

Cincinnati Children's Hospital Medical Center
Craniofacial Center and VPI Clinic

Pharyngeal Flap

What is Velopharyngeal Insufficiency (VPI)?

During normal speech, the soft palate (also called *velum*) raises and closes against the back wall of the throat (also called *pharynx* or *pharyngeal wall*). This closes off the nose from the mouth for speech. If the soft palate is not long enough to firmly close against the back of the throat during speech, sound and air can leak into the nose through the gap. This condition is called velopharyngeal insufficiency (VPI).

VPI can affect *resonance*, which is the quality of the voice. The voice may sound *hypernasal* because there is too much sound in the nose during speech. (*Hyponasality* is the opposite problem. It is due to blockage in the nose and occurs when the person has a bad cold.) VPI can also affect speech sound production. The child may not have enough air pressure in the mouth to make certain speech sounds. Also, a leak of air through the nose may be heard during speech.

To correct VPI for normal speech, the opening between the nose and mouth must be closed. The Furlow Z-plasty can correct VPI, particularly for children with a history of cleft palate or submucous cleft (where the muscles under the skin of the soft palate have not come together properly).

Procedure: The pharyngeal flap is done by taking a flap of tissue from the back of the throat (pharyngeal wall) and attaching it to the soft palate (velum). This flap forms a “bridge” to close the gap between the back of the throat and the soft palate. Two openings (called *lateral ports*) are left on each side of the flap. The openings allow the child to breathe normally through the nose.

What to expect after surgery: The pharyngeal flap procedure takes about 1 ½ hours. The child will stay in the hospital for 2 to 5 days. In the first few days after the surgery, the child will have a sore throat that is similar in feeling to when tonsils are removed. In addition, the child may have neck pain. The child will snore and not sleep well. This should get better over about 2 weeks. After surgery, there are no special foods that a child should avoid. The child and parent should use common sense.

Possible complications: After surgery, the child's speech may sound hyponasal for several weeks until the swelling goes down. There may also be temporary sleep apnea (when breathing stops for short periods during sleep). This will make the child snore loudly and sleep poorly. Sleep apnea after surgery usually gets better on

its own. However, some children need temporary help breathing at night. If sleep apnea does not go away after a few weeks, the child will need to be checked.

Sometimes the ports have to be adjusted later. They may need to be bigger (if the child continues to have sleep apnea) or smaller (if there is still a leak of air or sound during speech). This is usually an outpatient procedure. In very rare cases, the flap may have to be undone if the problem does not correct over time.

Speech therapy: Surgery makes it possible for the child to close off the nose from the mouth during speech, giving him or her the potential for normal speech. However, speech therapy is usually needed to help the child learn how to use the new structure, and to fix speech errors that were learned before the surgery.

Outcomes: Normal speech can be expected following surgery and speech therapy in 80% to 90% of patients. Sometimes, the size of the port needs to be adjusted. This can usually be done through a relatively minor outpatient procedure.

For more information, visit our websites:

www.cincinnatichildrens.org/craniofacial

www.cincinnatichildrens.org/vpi

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