CONDITION

Cleft lip

Learn how cleft lip develops, how it may affect feeding and dental health, and what to expect from surgery, team-based care, and follow-up.

WHAT IT IS
Difference in upper lip formation before birth

BODY SYSTEM
Mouth and face

MAIN SYMPTOMS
Upper lip split, nostril-opening gap, altered nose shape, upper gum gap

WHAT CAUSES IT
Genetic factors and pregnancy exposures

HOW IT IS DIAGNOSED
Physical examination after birth

MAIN TREATMENT
Surgical repair and team-based care

CAN IT BE CURED?
Yes, surgery closes the opening

IS IT AN EMERGENCY?
Sometimes, trouble breathing or heavy bleeding

LONG-TERM OUTLOOK
Treatable with possible ongoing specialist care

Overview

Cleft lip is a difference in how a baby's upper lip forms before birth. During early pregnancy, tissues from each side of the developing face normally join in the middle. A cleft occurs when the tissues that form the upper lip do not join completely.

The opening can range from a small notch in the lip to a wider gap that extends toward the nose. It may affect one side of the lip, called a unilateral cleft, or both sides, called a bilateral cleft. A complete cleft reaches the nostril. An incomplete cleft affects only part of the lip.

Cleft lip can occur by itself or together with cleft palate. Cleft palate is an opening in the roof of the mouth. The gum ridge that holds the upper teeth, called the alveolus, may also be involved. These differences affect treatment planning, so a child with a cleft lip should have the mouth and palate examined carefully.

Cleft lip is treatable. Surgery can close the opening and improve the shape and function of the lip and nose. Some children need additional dental, hearing, speech, or surgical care as they grow. Coordinated care from a cleft and craniofacial team helps address these needs over time.

Symptoms

A cleft lip is usually visible at birth. Its appearance depends on the cleft's location and size.

Possible features include:

An isolated cleft lip usually does not prevent a baby from swallowing. Many babies with only a cleft lip can breastfeed or use a standard bottle, although they may need help making a seal around the nipple.

Feeding is more likely to be difficult when cleft palate is also present. An opening in the palate can make it hard to create suction. Milk may come through the nose, and feeding may take longer. This can look concerning but is not usually dangerous by itself. A feeding specialist can recommend positioning or an appropriate bottle system.

Speech and hearing problems are more closely associated with cleft palate than with an isolated cleft lip. Dental concerns are more likely when the cleft extends through the gum ridge.

- A small split or notch in the upper lip
- An opening that extends from the lip into one nostril
- Openings on both sides of the lip
- A change in the shape or position of the nose
- A gap in the upper gum ridge
- A cleft palate occurring with the cleft lip

Causes and risk factors

Cleft lip develops very early in pregnancy, generally while the facial structures are forming during the first several weeks. In many cases, there is no single identifiable cause.

Researchers consider cleft lip a multifactorial condition. This means that a combination of genetic factors and exposures during pregnancy may affect development. Having a risk factor does not mean that a baby will have a cleft, and many babies born with a cleft have no known

risk factor.

Factors associated with a higher chance of cleft lip with or without cleft palate include:

Parents should not stop prescription medicine because of concerns about birth differences without speaking with a clinician. Suddenly stopping some medicines can cause serious harm. People who are pregnant or planning pregnancy can ask their doctor or pharmacist to review all prescription medicines, over-the-counter products, vitamins, and supplements.

Cleft lip is not caused by something a parent said, thought, or did during ordinary daily activities. When it occurs as part of a genetic syndrome, other parts of the body may also be affected. A genetics evaluation may help families understand whether a specific condition is present and whether testing would be useful.

- A family history of cleft lip or cleft palate
- Certain genetic conditions or changes in genes
- Smoking during pregnancy
- Diabetes that is present before pregnancy
- Use of certain medicines during early pregnancy, including some medicines used to treat seizures

Diagnosis

A cleft lip may be seen on a prenatal ultrasound. Ultrasound uses sound waves to make images of the developing baby. Some clefts are easier to identify than others, and a normal prenatal ultrasound cannot rule out every cleft. An isolated cleft palate is particularly difficult to see before birth.

If a cleft is suspected during pregnancy, parents may be referred for a detailed ultrasound and counseling. A prenatal visit with a cleft team can help the family learn about feeding, delivery planning, surgery, and expected follow-up. Most babies with an isolated cleft lip do not need a special method of delivery solely because of the cleft.

After birth, cleft lip is diagnosed through a physical examination. A clinician also examines the roof of the mouth and the gum ridge to determine whether the palate or alveolus is involved. The baby's breathing, feeding, weight, and overall health are assessed.

Additional evaluation depends on the child's findings. Genetic counseling or testing may be offered when there are other physical differences, developmental concerns, or a relevant family history. Hearing evaluation is especially important when cleft palate is present because fluid can collect behind the eardrum.

Treatment and management

Care is usually coordinated through a cleft and craniofacial team. Depending on the child's needs, the team may include plastic or oral and maxillofacial surgeons, pediatricians, nurses, feeding specialists, dentists, orthodontists, speech-language pathologists, hearing specialists, ear, nose, and throat doctors, genetic counselors, psychologists, and social workers.

Feeding support

Before surgery, the immediate goal is safe feeding and steady growth. A baby with an isolated cleft lip may be able to breastfeed or use a regular bottle. Adjusting the baby's position or supporting the cheeks around the cleft may improve the seal.

If cleft palate is present, a specialized bottle may be needed because the baby may not be able to create normal suction. A feeding specialist can demonstrate how to use the bottle and how to recognize an appropriate flow rate. Regular weight checks help confirm that the feeding plan is working.

Parents should seek prompt medical advice if feeding regularly takes a very long time, the baby coughs or struggles during feeds, or weight gain is a concern.

Cleft lip repair

Surgery to close the lip is called cheiloplasty. It is commonly performed during infancy, but the exact timing depends on the baby's growth, general health, anatomy, and the cleft team's approach. A baby who was born early or has heart, breathing, or other medical concerns may need a different schedule.

During surgery, the surgeon closes the opening, aligns the lip muscles, and works to improve the shape of the upper lip. The nose may also be reshaped because cleft lip can pull the nostril and nasal cartilage out of position. Surgery is performed under general anesthesia, meaning the baby is asleep and does not feel the operation.

The care team provides specific instructions about feeding, pain control, incision care, and activity after surgery. Families should use only the medicines and wound-care products recommended by the surgical team.

A scar remains after repair, but it often becomes less noticeable as it matures. The lip and nose continue to change as the child grows. Some children later have revision surgery to improve function, symmetry, or scar appearance. This does not necessarily mean that the first repair failed.

Ongoing care

If the gum ridge is involved, dental development should be monitored. Teeth near the cleft may

be missing, unusually shaped, or positioned differently. Orthodontic treatment and, in some cases, bone grafting of the gum ridge may be considered later in childhood.

Children with cleft palate need a separate palate treatment plan. They may also need regular hearing tests, monitoring for middle ear fluid, and speech assessment. Emotional support is important as children become more aware of appearance, speech, or questions from other people.

Complications

Possible concerns depend on whether the child has an isolated cleft lip or also has cleft palate or gum involvement.

They may include:

Surgical complications can include bleeding, infection, wound separation, or anesthesia-related problems. The surgical team will explain what to watch for and how to contact them.

Most concerns are managed through planned follow-up rather than emergency care. However, breathing difficulty, blue or gray lips, severe lethargy, or uncontrolled bleeding requires emergency medical help.

- Difficulty creating a seal during feeding
- Slow weight gain if feeding is inefficient
- Dental problems near a cleft in the gum ridge
- Changes in the shape of the nose
- A visible surgical scar or lip asymmetry
- Speech or hearing difficulties, particularly with cleft palate
- Social stress, teasing, or concerns about appearance

Follow up

Cleft care continues as the face, teeth, and speech develop. Even after a successful lip repair, periodic team visits can identify needs that are not obvious during infancy.

Routine follow-up may include:

Contact the child's care team promptly if the baby feeds poorly, has fewer wet diapers, repeatedly coughs or chokes during feeds, or is not gaining weight as expected. After surgery,

call the team for fever, increasing redness or swelling, pus-like drainage, worsening pain, bleeding that does not stop with the instructed measures, or an incision that begins to open.

Seek emergency care for trouble breathing, blue or gray coloring, difficulty waking the child, signs of severe dehydration, or heavy bleeding.

Families may benefit from keeping copies of operative reports, hearing results, dental records, and the cleft team's long-term care plan. As the child becomes older, involving them in age-appropriate discussions can help them understand their care and speak up about their goals.

- Monitoring feeding and growth
- Checking healing and scar development after surgery
- Evaluating the lip and nose as the face grows
- Dental care beginning in early childhood
- Orthodontic assessment when the teeth and jaws develop
- Hearing and speech checks when cleft palate is also present
- Emotional and social support for the child and family

Sources

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