CONDITION

Metatarsus adductus

Metatarsus adductus is an inward curve of the front half of a baby's foot.

WHAT IT IS
Inward curve of the front half of a baby's foot

BODY SYSTEM
Bones, joints, and muscles

MAIN SYMPTOMS
Curved forefoot, C-shaped outer edge, inward-pointing toes

WHAT CAUSES IT
Likely fetal positioning and growth factors

HOW IT IS DIAGNOSED
Physical examination; X-rays rarely needed

MAIN TREATMENT
Observation, stretching, serial casting, rarely surgery

CAN IT BE CURED?
Sometimes - many feet straighten with growth

IS IT AN EMERGENCY?
No - usually a painless congenital foot shape

LONG-TERM OUTLOOK
Most flexible feet become normally shaped and functional

Overview

Metatarsus adductus is a foot shape present at birth. The front half of the foot turns inward, while the heel is usually in a normal position. The bones affected are the metatarsals, which connect the middle of the foot to the toes.

From above, the foot may look curved or bean-shaped. The outer edge is more rounded than usual, and the toes may point inward. One or both feet can be affected.

Metatarsus adductus is not the same as clubfoot. In clubfoot, the whole foot is twisted inward and downward, including the heel. With metatarsus adductus, the curve mainly affects the forefoot, and the ankle usually moves normally.

The condition is often painless. Many flexible feet straighten as a baby grows and starts moving the legs and feet. Stiffer feet are less likely to correct on their own and may need

treatment to guide them into a straighter position.

Symptoms

Metatarsus adductus usually causes visible signs rather than pain or illness. You may notice:

The heel usually looks straight rather than turned inward. An affected foot may be flexible enough to move into a straight position with gentle pressure. In a rigid foot, the curve remains even when the foot is gently moved.

Babies with metatarsus adductus usually kick and move their ankles normally. The condition does not normally affect feeding, sleep, or general development.

A persistent curve may later make some shoes difficult to fit. A small number of older children develop pressure areas, calluses, or discomfort, especially if the deformity is stiff or marked.

- The front of the foot curves inward
- The toes point toward the other foot
- The inner side of the foot looks slightly hollow
- The outer edge of the foot has a C-shaped curve

Causes and risk factors

The exact cause is not always known. Metatarsus adductus is thought to develop because of the baby's position, movement, and available space in the uterus. Growth patterns in the developing foot may also contribute.

Nothing a parent did during pregnancy is known to cause the condition. It is generally not considered a straightforward inherited condition, although foot shapes and related features can sometimes occur in families.

Metatarsus adductus can occur by itself. It has also been associated with developmental dysplasia of the hip, in which the hip joint does not develop in its usual stable position. This association does not mean that every baby with a curved foot has a hip problem. A clinician will usually examine the hips as part of the baby's physical assessment.

Diagnosis

Metatarsus adductus is usually diagnosed through a physical examination soon after birth or

during an infant check-up. No blood test is needed.

The clinician looks at the foot from above and checks the position of the forefoot, heel, and ankle. They will gently move the foot to see whether it can be brought to a neutral, straight position. This helps describe the condition as flexible, partly flexible, or rigid.

The examination also helps distinguish metatarsus adductus from clubfoot and other causes of an inward-facing foot. In clubfoot, the heel and ankle are also affected, and the foot is usually more difficult to position normally.

X-rays are not usually needed in young babies. Their foot bones are still developing, and much of the foot is cartilage, which does not show clearly on a standard X-ray. Imaging may be considered when the diagnosis is uncertain, the curve remains in an older child, or surgery is being assessed.

The hips, legs, and overall movement may also be checked. Hip ultrasound or another test is only used when the hip examination or other risk factors suggest it is needed.

Treatment and management

Treatment is based mainly on how stiff the foot is, how marked the curve appears, and whether it improves with growth. The aim is a comfortable, functional foot that fits ordinary shoes.

A flexible foot can often be observed without active treatment. Many flexible cases become straighter during infancy and early childhood. Routine follow-up may be used to make sure the foot remains flexible and continues to improve.

A clinician may show parents or caregivers gentle stretching for some partly flexible feet. Stretching should not be forceful or painful. Because stretching is not appropriate for every foot, it is helpful to have the technique demonstrated rather than trying to reshape the foot without guidance.

Serial casting may be recommended for a foot that is rigid, markedly curved, or not improving. A series of casts holds the foot in gradually straighter positions. The casts are replaced as correction progresses. Treatment is generally easier while the foot is still small and the tissues are more flexible.

Some children use a brace, removable orthosis, or special footwear, particularly after correction or when a specialist believes extra support may help. These devices should be fitted and monitored because poor fit can cause skin pressure. Ordinary shoes do not force a flexible foot to become straight, and buying corrective shoes without an assessment is unlikely to help.

Surgery is uncommon. It may be considered for an older child with a severe, rigid deformity that causes pain, shoe problems, or functional difficulty despite non-surgical care. The operation depends on which joints and bones are affected. Surgery has risks, including stiffness, overcorrection, infection, and the need for further treatment, so it is reserved for selected cases.

Complications

Most children with flexible metatarsus adductus do not develop lasting problems. They usually walk, run, and take part in sports without special limits.

When a marked or rigid curve persists, possible problems include:

Metatarsus adductus may contribute to an inward-facing appearance when a child walks, but intoeing can also come from the shin bone or thigh bone. Persistent intoeing therefore does not always mean the foot condition has worsened.

Casts and braces can occasionally cause skin irritation or pressure problems. Toes that become swollen, unusually pale, blue, cold, or difficult to move need prompt assessment because the cast or brace may be too tight.

- Difficulty fitting standard shoes
- Rubbing, calluses, or pressure over the outer foot
- Foot discomfort during longer periods of activity
- A visible difference in foot shape or walking pattern

Prevention

Metatarsus adductus develops before birth and usually cannot be prevented. There is no established pregnancy position, exercise, diet, or footwear choice that prevents it.

Early recognition does not prevent the condition, but it can identify a stiff foot that may benefit from treatment while the tissues are still flexible. Keeping routine newborn and infant appointments gives clinicians an opportunity to examine the feet and hips.

Living with it and what to expect

Over the first months of life, a flexible foot often becomes less curved as the baby grows,

kicks, stands, and begins walking. Improvement may be gradual, so photographs taken from above can sometimes make changes easier to notice. They should not replace clinical follow-up when follow-up has been recommended.

A partly flexible or rigid foot is less predictable. It may remain curved without treatment or may improve only to a degree. Serial casting can often improve alignment, although the result and time needed are not identical for every child.

Once walking begins, most children with mild residual curvature remain active and comfortable. A foot can still function well even if its shape is not perfectly straight. Treatment is generally guided more by stiffness, pain, shoe fit, and function than by appearance alone.

Routine follow-up is particularly useful if the foot is stiff, treatment is underway, or the shape remains marked. An older child should be reassessed if new pain develops, shoes repeatedly rub in the same place, or walking and activities become difficult.

There is usually no need to restrict play or sport in a comfortable, untreated flexible foot. Shoes should have enough room across the toes and should not create pressure over the curved outer border.

When to get medical help

Arrange a routine appointment if you notice that a baby's forefoot curves inward. This is not usually urgent, but an examination can confirm the type of foot shape and check how flexible it is.

Seek an earlier assessment if:

If your child is wearing a cast or brace, contact the treating service promptly for increasing swelling, persistent rubbing, broken skin, a foul smell, drainage, or a cast that is wet, cracked, or slipping.

Seek urgent or emergency care if toes below a cast become blue, very pale, cold, severely swollen, or difficult to move, or if there is severe and increasing pain. These signs can mean that circulation or nerves are under pressure.

- The foot is stiff and cannot be gently moved toward straight
- The heel also appears turned inward or downward
- One leg or foot moves much less than the other
- The curve becomes more noticeable rather than improving
- An older child has pain, calluses, shoe problems, or difficulty walking

Common questions

Will metatarsus adductus straighten on its own?

Many flexible feet straighten during infancy or early childhood. A rigid or strongly curved foot is less likely to correct fully without treatment. An examination of flexibility gives more useful information than appearance alone.

Is metatarsus adductus the same as clubfoot?

No. Metatarsus adductus mainly curves the front of the foot inward, while the heel and ankle remain relatively normal. Clubfoot affects the whole foot, including the heel and ankle, and follows a different treatment pathway.

Will my baby walk normally?

Most children with flexible metatarsus adductus walk normally and have no activity limits. A severe, persistent, or rigid curve can sometimes affect shoe fit or comfort and may need treatment.

Does my baby need special shoes?

Most flexible cases do not need corrective shoes. A specialist may recommend an orthosis, brace, or specific footwear for selected children. Any device should be properly fitted and checked for pressure areas.

Can metatarsus adductus come back after casting?

Some residual or recurrent curvature can occur, especially when the original foot was stiff. Follow-up helps identify loss of correction and decide whether any further management is useful.

Does metatarsus adductus cause intoeing?

It can make the feet point inward, but intoeing may also come from the rotation of the shin or thigh bones. A clinician can examine the whole leg to identify where the inward position comes from.

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