OXYTERRA RS IN SPORTS MEDICINE



Interval hypoxic-hyperoxic training (IHT/IHHT) became widely adopted in the mid-20th century, following the experience of athletes who undertook high-altitude climbs. Studies revealed that inhaling rarefied air activated the oxygen transport system, improved circulation, sped up metabolism, and initiated deep regenerative processes in the body.

Scientists worldwide began to investigate the phenomenon of hypoxia (low oxygen concentration), which, when combined with hyperoxia (elevated oxygen concentration), proved to be **a powerful method for recovery and adaptation of the body's systems**.

> ***The findings of this study revealed that IHT had a significant impact on elevating exercisers' VO2max (P < 0.05). Berezovskiĭ demonstrated that IHT augmented lung reserve and enhanced respiratory muscle strength in participants [42]. During IHT, the body continually receives hypoxic stimuli, which undoubtedly exercises the respiratory muscles and fosters adaptation, ultimately enhancing respiratory function... Following IHT, participants show improved lung and respiratory system function, which may contribute to enhanced aerobic performance... IHT has shown significant positive effects on improving exercisers' VO2max and HB concentration. These findings preliminarily support the use of IHT as a beneficial method for enhancing aerobic capacity.***
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> *Huang, Z., Yang, S., Li, C., Xie, X., & Wang, Y. (2023). The effects of intermittent hypoxic training on the aerobic capacity of exercisers: A systematic review and meta-analysis. BMC Sports Science, Medicine and Rehabilitation, 15:174.*

IHT/IHHT in sports medicine is used for:

- **boosting aerobic capacity and endurance after intense physical exertion,**
- **increasing athletes' tolerance to acute hypoxic stress,**
- **optimizing autonomic heart regulation,**
- **enhancing psychological well-being,**
- **accelerating rehabilitation after injuries,**
- **relieving overtraining syndrome and chronic fatigue.**

SPORTS DISCIPLINES

This technology is suitable for athletes across all disciplines who seek to enhance endurance or speed up recovery from injuries. IHT/IHHT is particularly beneficial for athletes in endurance sports such as:

· Biathlon · Football · Volleyball · Basketball · Cycling · Rowing · Speed · Skating · Track and Field · Skiing · Swimming · Racewalking · Nordic · Walking · Triathlon

INTERVAL HYPOXIC-HYPEROXIC TRAINING EFFECTS (IHT/IHHT)*

Improvement of Cardiovascular Function
IHT/IHHT helps regulate the cardiovascular system by lowering blood pressure and reducing the risk of heart disease.

Enhanced Oxygenation
IHT/IHHT increases red blood cell production, which improves the body's ability to transport oxygen to tissues.

Improved Aerobic Endurance
IHT/IHHT enhances the body's capacity for sustained aerobic activity, ideal for long-distance disciplines like marathons, cycling, and swimming.

Enhancement of Physical Endurance
IHT/IHHT boosts tolerance to physical exertion.

Enhancement of Muscle Capillary Density
IHT/IHHT promotes the formation of new capillaries, ensuring more efficient oxygen delivery to muscles for improved performance.

Fat Reduction
IHT/IHHT activates fat-burning processes, decreasing body fat percentage while preserving muscle mass.

Pain Relief
IHT/IHHT reduces inflammation markers such as cytokines, raises the pain threshold, and triggers the release of endorphins, the body's natural painkillers.

Recovery from Overtraining
IHT/IHHT facilitates deep relaxation after intense workouts, alleviates the psychological stress associated with overtraining, restores sleep patterns, and reduces anxiety.

Mitochondrial Regeneration
Stimulates the growth and improvement of mitochondria, increasing cellular energy efficiency for better athletic performance.

*Based on scientific research findings.

SAFE, COMFORTABLE, AND EFFECTIVE

Each athlete is unique, and hypoxic-hyperoxic training should be just as individualized. Designing effective protocols requires careful consideration of the athlete's physical condition, fitness level, and specific goals.

The OXYTERRA RS device is equipped with advanced features to support personalized therapy through customizable protocols and biofeedback monitoring. By tracking the body's real-time response to training, OXYTERRA RS offers actionable insights and recommendations, ensuring maximum effectiveness and safety of hypoxic therapy.

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