



**HYPERBARIC  
OXYGEN  
THERAPY**

MANIFESTATION CODE

# HYPERBARIC OXYGEN

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As stated, several times the most readily accepted Oxygen Therapy by conventional medical practitioners is Hyperbaric Oxygen Therapy, or HBOT. However, even there, the medical establishment refuses to see the potential uses of this amazing healing technology, beyond what it is usually used for.

Hyperbaric Oxygen Therapy consists of breathing 100 percent oxygen while in an environment of increased atmospheric pressure. **This increases the amount of oxygen in the blood and getting into your tissues.** By now you should already be well familiar with the healing effects increased levels of oxygen in the blood can have.



The Undersea and Hyperbaric Medical Society, the professional organization in this field, recognizes 13 conditions for which it is legitimate to place patients in high-pressure chambers that force pure oxygen into their blood and tissues.

Eleven of those conditions have been approved by Medicare for reimbursement, indicating that solid evidence supports these uses of hyperbaric oxygen.

According to the world-renowned Mayo Clinic, in a hyperbaric oxygen therapy room, the air pressure is raised up to three times higher than normal air pressure. Under these conditions, your lungs can gather up to three times more oxygen than would be possible breathing pure oxygen at normal air pressure. Your blood carries this oxygen throughout your body, stimulating the release of substances such as growth factors and stem cells, which promote healing.

The Mayo Clinic operates one of the few “mainstream medicines” Hyperbaric Oxygen Chambers in the United States to treat any of the following conditions:

- Bubbles of air in your blood vessels (arterial gas embolism)
- Decompression sickness
- Carbon monoxide poisoning
- Slow healing or non-healing wounds
- Crush trauma
- Gangrene
- Skin or bone infection that causes tissue death
- Radiation injuries
- Burns
- Skin grafts or flaps at risk of tissue death
- Severe anemia

The very things that HBOT is recognized as effective for in conventional medicine is by extension the same reason it has proven to be effective as an Oxygen Therapy for many diseases beyond the above list in the alternative and anti-aging medicine community.

As usual, conventional medicine is just incapable of “thinking outside of the box” – or rather in this case – the chamber!

**HBOT is an effective treatment for acute and chronic tissues damage of**

**all types—any cause, any duration, any location.** The underlying causes can be trauma, infection, autoimmunity, ischemia, hypoxia, toxins, or something similar—it makes no difference what caused the injury.

When we think of “injured” tissues, we immediately think of trauma. But any damage to cells is an injury. Viruses, bacteria, any disease-causing pathogen, inflicts injury, on the genetic, even the molecular level. HBOT can repair “wounded” DNA, as in a viral attack; just as well as it can repair wounded flesh! While some of the mechanisms of action of HBOT, as they apply to healing and reversal of symptoms are yet to be discovered, it is known that HBOT:

1. Significantly increases oxygen concentration in all body tissues, even in patients with blocked arteries or other circulatory conditions that inhibit blood flow
2. Stimulates the growth of new blood vessels to locations with reduced circulation, improving blood flow to areas with arterial blockage
3. Dilates blood vessels and keeps them open even after therapy is completed, resulting in an increased blood vessel diameter greater than when therapy began, improving blood flow to compromised organs
4. Stimulates the creation of superoxide dismutase (SOD), one of the body's principal, internally produced antioxidants and free radical scavengers that seeks out and destroys toxins and invaders
5. Improves immune function by enhancing white blood cell action much as hydrogen peroxide does



When undergoing HBOT the increased pressure combined with the increase in oxygen concentration dissolves oxygen into the blood and all other body tissues and fluid 15 to 20 times the normal concentration. That amount of oxygen in your brain and other tissues is high enough to keep you alive even if your heart stopped beating and your blood stopped flowing!

While not a new idea by any means, HBOT has only in more recent years begun to be used for the treatment of chronic degenerative health problems such as arteriosclerosis, stroke, peripheral vascular disease, diabetic ulcers, wound healing, cerebral palsy, brain injury, multiple sclerosis, macular degeneration, and many other disorders.

The fact of the matter is, as you have already seen with ozone therapy and with H<sub>2</sub>O<sub>2</sub> therapy, wherever and whenever blood flow and oxygen delivery to vital organs is reduced, function and healing can be improved by increased oxygenation. This is especially the case with traumatic brain injury, or any conditions that cause brain cells to die due to lack of oxygen. When the brain is injured by stroke, conditions such as cerebral palsy, Parkinson's or trauma, HBOT may "wake up" stunned parts of the brain and return function.

One of the world's most experienced authorities on hyperbaric medicine was

Dr. Edgar End, clinical professor of environmental medicine at the Medical College of Wisconsin, who voiced his opinion on HBOT's value for the treatment of stroke in this way: "I've seen partially paralyzed people half carried into the chamber, and they walk out after the first treatment. If we got to these people quickly, we could prevent a great deal of damage."

As you might imagine the medical profession is becoming just as polarized concerning HBOT as you have seen they are on the either Oxygen Therapies – medical ozone and medical hydrogen peroxide we have discussed so far --and for many of the same reasons.

A vast majority of medical doctors believe that HBOT should be restricted to treatment of those rare conditions with prior FDA approval, such as those listed by the Mayo Clinic on pages 79-80. Physicians who use Hyperbaric Oxygen therapy in many of the proven "off-list" treatments have been disparaged, attacked, and even sanctioned. And yet, there are now more than 30,000 published scientific papers indicating uses for HBOT well beyond the "approved list."

In a recent interview with the New York Times, Dr. Charles S. Graffeo, a specialist in hyperbaric medicine at the Eastern Virginia Medical School, said "Hyperbaric oxygen can be life-saving for patients with the bends, like divers who have surfaced too quickly.

For those suffering from severe carbon monoxide poisoning, the most rigorous study so far found that three hyperbaric treatments decreased cognitive damage later. Traumas like crush injuries and thermal burns that deprive tissues of adequate oxygen also benefit from high-oxygen therapy, as do life-threatening infections called necrotizing fasciitis, if the condition is treated in its early stages. The therapy may also be useful for sepsis, a potentially life-threatening bacterial infection in the blood and tissues."

In the interview, Dr. Graffeo also said there was "a good theoretical basis and some promising evidence that hyperbaric oxygen therapy could help treat



clots on the retina, acute frostbite, recluse spider bites and thermal burns.”

Do you know any doctors personally? Friends? Maybe a family member or two? Then you know how hard it is for them to admit they are wrong about *anything* – let alone something that relates to what they think they know about a certain treatment for their patients!



Doctors are at their heart explorers and scientists. They eagerly embrace scientific research that supports a treatment they have been using and that is approved for general practice.

The conventional medical establishment also doesn't mind looking into and debating entirely new approaches to things. But what it really hates is reappraising a treatment it has already pooh-pooed. Like most of us, maybe even more than most of us, doctors hate to admit being in error.

Someday, HBOT will get its due, and when it does medical historians will look back and wonder how so much supportive research could have been ignored by the medical establishment of the 20<sup>th</sup> and early 21<sup>st</sup> centuries. By that time,

most of the individuals who attempted to keep HBOT “alternative” will probably no longer be in practice, sparing them extensive embarrassment!

## Conditions that benefit from HBOT

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Other than the list of recognized, FDA approved, and insurance company reimbursable conditions such as those listed by the Mayo clinic, the following conditions have also been treated successfully with HBOT worldwide.

### EMERGENCIES AND TRAUMA

- Cardiac Arrest
- Frostbite
- Near-Drowning
- Near-Electrocution
- Near-Hanging
- Stroke



## NON-EMERGENCY CONDITIONS

- \* Arteriosclerosis
- \* Autism
- \* Cerebral Palsy (CP)
- \* Fetal Alcohol Syndrome
- \* Stroke (acute and chronic residuals)
- \* Coma (acute and prolonged)
- \* Brain Dysfunction
- \* Acute Necrotizing Fasciitis ("flesh-eating bacteria")
- \* Fibromyalgia
- \* Lyme disease
- \* Migraine
- \* Rheumatoid Arthritis
- \* Chronic Fatigue Syndrome
- \* Parkinson's Syndrome

1. Breathing oxygen in a hyperbaric chamber provides up to a 40% increase in the amount of oxygen available than in normal air
2. Hyperbaric oxygen therapy dissolves oxygen directly into the plasma, brain and cerebrospinal fluids
3. The increased pressure causes the blood plasma and other liquids of the body to absorb MUCH LARGER QUANTITIES of oxygen, greatly increasing oxygen uptake by the cells, tissues, glands, brain, other organs, and fluids of the body.
4. The resulting increased uptake of oxygen allows for increased circulation to areas that may have swelling or inflammation. At the same time, the increased pressure decreases the swelling and inflammation

# HBOT in Stroke & Brain Injury

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Dr. Geoffrey H. Saft, D.C. is certified in Hyperbaric Oxygen Therapy. He runs the Hyperbaric Oxygen Healing Center in San Francisco, California. Dr. Saft commenting on his use of HBOT for Stroke and Traumatic Brain Injury has said, "Conditions that harm the brain have a wide reach. Whether from a stroke, or a traumatic brain injury, the results impair the whole family. The loss, or potential loss, of hopes, dreams, and expected joys and accomplishments is a loss suffered by all of those who care. Hyperbaric Oxygen Therapy is not a cure... but it can often help."

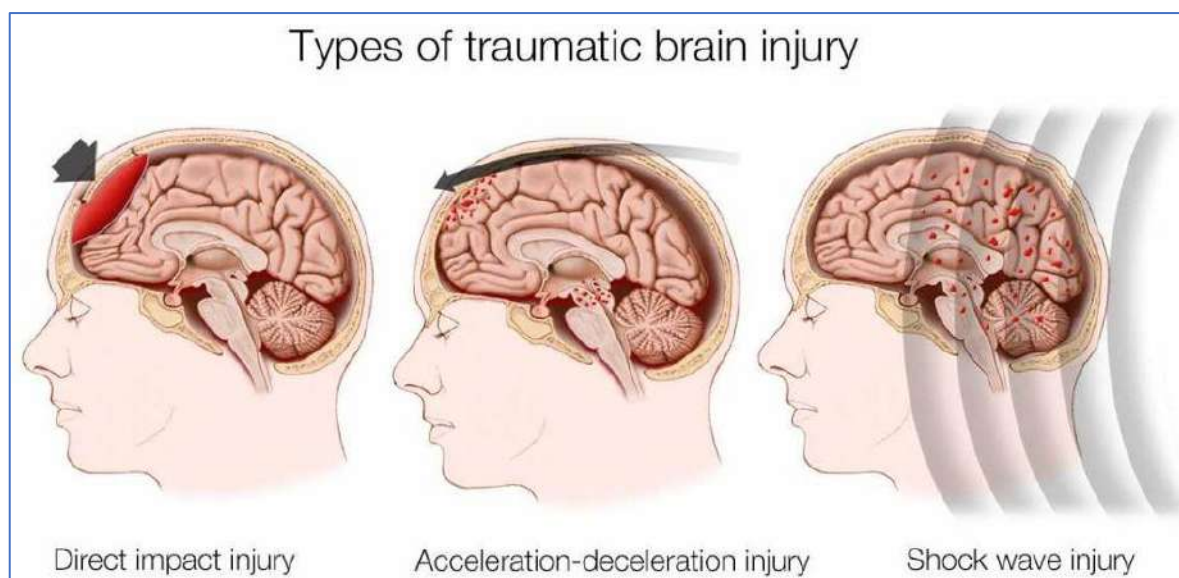
Margret H. the wife one of Dr. Saft's patients had this to say, "My husband suffered strokes in August 2006 that resulted in total loss of short-term memory, slurred speech, and difficulty walking. The doctors said he may never recover, and if he did it would take at least two years. Now, after only two months of hyperbaric therapy his memory is back, and his speech and walking are normal. His energy has improved. Dr. Saft is one of the most caring individuals we have ever met. We can't thank him enough for what he has done for us..."

According to Dr. Saft, even though science now knows better, the "old-school" idea still often remains that once an area of the brain has been damaged by a stroke, traumatic brain injury, or near drowning, that nothing or very little can be done to restore the function of that area.

However, recent scientific research has demonstrated that while the core-area of the damaged brain tissue may be irreversibly damaged, there is an area surrounding this tissue that hyperbaric oxygen therapy can restore, and these neurons can and do re-establish their function.

The majority of transient ischemia attack (TIA), stroke and brain injuries are caused by blood vessel obstructions, such as a blood clot, that cuts off the flow of oxygen to parts of the brain. This results in the death of nerve cells within a very short time. These dying brain cells begin to swell due to

their cell walls breaking down, allowing fluid to move into the cells.



As these cells swell, they begin to expand into the surrounding tissues. This causes constriction of the blood vessels in the surrounding tissues, which then causes a lack of oxygen to these previously normal cells. These surrounding cells then begin to swell as well. This gradually increasing, damaged, hypoxic tissue surrounding the original injury is called the "ischemic penumbra," and contributes up to 85% of the disability resulting from a stroke. According to Dr. Saft's results, "The cells in this secondary area have the potential of being restored to near-normal, and sometimes normal function through HBOT."

Neuroscientists have indicated that what Dr. Saft suspects is indeed true. Researchers have shown that crippled nerve cells may persist in the margins of wounds of the brain for many years. Studies have suggested that within these damaged margins, "idle" or "dormant" neurons are present. They are metabolically lethargic and are non-functional, because of low oxygen levels and secondary damage. But they remain viable and are subject to being revived with hyperbaric oxygen therapy.

Proof of this dormant life of the brain's cells has been demonstrated with the use of brain image scans done before and after a series of hyperbaric oxygen therapy. In the journal *Stroke*, Dr. Richard Neubauer, a pioneer in the use of this therapy for treating various neurological diseases, reported

outstanding results in a group of 122 stroke patients treated with HBOT. In one case, significant functional improvement was noted when Hyperbaric Oxygen Therapy was used 14 years after the initial stroke.

These studies by Dr. Richard Neubauer conclusively demonstrate the development of new blood vessels to the rim of tissue surrounding the area of the brain that had been damaged.

These newly formed blood vessels resulting from the hyperbaric oxygen therapy can then bring fresh blood and oxygen to the damaged tissue. The tissue begins to repair itself and returns to normal or near-normal. Once "awakened" these previously dormant neurons gradually reconnect to the rest of the brain. Having returned to normal or near to normal functioning, these revived neurons help to return the use of lost cerebral and bodily functions.

Do not misunderstand, this does not mean that Hyperbaric therapy can resurrect dead brain tissue; no one is making that claim.

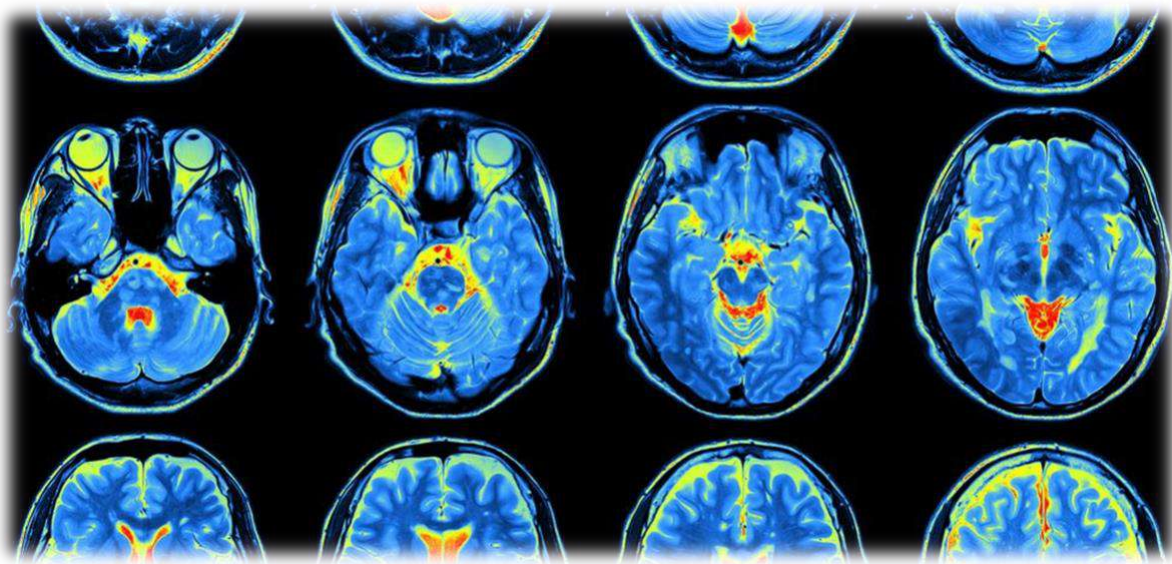
But what the research does prove is that it can facilitate the functioning of those dormant, idling nerve cells that have suffered secondary damage by stroke due to diminished oxygen. Oftentimes, the brain area suffering secondary damage is a larger part of the brain than that which suffered the primary damage. This area of secondary damage to the brain is the area that HBOT can help.

In terms of his own practice, Dr. Saft says, "Improvements have been achieved and gains have been made, even with patients who are more than a decade post-stroke."

Fibromyalgia is one of the modern era's so-called "mystery syndromes." It first began to be recognized in the past decade or so and along with Epstein Barr, so-called "yuppie flu," and half dozen or more such similar chronic syndromes, has been rising in occurrence continually.

Despite a dramatic increase in occurrence, today, the scientific community knows little more about Fibromyalgia than it did 15 years ago.

However, guess what a study of brain scans from the University of Alabama found? Surprise! There is a less blood flow to vital areas of the brain in people suffering from Fibromyalgia than in people without Fibromyalgia.



We already have learned that hyperbaric therapy works by greatly increasing your cells ability to uptake and process oxygen, which results in greater flow of oxygenated blood to vital areas.

Fibromyalgia has been successfully treated by oxygen therapies including HBOT in Europe and Asia for many years. Its proven ability to increase oxygenation and blood flow is undoubtedly one explanation as to why hyperbaric oxygen has been found to help these patients who are suffering from the debilitating effects of Fibromyalgia.

Hyperbaric oxygen is not a cure; but it has been shown to help patients with Fibromyalgia to feel "more like themselves." After treatments they often find themselves pain-free for the first time in months, or even years. Post treatment patients report feeling stronger and with an improved desire to do more.

## HBOT and Autism

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Autism is a mysterious behavior and developmental disorder which causes learning difficulties, and problems with language acquisition in children. It is a very complex neurological disorder that typically occurs within the first 3 years of life. Like fibromyalgia, and the other plagues of the 20<sup>th</sup> century, it has seen a dramatic increase in cases over the past 4 decades. Many believe as with the other “mystery” conditions that respond so well to oxidative therapy, the dramatic increase in children with autism has a lot to do with toxins in the environment and oxygen depletion.

Often, children with autism will seem to develop normally until 18 -24 months at which time an alarming regression in their development occurs and they may stop speaking and begin to lose interest in their surroundings and interactions with other people. Autism occurs two to four times more frequently in boys than in girls.



There are many theories as to what causes Autism such as abnormal cerebral blood flow to areas of the brain, high fevers, birth trauma, brain injury, infections, reactions to preservatives in vaccines, or lack of oxygen before, during or after delivery. Other theories suggest mineral deficiencies such as calcium, iron and zinc either in utero or after birth or fat and protein deficiencies.

The use of HBOT has been tried as a treatment for autism in many countries across the globe. The results are varied, but there have been some very encouraging anecdotal reports from practitioners and the families of patients.

It stands to reason as to why HBOT could help some children with autism. HBOT increases the concentration of oxygen in body tissues, which increases cerebral blood flow. Perhaps, the children with autism are experiencing learning and communications difficulties due to “stagnate neurons” such as those in the secondary injury sites of traumatic brain injury patients. As in Dr. Saft’s stroke victims, maybe HBOT “jump-starts” those connections, and these children can then think clearer.

We know that HBOT reduces swelling or excess fluid in the brain that might be pressing on centers of the brain which cause confusion, dysfunction, and inability to communicate in victims of stroke and other cerebral injuries. Perhaps many children with Autism are in a similar state?

In any case as to why it can help, HBOT has been shown to help many children with Autism. Parents are encouraged to educate themselves on this new dynamic use of HBOT so they can make informed decisions for the futures of their children.

A study that followed three autistic children who received HBOT, entitled *Hyperbaric Oxygen Therapy’s adjunctive role in the treatment of Autism*, had this to say on the subject.

Presently there are no effective cures for this disease as little is known as to the etiology. Diet, psychotropic medications and other regimens have been tried with mixed and often disappointing results. Recently a therapy that has been in and out of favor has been shown to be of possible benefit in the treatment of this disease.

Initial results were objective improvements in a variety of diverse phenomenon. Each child demonstrated global reduction in aggressive behavior. Parental summaries all stated substantial decrease in tendency to rage or exhibit tantrums. All children were reported to be easier to engage when the parent wished to initiate communication with marked improvement of direct eye contact.

All three children enrolled in a school program displayed higher



achievement with better performance and less instruction in classroom assignments. All children were improved with regard to understanding verbal commands. Reasoning abilities were noticeably enhanced in all individuals.

Brain imaging displayed enhanced neurophysiologic function in at least one of the members of this study.

The aim of hyperbaric oxygen therapy as an adjunct therapy was to evaluate the efficacy of the treatment in a series of 40 HBOT initial treatments, one or twice daily at 1.5 ata to 1.75 ata using a chamber on 100% oxygen for a total time of 60 minutes per treatment.

Patients were treated for 5 days consecutively with two days off. HBOT has been demonstrated to exert positive objective changes on a limited cohort of autistic children as evidenced by subjective and objective parameters. HBOT would seem to be useful and safe adjunctive therapy in the treatment of Autism.

# HBOT and Cancer

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Increasingly, hyperbaric therapy is being used to treat a number of severe side effects of some conventional cancer treatments such as radiation therapy and chemotherapy.

Well, in addition to improving the immunosuppression caused by those cancer treatments as intended, in many cancer patients, the HBOT treatment had an unexpected "side effect" – remission of their cancer!

But this should not have been such an "unexpected" outcome, if those that were giving the HBOT treatments accepted the idea that has been proven by practitioners of oxygen therapies - cancer cells are anaerobic, meaning they cannot thrive in a highly oxygenated atmosphere.

- ⇒ HBOT facilitates the growth of new blood vessels, enabling the transport of additional blood
- ⇒ HBOT augments the body's natural defense mechanisms to fight infection and kill bacteria
- ⇒ HBOT helps reduce any swelling that may occur around an area subjected to radiotherapy

HBOT therapy is increasingly being used to help patients who have been subjected to conventional radiation treatments.

A major problem with radiation therapy is that it does a lot of "collateral damage" killing cancer cells and nearby healthy cells alike!

With less healthy cells in the area of treatment, oxygen supply to the tissue

is lessened. Cut off from life giving oxygen, and essential nutrients to reach the tissues, over a period of time these tissues can become very fragile, break down and sometimes can even completely die, causing sores and ulcerations, a condition known as radiation necrosis. HBOT is FDA approved to treat and prevent radiation necrosis.

Beyond that, studies indicate that HBOT can be effective in treating the following cancers and cancer related conditions:

- ⇒ Chronic lymph edema in breast cancer
- ⇒ Chronic radiation cystitis
- ⇒ Pelvic cancer
- ⇒ Bowel cancer
- ⇒ Prostate cancer
- ⇒ Osteoradionecrosis
- ⇒ Chronic radiation proctitis
- ⇒ Acute blood loss anemia

# HBOT and Life Extensions

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Hyperbaric oxygen chambers deliver pure oxygen to the bloodstream, vital organs and to the muscles throughout the body. Increased oxygenation can help with many of the ravages of aging.

Oxygen is essential in a variety of enzymatic, biochemical, and physiologic interactions that promote normal cellular respiration and tissue functions. All of this metabolic process slows down as we age, and, fatigue lack of vitality, joint pain, muscle aches, cognitive difficulties, all of the “normal” symptoms of aging are the result. However the emerging science of anti-aging medicine says it does not have to be that way, and hyperbaric oxygen therapy is becoming a very potent arrow in their quivers!

After treatments in the hyperbaric chamber, many people experience an extraordinary jump in oxygenated particles in the blood. Those particles are more receptive to healing and repairing the damaged cells caused by aging. Free radicals cause your organs to age well before their time. Pure oxygen combats the free radicals that destroy cells on a molecular level.

As do all of the oxygen therapies, HBOT has been shown to build up the immune system. Professional and Olympic athletes have used the hyperbaric chambers to repair the damage that is inflicted on their tissues and organs – and now they are proving to return anybody and *anybody* to peak performance at any age!

# Final Thoughts

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As stated in the opening of this chapter, HBOT is probably the least controversial, and most readily accepted of the Oxygen Therapies discussed in this book. But that is actually as much a curse as a blessing, when it comes to getting its FULL POTENTIAL widely accepted.

In a sense, we're attempting to set the record straight and to tell people—especially physicians—to study the published scientific evidence. Mainstream medical journals engage in unconscionable editorial censorship.

They refuse to publish positive research studies on alternative therapies and are quick to print editorial criticism and anecdotal letters to the editor that are biased against such treatments. They have also been quick to uncritically print flawed studies that erroneously allege to disprove a controversial therapy. This has been just as true of “off-list” uses of HBOT as it has been of any uses of Ozone or Hydrogen Peroxide therapies.

But as with its less “conventional” cousins, it’s all about healthy cells, and healthy cells thrive in the presence of oxygen – toxins, germs, and unhealthy cells do not!

Hyperbaric Oxygen Therapy dissolves much greater amounts of oxygen into your cells, your tissues, your organs. Hyperbaric Oxygen dissolves increased oxygen into your blood plasma and cerebrospinal fluid. One of the most important facts to understand is that the health and functioning of your brain, one of your many organs, is most sensitive to oxygen deficiencies. The brain is also the most responsive organ to oxygen super-saturation.

This the main reason why stroke victims, as well as other patients who have brain and nervous system-related conditions, and those with cognitive difficulties, respond so well to Hyperbaric Oxygen Therapy.

HBOT originally was only used for diving injuries. The more conventional medicine came to understand how it helped victims of the bends, air embolisms, and decompression sickness – the more they were able to use Hyperbaric Chambers for other conditions. It is only a matter of time before they are forced to admit that it also does help all of the other conditions it has been used for – and by extension, admit the same of all oxidative therapies.

Now that you have a very good understanding of the three main Oxygen Therapies, Ozone, Hydrogen Peroxide, and HBOT, in the next section we will take a much more detailed look at the almost miraculous cures they have been able to achieve!