

UCLA treats carbon monoxide poisoning patients in largest hyperbaric chamber in Southern California



Many cases of carbon monoxide poisoning can be prevented

Every month, UCLA's hyperbaric chamber treats one or two people suffering from carbon monoxide poisoning. Many patients are firefighters or fire victims who have inhaled smoke. About 20 percent of the patients are people who have fallen asleep in a small room with a faulty space heater that leaked carbon monoxide.

"Room heaters are an especially big problem in Southern California in winter months," says Susan Sprau, M.D., medical director of UCLA Hyperbaric Medicine. "Carbon monoxide poisoning is potentially fatal, but people who survive the experience can also have long-term brain damage, which may not become apparent right away."

Alarm systems on wall or space heaters cannot prevent every incident of carbon monoxide poisoning, but they are an effective way to eliminate several unnecessary deaths and many cases of injury every year, she says.

"This is a preventative healthcare issue," Sprau says. "Doctors should be asking patients if they have space heaters in enclosed spaces and if they do, they should make sure they have installed alarms."

As many as 40 Californians die each year and thousands more suffer serious injuries, including brain damage, from carbon monoxide poisoning—mostly from the use of faulty space or wall heaters. A new law that requires property owners to install alarm devices on fossil-fuel-burning appliances that produce carbon monoxide should reduce those unnecessary injuries and deaths after the law goes into full effect in 2013. In the meantime, it's important to know that hyperbaric oxygen therapy is a safe and effective treatment for patients who have suffered carbon monoxide poisoning.

UCLA features multi-occupant hyperbaric chamber

UCLA's state-of-the-art, multi-occupant hyperbaric chamber began operating in 1997. The only chamber of its size in Southern California, it can accommodate up to 18 patients at a time and treats the second highest number of patients in the country every year. UCLA's hyperbaric chamber is big enough to accommodate patients who need intensive care and close monitoring by physicians. The roominess of the chamber is also less likely to cause claustrophobia, a complaint often heard by people treated in mono-chambers.

How it works

Hyperbaric oxygen therapy increases the amount of oxygen dissolved in the blood by exposing the patient to increased barometric pressure within a sealed chamber. Technicians can raise the barometric pressure up to three atmospheres, or the equivalent of about 66 feet below sea level. Without hyperbaric therapy, it takes about seven hours for toxic levels of carbon monoxide in a patient's bloodstream to decrease by half, but hyperbaric oxygen therapy reduces the half-time of carbon monoxide to just 23 minutes.

What to expect

UCLA's hyperbaric oxygen chamber has three separate, but connected, sections. The barometric pressure of each section can be varied to meet different patients' needs. Patients sit on a sofa or lie on a stretcher inside the chamber during treatment, which can last 90 minutes or more. When the doors are sealed, technicians slowly raise the chamber's barometric pressure to the desired levels to treat the patients inside. When the session ends, they slowly depressurize the cabin. The length of time that a patient must remain in the chamber varies according to the carbon monoxide saturation level of the blood.

Some patients experience ear popping, mild sinus discomfort or claustrophobia during the treatment. While most patients do not experience any symptoms immediately after treatment, rare side effects include temporary short-sightedness (myopia) and pulmonary oxygen toxicity.

Research supports hyperbaric oxygen therapy for a number of uses

Clinical studies have proven that hyperbaric oxygen therapy is an effective treatment for many health conditions besides carbon monoxide poisoning. UCLA Hyperbaric Medicine provides hyperbaric oxygen therapy for patients with conditions that are approved for Medicare reimbursement. Most health insurance policies cover these uses of hyperbaric oxygen therapy.

Medically approved uses of hyperbaric oxygen therapy are¹:

- Air or gas embolism
- Carbon monoxide poisoning
- Gas gangrene
- Crush injury, compartment syndrome and other acute traumatic ischemias
- Decompression sickness
- Healing problem wounds
- Central retinal artery occlusion
- Severe anemia
- Intracranial abscess
- Necrotizing soft tissue infections
- Osteomyelitis (refractory)
- Delayed radiation injury
- Compromised grafts and flaps
- Acute thermal burn injury
- Idiopathic sudden sensorineural hearing loss

¹ Undersea and Hyperbaric Medical Society, www.uhms.org, accessed November 2012

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