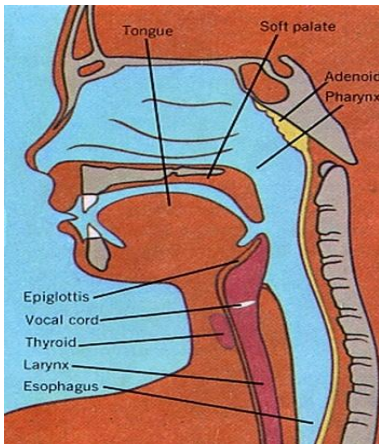


What is Laryngomalacia?

Laryngomalacia is the most common cause of noisy breathing in infants. The high pitched noise or squeaky sound heard during inspiration (breathing in) called stridor is often noticed in the first few weeks to months of life. This is heard most frequently when the infant is feeding, excited, or crying. Stridor is more pronounced when your child is lying or sleeping on their back. Symptoms may come and go over months depending on your child's growth and activity level. In most cases, laryngomalacia does not require treatment. Children typically outgrow laryngomalacia by 18-24 months.

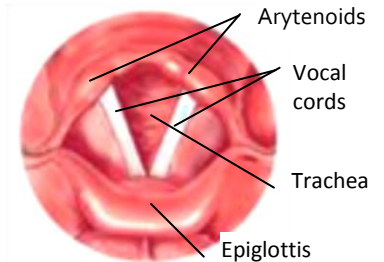
What causes Laryngomalacia?

Laryngomalacia is congenital, or something your child is born with and is not inherited. The exact cause is unknown. It may be caused by the immaturity and low muscle tone in the upper airway.



The upper airway is made up of the nose, mouth, throat, and larynx (voice box). The larynx is located behind the tongue and above the lungs. The larynx contains the vocal cords which open with talking, crying, and breathing, and close with feeding. The larynx also contains the arytenoids (the joints that move the vocal cords) and the epiglottis, which closes over the vocal cords when swallowing to protect the trachea or windpipe (the passage to lungs) and lungs from food or secretions.

In laryngomalacia, the epiglottis or the arytenoids that are soft and floppy. This floppy tissue gets pulled into the airway during inspiration, causing temporary partial blockage of the airway. This tissue is pushed back out when the infant exhales, opening the airway again.



The noisy breathing or stridor is heard as these tissues are drawn into the opening of the upper airway. Because of size difference between the lungs and upper airway, retractions or "sinking in" of the muscles in the neck and chest can be seen when your baby inhales. This is usually mild and intermittent.

How is Laryngomalacia diagnosed?

A complete medical history and physical examination is routine. A flexible fiberoptic laryngoscopy is typically performed. During this procedure, a small flexible tube is passed through the nose to examine the upper airway. This exam allows your doctor to see the structures of the larynx and how they move, to diagnose laryngomalacia and exclude other more unusual causes of stridor. This procedure is done in the office while your baby is awake. This is a brief and mildly uncomfortable procedure for your baby and does not require anesthesia.

Because there can be additional airway problems in babies with laryngomalacia, X-rays may be recommended. X-rays of the neck and chest may be helpful to look at the structures of the airway below the vocal cords that cannot be seen in the office. Airway fluoroscopy is an x-ray video of the airway which looks at the airway and other structures in the neck and chest while the child is breathing. Barium swallow is an x-ray which looks at the structures around the airway and the esophagus and stomach while your baby is swallowing special liquids. In some cases, laryngoscopy and bronchoscopy may be recommended. This during this procedure done in the operating room under general anesthesia, the upper and lower airways are examined.

How is Laryngomalacia treated?

There is usually no need for aggressive treatment as long as your baby's symptoms are mild and your baby is feeding without difficulty, gaining weight, and meeting milestones of development.

Many infants with laryngomalacia have gastroesophageal reflux (GER). GER occurs when food or acid from the stomach comes back up into the esophagus (or swallowing passage), throat, and larynx. Stomach contents and acid can irritate and inflame the larynx which may make laryngomalacia symptoms worse. GER treatment includes keeping your baby in an upright position for 15-30 minutes after feeding. In some cases, the doctor may prescribe acid-reducing medication. For more information about GER see: <http://www.naspghan.org/user-assets/Documents/pdf/diseaseInfo/GERD-E.pdf>

A few infants with laryngomalacia experience labored breathing, blue spells, apnea (stopping in breathing), or poor feeding and weight gain. These babies may require a surgery called laryngoscopy, bronchoscopy, and supraglottoplasty. While your baby is asleep under anesthesia in the operating room, the doctor will look at the larynx and trachea with special scopes. The doctor may remove tissue from the floppy larynx to improve breathing. Your baby would be monitored in the hospital overnight after this procedure.

When should I call the doctor?

Bring your baby to the doctor or emergency room if you witness:

- Blue spells or apnea or pauses in breathing
- Respiratory distress- retraction or sinking in of chest or neck muscle for long periods of time
- Feeding difficulties-choking with feeds, not enough formula intake, or a decrease in wet diapers
- Poor weight gain or weight loss

What can I do to help avoid complications?

1. **Monitor for sign of complications:** Keep appointment with primary care provider and otolaryngologist
2. **Frequent weight checks:** See your primary care provider
3. **Monitor for feeding problems:** Allow the infant to take brief pauses and breaks while feeding to "catch their breath". For more severe problems, evaluation by speech language pathologist
4. **Treatment of GER or gastroesophageal reflux:** After feeding keep the baby upright or elevated for 15 to 30 minutes and give prescribed medication as directed. For more severe problems, evaluation by a pediatric gastroenterologist.

Please call us for questions or concerns. During business hours:

Stacey Ishman, M.D. 410-502-3225, Sandra Lin, M.D. 410-614-6243, Emily Boss, M.D. 410-955-9772, Margaret Skinner, M.D. 410-502-6625, David Tunkel, M.D. 410-955-1559, Melinda DeSell, C.R.N.P. 410-502-6188.

For emergencies: 410-955-6070, ask for the Pediatric Otolaryngology physician (Peds ENT) on-call. For severe emergencies call 911.