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Resonance: All About Nasality

by Kevin Stuckey, M.Ed., CCC-SLP

Speech production involves vibration of sounds through the oral and nasal cavities. Resonance is the term used to describe the amount and location of these vibrations. The pathways of produced sounds and associated vibrations are important as they help shape speech sounds and determine the quality of voice. A child speaking with normal resonance effectively closes off the oral cavity and the nasal cavity during the production of sounds. This prevents air from escaping through the nose and allows the child to build up air pressure in the mouth for sound production. However, there are circumstances in which air escapes through the nose or the air is blocked during speech. This produces a vocal quality that may sound nasal and sometimes be difficult to understand.



Hyponasality

Hyponasality occurs when airflow and sound vibrations are being blocked from entering the nasal cavity. During speech production, the child may sound “stopped up” such as with a cold or sinus infection. However, the most

common physical blockage is enlarged tonsils or adenoids that block or alter the vibrations. This vocal quality is most noticeable when producing vowels and nasal consonants such as /m/, /n/, and /ng/.



Hypernasality

Hypernasality occurs when air moves from the oral cavity into the nasal cavity during speech production. This is often present with children who have a history of cleft palate or submucous cleft palate. The voice quality sounds as if the child is talking through the nose. This is most commonly observed when producing the vowel sounds /u/ and /i/ as well as voiced consonants /b/, /d/, /g/. In some instances, a child may exhibit nasal air emission in which air escapes out of the nose and can actually be heard during production of certain consonants (e.g. /p/, /t/, /k/, /s/, /sh/, and /ch/).



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(cont.)

What causes a Hyponasal or Hypernasal voice quality?

Causes may include:



- Physical structure of the throat, mouth or nose (cleft palate, enlarged adenoids, etc.)



- Range of movement of the throat, mouth, or nose muscles/areas



- Speech sounds produced incorrectly



- A physical blockage that prevents sounds and vibrations from entering into the nasal cavity

Treatment

If structural issues are causing the hyponasal or hypernasal voice quality, there are surgical options available to correct these issues. These may include:



- Tonsillectomy/Adenoidectomy

- Removal of nasal polyps



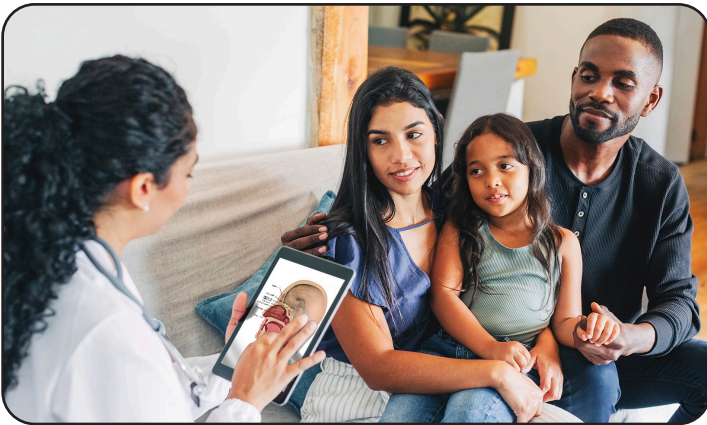
- Surgery to correct deviated septum

- Pharyngeal flap



- Sphincter pharyngoplasty

- Flap surgery to close an oronasal fistula



Related Handy Handouts®:

[80 – Cleft Lip and Cleft Palate](#)

[219 – Nasal Emission](#)

[493 – Tonsils and Adenoids](#)

Resources:

"Resonance Disorders." Cincinnati Children's Hospital. Accessed April 26, 2023. <http://www.cincinnatichildrens.org/speech> .

Carter, James. "Resonance Disorders." Texas Children's Hospital. Accessed April 26, 2023. <https://www.texaschildrens.org/health/resonance-disorders> .

Resonance Disorders. American Speech-Language-Hearing Association. Accessed April 26, 2023.

<https://www.asha.org/practiceportal/clinicaltopics/resonancedisorders/#:~:text=Hypernasality%E2%80%94occurs%20when%20there%20is,the%20nasopharynx%20or%20nasal%20cavity> .

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