

°CRYO

STAY YOUNG

Benefits of Localized Cryotherapy

The wide range of applications of cold therapy has long been recognized for thousands of years. In fact, the therapeutic benefits of cold temperature, particularly its analgesic and anti-inflammatory effects, were discovered by the ancient Egyptians and the Greek physician Hippocrates (Dawber & Cooper, 2001). Such intervention has evolved from the simple application of ice packs to the development of cutting edge equipment which utilizes the concept involving the effects of cold temperature in stimulating different body responses. Eventually, this idea has led to the emergence of different methods of cryotherapy, which is known to alleviate pain and inflammation commonly associated with various health conditions.

One of the effects of cryotherapy that is attributed to its promising benefits is vasoconstriction that reduces the circulation to the affected area. Vasoconstriction slows down the body's metabolism and reduces its demand for oxygen. Aside from this, cold application or cooling below 68°F (20°C), also helps retain the heat in our body and reduce acetylcholine production. Thus, relieving congestion and muscle spasm. On the other hand, the analgesic effect of cold therapy is related to its counterirritant action, its influence on the nerve endings, and its ability to reduce metabolic activity. During a cold therapy, the skin temperature drops almost immediately, which is subsequently followed by a decrease in subcutaneous temperature. However, structures beneath the subcutaneous layer are much less efficiently cooled. As a result, the patient experiences cold perception followed by aching or burning sensation and cutaneous anesthesia (Pfieler Enterprises, 2014).

Unlike whole body cryotherapy (WBC), localized cryotherapy aims to target specific parts of the body. Hence, it does not require the use of complex equipment such as cryosauna and cryogenic chambers to facilitate a cost-effective and equally safe treatment. Aside from this, since only the affected areas are exposed to extreme temperature, localized cryotherapy can be applied for longer periods to allow deeper penetration and a more effective cooling. In fact, in a study published in the American Journal of Sports Medicine, prolonged superficial cryotherapy reduces post-traumatic microvascular dysfunction, inflammation, and structural impairment secondary to closed soft tissue injury. These effects were due to the effect of cryotherapy in restoring functional capillary density, repairing tissue damage, decreasing intramuscular pressure, and reducing the number of adhering and invading granulocytes (Schaser, Disch, Stover, Lauffer, Bail, & Mittlmeier, 2007).

To provide its clients with the maximum benefits of cold application, °CRYO has promoted different methods of cryogenic services in order to meet the unique needs of their clients who seek to find solutions to their health problems and achieve optimum well-being. One of these services is localized cryotherapy. This method is geared towards facilitating recovery from injuries as well as reducing cellulite formation. In fact, cryotherapy is one of the essential components of the first aid treatment for musculoskeletal injuries known as R.I.C.E therapy - Rest, Ice, Compression and Elevation. This premise is further supported by the results of research studies showing the benefits of cryotherapy in both acute and rehabilitative phases of soft tissue injury which proved its ability to reduce metabolism, decrease the inflammatory reaction and induce local analgesia (Galiuto, 2016).

CRYO

STAY YOUNG

Aside from treating sports injuries, cryotherapy also offers promising benefits in fat reduction and body contouring. This procedure is referred to as cryolipolysis or cool sculpting or fat freezing. Cryolipolysis is a safe treatment, which is considered as a compelling alternative to liposuction and other invasive methods of reducing localized adiposities. This idea is supported by the results of a research study which revealed that cryolipolysis can lead to an average fat reduction ranging from 14.67 percent to 28.5 percent, as measured by calipers or 10.3 percent to 25.5 percent, as measured by ultrasound. However, the same study also showed that cryotherapy has no significant impact on lipid levels and liver function tests (Ingargiola, Motakef, Chung, Vasconez, & Sasaki, 2015).

Bibliography:

Dawber, R., & Cooper, S. (2001). The history of cryosurgery. *Journal of the Royal Society of Medicine*, 196 - 201.

Galiuto, L. (2016). The Use of Cryotherapy in Acute Sports Injuries. *Annals of Sports Medicine and Research*, 1060.

Ingargiola, M. J., Motakef, S., Chung, M. T., Vasconez, H. C., & Sasaki, G. H. (2015). Cryolipolysis for Fat Reduction and Body Contouring: Safety and Efficacy of Current Treatment Paradigms. *Plastic and Reconstructive Surgery*, 1581-1590.

Pfiedler Enterprises. (2014). Retrieved November 10, 2016, from Pfiedler Enterprises: <http://www.pfiedler.com/ce/1107/files/assets/common/downloads/Localized%20temperature%20therapy.pdf>

Schaser, K., Disch, A., Stover, J., Lauffer, A., Bail, H., & Mittlmeier, T. (2007). Prolonged superficial local cryotherapy attenuates microcirculatory impairment, regional inflammation, and muscle necrosis after closed soft tissue injury in rats. *The American Journal of Sports Medicine*, 93 -102.