

MILD HYPERBARIC OXYGEN THERAPY

Renew Your Health



CITYHYPERBARICS

What is mild Hyperbaric Oxygen Therapy (mHBOT)?

mHBOT is a specialised therapy that uses an increase in atmospheric pressure, combined with an increase in oxygen concentration.

This allows the body to incorporate more oxygen into the blood cells, blood plasma, central nervous system fluid, joint fluids and through all the tissues of your body, including discs and bone.

HOW DOES MHBOT WORK?

To understand mHBOT, a good analogy is a can of fizzy drink. The can is a pressurised vessel, in the can there is liquid, then add a gas. According to Henry's law, gas under pressure will dissolve into the liquid. Hence the "fizzy" in the drink.

In the Hyperbaric chamber, as the pressure goes up, more oxygen is "pushed" into the body's fluids to boost oxygen levels. Supplementary oxygen can be added to the chamber via the use of an oxygen concentrator.

This oxygen will become infused into all the body's fluids, including blood, plasma and cerebrospinal fluids. With 60–93% oxygen provided at 1.5 ATA pressure, red blood cells become quickly saturated with oxygen and all remaining oxygen dissolves directly into other body fluids and tissue.

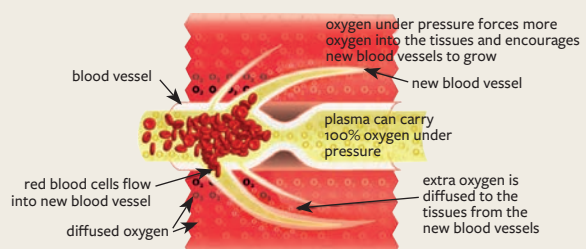
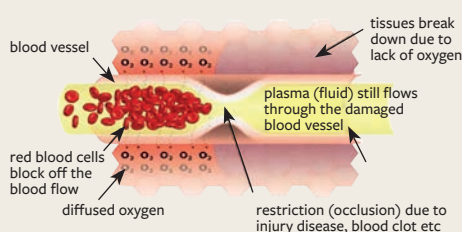
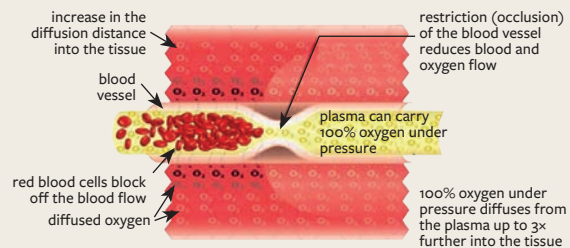
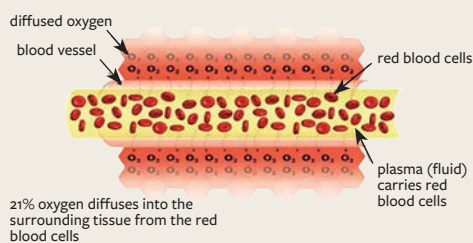
WHY IS OXYGEN SO IMPORTANT?

Nature dictates that healing cannot take place without adequate oxygen levels in the body's tissues. Cells and tissues without oxygen die, or become hypoxic.

Hypoxia is a condition in which the body, or a region of the body, is deprived of oxygen, function is reduced and cells can die.

Hypoxia is a major factor in the development of stroke, heart attack, Alzheimer's, dementia, diabetes and cancer.

Oxygen has natural healing properties and increasing the amount circulating throughout the body promotes faster and more effective healing for a wide variety of diseases and illnesses. It also provides numerous preventative health benefits.



mHBOT is a treatment, that
nobody can afford to ignore

MHBOT MAY ALSO...

- Stimulate growth of new blood vessels to locations with reduced circulation, including areas of arterial blockage.
- Aid in the treatment of atherosclerosis, stroke, wound healing and brain injury, including autism and dementia.
- Increase energy, stamina and endurance levels, while reducing fatigue.
- Provide the optimal environment for the body to carry out vital cell processes.
- Increase the capacity for the body to heal itself by increasing production of stem cell and vascular endothelial growth factors (VEGF).
- Enhance the white blood cells' ability to fight infection.
- Promote the growth of new collagen – the foundation of firm new skin.



How could mHBOT benefit me?

- Significantly reduces oedema
- Significantly reduces inflammation
- Improves range of motion due to reduced swelling
- Increases the production of collagen (anti-ageing)
- Increases healing and recovery from injury
- Supports scar tissue repair
- Enhances the growth of new blood vessels (angiogenesis)
- Increases oxygen levels in tissues
- Increases oxygen perfusion around wounds
- Improves bone regeneration for faster recovery
- Stimulates stem cell and growth factors
- Helps destroy viruses and anaerobic bacteria
- Increases removal of toxic bio-waste (Detoxification)
- Increases white blood cell production (Increased Immune function)
- Increases effectiveness of antibiotics
- Reduces surgery complications, especially for smokers and diabetics
- Improves physical training (Strength, Energy and Endurance)
- Increases effectiveness of chemotherapy
- Slows gut transit time in inflammatory bowel disease
- Improves gut wall function and absorption of nutrients
- Improves mind acuity, memory and concentration



Remarkable healing recovery

This 80 year old, with a history of TIA's (Transient Ischaemic Attacks), fell and hit her face on the pavement and was admitted to hospital for two nights.

As you can see from the first photo, Daphne suffered considerable bruising and grazes to her face. There was more damage to her forehead but we have cropped the image to help maintain patient privacy.

She came in for osteopathic treatment to City Osteopaths in Featherston St and also hyperbaric oxygen treatment in our eastern suburbs City Hyperbaric practice. She had five hyperbaric oxygen treatments of 1.5ATA pressure and 93% oxygen via a cannula for 90 minutes in the first two weeks and you can see the complete repair of the skin of her face in the second photo, which was taken just under two weeks after her fall.

Another effect of the hyperbaric treatment has been rapid improvement in her ability to walk up stairs.

On the first visit, before her first hyperbaric session, to get up one flight of stairs took 2–3 minutes with a person behind her for safety. When she came in for her second hyperbaric session she was able to walk up the stairs in half this time and now after five sessions she is able to walk up quickly and easily, one foot on each stair and at a normal speed.

Our goal is to improve her brain function and balance using 40 sessions of hyperbaric oxygen therapy, to improve her quality of life and hopefully avoid future falls.



This photograph was taken 1 day after Daphne sustained grazes and bruising from a fall.



Fourteen days later, after 5 hyperbaric oxygen treatments.

“Hyperbaric Oxygen Induces Late Neuroplasticity in Post Stroke Patients – Randomised Prospective Trial”

—University of Muenster, Germany. January 2013

Conclusion: The clinical results indicate that HBOT can lead to significant neurological improvements in post stroke patients, even at chronic late stage. The observed clinical improvements indicate that neuroplasticity can still be activated long after damage onset.

“Oxygen in Wound Healing: nutrient, antibiotic, signalling molecule and therapeutic agent”

—Clinical Plastic Surgery July 2012 39(3) 293-310

Conclusion: There is strong scientific basis for oxygen treatment as prophylaxis against infection, to facilitate wound closure. This article reviews extensive data from human trials of hyperbaric oxygen and topical oxygen treatment. Oxygen supports biochemical metabolism and cellular function and has roles in combating infection and facilitating the wound healing cascade.

Concussion cases resolving

As concussions in sport, especially at school level, become an increasingly prevalent topic of discussion and concern, it is vital that parents know they can help their child recover – regardless of how long ago the accident occurred.

Hyperbaric Oxygen Therapy is one of the lowest-risk treatments available for TBI (traumatic brain injury). Easily administered to a patient of any age. Small children can be accompanied by a parent inside a chamber. A course of treatment allows the concussion victim to return to their normal life with greatly reduced symptoms.

Todd was a promising schoolboy rugby talent. However both his sport and his continuing education were severely impacted by a number of serious head clashes. His symptoms manifested as daily headaches that extended into the evening and kept him awake. Simple exercise created blurred vision and head-spinning bouts of dizziness. Unable to concentrate on school work and suffering with light sensitivity, his academic results were slipping away.

After thirteen HBOT sessions of ninety minutes in duration, Todd's headaches reduced from every day to once a week and he began sleeping through the night. The light sensitivity and dizziness were also receding. After twenty four treatments, the headaches had stopped and all other symptoms had disappeared.



Many school level high impact sports can lead to concussions.

“Hyperbaric Oxygen Therapy (HBOT) for Reduction of Secondary Brain Damage in Head Injury”

—*Journal of Neurotrauma*, 21:44-48. 2004

Conclusion: Translational research of HBOT in a variety of Traumatic Brain Injuries (TBI) models has shown neuroprotective effects in the absence of increased oxygen toxicity. Recent clinical trials favour HBOT as promising safe therapeutic strategy for severe TBI patient.

“Role of Hyperbaric Oxygen Therapy in Severe Head Injury in Children”

—*Journal of Pediatric Neuroscience*. 2012 Jan-April 7(1) 4-8

Conclusion: In children with traumatic brain injury, the addition of HBOT significantly improved outcome and quality of life and reduced risk of complications. Patients receiving HBOT were significantly better than the control group with decreased hospital stay, better Glasgow Coma Scale and drastic reduction in disability.

Another patient who is impressed with HBOT for concussion is Bridget, an ex-policewoman who had sustained four concussions within eighteen months. Still in the prime of life, she was left with many side effects that made life difficult. “I had low levels of concentration and this generated a lot of frustration. My short term memory was hopeless and I would walk into a room and forget why I was there.”

“I was light sensitive, had fatigue and broken sleep patterns and felt as if I was descending into a premature old age. Not being able to find words was the worst part. I had begun to wonder whether things were on a steady decline for me.” Bridget undertook just ten HBOT treatments and experienced a reversal of all symptoms.

Six months on, things are as good as they’ve ever been. “I didn’t have high expectations.” she said, “I would have been happy with even minor improvement. For me, this therapy really did the trick.”

Annette suffered a serious concussion after a car accident eighteen months ago. Pain relief didn’t touch the headaches. “Try being a mum to three young children while having a never ending migraine!” said Annette, “I felt guilty for always being grumpy.” Even sleep didn’t provide relief from the constant hammering in her head. Light sensitivity and an inability to concentrate prevented her renewing her work contract.

After nine HBOT treatments, the headaches left and the room stopped spinning. A further ten treatments consolidated the results and she is doing very well.

“Hyperbaric Oxygen Therapy can improve Post Concussion Syndrome years after Mild Traumatic Brain Injury – Randomised Prospective Trial”

—PLoS One November 2013 10.1371/journal.pone 0079995

Conclusion: Convincing results based on a crossover study, demonstrating that HBOT can induce neuroplasticity and significant brain function improvement in mild TBI patients with prolonged Post-Concussion-Syndrome at late chronic stage, years after injury. The findings here bear the promises that HBOT can be effective in treating other brain impairments like PTSD or repairing radiation damage. It is reasonable to expect that HBOT can help slow down or even reverse metabolic disorders associated with neurodegenerative diseases.



Sensitivity to light was reversed after just 10 HBOT sessions.



After 9 HBOT treatments the never ending headaches were gone and the room stopped spinning.

Elite athlete powered by oxygen

World class ultramarathon runner Jo Johansen has become a “believer” in the power of oxygen. Jo has started using Hyperbaric Oxygen therapy (HBOT) this year.

For Jo a run of 25 kilometres is just a “walk in the park” compared to the 100’s of kilometres she undertakes in a race. With that sort of physical exertion, the body takes a huge amount of punishment; so to off-set the damage Jo climbs into a hyperbaric chamber for 90 minutes 5 times a week.

In Jo’s own words “I use the chamber 5 days out from a targeted event to saturate my cells with oxygen. It drives vital oxygen into the muscles and improves blood flow. It improves my mental focus and since starting Hyperbaric Oxygen Therapy, my performances seem effortless. This is attested to by the fact I’ve been able to take 3 minutes off my best marathon times.”

“Post event I use the chamber to accelerate the elimination of toxic by-product like lactic acid, to reduce inflammation and swelling. By taking a good quality nutritional supplement beforehand I am finding I heal and recover faster than I have ever done in the past. It would be no exaggeration that hyperbaric oxygen has dramatically improved my sports performance, aided in my recovery and I can see the treatment being key to prolonging my career as a competitive Ultra-Marathon runner. I would highly advise anyone who undertakes high training loads, or trains and plays at a competitive level, to seriously investigate this treatment and reap the rewards.”



Jo on her way to winning the 2014 Hillary Ultra.
(Image by Sportzhub)

“Effects of Exposure to Hyperbaric Oxygen for the Treatment of Acute Soft Tissue Injury”

—*Clinical Journal of Sports Medicine* 13 (3): 138-147. 2003.

Conclusion: In many cases of sports injury, surgery is often required. Treatments that can speed up the healing process are of greatest interest to the patient and the doctors. The advantages of HBOT are the known benefits in reducing swelling, decreased inflammation, improved collagen deposition in the skin and increasing the growth of new blood cells.

“Hyperbaric Oxygen Therapy in Sports Injury”

—*Journal of Applied Physiology* 106 (2): 711-728 2009.

Conclusion: By coupling the advances in sports medicine, physical treatments and Hyperbaric medicine, we will accelerate the time to recovery, complement surgical procedures and enhance the outcomes of physical therapy. As many professional sports teams have discovered, HBOT is a real tool to enhance their performance and reduce their down-time from injuries.

Medical science and HBOT

More than 1,000 patients who sustained cerebrovascular disease and have been treated with HBOT have shown improvements that range from 40%–90%.

“Hyperbaric Oxygen and Thrombolysis in Myocardial Infarction”

—The American Heart Journal, September 1998.

Conclusion: Hyperbaric Oxygen Treatment (HBOT) in combination with thrombolysis has been demonstrated to salvage myocardium in acute myocardial infarction (AMI). Treatment with HBOT appears to be a feasible and safe treatment for AMI and may result in an attenuated rise in creatine phosphokinase and a more rapid resolution of pain.

“Hyperbaric Oxygen Treatment for Inflammatory Bowel Disease: a Systematic Review and Analysis”

—Journal of Medical Gastroenterology. March 2013.

Conclusion: In patients with Crohn’s Disease, 78% had clinical improvements, while all 39 patients with ulcerative colitis improved.

HBOT lowered markers of inflammation and oxidative stress and ameliorated inflammatory bowel disease in both human and animal studies.

“Hyperbaric Oxygen can diminish fibromyalgia syndrome – prospective clinical trial”

—PLoS One. 2015;10(5):e0127012. PubMed

Conclusion: The study provides evidence that HBOT can improve the symptoms and life quality of FMS patients. Moreover it shows that HBOT can induce neuroplasticity and significantly rectify abnormal brain activity in pain related areas of FMS patients.

“Effects of Hyperbaric Oxygen on metabolic capacity of the skeletal muscle in Type II diabetic rats with obesity”

—Scientific World Journal 2012.

Conclusion: Hyperbaric Oxygen enhances glucose and lipid metabolism in the skeletal muscle, indicating that HBOT can prevent elevation of glucose and adipocyte hypertrophy.

“Applications of Hyperbaric Oxygen Therapy and Surgery”

—Division of Surgery, University of Nevada School of Medicine, Nevada, USA. 1992.

Conclusion: Many factors can delay wound healing such as oedema, infection, anaemia, poor perfusion and poor oxygen supply. The consequences of these factors is low oxygen tension, which adversely affects neutrophil, macrophages, collagen synthesis and fibroblast function during inflammation and repair. Hyperbaric Oxygen Therapy successfully negates these problems.

“Hyperbaric Oxygenation as a possible therapy of choice for infertility treatment”

—Bosn Journal Basic Medical Science 2006 May; 6(2):21-4. PubMed

Conclusion: The oxygen used under pressure, the oxygen as a drug may have extraordinary significance for better outcome of pregnancy implantation by improving endometrial receptivity. If endometrial receptivity is conditioned by adequate vascularisation and oxygenation, then hyperbaric oxygen is the treatment of choice.

“How mild Hyperbaric Oxygen Therapy (mHBOT) worked and why it’s good for our children”

—Medicinal Veritas, 2 647. 2005.

Conclusion: Children on the autistic spectrum experience improvement in a wide range of their symptoms with mHBOT treatments, including increased language ability, better socialisation, less aggression, improved bowel function and better cognition, to name a few.

“Hyperbaric Oxygen Therapy and Cancer – a review”

—Target Oncology 2012 Dec; 7(4): 233-242

Conclusion: Two systematic reviews have concluded that the use of HBOT in patients with malignancies is considered safe. HBOT alone has a strong anti proliferative effect on different mammary cells in vivo and vitro. HBOT could be an effective therapy for breast cancer and this is supported by six studies over the last nine years.

The HBOT experience

Hyperbaric Oxygen is not a temporary fix. It is a non-invasive, safe treatment and has a growing body of documented studies that substantiate its ability to help people live longer, more comfortable and productive lives.

Call us to book an HBOT Medical Assessment with one of our trained Registered Healthcare Practitioners to decide your individual protocol. Then you can book your first HBOT chamber session.

In the chamber you will feel a change in ear pressure (similar to the feeling when ascending or descending in an aeroplane). The remainder of the treatment will be peaceful and tranquil. A good time to relax, sleep, read or watch a movie on your electronic device in flight mode.

After effects reported are a slight pressure in the ear for a short while, a pleasant feeling of euphoria. Some have reported having their best night's sleep after a session; others say it's like having the "cobwebs" removed from their brains!

TREATMENT SCHEDULE

We are all unique individuals and our response time to any treatment is equally unique. Case studies show that with continued use, the procedure produces progressively dramatic results.

Research supports that chronic conditions (such as Stroke, Coronary Heart Disease and Diabetic Ulcers) usually require 20–40 sessions.

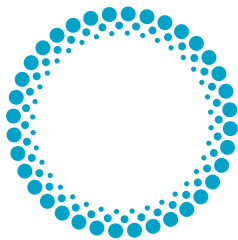
- **Acute sprain/strain injury:** Individual results vary but expect considerable healing in 5–10 visits.
- **Pre and post surgery recovery:** 2–3 treatments pre-surgery will prepare your body to recover more quickly. After surgery a further 2–3 treatments will help decrease inflammation that causes pain and swelling. *(Please discuss your surgery details with your Hyperbaric technician to ensure the appropriate treatment is given.)*
- **To detoxify or decrease inflammatory conditions** such as Crohn's, Ulcerative Colitis or Irritable Bowel Syndrome (IBS), studies show significant improvement in 10–20 sessions.
- **Autism, Cerebral Palsy, Multiple Sclerosis, Stroke, Traumatic Brain Injury (TBI), PTSD, Concussion, Bell's Palsy or Alzheimer's Disease,** a minimum commitment of 40 sessions is recommended due to the time required for the body to heal. These conditions also respond quickly when incorporated with certain dietary changes and nutritional supplementation.

The treatment is peaceful and tranquil, a good time to relax, sleep, read or watch a movie.





Our HBOT
treatment room at
Featherston Street.



CITYHYPERBARICS

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