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### The role of hyperbaric oxygen therapy within oral and maxillofacial surgery

Hyperbaric oxygen therapy (HBOT) is a medical treatment defined as an intermittent inhalation of 100% oxygen in a hyperbaric chamber at a pressure higher than 1 absolute atmosphere. Physiological effect of HBOT is based on a dramatic increase in the amount of dissolved oxygen and leads to a net gain in oxygen concentration in tissues and subsequently induces growth of new vessels, restores tissue homeostasis, enhances white blood cells function and enhances effect of antibiotics. Health Canada has approved HBOT for several indications such as air or gas embolisms, carbon monoxide poisoning, decompression sickness, compromised grafts and flaps, necrotizing infections, osteomyelitis and delayed radiation injury. HBOT is an established intervention in prevention and treatment of early osteoradionecrosis. Tooth extraction, dental implants and dental disease in irradiated areas can lead to the development of jaw and mandibular necrosis that could be prevented by the administration of a series of hyperbaric oxygen therapy before and after extraction or dental surgery. Besides its prophylactic role, HBOT has a remarkable therapeutic effect in established osteoradionecrosis. It promotes healing of the oral lesions, decreases pain, and improves trismus and muscle stiffness. HBOT should be considered in early infective processes that are resistant to initial treatment and must be considered as an adjuvant treatment in refractory mandibular/jaw osteomyelitis. It should be used in combination with antibiotics and debridement. HBOT is a safe and reliable treatment with very few contraindications and side effects. Clinical indications, common side effects and contraindications to therapy will be discussed.

### Biography

Hance Clarke is an Anesthesiologist and Hyperbaric Physician. He has received his BSc in Physiology and Psychology from the University of Western Ontario and MSc in Neuroscience from the University of Toronto, Canada. After his Medical Doctor (MD) and Anesthesia Subspecialty training in Toronto, he received his PhD from the Institute of Medical Sciences at the University of Toronto. His areas of interest include the transition from acute to chronic pain and hyperbaric medicine.

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