CONDITION

Micrognathia

Micrognathia is a lower jaw that is smaller than expected, usually present at birth.

WHAT IT IS
Smaller-than-expected lower jaw present from birth

BODY SYSTEM
Face, jaws, airway, and teeth

MAIN SYMPTOMS
Receding chin, noisy breathing, feeding difficulty, poor weight gain

WHAT CAUSES IT
Altered fetal jaw growth, sometimes linked to genetic conditions

HOW IT IS DIAGNOSED
Physical examination, airway assessment, and imaging when needed

MAIN TREATMENT
Airway support, feeding support, orthodontics, or jaw surgery

CAN IT BE CURED?
Sometimes - growth or surgery can improve jaw function

IS IT AN EMERGENCY?
Sometimes - blue colour or severe breathing difficulty

LONG-TERM OUTLOOK
Often good, shaped by airway problems and associated conditions

Overview

Micrognathia means that the lower jaw is smaller than expected. It is usually present at birth, although mild cases may become more noticeable as a child grows and the teeth develop.

A small lower jaw can also look set back from the upper jaw. A jaw that is mainly positioned farther back is called retrognathia . The two features often occur together, but they do not mean exactly the same thing.

Micrognathia is a condition or physical finding, not a disease. It may occur by itself or as part of a genetic or craniofacial condition affecting the skull and face. One important example is Robin sequence , in which a small or set-back jaw allows the tongue to fall toward the back of the throat. This can narrow the airway and is often associated with a cleft palate.

Why micrognathia matters depends less on appearance than on function. In some babies, it

causes no major problems. In others, it can interfere with breathing, feeding, sleep, tooth alignment, or speech. Early assessment is especially important when a newborn has noisy breathing, difficulty feeding, or poor weight gain.

Symptoms

The visible feature is a small or receding chin. Symptoms can range from none to significant breathing or feeding problems.

Possible signs include:

Breathing may be worse when a baby lies in certain positions because the tongue can move backward and partly block the throat. The medical term for this backward movement is glossoptosis .

Not every child with micrognathia has airway obstruction. A mild jaw difference may only be identified during a routine examination, dental assessment, or scan performed for another reason.

- Noisy, high-pitched, or laboured breathing
- Pauses in breathing, especially during sleep or feeding
- Difficulty latching, sucking, or coordinating sucking with breathing
- Coughing, choking, or tiring during feeds
- Long feeding times or poor weight gain
- Snoring, restless sleep, or daytime tiredness in older children
- Crowded teeth or an uneven bite as the teeth come in

Causes and risk factors

Micrognathia develops before birth when the lower jaw does not grow as much as expected. In many isolated cases, there is no single identifiable cause.

It can also occur as part of a genetic or chromosome-related condition. Examples include Robin sequence, Treacher Collins syndrome, Stickler syndrome, and some chromosome differences. A cleft palate may occur alongside it.

Robin sequence is described as a sequence because one developmental difference can lead to another. Limited lower-jaw growth changes the position of the tongue, which may affect the airway and interfere with closure of the roof of the mouth.

Some genetic conditions are inherited from a parent. Others result from a new genetic change in the egg, sperm, or developing baby. Having a child with micrognathia does not automatically mean that either parent has the same condition or caused it.

The chance of micrognathia occurring again in a future pregnancy depends on whether it is isolated or linked to a specific genetic diagnosis.

Diagnosis

Micrognathia may be suspected before birth during an ultrasound. A specialist ultrasound examines the facial profile, jaw, palate, growth, and other organs. Fetal MRI may occasionally provide more detail, but prenatal imaging cannot always predict how well a baby will breathe or feed after birth.

After birth, diagnosis begins with examination of the face, jaw, mouth, tongue, and palate. The care team also observes breathing during sleep and feeding. Weight gain and oxygen levels may be monitored.

Further assessment can include:

An endoscopy or sleep study may help identify where airway narrowing occurs. This matters because not every breathing problem in a child with micrognathia is caused by the tongue or jaw.

If a genetic condition is suspected, testing may involve a chromosome test, a panel of several genes, or broader genetic sequencing. A normal test does not always exclude every possible genetic cause.

- Flexible endoscopy, using a thin camera to examine the nose and throat
- A sleep study to measure breathing, oxygen, and sleep disruption
- X-rays or three-dimensional scans for surgical or orthodontic planning
- A feeding and swallowing assessment
- Genetic testing when other features suggest an associated condition

Treatment and management

Treatment is based on breathing, feeding, growth, jaw development, and any associated condition. A small jaw without functional problems may only need monitoring.

Babies with breathing difficulties need an individual airway assessment. In hospital, specialists

may use carefully selected positioning, a soft airway placed through the nose, or positive airway pressure such as CPAP. CPAP provides gentle air pressure through a mask to help keep the airway open.

Positioning for airway treatment is not the same as routine infant sleep advice. Babies should usually sleep on their backs on a firm, flat surface. A different position should only be used under a specific medical plan, with clear instructions about monitoring and safe sleep.

Feeding support may include pacing, changes in feeding position, or a bottle and teat designed for babies with jaw or palate differences. If feeding is unsafe or a baby cannot take enough milk, temporary tube feeding may be needed. Some children need longer-term feeding support while their airway and swallowing mature.

Surgery may be considered when significant obstruction continues despite non-surgical treatment. Options include:

Mandibular distraction involves cutting the jaw bone and slowly separating the segments with a device so new bone forms between them. It can move the tongue base forward and create more airway space.

Later care may involve orthodontics, dental treatment, jaw surgery, speech therapy, or cleft palate treatment. Management is often coordinated by a craniofacial team that may include airway, feeding, dental, surgical, speech, hearing, and genetics specialists.

- Tongue-lip adhesion , which temporarily holds the tongue farther forward
- Mandibular distraction osteogenesis , which gradually lengthens the lower jaw
- Tracheostomy , which creates an airway opening in the neck in complex or severe cases

Complications

The main early complication is upper-airway obstruction. Repeated obstruction can lower oxygen levels and disrupt sleep. Older children may develop obstructive sleep apnoea, in which breathing repeatedly narrows or stops for short periods during sleep.

Feeding and breathing difficulties may lead to slow weight gain. Milk or food can sometimes enter the airway, known as aspiration, which may cause coughing, choking, or repeated chest infections.

As the jaw and teeth develop, there may be crowding, an uneven bite, or difficulty closing the teeth together. A cleft palate can contribute to speech differences, middle-ear fluid, and hearing problems.

Micrognathia can also make placing a breathing tube during anaesthesia more difficult. The

anaesthesia team should be told about the condition and any past airway procedures before an operation or sedation.

The likelihood of developmental or other long-term problems is mainly influenced by associated conditions, not by jaw size alone.

Prevention

Most cases of micrognathia cannot be prevented. The jaw difference develops early in pregnancy and is often related to complex development or a genetic change. It is not usually caused by something a parent did or did not do.

When micrognathia is linked to an inherited condition, genetic counselling can explain the test results and the chance of recurrence in another pregnancy. Prenatal testing or detailed fetal imaging may be available for some known genetic conditions, but these identify or monitor risk rather than prevent the jaw difference.

Living with it and what to expect

The course differs according to the severity of airway and feeding problems and whether another condition is present. Some babies with mild, isolated micrognathia have enough jaw growth during infancy and childhood for their facial proportions and airway function to improve. Growth is not guaranteed to correct the condition completely.

The first months often focus on safe breathing, effective feeding, and weight gain. Follow-up may include repeated airway or sleep assessments because symptoms can change as a baby grows, gains muscle control, or develops infections.

During childhood, attention often shifts toward sleep quality, speech, hearing, teeth, and bite alignment. Orthodontic treatment may be needed as adult teeth appear. Some children have further jaw surgery after more facial growth has occurred, even if they had treatment as infants.

Children with isolated micrognathia can usually take part in ordinary school, play, and family life. Those with a broader craniofacial or genetic condition may need longer-term support tailored to that condition.

Routine follow-up remains important even when breathing appears improved. Snoring, restless sleep, morning headaches, behavioural changes, or daytime sleepiness can be signs that sleep-related obstruction needs reassessment.

When to get medical help

Call emergency services if a baby or child:

Seek prompt medical assessment for repeated breathing pauses, worsening chest pulling during breaths, frequent choking during feeds, or unusual sleepiness. A newborn who cannot feed adequately or has fewer wet nappies may also need urgent assessment.

Arrange routine follow-up if feeding takes a long time, weight gain is slow, snoring is persistent, sleep is restless, or dental alignment is becoming difficult. These concerns are not always emergencies, but they may require changes in monitoring or treatment.

- Has severe difficulty breathing, gasps, or cannot make normal sounds
- Develops blue, grey, or very pale lips or skin
- Has a prolonged pause in breathing or becomes unresponsive
- Chokes and cannot breathe or clear the blockage

Common questions

Will my baby's small jaw grow normally?

The lower jaw often grows during infancy and childhood, and mild isolated micrognathia may become less noticeable. Some children continue to have a small or set-back jaw and need orthodontic or surgical treatment. Associated genetic conditions can affect the pattern of growth.

Is micrognathia the same as Robin sequence?

No. Micrognathia describes a small lower jaw. Robin sequence involves a small or set-back jaw, backward displacement of the tongue, and airway obstruction. A cleft palate is also common. A person can have micrognathia without having Robin sequence.

Can micrognathia be seen on an ultrasound?

Sometimes. A prenatal ultrasound may show a small or receding lower jaw, particularly during a detailed fetal assessment. Mild cases can be difficult to detect. Ultrasound also cannot always show how much breathing or feeding difficulty will occur after birth.

Does every baby with micrognathia need surgery?

No. Babies without significant airway or feeding problems may only need observation. Others can be managed with feeding support, an airway device, or positive airway pressure. Surgery is generally considered when obstruction is serious or does not improve with less invasive

measures.

Is it safe for my baby to sleep on their back?

Back sleeping is the standard safe-sleep position for most babies. Some babies with significant airway obstruction need a specialist positioning plan, often with monitoring. Do not change sleep position or use pillows, wedges, or positioning products unless the baby's clinical team has provided specific instructions.

Will micrognathia affect speech or teeth?

It can. Tooth crowding and an uneven bite may develop as the jaw grows. Speech may be affected when micrognathia occurs with a cleft palate, hearing loss, or another craniofacial condition. Dental, orthodontic, hearing, and speech follow-up can identify these problems early.

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