



HYPERBARIC OXYGEN THERAPY

STEM CELLS & HYPERBARICS

Stem cells have the remarkable potential to develop into numerous different cell types and serve as the body's primary internal repair system. The innate ability of stem cells to differentiate into other types of cells with specialized functions (blood, brain or tissue cells) replenishes and regenerates the body from the effects of aging and disease. Hyperbaric oxygen therapy (HBOT) has been shown to significantly increase the concentration of circulating stem/progenitor cells within the peripheral circulation system. By increasing blood plasma oxygen levels, bone marrow derived stem cells were shown to significantly proliferate and mobilize. The proposed mechanism of action was through a nitric oxide dependent mechanism. This evidence plays a key role in regenerative medicine as the increased number of stem cells in the body have the ability to provide enhanced and accelerated physiological repair. Studies have demonstrated HBOT's therapeutic influence on stem cells with the following:



ENHANCES STEM CELL ACTIVITY WITH HBOT (DOCUMENTED PHYSIOLOGICAL EFFECTS):

- ✓ Activates nitric oxide synthase type 3 (NOS-3)
- ✓ Proliferates and mobilizes bone marrow derived stem cells
- ✓ Improves engraftment and differentiation of several progenitor cell types in organs such as the spleen, bone marrow, brain, peripheral nerve, pancreas, cartilage & heart
- ✓ Increases colony-forming cells
- ✓ Stimulates stromal-derived growth factor
- ✓ Reduces high ROS levels
- ✓ Promotes endothelial growth factor-2 for angiogenesis
- ✓ Increases CD34 expression & Pluripotent Stem Cells

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www.healthbeyondo2therapy.com

609.512.1468

Princeton Integrative Health | 134 Franklin Corner Rd Suite 106 Lawrenceville, NJ 08648



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SPORTS & HYPERBARICS

Continued...

ENHANCE HEALING FROM DISEASE/INJURY WITH HBOT (CLINICALLY DOCUMENTED + SUPPORTED THROUGH RESEARCH CITATIONS)

- ✓ Accelerates growth & Repair of damaged tissue
- ✓ Improves tissue regeneration & organ functionality
- ✓ Promotes neurogenesis
- ✓ Stimulates osteogenesis
- ✓ Enhances recovery from heart attack



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