain." The study went further on to state, warm water immersion has been shown to demonstrate "an increase in blood flow, HR [heart rate], and cardiac output, and a decrease in peripheral resistance. Benefits such as decreased muscle spasm, stiffness, and increased range of motion have also been reported following the application of heat."

Breanne Kallonen, Naturopathic Medical Intern with Integrative Medicine, supports these findings. "Temperature as well as duration of treatment can change the therapeutic effect of the treatment. For instance, a short hot or short cold will both have an intrinsic stimulative effect on circulation whereas a long cold treatment will



have a depressive effect. A short cold treatment stimulates the metabolism of the tissues it is applied to. It increases oxygen absorption, increases CO2 excretion, and increases peripheral red and white blood cell count."

IMPROVING HEART HEALTH & HIGH BLOOD PRESSURE

Studies have shown hydrotherapy can help reduce high blood pressure by improving circulation and heart rate. In the study, Biophysiologic Effects of Warm Water Immersion, the findings showed, "circulation to deep muscle structures is also increased significantly in water immersion, improving oxygen flow to tissues and potentially facilitating healing of muscle, bone, and joint injuries."

Another study found warm water immersion resulted in an 11% decrease in systolic blood pressure and diastolic blood pressure. The study also found those who soaked in a hot tub for 10 minutes had "increased feelings of well-being and decreased state anxiety."

Breanne Kallonen goes on to add, "Besides promoting blood flow, hydrotherapy benefits the heart by increasing the removal of toxic products, increasing healing, increasing immunity and promoting relaxation."

According to a study by NCBI, hydrotherapy can help improve the cardiovascular system and hypertension. Although it was previously believed that hydrotherapy would increase your chances of heart failure, research has shown patient's cardiac function improved during a session of aquatic therapy due to an increase in the amount of blood that ends up getting pumped to the heart.

So how does this work? Immersion in warm water like a hot tub increases your body temperature, causing your body to eliminate toxins and wastes. In addition, as the body temperature rises, so does your heart rate which is similar to the same way it reacts when you're doing cardio exercise. Because of this, you not only increase circulation but improve your overall health.



