HYOX

HYPERBARIC AND REHABILITATIVE MEDICINE

Breathe deep. Heal faster.

Hyperbaric Oxygen Therapy for **INFECTIOUS DISEASE**

Locations in NW Atlanta and Gwinnett

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www.hyox.com • info@hyox.com

Affiliated hospitals *(for inpatient consults)*:
Gwinnett Medical Center
Northside Hospital
WellStar Cobb Hospital
WellStar Douglas Hospital
WellStar Windy Hill Hospital

How to Refer to HyOx

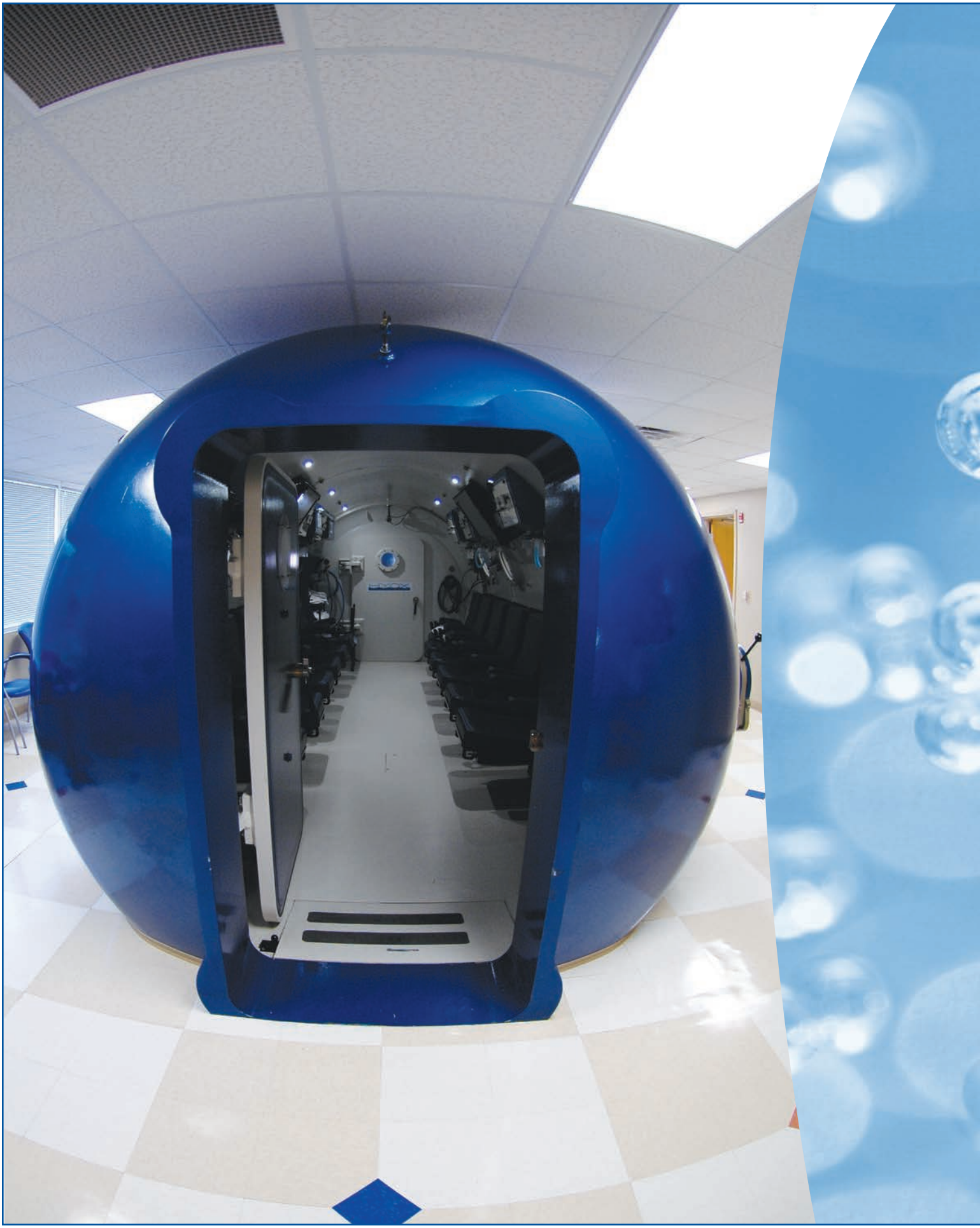
Call your preferred location to make a referral. We'll handle the paperwork, insurance verification and contact the patient to schedule an initial consultation. A physician's signature on the referral form is needed.

OR

Print a referral form from the www.hyox.com homepage, complete and fax to your preferred location. We'll confirm receipt, verify insurance and contact the patient to schedule an initial consultation.

Initial Patient Consultation* to commence treatment regimen

* A referral for hyperbaric oxygen therapy does not obligate the patient to undergo treatment. Please encourage patients to come for an initial consult to learn about the benefits of hyperbaric oxygen therapy so they can make an informed decision and avoid further complications.



About HyOx

HyOx Medical Treatment Center is a fully accredited, freestanding medical facility specializing in hyperbaric medicine and rehabilitation. We prescribe 100 percent oxygen as a drug with time and pressure limits to patients with chronic wounds, infections and other injuries. Patients undergo adjunctive hyperbaric oxygen (HBO_2) therapy in Georgia's largest pressurized chamber to supersaturate the body with the oxygen needed to feed starving tissues and cells and accelerate the healing process.

A multi-disciplinary team of board certified Undersea and Hyperbaric Physicians, Certified Wound Specialists, Registered Nurses, Certified Hyperbaric Registered Nurses, Certified Hyperbaric Technicians, Physician Therapists, Social Workers, and other healthcare professionals deliver hyperbaric medicine, wound care and other rehabilitative services when needed to expedite healing and achieve a better quality of life.

About Hyperbaric Oxygen Therapy

Without adequate oxygen tissues and cells starve and may die. Hyperbaric oxygen (HBO_2) treatments provide the body with 100 percent oxygen delivered at a high level of pressure to enable those tissues and cells to live. With air containing only 21 percent oxygen, the power of HBO_2 therapy is its ability to supersaturate the body by delivering 10 to 15 times more oxygen to the patient. Equivalent to 45 feet below sea level, the pressure reached in HyOx's multi-patient hyperbaric chambers enables 100 percent oxygen to dissolve into the patient's plasma to help accelerate wound healing, fight infection, increase vascularity, and improve quality of life.

BENEFITS of Hyperbaric Oxygen Therapy:

- Fights infection synergistically with antibiotic therapy by boosting the efficacy of aminoglycosides (1) by restoring immune mechanisms that have become dysfunctional due to hypoxia (this directly affects neutrophilic killing of organisms as phagocytosis becomes inefficient)
- Reduces the amount of hypoxic leukocyte dysfunction/adherence occurring within an area of hypoxia and infection providing oxygenation to ischemic area limiting the spread and progression of infection (2)
- Helps resolve infections combined with antibiotic and surgical debridement, by augmenting the transport of certain antibiotics across bacterial cell walls *(antibiotic transport does not occur if oxygen tension levels are below 20 to 30 mmHg)* (3)
- Salvages tissue and, in some cases, limbs, by supplementing oxygen availability to hypoxic tissues with inadequate perfusion by supersaturating the plasma with oxygen to promote angiogenesis
- Stops alpha-toxin production in gas gangrene and inhibits bacterial growth which enables the body to utilize its own host defense mechanisms (4)
- Fight against acute tissue necrosis (5) caused by clostridia (and other anaerobes) by forming oxygen free radicals in the relative absence of free radical degrading enzymes, such as superoxide dismutases, catalases and peroxidases, by radically increasing oxygen tensions in the body (6)
- Assists in the salvage of life, limb and tissue-threatening infection thereby reducing hospitalization and further infection control procedures

REFERENCES:

(1) Mandell G. Bactericidal activity of aerobic and anaerobic polymorphoneclear neutrophils. **Infect Immun** 1974; 9: 337-341.
(2) Knighton DR, Fiedgel VD, Halverson T, Schneider S, Brown Ti, Wells CL. Oxygen as an antibiotic: the effect of inspired oxygen on bacterial clearance. **Arch Surg** 1990; 125: 97-100.
(3) Verklin RM, Jr, GL Mandell. Alteration of effectiveness of antibiotics by anaerobosis. **J Lab Clin Med**, 1977. 89 (1) 65-71.
(4) Hill GB, Osterhout S. Experimental effects of hyperbaric oxygen on selected clostridial species I in vitro studies and II in vivo studies in mice. **J Infect Dis** 1972; 125: 17B35.
(5) Stevens DL, Tweten RK, Awad MM et al. Clostridial gas gangrene: Evidence that alpha- and theta-toxins differentially modulate the immune response and induce acute tissue necrosis. **J Inf Dis** 1997; 176: 189-195.
(6) Van Unnik AJM. Inhibition of toxin production in Clostridium perfringens in vitro by hyperbaric oxygen . Antonie Leeuwenhoek **Microbiol** 1965; 31: 181B – 186.

Infectious Disease

APPROVED AND COVERED CONDITIONS:

- **Chronic refractory osteomyelitis**

  Referral Protocol: Post four to six weeks of antibiotic therapy with no healing progression

- **Necrotizing soft tissue infections (necrotizing fasciitis, Fournier's Gangrene, non-clostridial myonecrosis, crepitant anaerobic cellulitis, progressive bacterial gangrene, zygomycotic gangrenous cellulitis)**

  Referral Protocol: In the acute phase, after a wound culture, MRI or bone biopsy show necrotizing bone or soft tissue infection – when anatomic levels of involvement of skin, superficial or deep fascia and muscle involvement can be assessed by biopsy, MRI and deep tissue cultures

  Note: Copies of recent lab work required for pre-authorization

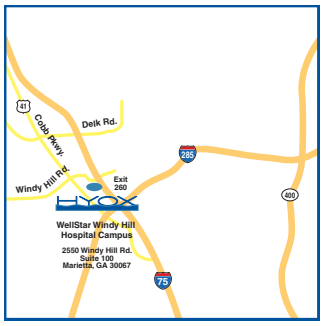
- **Clostridial myonecrosis (gas gangrene)**

  Referral Protocol: Immediately when gas gangrene manifests (typically hours after injury or an operation) with a severe and sudden pain in the infected area followed by fever, shiny and tense skin then becoming dusky and bronze-like. Also, hemorrhagic bullae or vesicles may be noted with thin, bloody serum-like exudate with a sickly, sweet odor along with swelling of the infected area and muscles that are non-contractible and don't bleed when cut.

- **Refractory actinomycosis / other mycoses**

- **Intracranial abscess**

  Referral Protocol: Immediately, upon diagnosis of multiple abscesses, abscesses in a deep or dominant location, in a compromised host and in situations where surgery is contraindicated or where the patient is a poor surgical risk and when there's no response or further deterioration in spite of standard surgical (e.g. 1-2 needle aspirates) and antibiotic treatment.



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