

# Hyperbaric Oxygen Therapy (HBOT)

## PUTTING THE PRESSURE ON DISEASE

Our service provides 24-hour Hyperbaric Oxygen Therapy (HBOT) consultation and case management for large and small animal patients and incorporates a state-of-the-art hyperbaric delivery system. HBOT allows a patient to breathe very high concentrations of oxygen by placing the patient in a chamber and increasing the air pressure around them. The increased pressure condenses the oxygen molecules in the alveolus, making more molecules available at the alveolar-capillary interface for diffusion into the blood. It has the same effect as a scuba diver going underwater to a certain depth. By breathing 100% oxygen under increased pressure, we can increase the amount of oxygen dissolved in the blood by as much as 15 times normal concentrations.

### How is HBOT applied to the patient?

The patient is placed in a chamber of suitable size and the pressure surrounding the patient is increased by allowing oxygen to flow into the sealed chamber (see photo below).

### What is the goal of HBOT?

The goal of hyperbaric oxygen therapy is to increase the amount of oxygen delivered to the diseased tissue to help it heal. As we increase the concentration of oxygen in the blood to very high levels we increase the amount of oxygen and the distance oxygen diffuses in the tissues. Hyperbaric oxygen therapy may be used alone or in conjunction with conventional therapies (integrative medicine).

### What is a treatment protocol?

Oxygen should be considered a drug and just as any other drug we might administer it has various doses, frequencies of

administration and duration of therapy depending on what disease is being treated. For example, a protocol might call for a patient to receive 2 atmospheres of pressure (like diving to 33 ft. in the ocean) for 1 hr. every other day for 7-10 treatments.

### What are the indications for HBOT?

Hyperbaric oxygen therapy is both a primary treatment and a complementary therapy. Consequently, hyperbaric oxygen therapy may be used alone or in conjunction with conventional therapies.

There are many indications for this therapy. In general, any condition or disease in which the circulation to the diseased tissue has been compromised will benefit from this therapy. Hyperbaric therapy is a primary treatment for some diseases including severe smoke inhalation, Clostridial and other anaerobic infections, and compromised wounds. Hyperbaric therapy is beneficial in athletic injuries

such as desmitis, tendonitis, and fractures. Other diseases for which hyperbaric therapy is indicated include acute laminitis, reperfusion diseases (intestinal obstruction, colon torsions, volvulus, etc.), enteritis, ileus, endotoxemia, infertility, Rhodococcus

pneumonia, Lyme's disease, osteomyelitis, compressive chord lesions post op, cerebral trauma and vascular disease, peripheral neuropathies, to mention just a few.

### How do I know if a patient would benefit from hyperbaric therapy?

The veterinarians at the University of Tennessee, College of Veterinary Medicine and at other hyperbaric centers are good resources for consultation on the use of hyperbaric therapy in the horse. We are still developing studies to look at all of the potential uses for this therapy in animals.

### Are there risks associated with this therapy?

The risks associated with hyperbaric therapy are minimal if it is properly applied. As with any drug therapy, there are occasions where unanticipated reactions occur, but these are rare. Thousands of people and animals have been successfully treated with this therapy. Oxygen toxicity and barotrauma are two effects of administering oxygen under pressure that are continuously monitored for during therapy. The incidence of these effects is minimized by proper dosing, frequency, and duration of pressure and oxygen and proper compression and decompression procedures.

### Are there side effects of HBOT?

The side effects in animals are very infrequent. Most side effects studied in humans are usually transient and disappear when the therapy is discontinued.

