The Limping Child

At one time or another, all children have episodes of limping. Usually the limp is caused by minor injury and will get better by itself. Limping that lasts longer than a week and is not getting better on its own presents several challenges to parents and doctors:

1. How does it affect the child? Young children are not very good at describing things. Older children may try to "play through" pain even when it is not safe.
2. Where is it coming from? The cause may be anywhere in the leg, and maybe even in another part of the body.
3. What tissue is responsible? Limping can result from problems in muscles, ligaments, joints, or bones.
4. Does it require treatment? Children have fantastic healing ability and many problems will resolve on their own.
5. How serious is it? Conditions causing limp vary from the trivial—which are very common—to the life-threatening, which are rare.

This article reviews the wide range of things that cause children to limp, as well as the strategies doctors use to determine the exact cause of limping.

Cause

Injury

The most common cause of limping is a minor injury. Injuries in children are usually obvious, but persistent limping after an injury can be a sign that there is an underlying fracture (broken bone).

Infection and Inflammatory Disease

After injury, infections and inflammatory conditions are the next most common causes of limping in children.

Infections. Viral or bacterial infections can settle in growing bones and adjacent joints, and often will cause pain and limping in younger children.

Inflammatory diseases. Many types of inflammatory disease, such as juvenile arthritis, can affect joints and cause pain, swelling, and limping.

Transient synovitis/toxic synovitis. Some illnesses cause increased inflammation throughout the body, and joints may temporarily swell and become painful.

Other Causes

Most other causes of limping are not common. Serious bone diseases and nervous system disorders are very rare.

Tumors. Different types of tumors can grow into bone and soft tissues, producing pain and limping.

Congenital abnormalities. Problems that develop before a baby is born can cause limping. These often cause a difference in leg lengths, and the limping is usually noticed when toddlers begin to walk. For more in-depth information: Limb Length Discrepancy(/en/diseases--conditions/limb-length-discrepancy/)

Legg-Perthes Disease. In this condition, there is not enough blood supply to the hip. Without a good blood supply, the top of the thighbone (the "ball" of the "ball and socket" joint of the hip) can flatten. This condition usually occurs between ages 4 and 10 in otherwise healthy children.

For more in-depth information about Legg-Perthes Disease: Perthes Disease (/en/diseases--conditions/perthes-disease/)

Slipped Capital Femoral Epiphysis. This occurs when the ball part of the hip joint slips off the upper thighbone due to a weakened growth plate. This occurs just before puberty between ages 9 and 15.

For more in-depth information about this condition: Slipped Capital Femoral Epiphysis (/en/diseases--conditions/slipped-capital-femoral-epiphysis-scfe/)

Diskitis. The disk spaces between the small bones in the spine can become inflamed and irritated, which can cause limping.

Nervous system disorders. Limping can be a child's way of adjusting to pain, or it can be caused by a problem with the nerve signals that control walking. Disorders of the nervous system can cause weakness or tightness in the muscles, which can cause a child to walk differently.

This chart outlines the most common causes of limping along with general symptoms.

Cause	Age	Onset of Symptoms	Fever	Pain	Swelling	Loss of Range of Motion
Trauma/Injury	Any age	Sudden	No	Yes	Sometimes	Sometimes
Infection	Younger children	Gradual	Yes	Yes	Sometimes	Sometimes
Inflammatory	Older than 2	Gradual	Sometimes	Yes	Yes	Yes
Tumor	Any age	Gradual	Sometimes	Yes	Sometimes	Sometimes
Legg-Perthes	Ages 4-10	Gradual	No	Yes	No	Yes
Slipped Capital Femoral Epiphysis	Ages 9-15	Gradual or Sudden	No	Yes	No	Yes
Congenital Hip Dysplasia	Ages 1-18	Gradual	No	Sometimes	No	Yes
Neurologic	Any age	Gradual	No	No	No	Yes
Diskitis	Any age	Gradual	Sometimes	Sometimes	No	No

Doctor Examination

Medical History

When you take your child to the doctor because of an unexplained limp, your doctor will first discuss your child's medical history, recent activities, and overall health. He or she will also ask you to describe the limp and when it occurs.

The more information that you can provide your doctor, the better he or she will be able to determine the cause of the limp. For example, if you have a family history of rheumatoid arthritis, knowing this could help your doctor sort out possible causes of your child's limp. Or if your child has recently had a cough, sore throat, or rash, it is possible that a virus or strep organism is causing joint inflammation. If your child has a fever, it is possible that the limp is caused by a bone or joint infection.

Physical Examination

After discussing your child's symptoms and medical history, your doctor will examine your child. Because long pants cannot be worn during the examination, some children are more comfortable wearing their own shorts or bathing suit to the appointment.

- Your doctor will watch your child walk. Younger children cannot always describe where they are hurting, but carefully watching them walk can often show which side of the body is affected. For example, if a child leans to one side when standing on one leg, it is often a sign that he or she may be unconsciously trying to take some of the weight off of the painful hip. If one foot is spending less time on the ground than the other, it may be a sign of pain in that leg.
- Your doctor will feel your child's legs for tenderness, swelling, or bruising. It may be possible to determine if the problem is in a muscle, a joint, or a bone. Your child's arms will also be examined to check for associated injuries.
- Your doctor will examine your child's joints—such as the hip and knee—for pain, swelling, and loss of range of motion. Decreased movement in any direction, or pain at the extreme ranges of motion, point to that joint as the cause of the limp.
- If it seems like the pain is coming from your child's knee, your doctor will do a very careful examination of the ligaments and movement of the knee. Swelling or abnormal movements can indicate a ligament injury.
- Your doctor will also check your child's spine for pain, stiffness, curvature (scoliosis), or unusual skin markings (rash or spots).
- If your child does not have any pain, your doctor will look for evidence of congenital abnormalities or nervous system disorders that may be causing the limp. Some of the signs of a nervous system disorder include a tight Achilles tendon (heelcord), claw toes, or a very high arch on one foot. In addition, a careful neurologic exam can detect muscle strength or reflex imbalances that can indicate a problem involving the brain, spinal cord, or muscles in the arms and legs.

Tests

X-rays

Your doctor may recommend x-ray images to help determine the exact cause of your child's limp. X-rays will be taken of areas of the body where there is pain, swelling, or loss of range of motion. Your doctor may want images of these areas from different angles, such as the front, side, and back. X-ray images of your child's unaffected side (for example, the other leg) may also be taken to compare with the painful affected side.

Other Imaging Tests

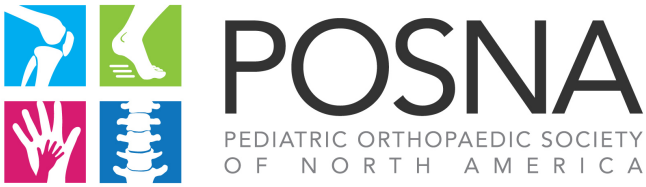
If x-rays are normal and the cause of the limping is unclear, a bone scan can be helpful to detect a subtle fracture, a bone infection, or a bone tumor.

Your doctor may order a magnetic resonance imaging (MRI) scan if your child's pain and limping are well localized but the x-rays are normal. MRI scans can show joint swelling, fractures, infections, and bone tumors.

Your doctor may order an ultrasound to look for fluid in a joint. This is particularly useful for the hip where swelling is hard to see.

Laboratory Studies

Laboratory studies are particularly useful in inflammatory conditions such as viral diseases, and may be helpful to identify the cause of joint swelling by juvenile rheumatoid arthritis or Lyme disease.



Reviewed by members of

POSNA (Pediatric Orthopaedic Society of North America)(https://posna.org/)

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