AmeriHealth Caritas Ohio

Pediatric turbinoplasty

Clinical Policy ID: CCP.1507

Recent review date: 3/2025

Next review date: 7/2026

Policy contains: nasal congestion, turbinate hypertrophy, rhinitis, rhinosinusitis, turbinectomy, turbinoplasty

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Coverage policy

Turbinoplasty, or turbinate reduction, for children is clinically proven for persistent, symptomatic turbinate hypertrophy and, therefore, may be medically necessary when all of the following criteria are met (National Institute for Health and Care Excellence, 2014; Seidman, 2015):

- Turbinate hypertrophy is documented by direct visualization or nasal endoscopy.
- The enlarged turbinates are causing obstruction to breathing or chronic sinusitis (symptoms ≥ six weeks).
- Intranasal corticosteroid spray has been trialed for at least three months and failed to adequately improve symptoms or is contraindicated/not tolerated (Maniaci, 2024).
- A course of medical management has been attempted and failed or is contraindicated.
- Only inferior turbinates are reduced.

Turbinate reduction may be performed during tonsillectomy/adenoidectomy if the turbinates are enlarged and causing significant nasal obstruction.

Limitations

Members under age two are not candidates for turbinoplasty. The procedure is experimental/investigational and not clinically proven before this age.

Turbinectomy, or removal of bone, in children is experimental/investigational and not clinically proven.

Alternative covered services

- Balloon ostial sinuplasty.

- Standard treatments for chronic nasal congestion, deviated septum, snoring, sleep apnea, or nosebleeds, including corticosteroid injections and nasal corticosteroid sprays/decongestants.

Background

The superior, middle, and inferior turbinates are bonelike structures in the inferior part of the nose that clean, warm, and humidify inhaled air. The turbinates are composed of fleshy tissue with very fine bones supporting them so that the goal is not to remove bone but to decrease the fleshy tissue. Turbinate hypertrophy, which can be caused by allergy, infection, and hormonal changes, results in nasal obstruction (allergic, vasomotor, or infectious rhinitis), as measured by the amount of air flow in the nose (Abdullah, 2021).

Antihistamines, topical decongestants, and topical corticosteroids are often effective in treating nasal obstruction. If these therapies are unsuccessful after three to six months, surgery can be considered (Komshian, 2019). Procedures include adenoidectomy, sinus puncture/lavage, open surgical approaches, endoscopic sinus surgery, balloon sinuplasty, turbinectomy, and turbinate reduction (Isaacson, 2015).

Surgical reduction of the inferior turbinate can relieve nasal block while retaining turbinate function. Surgery of the inferior turbinate involves removal of the mucosa, soft erectile tissue, and turbinate bone. Techniques include conventional (partial or total), laser, cryo-, and electro-cautery turbinectomy. Because surgery results in excess loss of bone and mucosa tissue, turbinoplasty (which preserves functional medial mucosa) can be performed instead (Abdullah, 2021), most commonly by submucous resection or tissue ablation (Seidman, 2015).
Turbinate reduction surgery in children, as compared with adults, has been described as “contentious and debatable” due to concerns over complications like excessive bleeding, damage to the mucosa with synechiae and tear, disruption of nasal physiology and function, and disturbance of facial development (Abdullah, 2021). Moreover, consensus on the preferred approach is lacking (Komshian, 2019).

In the pediatric population, the procedure involves reduction of excess reactive soft tissues of the turbinate and not the underlying supporting bone. A recent review notes that while “turbinate surgery in pediatric patients is gradually increasing in popularity amongst pediatric otolaryngologists…there is scarce information regarding this surgical procedure in children” (Calvo-Henriquez, 2022).

Findings

Guidelines

To address the absence of specific surgical guidelines for children, an international group of otolaryngologists developed a clinical consensus statement using a modified Delphi process, incorporating a literature review of eight articles including meta-analysis, systematic reviews, and case studies (n = 3, 088). The recommendations pertained to the diagnosis, treatment, and follow-up of pediatric turbinate hypertrophy. They included guidance on using diagnostic tools like anterior rhinoscopy and fiberoptic examination, medical therapies like intranasal corticosteroids and saline irrigations, and surgical interventions such as pediatric turbinoplasty with minimally invasive techniques (Maniaci, 2024).

The American Association of Family Physicians’ guideline on rhinosinusitis only addresses adult cases (Sedaghat, 2017). The American Academy of Otolaryngology’s guideline on allergic rhinitis with nasal obstruction and enlarged inferior turbinates supports the referral of patients who failed medical management to specialists for surgery; children younger than age 2 were excluded from this guideline. The Academy concludes that “inferior reduction surgery is a reasonable option” for allergic rhinitis patients who have inferior turbinate hypertrophy with symptoms despite medical management; benefits cited include improved symptoms, improved quality of life, improved medication delivery, reduced medication use, and better sleep. The Academy graded evidence for

necessity Moderate/Grade C, due to a lack of head-to-head trials between medical and surgical outcomes (Seidman, 2015).

A guideline from the United Kingdom states that, in cases of turbinate hypertrophy refractory to medical management, evidence supports the safety of radiofrequency tissue reduction for turbinate hypertrophy, and supports efficacy up to two years after surgery. However, the guideline includes microdebrider-assisted and laser-assisted turbinoplasty as acceptable, but not turbinectomy (National Institute for Health and Care Excellence, 2014).

Evidence review

Results of systematic reviews and other large reviews support turbinoplasty and turbinectomy as safe and effective treatments in children with inferior turbinate hypertrophy refractory to medical management. Non-mucosal-sparing turbinectomy surgery often results in postoperative complications (excessive bleeding, crusting, pain, and prolonged recovery period), and thus mucosal-sparing procedures (turbinoplasty) are typically the preferred option for cases of nasal obstruction refractory to conservative treatment (Abdullah, 2021). There is insufficient evidence to determine the superiority of any turbinoplasty technique for treating inferior turbinate hypertrophy.

Adding turbinate reduction to endoscopic sinus surgery had no significant impact on rates of readmission within 30 days (McKeon, 2019), and adding turbinectomy to tonsillectomy/adenoidectomy procedures did not significantly raise rates of 14-day relevant revisits (9.4% versus 8.6%, *P* = .11) or hemorrhage requiring cauterization (1.5% versus 1.4%; *P* = .64) (Yuen, 2017).

A systematic review of 13 studies (n = 1,111) of turbinate surgery in children showed postoperative improvement in nasal congestion. Authors concluded the procedure to be safe, based on a complication rate of 3.12% — mostly minor bleeding, crust, and pain. Due to poor quality of studies, a surgical technique could not be recommended, but the safest were microdebrider-assisted inferior turbinoplasty, radiofrequency, coblation, and laser (Calvo-Henriquez, 2020).

A systematic review of 58 studies analyzed results of surgery for inferior turbinate hypertrophy, excluding patients with refractory allergic/vasomotor/hypertrophic rhinitis. Turbinectomy and submucosal resection had elevated rates of crusting and epistaxis. Conservative treatments such as cryotherapy and submucous diathermy did not provide long-term results. Authors judged submucosal resection and radiofrequency ablation to have the most positive outcomes (decreased nasal resistance and preserved mucosal function). The Sinno review did not distinguish results for children and adults separately (Sinno, 2016).

Two updated analyses examined the efficacy, safety, and long-term outcomes of pediatric turbinate reduction surgery, the results of which confirmed earlier findings. A meta-analysis (n = 510) showed improved nasal patency post-surgery with similar success in various surgical techniques, highlighting the effectiveness of rhinoplasty in treating a nasal obstruction in the midterm (Alves de Sousa, 2023). Finally, a systematic review of 23 studies (n = 5,206) found turbinate reduction generally safe and effective, particularly for cases resistant to medical treatment, with low complication rates such as crust formation (Aljeraisi, 2024).

In 2023, we added a consensus statement and new review information to the policy and changed the coverage from investigational to medically necessary based on the new information.

In 2024, we removed three non-seminal studies that were published more than 10 years ago and added new analyses to the policy. No policy changes are warranted.

In 2025, we reorganized the findings, deleted older references, and added no newly published relevant literature to the policy. No policy changes are warranted.

References

On February 3, 2025, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “nasal congestion,” “rhinitis,” “rhinosinusitis,” “turbinate hypertrophy,” “turbinectomy,” and “turbinoplasty.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

1/2022: initial review date and clinical policy effective date: 2/2022

4/2023: Policy modified from investigational to medically necessary, references updated.

3/2024: Policy references updated.

3/2025: Policy references updated.