

# M.D. NEWS

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## A Breath of Fresh Air: Hyperbaric Medicine

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By Elizabeth Schwartz

It's one of the least expensive medicines available. In fact, it's free. We breathe it every day. Oxygen. We need it to live, but the therapeutic effects of oxygen are far-reaching.

For years, doctors have used oxygen for healing wounds. It is one of the most commonly used treatments for hospital patients. This is because oxygen in blood or tissue promotes the healing process. Hyperbaric oxygen therapy, or HBOT, lets patients inhale 100% oxygen at a pressure greater than sea level.

The combination of increased oxygen and pressure provides

the body with approximately 20 times the normal oxygen, which promotes healing.

The commonality of oxygen healing is what drew Helen Gelly, M.D., to hyperbaric medicine. While working as an emergency physician, Dr. Gelly received frequent requests from poison control centers to treat patients with carbon monoxide (CO) poisoning. She took an interest in the healing effect of hyperbaric oxygen for more than just critically ill trauma patients.

"I received training in hyperbaric medicine and started see-



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Dr. Helen Gelly of Hyperbaric  
Physicians of Georgia.

ing other patients who needed therapy. There are so many more applications of hyperbaric therapy besides the emergency carbon monoxide patients. We get to help more patients with a variety of problems return to a more normal quality of life, after devastating diseases,” says Dr. Gelly, a physician with Hyperbaric Physicians of Georgia.

Dr. Gelly and fellow emergency physicians began treating patients at the hyperbaric chambers at Emory Crawford Long Hospital and St. Joseph’s Hospital in Atlanta in the early 1990s. Eventually in 1993, they opened Cobb Hyperbaric Medicine adjacent to Kennestone Hospital.

Theirs is one of only a few freestanding hyperbaric chambers in the Southeast.

Dr. Gelly’s practice uses 2.4 atmospheres — about 45 feet below sea level. Some hyperbaric chambers go as low as 160 feet below sea level. She says the deeper chambers are reserved for serious scuba diving accidents.

“We were seeing a need for this kind of therapy, not only in Atlanta but also in the Cobb/Marietta area,” explains Dr. Gelly. “That’s when we opened our freestanding chamber. We started to become involved in hyperbarics in more and more applications, like wound healing in diabetics, chronic bone infections and ameliorating the long-term effects of radiation therapy on healing.”

HBOT is used for a wide range of treatments, from diabetic foot wound to nonhealing surgical wounds. The common thread is low oxygen level in the surrounding tissue. The added oxygen with HBOT promotes and speeds the body’s natural healing process.

“When HBOT is used in conjunction with standard wound care, improved results have been demonstrated in the healing of difficult or limb-threatening wounds as compared to routine wound care alone,” says Dr. Gelly.

The therapy is delivered in two types of environments: a monoplace or multiplace chamber. The monoplace seats one person

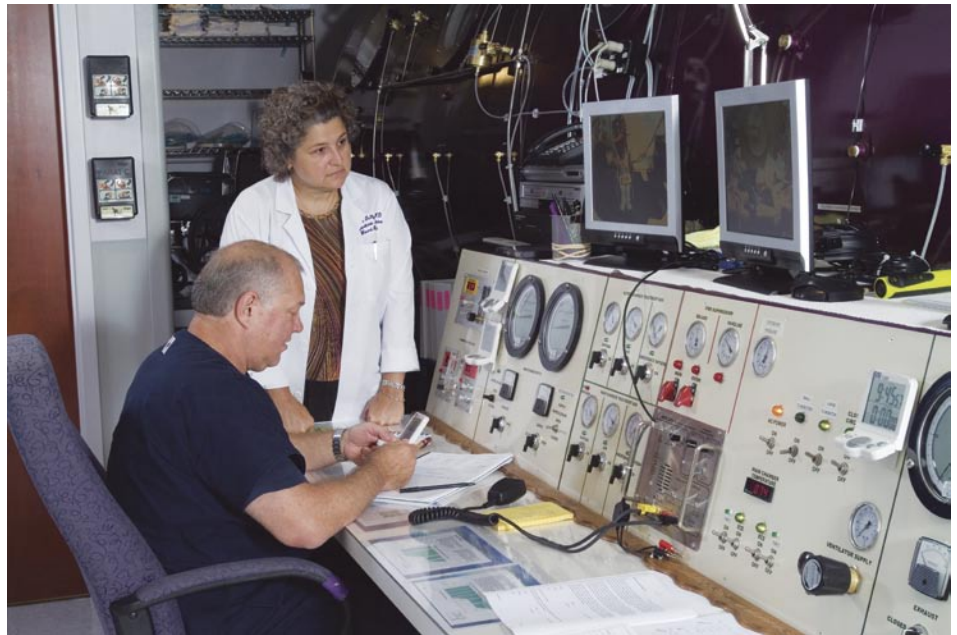


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**Staff carefully monitor and observe each patient and check vital signs before and after a treatment.**

with a smaller cylinder. The patient breathes oxygen directly followed by air breaks that are provided by mask. This is to prevent complications of seizures from too much oxygen. The monoplace environment offers treatments that can be customized to each patient’s needs, as well as flexibility in scheduling.

The advantage of the multiplace is more patients can receive treatment at one time. In the multiplace, as many as eight patients are treated at a time by breathing oxygen through a hood over their head. The whole vessel is pressurized with air. Those patients that cannot be treated in the monoplace chambers due to physical constraints or claustrophobia benefit from the larger multiplace chamber.

“We do two runs a day in the multiplace,” says Dr. Gelly. “We usually see about 18 patients in that time.”

Most patients receive between 20-40 treatments depending on response. The maximum is usually 80 treatments due to patient safety. Of the more than 6,000 treatments the practice does a year, most are scheduled and non-emergent.

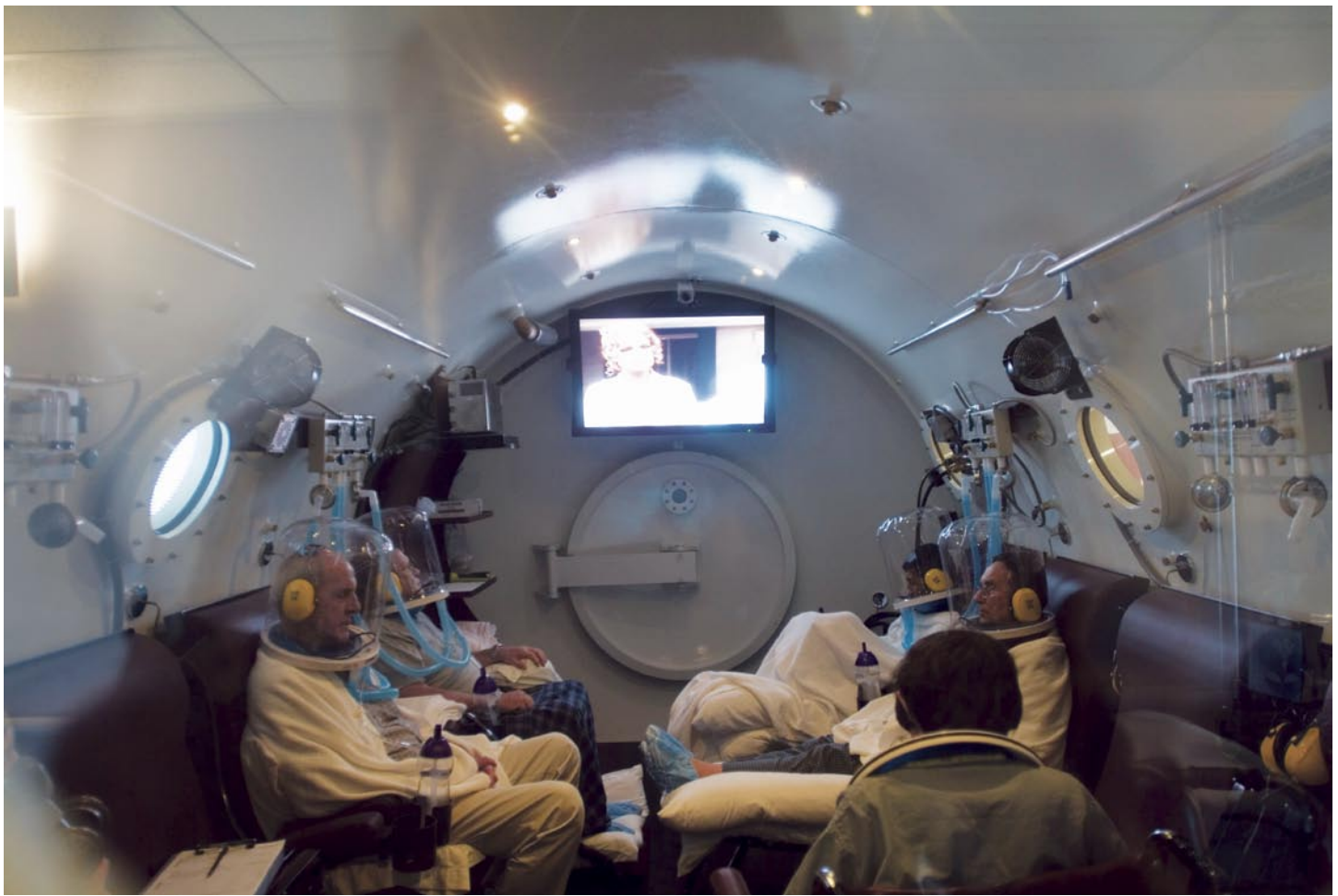
Dr. Gelly says between the three locations and multiple chambers, they are able to accommodate most patients with convenience and little waiting time. Treatments run from 7 a.m. to 3 p.m.

The most common side effect of HBOT is a noticeable change in pressure in the ears and sinuses or possible seizures. Patients typically receive 30 minutes of oxygen, and then breathe air to decrease the risk of seizures from too much oxygen exposure.

Staff carefully monitor and observe each patient and check vital signs before and after a treatment. In fact, each patient is assigned what Dr. Gelly calls a “tender” or staff specially assigned to monitor that patient’s comfort level and progress during a treatment.

## Helen Gelly, M.D.

Dr. Helen B. Gelly has practiced hyperbaric medicine full time since 1993. She is subspecialty certified in undersea and hyperbaric medicine and has lectured nationally on hyperbaric medicine and wound healing for many years. She is actively involved on the national level to increase the acceptance of hyperbaric medicine as a treatment modality. Locally, she continues to lecture to recreational diving groups, as well as to the medical school and residency programs at Emory University. Currently, Dr. Gelly is President of the Gulf Coast Chapter of the Undersea & Hyperbaric Medical Society.



**Hyperbaric oxygen therapy is delivered in two types of environments: a monoplace or multiplace chamber.**

“We have to take special precautions, especially for diabetics,” adds Dr. Gelly. “We want to carefully monitor their blood sugar because they can experience a sudden drop.”

Dr. Gelly says that most patients are comfortable during the treatment and their staff works to put everyone at ease. Patients can watch TV or choose from a selection of more than 600 movies, tapes, CDs or a radio.

Most HBOT treatment is covered by insurance for wound care purposes. Hyperbaric Physicians of Georgia sees a variety of patients — men and women. Most are over 40 and being treated for diabetic foot wounds, nonhealing surgical wounds usually complicated by diabetes or radiation tissue injury from cancer treatment.

“We see men who have prostate cancer and get radiation, patients with oral cancer who require radiation and dental extraction, or breast reconstruction surgery,” says Dr. Gelly. “This is definitely not a first line of treatment, but when conventional treatment does not provide a satisfactory outcome, hyperbaric oxygen can make a huge difference in the successful outcome of these procedures.”

According to the Undersea & Hyperbaric Medical Society, hyperbaric chambers and hyperbaric oxygen therapy have been used for centuries, as early as 1662. Clinical use of the therapy started

as early as the 1880s. It has been used safely since the 1930s to help treat deep-sea divers with decompression sickness.

“The most dramatic effect I’ve seen was on a patient with an arterial gas embolism after aortic valve replacement. He was blind, and after the therapy, he could see,” says Dr. Gelly. “He was even able to return to work.”

A physician, most often a surgeon, usually refers patients. Dr. Gelly says they evaluate all patients carefully to make sure there’s no contraindications and that they are a good candidate for therapy. Some patients with respiratory disease may not be eligible for treatment. Her staff carefully screens potential patients with a full evaluation, nutritional assessment and chest X-ray.

All of the physicians and staff at Hyperbaric Physicians of Georgia are specially trained in hyperbaric medicine. They have a full-time staff of nurses, techs and emergency workers. The physicians remain on call for emergency hyperbaric treatments for appropriate patients, and Dr. Gelly is proud of their work with HBOT and their continued service to the community.

“The effects of the therapy can be successful,” she says. “We’ve come a long way from treating just emergency patients. With this therapy, our care can reach a lot more people.”

*For more information, visit [www.hbomdga.com](http://www.hbomdga.com). ■*