

MINNEAPOLIS, MN- AN EXCITING STUDY "REPEATED HYPERTHERMIA EXPOSURE INCREASES CIRCULATING BRAIN DERIVED NEUROTROPHIC FACTOR LEVELS WHICH IS ASSOCIATED WITH IMPROVED QUALITY OF LIFE, AND REDUCED ANXIETY: A RANDOMIZED CONTROLLED TRIAL"

published on Dec. 19, 2019 in the Journal of Thermal Biology and carried out and reviewed by professors at/and from 1st Moscow Medical University (Russia) & Univ. of Stanford (USA)

The Study investigated the effect of a repeated **hyperthermia exposure program (HTC)** on serum **Brain Derived Neurotrophic Factor (BDNF)** in healthy humans. (*BDNF is a marker of neuroplasticity usually increased as response to acute exposure to human body stressors.*)

Context: Hyperthermia is known to be beneficial to patients affected by various diseases. Little is known about BDNF changes after repeated exposure to hyperthermia.

The treatment period was 10 weeks. Researchers analyzing serum BDNF and questionnaires data were blinded to participants allocation. The study of 34 healthy male participants compared **Light Intermittent Exercise (LIE)** versus **Repeated Hyperthermia exposure program (HTC)** using a head-out-hyperthermic chamber ('**Cocoon Pod**', **Wellness USA, Minnesota, USA**). Cocoon is a specially instrumented, custom-designed heat stress chamber for whole-body passive dry heat exposure in supine and comfortable position. The participant's head was cooled by an embedded fan generating a room temperature air flow, as control.



vs.



Repeated exposure to hyperthermia resulted in a **significantly higher increase of circulating BDNF** compared to the control group consisting of intermittent light intensity exercise. **Mean change in BDNF was higher in HTC group vs LIE** after both time points (after 12 and after 24 sessions).

Interestingly, the increase in serum BDNF was also associated with **marked improvements in quality of life and reduced anxiety levels**. Intermittent light-intensity exercise did not affect BDNF levels, exercise tolerance and quality of life.

This pioneering study suggests hyperthermia as potential complementary treatment and future studies on the impact of **hyperthermia conditioning (HTC)** on **neurological health and cognitive function** in clinical population characterized by brain neuroplasticity declined psychological impairments such as anxiety.

For full access to the study: [CLICK HERE](#)

For more info about the Cocoon Wellness PODs: www.wellness-usa.com

MINNEAPOLIS, MN- A STUDY "PASSIVE WHOLE-BODY HYPERTHERMIA INCREASES AEROBIC CAPACITY AND CARDIO-RESPIRATORY EFFICIENCY IN AMATEUR ATHLETES"

published in "Health" on January 7, 2020 by Scientific Research Publishing (SCIRP). The research was carried out by professors at/and from the *School of Health & Human Performance (University of Dublin-Ireland) and 1st Moscow Medical University (Russia)*.

The Study showed that **Passive Whole Body Hyperthermia (PH)** procedures leads to the **increase of peak oxygen consumption, oxygen consumption at the level of anaerobic threshold, and heart efficiency (enhancement of oxygen pulse values), as well as efficiency of pulmonary ventilation and bronchial conductance**, which we consider to be cross effects of adaptation to passive whole-body repetitive hyperthermia.

The research was carried out using a **capsule Alfa Basic (Sybaritic Inc., Minnesota, USA)**. The capsule is an ergonomic pod in which an athlete may take a lying position and undergo whole-body hyperthermia procedures (infrared heating), the head being outside the pod blown by cool air with a built-in ventilator.



The experimental group (EG, 14 people), underwent 24 procedures of passive whole-body hyperthermal adaptation, and the control group (CG, 14 people), underwent 24 training sessions with elliptical gym apparatus in interval regime. All EG participants underwent a testing hyperthermia procedure (HP) in the capsule; then the body core temperature was measured.

On average, the temperature in the capsule was established at 65°C - 80°C, while the temperature of the athlete's body core by the end of the procedure increased by 1.5°C - 2.0°C. The recommended duration of one procedure was 40 minutes.

After 12 HP procedures, EG athletes demonstrated **significant increase in the exercise time up to fatigue**. After 24 procedures in EG, under reliably longer exercise time up to exhaustion compared to the CG, we marked **reliable increase of aerobic efficiency**—

The 10-week course of passive hyperthermia revealed that the selected regime leads to the **increase of aerobic efficiency, peak oxygen consumption, oxygen consumption at the level of anaerobic threshold, and heart efficiency**.

For full access to the study: [CLICK HERE](#)

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