

**TITLE:** The Role of Depressor Septi Nasi Manipulation in Rhinoplasty: A Systematic Review

**AUTHORS:** Sammy Sinno MD, Jessica B. Chang BS, Arif Chaudhry MD, Pierre B. Saadeh MD, Michael R. Lee MD

**BACKGROUND:** Rhinoplasty involves modification of underlying bone and cartilage to improve the external appearance of the nose. While the majority of nasal alterations result from either augmentation or reduction of bone and cartilaginous substructure, modifications of influential soft-tissue provides significant contribution to the final result. The depressor septi nasi (DSN) muscle is a soft-tissue structure well known to influence the final result in rhinoplasty. The objective of this study was to perform a standardized, comprehensive review of relevant data published in regards to the DSN.

**METHODS:** A comprehensive search of the terms depressor septi nasi muscle and depressor septi muscle was performed using PubMed, MEDLINE, and Cochrane databases. Articles were reviewed for relevancy and included if criteria were met. A second review was performed of all cited articles for thoroughness.

**RESULTS:** Thirteen of 43 articles met the predetermined criteria for inclusion on the initial search, yielding a total of 784 patients who received DSN treatment. All 13 articles concluded that patients presenting with hypertrophy of the DSN, causing nasal tip depression and upper lip shortening during animation, are ideal candidates for manipulation of the muscle. Secondary search revealed additional cadaver studies meeting inclusion criteria, with 160 cadaver specimens. Techniques were varied, utilizing the intranasal or intraoral approach, and the muscle was manipulated either through excision or transposition. Different pre- and post-operative measures were taken and could not be directly compared across all papers. The most common measure was nasolabial angle (NLA) or columellolabial angle; 7 studies (54%) noted improved NLA, 3 of which found a mean change of 14.6 degrees from preoperative baseline. Other measurements included nasal length and upper lip height. No permanent complications were reported, although one study noted transient upper lip asymmetry or paresthesias. No relapse was evident up to 2 years postoperatively in two articles. Overall outcomes reported included correction of nasal tip ptosis, increase in upper lip length, decrease in nasal length, and decrease in gingival show during animation. Improvement in nasal contour was seen in 99% (n=777) of patients.

**CONCLUSION:** The DSN is associated with controversy in regards to nomenclature. No superior result has been established pertaining to surgical approach or technique used for treatment. Treating the DSN is associated with improved aesthetic outcomes in rhinoplasty.