

What is Hyperbaric Oxygen Therapy?

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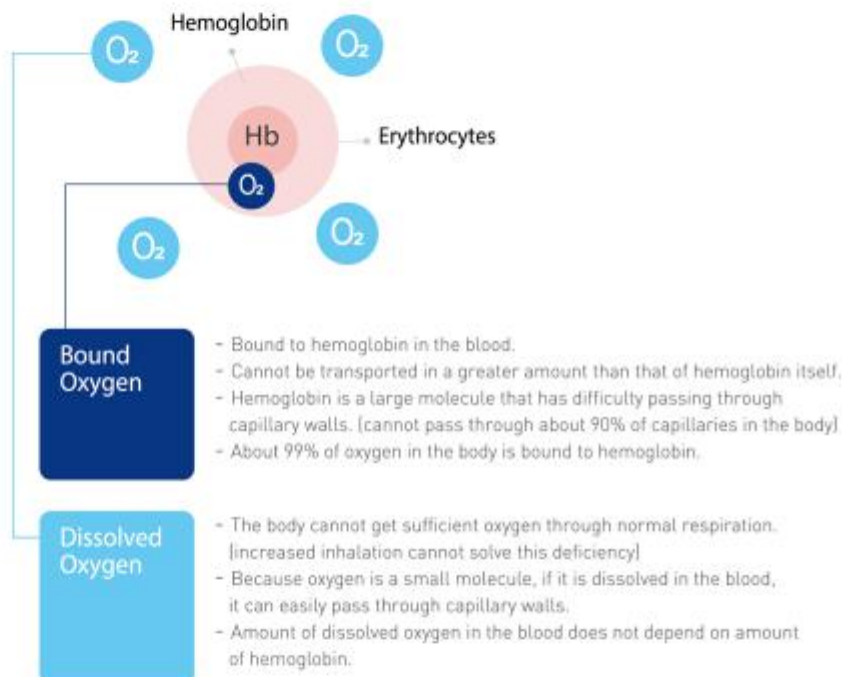
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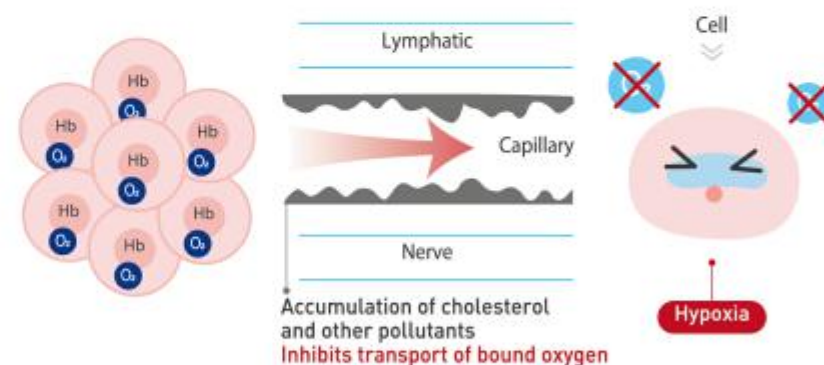
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Bound oxygen vs. Dissolved oxygen

There are two types of oxygen in the body-oxygen which is bound to hemoglobin and oxygen which is dissolved freely in the blood. Normal respiration only involves transport of oxygen which is bound to hemoglobin. However, because hemoglobin is larger than the size of most capillaries in such vital organs as the lungs, kidneys, liver, and skin, hemoglobin-bound oxygen transport is not sufficient to attain full-body blood circulation.

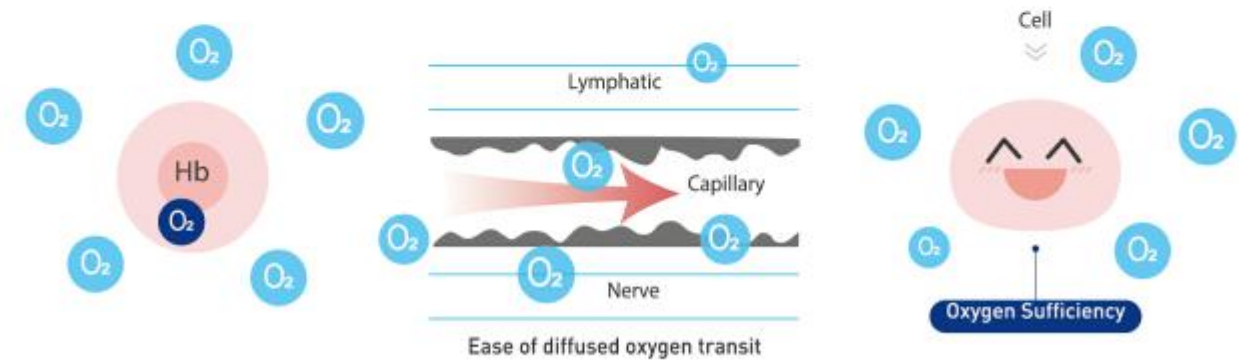


Furthermore, poor diet, lack of exercise, and other lifestyle factors lead to cholesterol accumulation in the blood, attachment of debris to red blood vessels, and blood vessel blockage, further hindering proper blood circulation in the body. Ultimately, the deficiency of oxygen due to the combination of such factors leads to accelerated aging and the onset of a multitude of diseases.



Hyperbaric Oxygen Therapy

If the atmospheric pressure of oxygen is high, oxygen will not only readily bind with hemoglobin in red blood cells, the content of dissolved oxygen will be increased, transport across capillary walls will be efficient, free movement into the smallest areas of the circulatory system will become easier, and cellular activity will also be increased.



In hyperbaric oxygen therapy, purified oxygen is inhaled under high atmospheric conditions, increasing oxygen concentration within the body, and alleviating the effects of oxygen deficiency.

Typical fields in which hyperbaric oxygen therapy is applied



Cosmetic Surgery / Orthopedics / Rehabilitation
Edema reduction (finger reconstruction surgery), cell regeneration after microsurgery, treatment of muscular or skeletal damage



Dermatology
Acne, herpes simplex, herpes zoster, pattern hair loss, beautification, etc.



Surgery
Infection from external injury, acute soft tissue damage, ulcer, burns, wounds, skeletal problems, etc.



Ophthalmology
Diabetic retinitis, corneitis, etc.



Neurosurgery / Neurology
Senile dementia, apoplexy, paralysis, neurosis, autism, schizophrenia, headaches, migraines, etc.



Other
The bends (from diving), improving athletic performance (currently used by countless well-known athletes), stress alleviation and recovery from fatigue, improving mental activity and ability to focus, promoting metabolism and blood flow.



Internal Medicine
Chronic asthmatic bronchitis, acute exogenous pneumonia poisoning (carbon monoxide poisoning, gas poisoning in the case of fire), aftereffects of stroke, cerebral hemorrhage, cerebral infarction, hardening of arteries, diabetes, ischemia, heart disease, etc.

ozone H3000



FEATURES

- Easy access (in and out) by mounting bed slide for patients with mobility difficulties or burns.
- Simplified caster mounting and peripherals for layout changes.
- Ease of patient monitoring through observation window.
- Spare connectors for optional mountable units
- Securing stability with world-class chamber technology

Automatic control system which facilitate chamber decompression and pressurization

Safe whole-body high-pressure oxygen therapy chamber

Automatic treatment through PC program Two choosable mode: Auto/Manual

SPECIFICATIONS

Chamber	Available to set freely between 1.1~3.0ATA
Material	Steel
Patient breathing apparatus	A holder mounted for oxygen mask
Communication device	Patient-operator callable through interphone
Length	2415 mm
Width	1156 mm
Height	1308 mm
Weight	1000 kg
Operational pressure	1.1 ATA ~ 3.0 ATA
Capacity	1
Power	220V / 50-60Hz / 65VA
Installation	2m x 4.6m

ozone H2000



SPECIFICATIONS

MODEL		O ₂ ONE H2000
Chamber	capacity	1 person
	material	Aluminum
	size/weight	225cm x Ø81cm, 113kg
	pressure	1.1~2.0ATA
Oxygen generator	flow rate	10 Liters / min
	Oxygen purity	93%±3%
	power	220V~, 50-60Hz, 570W
	size/weight	W390mm x D445mm x H625mm, 40kg
System+Air cooler	flow rate	140Liters / min
	specification	Dual Head Oilless
	air filter	Dual
	power	220VAC±10%, 50-60Hz, 1000VA
	size / weight	W530mm x D455mm x H1070mm, 84kg
Colored display monitor	size	external: 25.9cm(10.2inch) touch screen, internal : 17.8cm(7inch) touch screen
Installation		1.5m × 2.5m

FEATURES

- Pressure controllable (between 1.1ATA~2.0ATA)
- Equipped with personal oxygen mask
- Emergency button to release pressure in emergency
- Air conditioning system
- Wide and convenient transparent viewing window
- Automatic control system using computing system
- Interphone system between patient inside the chamber and operator outside.
- Oxygen absorption flow rate adjustable
- Color touch display with internal/external monitoring and control
- Lock function to prevent tampering with patients inside the chamber



ozone H750/810/950



FEATURES

- Colored controlling system automatically adjusts pressure (between 1.1ATA ~ 1.5ATA), time and temperature.
- Slide type entry door
- Emergency button to release pressure in emergency
- Wide and convenient transparent viewing window
- Securing stability with world-class chamber technology
- Air cooling system
- A remote controller for adjusting time, pressure, temperature
- Colored monitoring system which controls pressure, O₂ concentration, density of carbon dioxide, temperature-humidity

SPECIFICATIONS

MODEL		O ₂ ONE H750	O ₂ ONE H810	O ₂ ONE H950
Chamber	capacity	One		
	material	Aluminum		
	size	225cm × Ø75cm, 109kg	225cm × Ø81cm, 112kg	225cm × Ø95cm, 127kg
	pressure	1.1 ~ 1.5ATA		
Oxygen generator	flow rate	5 Liters / min		
	Oxygen purity	93%±3%		
	power	220VAC, 50-60Hz, 238W		
	size/weight	W273mm x D392mm x H496mm, 17kg		
System+Air cooler	flow rate	85Liters / min		
	specification	Dual Head Oilless		
	air filter	Dual		
	power	220VAC±10%, 50-60Hz, 720VA		
	size / weight	W530mm × D455mm × H1075mm, 86kg		
Remote controller (option)		W8.9cm × H4.7cm × D2.6cm, 0.2kg		
Installation		1.5m × 2.5m		



oxo Oxysys 4500/4000



FEATURES

- Two controllable pressures: 1.1ATA and 1.3 ATA
- Safety knob to release pressure in emergency
- Air cooling system
- Wide and convenient transparent viewing window
- Adjustable timer system for therapy
- Interphone for two-way communications inside and outside the chamber
- Easy installation and movement with stable hardware

SPECIFICATIONS

MODEL		OXYSYS 4000	OXYSYS 4500
Chamber	capacity	One	One + Guardian
	material	Polyurethane	
	size / weight	220cm × Ø70cm, 22kg	220cm × Ø90cm, 25kg
	pressure	1.1ATA / 1.3ATA	
Oxygen generator	flow rate	5 Liters / min	
	Oxygen purity	93%±3%	
	power	220VAC, 50-60Hz, 238W	
	size / weight	W273mm × D392mm × H496mm, 17kg	
System+Air cooler	flow rate	85Liters / min	
	specification	Dual Head Oilless	
	air filter	Dual	
	power	220VAC±10%, 50-60Hz, 720VA	
	size / weight	W530mm × H1075mm × D455mm, 85kg	
Installation		1.5m × 2.5m	

oxo Pet Chamber



FEATURES

- Relieving Pet's stress
- Rehabilitation treatment such as dislocation and fracture recovery of animals
- Recovery of minor wounds such as abrasions
- Restoring fatigue and physical strength of animals that consume a lot of physical strength such as race dogs
- The enhancement of metabolism in sick animals
- Effective for improving hair conditions and skin beauty of animals
- Other effects: Improvement in brain functions and concentration, discharge waste from body

SPECIFICATIONS

MODEL		Pet Chamber
Chamber	capacity	One
	material	Poly Carbonate, Aluminum
	size / weight	L1140mm × W720mm × H810mm, 92kg
	pressure	1.2 ATA
System	flow rate	10 Liters / min
	specification	Dual Head Oilless
	air filter	Dual
	power	220VAC±10%, 60Hz, 350VA
	size / weight	L655mm × W380mm × H650mm, 48kg
Installation		1.5m × 2.5m



FEATURES

- Pressure controllable [between 1.1ATA~1.5ATA]
- Wide and convenient transparent viewing window
- Adjustable timer for therapy
- Interphone for two-way communications inside and outside the chamber
- Easy installation and movement with stable hardware
- Lightened structure
- Oxygen generator developed on the basis of medical standards

SPECIFICATIONS

MODEL		General type
Chamber	capacity	One
	material	Aluminum
	size / weight	225cm × Ø81cm, 115kg
	pressure	1.1 ~ 1.5ATA
System	flow rate	Pressured air flow : 85 Liters / min, Oxygen flow : 5 Liters/min
	Oxygen purity	90%±5%
	power	220VAC±10%, 50-60Hz, 250VA
	size / weight	L655 × W380 × H900(mm), 54kg L455 × W530 × L1075(mm), 85kg
Installation		1.5m × 2.5m

SELECTED REFERENCES TO PUBLISHED RESEARCH ON HBOT

A small selected sample from more than 30,000 articles on this subject in the scientific literature

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CONTRAINDICATIONS AND SIDE EFFECTS

The absolute contraindication for HBO therapy is untreated pneumothorax.

The relative contraindications are listed in Table 1.

The appropriateness of HBO treatment for terminally ill patients remains uncertain.

The most common side effect is otic barotrauma, although some patients may require myringotomy; these issues can often be managed with pre-treatment Valsalva maneuvers and vasoconstrictors.

Claustrophobia is common but can be effectively managed with minimal sedatives.

Pulmonary barotrauma presents as pneumomediastinum, pneumothorax, or tension pneumothorax, although these side effects are rare, they are serious.

Oxygen toxicity induces changes directly in enzymes, membranes, and nuclei, or indirectly through ischemia, reduced substrate availability, hypocapnia, acidosis, anemia, and hyperbilirubinemia. Exposure for 3 hours at 3 atmospheres or 30-40 minutes at 4 atmospheres are safe thresholds for healthy adults. HBO at 3 atmospheres primarily affects the central nervous system, while at 2 atmospheres, the respiratory system is primarily affected.

Central nervous system toxicity leads to seizures and alterations in vision, smell, and taste.

Pulmonary oxygen toxicity is rare and occurs more frequently following prolonged exposure to normobaric oxygen.

Table 1. Relative contraindications to the use of HBO

Pregnancy	History of spontaneous pneumothorax
Emphysema with CO ₂ retention	History of thoracic or reconstructive ear surgery
Upper respiratory infection	Optic neuritis
Chronic sinusitis	Congenital spherocytosis
Seizure disorder	Viral infections
Uncontrolled fever	Asymptomatic pulmonary lesions

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