

# About Hyperbaric Oxygen Therapy

## At Stockton Family Practice

### **Background:**

Hyperbaric Oxygen Therapy (HBOT) is an emerging medical discipline that has a history of 200 years of practical experience. HBOT is a method of exposing an individual to pressurized oxygen for the purpose of increasing oxygen delivery to their tissues. Patients receive oxygen under pressures ranging from 1.3-4 atmospheres (1 atmosphere is equal to the pressure we experience at sea level and the 1.4 atmospheres that we use would feel the same as swimming 13 feet below the surface).

In 1980, R. Neubauer, MD published his results for the treatment of stroke patients in the journal "Stroke." A few years later K. K. Jain, MD, a neurosurgeon, confirmed those results and he eventually compiled reports of the multiple benefits of HBOT in the "Textbook of Hyperbaric Medicine" first published in 1990.

When SPECT scans became available, neuroradiologists were actually able to visualize and document the progressive benefits of HBOT in a variety of illnesses. The SPECT scan records a radiographic image of the brain identifying areas of under activity and impaired function.

### **How does HBOT work?**

When an area of the brain is injured, such as after a stroke, there is an area of dead tissue and a much larger area of hypoxic or oxygen deprived tissue. This hypoxic area is not dead but does not have enough oxygen supply to function so it is programmed to go into a hibernation-like state. When oxygen is delivered under pressure we are able to get enough into the deprived area to reawake the tissue and, in response, there is a spurt of new blood vessel growth (angiogenesis). With repeated treatments this angiogenesis will be able to maintain the nourishment as the brain cells regain some of their healthy, vital functioning.

HBOT also stimulates the production of one of the body's most powerful free radical scavenger, superoxide dismutase (SOD), which helps clear toxins from the involved areas. This may be how it helps chemically damaged brains to recover function.

### **What is HBOT used for?**

HBOT is approved by the FDA for certain disorders. It was first used for illnesses arising out of deep sea diving. These include decompression illness ("the bends") and air embolism. Other approved uses include blood loss, bone infections, carbon monoxide poisoning, burns, crush injuries, non-healing wounds, gangrene, radiation damage and skin grafts.

Other conditions are being treated by HBOT at many centers around the world. In the US these treatments would be considered "off label" and as such are perfectly legal but are not going to be recognized by insurance companies for reimbursement. While there are many reports of the effectiveness of HBOT in off label conditions, by law no claims can be made as to the benefits or effectiveness.

### **Unapproved Conditions that May Benefit from HBOT**

- **ADD**
- **Autism**
- **Bell's Palsy**
- **Bone Fracture**
- **Cerebral Palsy**
- **Chronic Fatigue**
- **Diabetic Foot Ulcers**
- **Fibromyalgia**
- **Head Injury**
- **Lupus**
- **Lyme Disease**
- **Migraine Headache**
- **Multiple Sclerosis**
- **Near Drowning**
- **Recovery in Plastic/Reconstructive Surgery**
- **Spastic Bladder**
- **Sports Injuries**
- **Spinal Cord Injury**
- **Stroke**