

Overview

Hyoid suspension publications are often confounded by the performance of a genioglossus advancement as part of the tongue base surgical intervention. A careful review of available evidence, however, indicates more efficacious objective and subjective results for hyoid suspension to the mandible (hyo-mandibular suspension) versus hyoid suspension to the thyroid cartilage (hyo-thyroid suspension) when the hyoid suspension is performed with an uvulopalatopharyngoplasty (UPPP).

Evidence-based Review of Hyoid Suspension Techniques

Thirty-four published studies for hyoid suspension as a treatment for obstructive sleep apnea (OSA) were found in a comprehensive literature review. Five of these studies were for hyo-mandibular suspension performed with an UPPP.^{1,2,3,4,5} Ten of these studies were for hyo-thyroid suspension performed with an UPPP.^{6,7,8,9,10,11,12,13,14,15} The results are summarized in the following table:

	N	AHI reduction	Surgical Success ¹⁶	ESS change
Hyo-mandibular Suspension	123	60%	71%	-7.3
Hyo-thyroid Suspension	495	48%	58%	-3.8

The reported data for these techniques performed without a genioglossus advancement shows hyo-mandibular suspension with 25% greater AHI reduction, 22% greater surgical success, and a 92% greater subjective improvement than hyo-thyroid suspension.

Why is Hyo-mandibular Suspension Better than Hyo-thyroid Suspension?¹⁷

The hyoid bone attaches to multiple muscles and helps to stabilize the upper airway. A low hyoid position creates a long upper airway that lacks rigid support between the mandible and the hyoid bone. This increases the likelihood of tongue base airway collapse and agrees with evidence correlating a low position of the hyoid bone to higher sleep apnea severity. Moving the hyoid bone anteriorly and superiorly helps to shorten the airway, reduce airway collapse, and improve OSA.

Conclusion

Reported data show larger improvements for hyo-mandibular suspension over hyo-thyroid suspension in the treatment of tongue base airway obstructions, with results at least 22% greater than those for the hyo-thyroid technique.

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Catalog No.	Description
FG0002	Encore Suspension System (USA)

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