

IQWiG Reports - Commission No. N06-01A

# Hyperbaric oxygen therapy for burns<sup>1</sup>

## Executive Summary

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<sup>1</sup> Translation of the executive summary of the final report “Hyperbare Sauerstofftherapie bei Brandwunden” (Version 1.0; Status: 03.09.2007). Publication date of translation: 05.11.2007. Please note: This translation is provided as a service by IQWiG to English-language readers. However, solely the German original text is absolutely authoritative and legally binding.

# Publishing details

**Publisher:**

Institute for Quality and Efficiency in Health Care

**Topic:**

Hyperbaric oxygen therapy for burns

**Contracting agency:**

Federal Joint Committee

**Commission awarded on:**

03.02.2006

**Internal Commission No.:**

N06-01A

**Publisher's address:**

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## Executive summary

### Background

The Institute for Quality and Efficiency in Health Care (Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen [IQWiG]) was commissioned by the Federal Joint Committee to evaluate the benefits and harms of hyperbaric oxygen therapy for burns.

### Research questions

The aims of this evaluation were to assess, in patients with burns,

- hyperbaric oxygen therapy as an add-on to conventional therapy compared with conventional therapy alone;
- various types of hyperbaric oxygen therapy as an add-on to conventional therapy compared with each other.

The focus of this evaluation was on patient-relevant therapy goals.

### Methods

We performed a systematic literature search to identify randomised controlled trials (RCTs) and non-randomised intervention studies with concurrent controls on the questions outlined above. For this purpose, a comprehensive database search was conducted (MEDLINE, EMBASE, CENTRAL, BIOSIS, CINAHL, DORCTIHM). In addition, reference lists of relevant secondary publications (systematic reviews, HTA reports, meta-analyses) were screened. Moreover, scientific societies and drug manufacturers were asked to provide information on relevant published and unpublished studies. IQWiG's preliminary evaluation, the preliminary report, was published on the Internet ([www.iqwig.de](http://www.iqwig.de)) and interested persons and parties were invited to submit written comments (written hearing). After the hearing procedure, the final report was published.

### Results

Overall, 5 non-randomised controlled studies and only a single RCT (with partial blinding) could be considered in the evaluation. Four of the 6 studies showed major methodological deficiencies. All studies referred to severely burnt patients in the acute phase. In the studies, hyperbaric oxygen therapy was performed with similar pressures (mainly 2 ata) and similar intensity (duration of therapy in each study 90 to 120 minutes, 2 to 3 times daily over a period of 5 to 35 days). In the RCT, which included only 16 patients, a reduction in wound healing time to less than half was shown. However, no other study provided concrete information on wound healing. No substantial differences in mortality were shown in the studies. The incidence of sepsis was reported to be reduced in one study and increased in another. The avoidance of surgical interventions through the use of hyperbaric oxygen therapy was reported in 1 of the 4 non-randomised studies. The reduction in time spent in hospital was reported in 1 of 3 studies. No serious adverse events related to hyperbaric oxygen therapy were noted.

**Conclusion**

With consideration of both randomised and non-randomised studies, the quantity and quality of the evidence base on the potential benefits and harms of hyperbaric oxygen therapy in patients with burns is poor. Therefore, the potential benefits and harms of this therapy cannot be described reliably.

**Key words:** hyperbaric oxygen therapy, hyperbaric oxygenation, compression chamber, burns, burn trauma, systematic review