CONDITION

Cleft lip and palate

Learn how cleft lip and cleft palate affect feeding, hearing, speech, and dental health, and how coordinated care and surgery can help.

WHAT IT IS
Birth difference causing an opening in the upper lip or palate

BODY SYSTEM
Face and mouth

MAIN SYMPTOMS
Visible opening, feeding problems, hearing loss, nasal or unclear speech

WHAT CAUSES IT
Genetic and environmental influences

HOW IT IS DIAGNOSED
Examination of the face and mouth

MAIN TREATMENT
Surgery and coordinated supportive care

CAN IT BE CURED?
Sometimes, surgery closes cleft; follow-up continues

IS IT AN EMERGENCY?
Sometimes, with severe trouble breathing

LONG-TERM OUTLOOK
Most children make strong progress with coordinated care

Overview

Cleft lip and cleft palate are differences that develop before birth. A cleft is an opening or gap caused when parts of the face or roof of the mouth do not join completely during early pregnancy.

A cleft lip affects the upper lip. It may be a small notch or a wider opening that extends toward the nose. It can occur on one side or both sides. Some children also have an opening in the gum where teeth will develop.

A cleft palate affects the roof of the mouth, called the palate. The palate has a hard front section and a softer back section. A cleft may involve part or all of these areas. A child may have cleft lip, cleft palate, or both.

These conditions can affect feeding, hearing, speech, breathing through the nose, and the growth of the teeth and jaws. The effects differ greatly between children. Treatment often involves surgery during childhood, along with support from several health professionals.

Cleft lip and palate can occur alone or as part of a genetic syndrome that causes other medical or developmental differences. Most children can make strong progress with coordinated care. Treatment plans are adjusted as the face, mouth, and teeth grow.

Symptoms

A cleft lip is usually visible at birth. It may appear as an opening in the upper lip, a change in the shape of the nostril, or a gap that extends through the upper gum.

A cleft palate may also be easy to see, but some openings are less obvious. A submucous cleft palate is covered by the lining of the mouth and may not be found until later. Signs can include feeding problems, frequent middle-ear fluid, or speech that sounds unusually nasal.

Possible effects include:

A cleft lip alone may have little effect on feeding. A cleft palate is more likely to make suction difficult because the mouth cannot form a complete seal. This does not necessarily mean that a baby cannot feed by mouth. Special feeding techniques and bottles often help.

- Difficulty creating suction during bottle-feeding or breastfeeding
- Milk or formula coming through the nose
- Long feeding times, coughing during feeds, or poor weight gain
- Fluid behind the eardrum and temporary hearing loss
- Repeated ear infections
- Delayed or unclear speech
- Air escaping through the nose while speaking
- Missing, extra, crowded, or unusually shaped teeth near the cleft
- Differences in the growth or alignment of the upper and lower jaws

Causes and risk factors

Cleft lip and palate develop early in pregnancy, while the face and mouth are forming. In many cases, there is no single identifiable cause.

These conditions usually result from a combination of genetic and environmental influences. Genetic influences may involve one or several genes. Environmental influences are exposures or health factors that may affect development during pregnancy.

Factors associated with a higher chance of cleft lip or palate include:

Having a risk factor does not mean that a baby will develop a cleft. A cleft can also occur when no known risk factors are present. Parents may worry that something they did caused the condition, but it is usually not possible to connect an individual case to one action or exposure.

People who are pregnant or planning pregnancy should not stop a prescribed medicine on their own. A clinician can review whether a medicine should be continued, changed, or monitored differently. General pre-pregnancy care, including control of existing health conditions and avoidance of tobacco, supports healthy fetal development but cannot prevent every cleft.

- A family history of an orofacial cleft
- Certain genetic conditions or chromosome differences
- Smoking during pregnancy
- Diabetes present before pregnancy
- Use of certain medicines during pregnancy, including some anti-seizure medicines
- Other health or environmental factors that researchers are still studying

Diagnosis

Some cleft lips are detected during a prenatal ultrasound. A cleft palate without cleft lip is harder to identify before birth because the roof of the mouth may not be clearly visible on routine imaging.

After birth, cleft lip and most cleft palates are diagnosed by examining the baby's face and mouth. A clinician may gently feel the palate because some openings are difficult to see. When a submucous cleft is suspected later, assessment may include examination by a cleft or ear, nose, and throat specialist.

The care team will also check how the baby feeds, breathes, and gains weight. Early hearing screening is important, although a normal newborn hearing screen does not rule out later problems caused by middle-ear fluid.

Further evaluation may include:

Genetic testing is not necessary for every child. A genetic counselor or medical geneticist can explain whether testing may help identify a syndrome, guide other health checks, or clarify the

chance of clefting in a future pregnancy.

- A feeding and growth assessment
- Regular hearing tests and examinations of the eardrums
- Speech and language assessment as the child develops
- Dental and orthodontic examinations
- Imaging for surgical or dental planning when needed
- A genetics assessment when there are other physical findings, developmental concerns, or a relevant family history

Treatment and management

Care is usually provided by a cleft or craniofacial team. This may include surgeons, pediatricians, nurses, feeding specialists, ear specialists, audiologists, speech-language pathologists, dentists, orthodontists, genetic professionals, psychologists, and social workers.

Feeding support

Feeding is the first priority after birth. Babies with cleft palate may need a squeezable bottle, a special nipple, a more upright position, and frequent pauses for burping. A feeding specialist can show caregivers how to support safe, efficient feeding.

Breast milk can still be provided. Some babies can breastfeed directly, especially if they have cleft lip without cleft palate. Others may need expressed breast milk in a specialized bottle.

Growth should be monitored. Contact the child's clinician promptly if feeds regularly take a very long time, the baby coughs or chokes repeatedly, has fewer wet diapers, or is not gaining weight as expected.

Surgery

Surgery closes the cleft and supports function and appearance. Cleft lip repair is generally performed during infancy. Palate repair is also usually performed in infancy, although the timing and technique depend on the child's anatomy, growth, health, and treatment center.

Some children need additional procedures later. These may address speech, the shape of the lip or nose, a gap in the gum, dental development, or jaw alignment. An alveolar bone graft places bone into a cleft in the upper gum. When needed, it is commonly planned in relation to the development of permanent teeth.

Surgery does not end the need for follow-up. Hearing, speech, dental growth, and emotional well-being may require attention as the child grows.

Hearing and ear care

Children with cleft palate commonly have trouble with the eustachian tubes, which connect the middle ears to the back of the nose. Poor ventilation can lead to fluid behind the eardrum and reduced hearing.

An ear specialist and audiologist may monitor hearing regularly. Some children need small ventilation tubes placed in the eardrums. The decision depends on hearing results, persistent fluid, infections, speech development, and the child's overall needs.

Speech and dental care

A speech-language pathologist monitors how a child makes sounds and whether too much air escapes through the nose. Speech therapy can help with learned sound patterns. However, therapy cannot close an opening or correct every structural problem. Some speech differences require further evaluation or surgery.

Dental care should begin early. Children may have enamel problems or teeth that are missing, extra, or poorly positioned near the cleft. Orthodontic treatment can guide tooth and jaw alignment. More complex dental or jaw treatment may continue into adolescence or adulthood.

Psychological and social support can also be valuable. Children and families may need help with visible differences, school experiences, repeated procedures, or questions about self-image.

Complications

Possible complications depend on the type and extent of the cleft. They may include feeding and growth problems, persistent middle-ear fluid, hearing loss, speech difficulties, dental disease, and differences in jaw growth.

Hearing loss related to middle-ear fluid may be mild or temporary, but it can still affect speech and learning if it is not recognized. Regular hearing checks are therefore important even when a child seems to respond to sound.

After surgery, temporary pain, swelling, and reduced interest in eating may occur. The surgical team will provide specific instructions about food, wound care, activity, and signs of infection.

Seek emergency help if a baby or child:

Contact the clinical or surgical team urgently for repeated choking during feeds, signs of dehydration, bleeding after surgery, worsening swelling, trouble drinking, or fever and other symptoms the team has asked you to report.

Concerns such as unclear speech, ear discomfort, slow weight gain, or dental problems usually

need timely routine assessment rather than emergency care.

- Has severe trouble breathing, turns blue or gray, or becomes unresponsive
- Has uncontrolled bleeding
- Appears to be choking and cannot breathe or make sounds

Follow up

Cleft-related care continues as the face, teeth, speech, and hearing develop. Follow-up schedules are individualized, but visits with the cleft team often continue through childhood and adolescence.

Routine monitoring may cover:

Families should keep regular primary care and dental appointments in addition to cleft-team visits. Vaccinations and general childhood care remain important.

Arrange a routine review if speech becomes harder to understand, the child develops frequent ear symptoms, permanent teeth are not appearing as expected, or the child is worried about appearance or social experiences. Earlier discussion allows the team to assess whether support, testing, or a change in the treatment plan is needed.

Adults born with a cleft may also seek care for dental problems, jaw alignment, nasal breathing, speech, hearing, scars, or appearance. A craniofacial team can review these concerns even if treatment ended years earlier.

- Feeding, nutrition, growth, and sleep
- Healing and results after surgery
- Hearing, middle-ear fluid, and ear infections
- Speech and language development
- Tooth health and jaw alignment
- School progress, behavior, and emotional well-being
- Planning for future surgery or orthodontic care

Sources

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