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| **Title:** | **Hyperbaric oxygen therapy (HBOT) for the treatment of non-healing wounds in non-diabetic patients and refractory soft tissue radiation injuries, May 2003** |
| **Agency:** | **Medical Services Advisory Committee (MSAC)**<br>**Mail Drop Point 107**<br>**Australian Government Department of Health and Ageing**<br>**GPO Box 9848 Canberra ACT 2601 Australia.** |
| **Reference:** | **MSAC application 1054, Assessment report, ISBN 0 62482562 9, ISSN 1443-7120, http://www.msac.gov.au/** |


**Aim**

To assess the safety, effectiveness and cost-effectiveness of HBOT for the treatment of non-healing wounds in non-diabetic patients and refractory soft tissue radiation injuries and under what circumstances public funding should be supported.

**Conclusions and Results**

*Safety* Most adverse events associated with HBOT are self-limiting and resolve with termination of therapy. The most common adverse events reported were myopia, barotrauma, claustrophobia and oxygen toxicity. Serious life-threatening events and fatalities were rare.

*Effectiveness* For the indication, non-healing wounds in non-diabetic patients, evidence from a randomised controlled trial (RCT) showed that HBOT resulted in a decrease in wound area, while a study using historical controls reported a trend toward prevention of wound breakdown and infection and a reduction in length of hospitalisation. Evidence was available from RCTs of the effectiveness of HBOT for various sub-indications relating to radiation therapy. The use of HBOT for cognitive impairment following brain irradiation showed a non-significant improvement in neuropsychological function. In patients with radiation-induced brachial plexopathy, there were no significant differences in sensory thresholds or quality of life between those receiving HBOT compared to controls. In patients at high risk for the development of osteoradionecrosis, HBOT was found to increase the likelihood of healing tooth socket wounds following extraction compared to the administration of penicillin. In patients who had undergone radiation therapy, HBOT reduced the likelihood of major wound infection, major wound dehiscence, and delayed wound healing in myocutaneous grafts.

*Cost-effectiveness* The clinical evidence was inadequate to substantiate claims that HBOT was cost-effective in the treatment of refractory soft tissue radiation injuries or non-diabetic refractory wounds.

**Recommendations**

The clinical evidence was inadequate to substantiate claims that hyperbaric oxygen therapy (HBOT) was cost-effective in the treatment of refractory soft tissue radiation injuries or non-diabetic refractory wounds. However, MSAC recommended that, as there are no effective alternative therapies and in view of the progress of local data collections and an international trial, funding for HBOT continue for MBS listed indications at currently eligible sites, for a further three years.

**Method**

MSAC conducted a systematic review of medical literature published between 1966 and 2002 identified via several databases including the Cochrane Library, Medline, PreMedline, Current Contents, Biological Abstracts, CINAHL, CancerLit, EMBASE, and HBO Evidence. Assessment of clinical effectiveness relied on 21 primary studies, including case series as supportive evidence.