



Title	Upper Airway Surgery for the Treatment of Adult Sleep Apnea
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Aim

To evaluate the safety and effectiveness of upper airway surgery for treating obstructive sleep apnea (OSA) in adults, in comparison with conservative therapy, treatment with devices (continuous positive airway pressure [CPAP] and oral appliances), and no treatment/placebo.

Conclusions and results

A search identified 1016 potentially relevant articles, of which 35 were retrieved. Four systematic reviews, published between 1996 and 2007, were eligible for inclusion. The reviews evaluated a range of procedures and included 4 relevant randomized controlled trials (RCTs) that examined the upper airway surgery (UAS), ie, uvulopalatopharyngoplasty (UPPP), laser-assisted uvulopalatoplasty (LAUP), and temperature-controlled radiofrequency tissue ablation (TCRFTA). A recent RCT on palatal implants was also included in this rapid review. High-level evidence was not available for any other procedures. Conclusions based on the 5 studies are summarized below.

- Evidence was insufficient to determine the effect of upper airway surgery on polysomnography results. It is unclear from the evidence whether any surgical procedure is superior, and the long-term effectiveness of the procedures cannot be established.
- Evidence was insufficient to determine the effect of upper airway surgery on daytime sleepiness, snoring, or quality of life. There was no difference between surgery and use of devices for the outcomes reported.
- Evidence was insufficient to determine levels of patient satisfaction, or to make long-term survival comparisons between upper airway surgery and alternative treatments.
- From limited safety evidence, UPPP appeared to have more adverse effects than the less invasive procedures of TCRFTA and palatal implants. LAUP

had similar adverse effects to UPPP, at similar rates of occurrence. Long-term safety data were not available.

From the reviewed literature, UAS for OSA does not provide significant benefit over conservative treatment or treatment with devices. Following failed conservative treatment or treatment with devices, selected patient groups with specific anatomical features, body mass index, and OSA severity may benefit from certain UAS techniques. However, the evidence is insufficient on the effectiveness of any surgical procedure, regardless of patient characteristics.

Recommendations

See section below on further research.

Methods

Studies were identified by searching BMJ Clinical Evidence, the York (UK) Centre for Reviews and Dissemination (CRD), the Cochrane Library, PubMed, and EMBASE from inception to March 2008. An ASERNIP-S researcher extracted the data using standardized extraction tables developed a priori, and a second researcher checked the work.

Further research/reviews required

The current lack of quality RCT evidence on surgical procedures for OSA translates into insufficient guidelines for practice. Further well-designed RCTs are required to address this shortfall.