

Velopharyngeal Dysfunction: Surgery

Treatments that Claim to Correct Velopharyngeal Dysfunction

<u>Treatment</u>	<u>Does it correct VPD in children with 22q11.2DS?</u>
Speech therapy	NO. Speech therapy corrects articulation problems but cannot fix VPD.
Speech prostheses	NO. Children with 22q11.2DS usually have a hard time tolerating them.
Oral exercises	NO. Research shows these exercises do not help speech and cannot fix VPD.
Surgery	YES. The surgeon and speech pathologist must work together to tailor the surgical procedure to each child's specific needs.

Benefits of a VPD Surgery

↑ Speech intelligibility

↓↓ Air exiting the nose when talking

↓↓ Hypernasal speech

↑ Pressure on speech sounds

Types of Surgical Procedures that Can Correct VPD

VPD is usually more severe in children with 22q11.2DS, and the surgery can be more complex. Please discuss with your surgeon to choose the most suitable surgery.

<u>Procedure</u>	<u>What does it do?</u>
Furlow Palatoplasty	<ul style="list-style-type: none"> • Can correct VPD in a child with cleft palate or submucous cleft palate • Repositions the palate muscles • Helps the soft palate gain some length so it can close the VP valve • Does not work well in most children with 22q because it does not address all the causes of their VPD
Sphincter Pharyngoplasty	<ul style="list-style-type: none"> • Uses tissue from the sides of the throat • Makes the VP port smaller • Augments the back of the throat
Posterior Pharyngeal Flap Surgery	<ul style="list-style-type: none"> • Is the main type of surgery for VPD in children with 22q11.2DS • Uses tissue from the back of the throat to make a flap • The flap connects the back of the throat to the back of the soft palate • The procedure converts the single large VP port into two small side ports, separated by the flap.

Velopharyngeal Dysfunction: Surgery (continued)

Before the surgery

- Address **anxiety issues**
- Undergo **imaging studies**
 - Nasopharyngoscopy and/or video fluoroscopy for diagnosis and surgical planning
 - MRI to determine carotid artery position
- Undergo a **sleep study** if the child already has breathing troubles during sleep.
 - VPD surgery can lead to obstructive sleep apnea (OSA) (See box on the right)
- Decide if the **tonsils** can remain
 - Large tonsils can contribute to OSA after surgery
- Decide if the **adenoid pad** can remain
 - While children with 22q11.2DS should generally not have the adenoid removed, adenoidectomy may be needed if it is enlarged and will interfere with proper VPD surgery.
- Consider **other conditions** (heart, spine, endocrine issues) before anesthesia

After the surgery

- First few weeks - Swelling in surgical area, leading to snoring and nasal stuffiness
- At about 6 months
 - Sleep study to check for OSA
 - Speech evaluation
- First 12 months
 - Healing and scarring in surgery area
 - Speech results evolve
- At about 12 months
 - Speech evaluation
- Long term follow-up is necessary

OBSTRUCTIVE SLEEP APNEA (OSA)



OSA occurs when muscles in the throat relax and block the airway during sleep. The chance of this occurring is increased with large tonsils, large adenoids, and VP surgery. During VPD surgery, the VP valve is narrowed, which can lead to a potential complication of OSA. All patients who have VPD surgery should have a **sleep study** (polysomnogram) about 6 months afterward to make sure the surgery has not caused OSA.

SURGERY SUCCESSFUL?

Surgery outcomes are determined by both objective measurements and subjective judgements of the child, parent, surgeon, and speech pathologist. If the results are good, the team may choose not to treat a minor remaining problem. Wait at least a year before determining if more imaging and surgery are needed.

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