CONDITION

Knock knees

Knock knees are an inward leg alignment where the knees meet while the ankles remain apart.

WHAT IT IS
Inward angling of the legs at the knees

BODY SYSTEM
Bones, joints and muscles

MAIN SYMPTOMS
Knees touching, ankles apart, altered walking, occasional knee pain

WHAT CAUSES IT
Normal growth, inherited alignment, bone disease, or injury

HOW IT IS DIAGNOSED
Physical examination and standing leg X-rays when needed

MAIN TREATMENT
Observation, cause-specific care, or alignment surgery

CAN IT BE CURED?
Sometimes - growth or surgery can correct alignment

IS IT AN EMERGENCY?
Sometimes - severe pain or inability to walk after injury

LONG-TERM OUTLOOK
Most childhood cases straighten; persistent cases may need treatment

Overview

Knock knees are an alignment of the legs in which the knees angle inward. The medical term is genu valgum . When someone stands with their knees together, there may be a gap between the ankles.

This alignment is a common and usually normal stage of childhood growth. It often becomes most noticeable at about ages 3 to 4, then gradually reduces as the legs develop. By around age 7, most children have reached a more adult pattern of alignment.

Knock knees matter when the angle is pronounced, affects only one leg, continues to worsen, or remains well beyond the usual age for normal growth-related change. In these situations, it can sometimes reflect a problem with bone growth or place extra stress on the knees.

Adults can also have knock knees. The alignment may have continued from childhood or developed after an injury, bone disease, or arthritis. Treatment is based on pain, function, the cause, and the degree of misalignment-not appearance alone.

Symptoms

The main feature is the position of the legs rather than an illness-related symptom. When standing with the kneecaps facing forward, the knees may meet while the inner ankles remain apart.

Other possible features include:

Many children with normal developmental knock knees have no pain and remain fully active. Their legs may look more angled when they are tired or standing in a relaxed position.

Pain should not automatically be blamed on knock knees. Knee pain can have several causes, including injury, muscle weakness, kneecap problems, or arthritis. A healthcare professional can assess whether alignment is likely to be contributing.

- Feet positioned farther apart during standing or walking
- An awkward-looking or inward-swinging walking pattern
- Uneven shoe wear
- Tired legs after activity
- Pain around the kneecap or on one side of the knee
- Difficulty running or taking part in sport when the angle is pronounced

Causes and risk factors

In young children, knock knees are usually part of normal growth. Babies commonly begin with bowed legs. The legs then straighten and often move into a knock-kneed position before settling into their later alignment.

Family traits also influence leg shape. Some people naturally have more inward angling than others without having a bone disorder.

Less commonly, persistent or worsening knock knees may be related to:

A growth plate is an area of developing tissue near the end of a child's bone. Damage to one side can make the bone grow unevenly.

Higher body weight does not explain every case. However, it can make the alignment appear

more pronounced and may increase stress on the knees. It can also make an examination and accurate measurement more difficult.

- Rickets , in which bones become soft because they do not mineralise normally, often involving vitamin D, calcium, or phosphate problems
- Kidney, liver, or digestive conditions that affect bone health
- Skeletal dysplasia , a group of inherited conditions affecting bone growth
- Injury or infection involving a growth plate near the knee
- A previous fracture that healed with altered alignment
- Arthritis or cartilage loss in part of the knee, especially in adults

Diagnosis

Diagnosis begins with an examination while you or your child is standing and walking. The clinician will look at the hips, knees, ankles, feet, and kneecaps. They may also check whether both legs are affected equally and whether the knees can move normally.

The distance between the ankles may be measured while the knees touch. This measurement is only one part of the assessment. Age, height, body position, symptoms, and change over time are also important, so a home measurement cannot confirm whether the alignment is abnormal.

Most young children with mild, even, painless knock knees do not need tests. Photographs or measurements taken during routine follow-up may be enough to confirm that the legs are gradually straightening.

A standing X-ray of both legs may be recommended if the angle is severe, one-sided, painful, worsening, or continuing beyond the expected age. A full-length X-ray shows how weight passes from the hip through the knee to the ankle and helps locate the source of the angling.

Blood tests may be used if there are signs of rickets or another condition affecting bone health. These tests can check substances involved in bone development, such as calcium, phosphate, vitamin D, and markers of kidney or liver function.

Treatment and management

Most children with normal developmental knock knees need observation rather than treatment. The alignment usually becomes less noticeable as growth continues. Routine

follow-up may be suggested if the angle is pronounced or there is uncertainty about its progress.

Regular activity is generally encouraged when it is comfortable. Physiotherapy may help with muscle strength, balance, knee control, or pain. It can improve how the legs function, but exercises do not usually change an established bone angle.

Special shoes, insoles, braces, and night splints do not normally straighten physiological knock knees. Insoles may sometimes improve comfort when there is an associated foot problem, but this is different from correcting the underlying leg alignment.

If another condition is affecting bone growth, treatment focuses on that cause. For example, rickets requires assessment of why bone mineralisation is abnormal. Treatment should be guided by test results rather than starting high-dose supplements without medical advice.

Surgery is considered only for selected cases, such as severe or worsening alignment, significant symptoms, or an abnormal mechanical line through the leg.

In a child who still has enough growth remaining, guided growth may be used. This small operation temporarily slows growth on one side of the growth plate, allowing the other side to catch up gradually. Timing and follow-up are important because the correction continues as the child grows.

For someone who has finished growing, an osteotomy may be considered. This operation cuts and realigns a bone, then holds it in position while it heals. Adults with advanced knee arthritis and major deformity may sometimes be offered joint replacement instead. These are specialist decisions based on symptoms, X-rays, overall health, and treatment goals.

Complications

Normal childhood knock knees rarely cause lasting problems. Most children can walk, run, and play without restrictions.

Pronounced or persistent misalignment can change how force passes through the knee. Possible longer-term problems include pain around the kneecap, kneecap instability, reduced walking comfort, and uneven wear within the knee joint.

Knock-kneed alignment is associated with certain patterns of knee arthritis, but it does not mean that arthritis will definitely develop. Body weight, previous injuries, age, activity, and joint health also influence that risk.

Severe one-sided deformity can affect gait and may create a functional difference in leg length. The underlying cause, rather than the visible angle alone, can also lead to complications

if a bone or growth disorder is not treated.

Operations carry risks such as infection, stiffness, incomplete or excessive correction, and the need for another procedure. A surgical team should explain the expected benefit, recovery, and specific risks before treatment.

Prevention

Normal developmental or inherited knock knees cannot be prevented. They are not caused by letting a child stand or walk too early, and ordinary play does not make them worse.

Some causes related to poor bone health may be preventable or treatable, but advice depends on age, diet, health conditions, and local vitamin D guidance. Do not use high-dose vitamin or mineral supplements to treat leg alignment without an assessment.

Protective equipment and safe activity practices can reduce some knee and growth-plate injuries, although no injury-prevention method removes all risk.

Living with it and what to expect

For most young children, knock knees become noticeable during the preschool years and then slowly improve. The change takes place over years rather than weeks. The legs do not need to become completely straight to be healthy and functional.

A child with painless, even knock knees can usually take part in school, play, and sport. There is generally no need to restrict activity because of appearance alone. Comfortable, correctly fitting shoes are usually sufficient.

If monitoring is recommended, appointments may involve repeat examinations, measurements, or photographs. X-rays are not routinely repeated unless the findings or symptoms make them useful.

Persistent knock knees do not always require treatment. Some teenagers and adults have stable inward alignment throughout life without major limitations. Others develop pain or difficulty with longer walks, running, stairs, or sport and may benefit from strength-based rehabilitation or specialist assessment.

After guided-growth surgery, correction occurs gradually while the child grows. Follow-up continues until the desired alignment is reached, and the implant may then be removed. Osteotomy recovery is longer because the bone must heal in its new position.

No treatment can promise a particular long-term course. The outlook is influenced by age,

remaining growth, the amount of angling, symptoms, and whether an underlying bone or joint condition is present.

When to get medical help

Arrange a routine medical appointment if:

Seek urgent medical care after an injury if there is severe pain, obvious deformity, rapidly increasing swelling, or an inability to put weight on the leg.

A hot, red, swollen knee with fever or feeling seriously unwell also needs urgent assessment because infection is one possible cause. Use emergency services for major trauma, an open wound over a deformity, or a foot that becomes cold, pale, numb, or weak.

These urgent situations are different from stable, painless knock knees, which can usually be discussed at a routine appointment.

- Knock knees are getting more noticeable after about age 7
- One leg is affected much more than the other
- The alignment began suddenly or appeared after an injury
- There is ongoing knee, hip, ankle, or foot pain
- Walking is difficult, there is a persistent limp, or activity is limited
- Growth seems unusually slow or there are other concerns about bone health
- An adult develops new or worsening leg alignment

Common questions

Will my child grow out of knock knees?

Most preschool children with even, painless knock knees gradually develop a less angled position by around age 7. Improvement is less predictable if the angle is severe, affects one side, or continues to worsen.

Can exercises straighten knock knees?

Exercises can strengthen the hips and legs, improve balance, and reduce some types of knee pain. They do not usually reshape bones or correct a fixed bone angle.

Do special shoes or insoles fix knock knees?

Special shoes and insoles do not normally correct developmental knock knees. They may

sometimes help comfort when a separate foot problem is present.

Can knock knees cause arthritis?

Pronounced alignment can change pressure within the knee and is associated with some patterns of arthritis. It does not mean arthritis is inevitable, and many people with knock knees never develop major joint problems.

Is surgery always needed if knock knees continue after childhood?

No. Treatment is based on pain, function, progression, and the degree and cause of the alignment. Stable knock knees that do not cause problems may not need surgery.

Can adults develop knock knees?

Yes. Adult knock knees may have continued from childhood or developed because of arthritis, a previous injury, or a condition affecting bone. New or worsening adult alignment should be assessed, particularly when it is painful or one-sided.

Sources

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