

# INTERNATIONAL INDICATIONS FOR HBOT

(from Jain, K.K. (1989) Oxygen in Physiology and Medicine. Thomas, Springfield--taken from U.S., Chinese, Japanese, and Russian HBO Committees)

1. Decompression Sickness
2. Air embolism
3. Poisoning: carbon monoxide, cyanide, hydrogensulfide, carbon tetrachloride.
4. Treatment of certain infections: gas gangrene, acute necrotizing fasciitis, refractory mycoses, leprosy, osteomyelitis.
5. Plastic and reconstructive surgery:
  - for nonhealing wounds
  - as an aid to the survival of skin flaps with marginal circulation
  - as an aid to reimplantation surgery
  - as an adjunct to the treatment of burns
6. Traumatology: crush injuries, compartment syndrome, soft tissue sports injuries
7. Orthopedics: nonunion of fractures, bone grafts, osteoradionecrosis
8. Peripheral vascular disease: shock, myocardial ischemia, aid to cardiac surgery, ischemic gangrene, ischemic leg pain
9. Neurological: stroke, multiple sclerosis, migraine, cerebral edema, multi-infarct dementia, spinal cord injury and vascular diseases of the spinal cord, brain abscess, peripheral neuropathy, radiation myelitis, vegetative coma
10. Hematology: sickle cell crises, severe blood loss anemia
11. Ophthalmology: occlusion of central artery of retina
12. Gastro-intestinal: gastric ulcer, necrotizing enterocolitis, paralytic ileus, pneumatoides cystoides intestinalis, hepatitis
13. For enhancement of radiosensitivity of malignant tumors
14. Otorhinolaryngology: sudden deafness, acute acoustic trauma, labyrinthitis, Meniere's disease, malignant otitis externa (chronic infection)
15. Lung diseases: lung abscess, pulmonary embolism (adjunct to surgery)
16. Endocrine: diabetes
17. Obstetrics: complicated pregnancy--diabetes, eclampsia, heart disease, placental hypoxia, fetal hypoxia, congenital heart disease of the neonate

18. Asphyxiation: drowning, smoke inhalation
19. Aid to rehabilitation: spastic hemiplegia of stroke, paraplegia, chronic myocardial insufficiency, peripheral vascular disease.

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# Rx PRESCRIPTION STRENGTH OXYGEN

Rheolife in Association with Biobarica now offers HBOT in Jamaica

HBOT has been used for over 50 years

**Hyperoxia** is achieved by breathing 100% oxygen via face mask in the hyperbaric chamber.

Rheolife uses BioBarica medium air systems with Revitalair\* 430 chamber. A pressure of 1.4 ATM is used as recommended by The Undersea and Hyperbaric Medical Society (UHMS), to provide all the medical benefits of HBOT without the complexity and complications associated with higher pressure systems.

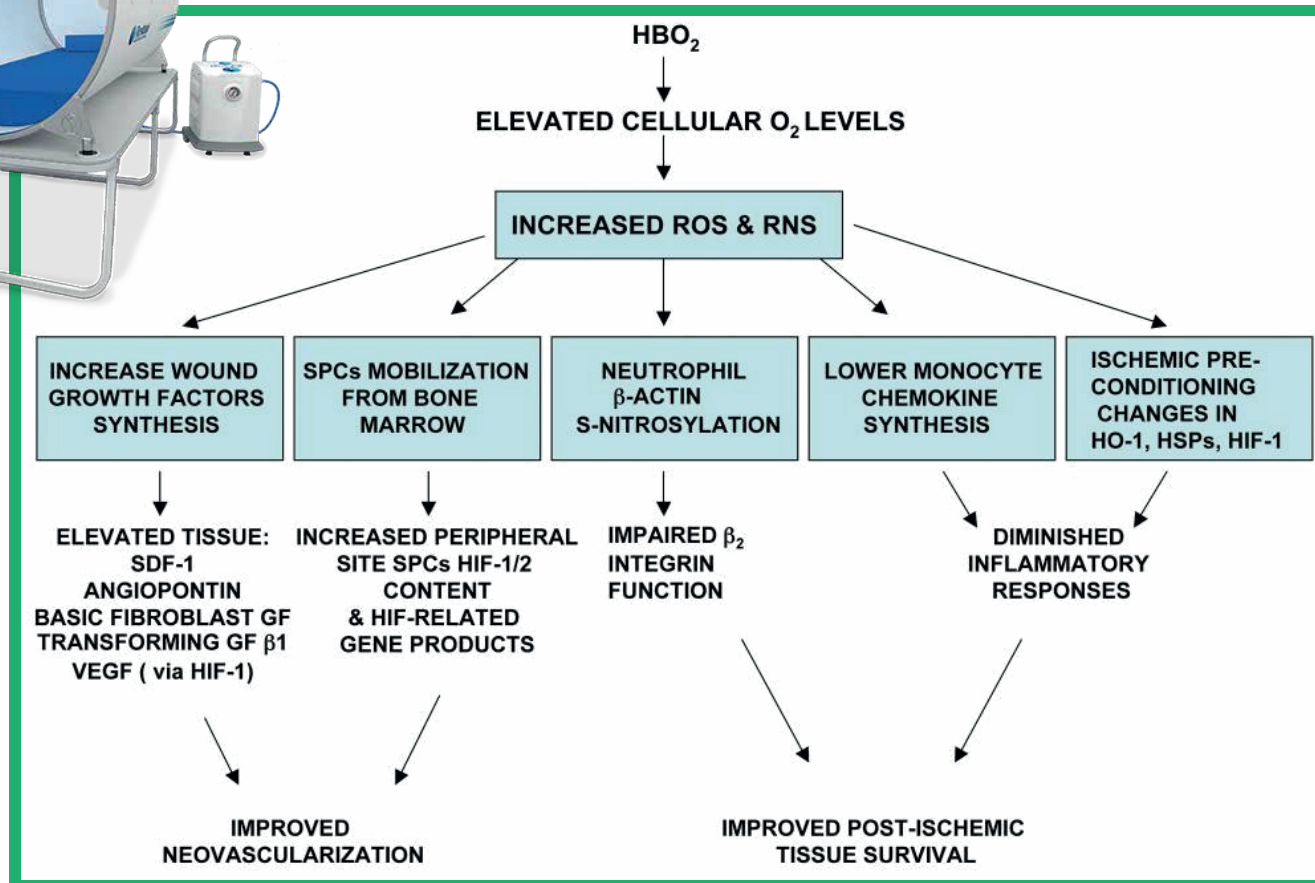


## MECHANISMS OF ACTION

Reactive oxygen species (ROS), reactive nitrogen species (RNS), GF=growth factor, VEGF=vascular endothelial growth factor, HIF= hypoxia inducible factor, SPCs=stem/progenitor cells, HO-1 =heme oxygenase-1, HSPs=heat shock proteins.

HBO2 can stimulate healing in refractory wounds and irradiated tissues.

Cells within the wound exhibit increased collagen synthesis, growth factors production, improved cell migration and tube-formation functions. A separate free radical-based mechanism for augmentation of neovascularization by HBO2 is through SPCs. Hyperoxia stimulates bone marrow SPCs mobilization and also improves their functions once they home to peripheral sites.



Leucocyte bacteria-killing capacity is enhanced with hyperoxia

The hyperbaric chamber represents an efficient tool that, together with conventional medical treatments, gives patients more chances of recovery.

## FDA APPROVED USES FOR HYPERBARIC OXYGEN THERAPY (HBOT)

The Undersea and Hyperbaric Medical Society (UHMS)-an organization representing physicians, nurses and technicians in the field of hyperbaric medicine-met with the Food and Drug Administration (FDA) and recommended HBOT for 14 specific conditions. More than 30 years later, those approved conditions remain much the same:

### HBOT for Air or Gas Embolism

An air or gas embolism is caused by air in the arteries caused by diving or an invasive medical procedure that punctures an artery or lung.

### HBOT for Carbon Monoxide Poisoning

Carbon monoxide poisoning or CO poisoning complicated by cyanide poisoning. Also includes poisoning from methylene chloride.

### HBOT for Gas Gangrene

The medical names for these severe infections of the muscle are clostridial myositis and myonecrosis.

### HBOT for Crush injury

Acute ischemias (loss of blood flow)-usually caused by heavy equipment.

### HBOT for Decompression Sickness

Decompression sickness is one of the first conditions treated with HBOT. It is brought on when a diver ascends too quickly and does not allow the oxygen in the body to expand at a safe rate including problem wounds; this category out of five people with type 2 diabetes and can lead to amputation. Recently added to this category was central retinal artery occlusion, or "stroke of the eye," from blockages in the arteries of the eye.

### HBOT for Severe Anemia

Severe Anemia is any acute, severe blood loss, such as from a wound on the battlefield or severe trauma.

### HBOT for Intracranial Abscess

(an accumulation of infected material); these abscesses of the brain are common in patients with abnormal immune systems.

### HBOT for Necrotizing soft tissue infections

From "flesh-eating bacteria," these severe infections usually progress rapidly.

### HBOT for Osteomyelitis

Chronic bone infections that resist standard treatment most common in the lower leg after severe trauma.

### HBOT for Delayed Radiation Injury

Radiation damages blood vessels, and the lack of blood supply eventually can cause wounds to form in soft tissue and bone.

### HBOT for Compromised Skin Grafts and Flaps

Grafts and flaps of skin and other tissue (cartilage, bone, fat) are used in reconstructive surgery (such as breast reconstruction after a mastectomy). In some cases, blood supply to the graft or flap is compromised, causing complications.

### HBOT for Thermal burn Injury

From fire or heat.

### HBOT for Idiopathic Sudden Sensorineural Hearing Loss

Classically defined as a hearing loss of at least 30 dB over at least three contiguous frequencies-occurring within three days. This is the latest approved indication added by UHMS Board of Directors late 2011.