**HYPERBARIC OXYGEN THERAPY FOR RADIATION INDUCED XEROSTOMIA**

[Oral Surg Oral Med Oral Pathol Oral Radiol.](http://www.ncbi.nlm.nih.gov/pubmed/26093680) 2015 Jul;120(1):22-8. doi: 10.1016/j.oooo.2015.03.007. Epub 2015 Mar 25.

**Hyperbaric oxygen therapy for the treatment of radiation-induced xerostomia: a systematic review.**

[Fox NF](http://www.ncbi.nlm.nih.gov/pubmed/?term=Fox%20NF%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)1, [Xiao C](http://www.ncbi.nlm.nih.gov/pubmed/?term=Xiao%20C%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)2, [Sood AJ](http://www.ncbi.nlm.nih.gov/pubmed/?term=Sood%20AJ%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)2, [Lovelace TL](http://www.ncbi.nlm.nih.gov/pubmed/?term=Lovelace%20TL%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)3, [Nguyen SA](http://www.ncbi.nlm.nih.gov/pubmed/?term=Nguyen%20SA%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)2, [Sharma A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Sharma%20A%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)4, [Day TA](http://www.ncbi.nlm.nih.gov/pubmed/?term=Day%20TA%5BAuthor%5D&cauthor=true&cauthor_uid=26093680)2.

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**Abstract**

**OBJECTIVE:**

Radiation-induced xerostomia is one of the most common morbidities of radiation therapy in patients with head and neck cancer. However, in spite of its high rate of occurrence, there are few effective therapies available for its management. The aim of this study was to assess the efficacy of hyperbaric oxygen on the treatment of radiation-induced xerostomia and xerostomia-related quality of life.

**STUDY DESIGN:**

PubMed, Google Scholar, and the Cochrane Library were searched for retrospective or prospective trials assessing subjective xerostomia, objective xerostomia, or xerostomia-related quality of life. To be included, patients had to have received radiation therapy for head and neck cancer, but not hyperbaric oxygen therapy (HBOT).

**RESULTS:**

The systematic review initially identified 293 potential articles. Seven studies, comprising 246 patients, qualified for inclusion. Of the included studies, 6 of 7 were prospective in nature, and 1 was a retrospective study; and 2 of the 7 were controlled studies.

**CONCLUSIONS:**

HBOT may have utility for treating radiation-induced xerostomia refractory to other therapies. Additionally, HBOT may induce long-term improvement in subjective assessments of xerostomia, whereas other therapies currently available only provide short-term relief. The strength of these conclusions is limited by the lack of randomized controlled clinical trials.

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[Caries Res.](https://www.ncbi.nlm.nih.gov/pubmed/21447949) 2011;45(2):136-41. doi: 10.1159/000324811. Epub 2011 Mar 26.

**The effect of hyperbaric oxygenation on postradiation xerostomia and saliva in patients with head and neck tumours.**

[Cankar K](https://www.ncbi.nlm.nih.gov/pubmed/?term=Cankar%20K%5BAuthor%5D&cauthor=true&cauthor_uid=21447949)1, [Finderle Z](https://www.ncbi.nlm.nih.gov/pubmed/?term=Finderle%20Z%5BAuthor%5D&cauthor=true&cauthor_uid=21447949), [Jan J](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jan%20J%5BAuthor%5D&cauthor=true&cauthor_uid=21447949).

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**Abstract**

The study was designed to evaluate the influence of hyperbaric oxygenation (HBO) therapy on salivary gland function and the growth of salivary Streptococcus mutans, Lactobacillus and Candida albicans in patients with head and neck tumours who had undergone radiation therapy. Sixteen patients were included, with radiation doses from 58 to 70 Gy. The first examination was performed at baseline before the first HBO therapy (33.7 ± 9 months after radiation therapy), and the second after 20 daily HBO therapies in a hyperbaric chamber at 2.5 ATA (absolute atmospheres), where patients breathed 100% oxygen for 90 min each day. Measurements of salivary flow, buffer capacity, saliva pH and colony density of S. mutans, Lactobacillus and C. albicans in stimulated saliva were conducted, and xerostomia grade was assessed. Salivary flow increased from 0.20 ± 0.1 to 0.39 ± 0.2 ml/min at the end of HBO therapy (p < 0.001). Salivary pH also increased from 6.0 ± 0.2 to 6.5 ± 0.1 (p < 0.05). The colony density decreased from the time at baseline to the end of HBO therapy for S. mutans (p < 0.001), Lactobacillus (p < 0.05) and the fungus C. albicans (p < 0.05). The xerostomia grade decreased from 2.63 ± 0.2 to 1.94 ± 0.2 after HBO (p < 0.001). There was no significant change in buffer capacity. The increased salivary secretion rate and salivary pH, and decreased S. mutans and Lactobacillus colony density that were observed after HBO therapy may reduce caries progression in those patients.

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