

Velopharyngeal Dysfunction: Speech Issues

Speech Production in VPD

- **Hypernasal speech**
 - Because of the incomplete closure between the mouth and nose, air escapes through the nose during speech
 - The sound resonates in the nasal cavity, making the speech sound hypernasal.
 - “baby” may sound like “maymee”
- **Nasal emission**
 - When the child makes pressure consonant sounds such as P or B, others can hear the air coming through the nose.
 - Nasal emission is not a problem for M and N sounds.
- **Weak pressure consonants**
 - Pressure sounds are weak
 - If we block the child’s nose temporarily, we can temporarily create pressure or intensity
- **Compensatory articulation errors**
 - These are abnormal articulation patterns that result from changes in the structure and/or function of the speech mechanism.
 - E.g.: **Glottal stop** – the child uses the vocal cords to create a consonant-like sound in place of normal speech sounds that should be made in the mouth
 - “puppy” sounds like “uh ee”, daddy sounds like “a ee”
 - Other errors may include pharyngeal fricatives/stops, nasal fricatives (sounds made in the nose), clicks etc.
 - Compensatory articulation errors make it difficult to diagnose VPD.
 - Compensatory articulation problems are common (~26-56%) in children with 22q11.2DS

Speech therapy and oral-motor exercises

CANNOT fix VPD!

Speech therapy can improve articulation; however, the hypernasal component of speech must be managed with surgery.

Oral-motor exercises are not effective for improving speech. None of the oral exercises or sucking and blowing activities have been proven to improve speech or fix VPD. It is best to do direct speech therapy and focus on learning correct place and manner of speech sound production.

VPD is a structural/anatomic problem that requires surgery to fix.



Velopharyngeal Dysfunction: Speech Issues (continued)

If my child may have VPD, what should the speech therapist do?

- (1) Start **direct speech therapy** (teaching of speech sounds) as soon as the child can begin to imitate
 - This may help reduce development of compensatory speech patterns
- (2) Have **one-on-one** sessions
 - Therapy must be intense with lots of repetitions and drills
 - Group therapy may not result in significant changes
 - Private therapy, if available, can be helpful
- (3) Work on **articulation**
 - Work on the placement of lips and tongue
 - Emphasize oral pressure and oral airflow
 - Squeeze the nose of the child in cases of severe VPD
 - This helps him/her feel the pressure, **hear the sound**, and to learn to regulate it independently for the proper production of consonants
- (4) Focus early on **sound production**
 - Having consonants ready allows them to get VP imaging to plan for VPD surgery

HOWEVER:

- (1) **DON'T** do oral-motor exercises – they do not fix VPD
- (2) **DON'T** ask the child to speak more loudly. It can strain his/her voice.
- (3) **DON'T** ask the child to make his/her speech less nasal.
 - The hypernasality is due to the anatomic and neuromuscular problems that are causing the VPD. The child has no control over the hypernasality

Why should a child do speech therapy before VPD surgery?

VPD surgery usually takes place around 4 to 6 years. Before surgery, the child must undergo an imaging study for accurate diagnosis and surgery planning. The child must be able to imitate speech on command and produce pressure consonants (P, B, D, T, F, S). It is for the speech pathologist prepare for the imaging study by practicing target speech sounds and words to be used during the study.

Ongoing speech therapy is necessary before and after surgery.

Remember:

Speech therapy can treat articulation problems.

Surgery can correct VPD by decreasing hypernasality, increasing oral pressure and helping the child to form sounds with therapy. Speech therapy alone cannot fix the anatomic problem of VPD.

For more info, see the video [22q11.2 VPD AND HYPER-NASAL SPEECH](#) from the 22q Family Foundation.