



Cleft Lip and Cleft Palate

What is cleft lip and cleft palate?

We all start out life with a cleft lip and palate. During normal fetal development between the 6th and 11th week of pregnancy, the clefts in the lip and palate fuse together. In babies born with cleft lip or cleft palate, one or both of these splits failed to fuse.

A “cleft” means a split or separation; the palate is the “roof” of the mouth. A cleft palate or lip then is a split in the oral (mouth) structure. Physicians call clefting a “craniofacial anomaly.” A child can be born with both a cleft lip and cleft palate or a cleft in just one area. Oral clefts are one of the most common birth defects.

Clefts in the lip can range from a tiny notch in the upper lip to a split that extends into the nose. A cleft palate can range from a small malformation that results in minimal problems to a large separation of the palate that interferes with eating, speaking, and even breathing. Clefts are often referred to as unilateral, a split on one side, or bilateral, one split on each side. There are three primary types of clefts:

- Cleft lip/palate refers to the condition when both the palate and lip are cleft. About one in 1,000 babies are born with cleft lip/palate.
 - About 50 percent of all clefts
 - More common in Asians and certain groups of American Indians
 - Occurs less frequently in African Americans
 - Up to 13 percent of cases present with other birth defects
 - Occurs more often in male children
- Isolated cleft palate is the term used when a cleft occurs only in the palate. About one in 2,000 babies are born with this type of cleft (the incidence of submucous cleft palate, a type of isolated cleft palate, is one in 1,200).
 - About 30 percent of all clefts
 - All racial groups have similar risk
 - Occurs more often in female children
- Isolated cleft lip refers to a cleft in the lip only accounting for 20 percent of all clefts.

What causes clefts?

No one knows exactly what causes clefts, but most believe they are caused by one or more of three main factors: an inherited characteristic (gene) from one or both parents, environment (poor early pregnancy health or exposure to toxins such as alcohol or cocaine), and genetic syndromes. A syndrome is an abnormality in genes on chromosomes that result in malformations or deformities that form a recognizable pattern. Cleft lip/palate is a part of more than 400 syndromes including Waardenburg, Pierre Robin, and Down syndromes. Approximately 30 percent of cleft deformities are associated with a syndrome, so a thorough medical evaluation and genetic counseling is recommended for cleft patients.

How is a cleft diagnosed?

Clefting of the lip and palate is usually visible during the baby's first examination. One exception is a submucous cleft where the palate is cleft, but remains covered by smooth, unbroken lining of the mouth. A child with cleft lip or palate is often referred to a multidisciplinary team of experts for treatment. The team may include: an otolaryngologist (ear, nose, and throat specialist), plastic surgeon, oral surgeon, speech pathologist, pediatric dentist, orthodontist, audiologist, geneticist, pediatrician, nutritionist, and psychologist/social worker.

How are clefts treated?

Treatment of clefts is highly individual, depending on the overall health of the child and the severity and location of the cleft(s). Multiple surgeries and long-term follow-up are often necessary. Because clefts can interfere with physical, language and psychological development, treatment is recommended as early as possible. Surgery to repair a cleft lip is usually done between 10 and 12 weeks of age. A cleft palate is repaired through a procedure called palatoplasty, which is done between nine and 18 months. Additional surgeries are often needed to achieve the best results. In addition to surgery, the child may receive follow-up care from members of the multidisciplinary team on issues of speech, hearing, growth, dental, and psychological development.

What are the complications of clefts?

The complications of cleft lip and cleft palate can vary greatly depending on the degree and location of the cleft. They can include all or some or all of the following:

Breathing: When the palate and jaw are malformed, breathing becomes difficult. Treatments include surgery and oral appliances.

Feeding: Problems with feeding are more common in cleft children. A nutritionist and speech therapist that specializes in swallowing may be helpful. Special feeding devices are also available.

Ear infections and hearing loss: Any malformation of the upper airway can affect the function of the Eustachian tube and increase the possibility of persistent fluid in the middle ear, which is a primary cause of repeat ear infections. Hearing loss can be a consequence of repeat ear infections



and persistent middle ear fluid. Tubes can be inserted in the ear by an otolaryngologist to alleviate fluid build-up and restore hearing.

Speech and language delays: Normal development of the lips and palate are essential for a child to properly form sounds and speak clearly. Cleft surgery repairs these structures; speech therapy helps with language development.

Dental problems: Sometimes a cleft involves the gums and jaw, affecting the proper growth of teeth and alignment of the jaw. A pediatric dentist or orthodontist can assist with this problem.



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