



CENTRAL TEXAS
CRYOTHERAPY

WHY WHOLE BODY CRYOTHERAPY WORKS

WHAT IS WHOLE BODY CRYOTHERAPY?

- Whole Body Cryotherapy (WBC) is a form of cold therapy which involves surrounding the entire body, with or without the head, with hyper-cold air. Although created in the 70's by a Japanese doctor to treat Rheumatoid Arthritis, it has a plethora of other health benefits.
- Everyone can enjoy its benefits although some do it for specific reasons. These benefits come from sustained and regular sessions. The following pages will break down each system or improvement. Which ones will benefit you the most?

BUT HOW? (Summarized)

- The initial response of the body is a nervous system sympathetic response (Fight-or-Flight) which increases heart rate, signals healing, focuses the mind, and prepares for survival. However, the summative effects are parasympathetic. Which include a lower heart rate, increased arousal, and improved digestive system (Feed-and-Breed or Rest-and-Digest). As well, an increase in metabolism to warm the body burns calories. The increase in norepinephrine triggers the release of glucose from energy stores. An increased blood flow helps to heal the skeletal muscles after exercise or injury. Inflammation and swelling are reduced by activation of inflammation antagonists. There is a release of mood-boosting neurotransmitters which combat depression as well as a mental resiliency that occurs by choosing to get out of your comfort zone.

LYMPHATIC SYSTEM

- This is a network including vessels which carry away extra (approximately 10%) fluids left in tissue by blood. It also carries away toxins, bacteria, and other unwanted items away from tissue. They are carried to the lymph nodes which use a form of white blood cells to destroy them. Unlike the circulatory system which uses the heart to pump the fluid, the lymph fluid only moves when we breathe, or muscles are contracted. Whole Body Cryotherapy contracts a lot of muscles all at once giving the body a major flush.

CIRCULATORY SYSTEM

- A network of blood vessels and a heart to pump blood to tissue and organs around the body bringing nutrients, oxygen, and hormones while removing waste. Poor functioning can lead to high blood pressure, headaches, fatigue, muscle cramping, and even heart attack and stroke. A healthy system improves heart health, mental function, improved immune response, and metabolism. With WBC, the blood rushes to protect the vital organs. A sympathetic response signal, norepinephrine, increases heart rate and forces nutrient filled and oxygenated blood to the entire body, most notably, the skeletal muscles.

AUTONOMIC RECOVERY

- Autonomic recovery starts by lowering inflammation in the brain and body. This encourages self-production of stem cells that repair damage. The reduction of metabolic inflammation has been shown to increase the production of stem cells which are produced in several organs and result in organ and tissue renewed function and health. WBC has been proven to enhance this short-term autonomic response after intense exercise.

INFLAMMATION

- Inflammation is a response to pathogens, tissue damage, trauma, and cold/heat exposure. This acute form is necessary. But chronic inflammation is detrimental and even deadly. Part of the autonomic recovery is the sympathetic nervous system(SNS) which sends signals to reduce inflammation. Like hitting the reset button, it recalibrates the parasympathetic nervous system(PNS) which controls the immune/inflammation response. WBC has been proven to enhance both responses by triggering a sharp initial SNS followed by a well balanced PNS.

METABOLISM AND WEIGHT LOSS

- During a WBC session, the blood rushes to surround the vital organs. With the release of norepinephrine, blood pressure and heart rate increase to push blood to the rest of the body as much as possible. As well, your muscles begin to contract to create friction for building heat. This norepinephrine also triggers the release of glucose from energy stores. Essentially, you are stoking the fires with as much coal as you can access. This is what causes such great calorie burns that last even after you exit the session.

TEMPERATURE REGULATION

- Are you always cold? In the west we are very comfortable day to day. If it's cold we turn on the heater or put on many layers of clothing. This makes our body and mind lazy. By doing cold therapy we can reset the body's stuck thermostat. Your body can then regulate its temperature more effectively. Like our ancestors, you feel comfortable in varying temperatures.

SKIN

- Cold treatments can improve skin in several ways. It trains the blood vessels in the skin to be more responsive. With this is the activation of cell rejuvenation and increased production of collagen. Collagen is the protein that gives skin its elasticity and firmness. But it also reduces the excretion of sebum which is a waterproofing secretion of the skin. This keeps the shine down and helps avoid acne. Lastly, it closes pores so they don't collect dirt and appear large.

DEPRESSION, ANXIETY, MENTAL TOUGHNESS

- When the body is introduced to cold air it sends signals to the brain causing the release of beta endorphins and norepinephrine (noradrenaline). This creates mental clarity, awareness, a "feel good vibe", and sense of well being.
- Making the conscious decision to voluntarily make yourself uncomfortable alone builds mental toughness. Then to go through with it builds positive reinforcement habits inside your own mind. You can then tough out more situations that aren't self inflicted both physical and mental.