

Tibial De-Rotational Osteotomies for Tibial Torsion

Why does my child need tibial torsion surgery?

A lot of young children walk with their toes pointing in or out instead of straight ahead. The most common reason is tibial torsion, a twist in the tibia bone of the lower leg. This twist brings the knee and ankle out of alignment. The feet respond by turning in (internal tibia torsion) or out (external tibia torsion). Most of the time, tibial torsion gets better as a child exercises the leg muscles by walking and running.

But when a child has spasticity, a condition in which muscle tone is very strong, tibial torsion can get worse instead of better as the child grows. Surgery helps children with spasticity who can stand, but cannot walk or run normally because of tibial torsion. It is also helpful for children in a wheelchair who cannot place their feet on the footrest because of a twisted tibia. Surgery is the only way to help tibial torsion. There are no braces or treatments that can fix the problem.



What happens during the surgery?

First, the surgeon cracks the tibia and the smaller fibula bone next to it, usually just above the ankle. Surgically cracking a bone is also known as an osteotomy. It is similar to breaking a bone, except that it is done on purpose. The surgeon weakens the tibia bone first by drilling holes through a small surgical opening. The next step is to rotate, or turn, the bone into correct alignment. The surgeon then places a pin in the bone just below the knee. The pin will be removed once the bone heals. In the meantime, your child will wear a cast that starts at the pin and covers the leg and foot. The cast keeps the leg from moving while new bone grows.

Some surgeons perform tibial torsion surgery by cutting and rotating the tibia at the top of the bone instead of the bottom. But Nemours surgeons believe our method has better outcomes.

What are the incisions like?

They are very small, more like a stab than a cut. There are three in all: one just above the ankle, another where the pin goes in at the top of the tibia bone, and a third incision where the pin comes out on the other side.

What happens after surgery?

A cast goes on in the operating room right after surgery. If your child walked before surgery, they will probably be taken to the cast room within 24 hours so a technician can turn the cast into a walking cast. As soon as your child feels well enough, it's time to start walking in the cast. A therapist will help get this started.

About four weeks after surgery, your child will return to the cast room to have the pin removed. An X-ray will be taken first. Then the cast technician will cut two small "windows" in the cast and pull out the pin. After the pin is out, the technician will cover the openings.

Your child will probably stay in the cast for another two weeks. A total of six weeks is an average healing time. But it may take a bit longer for your child's tibia to heal in its new position.

Will my child have pain?

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Yes, your child will need pain relievers and muscle relaxants at first. Our staff is trained to help make patients as comfortable as possible. Once you go home, please call the office if pain is a problem or the pain medication your child's doctor prescribed causes side effects.

Will my child be able to walk and do other activities once we go home?

Most children who walked before surgery are walking again within two weeks. A lot depends on how your child feels. Your child may need a walker or another piece of equipment to help with walking until healing is complete.

Will my child be able to ride in the car?

Yes. Just be sure to find a comfortable way to make room for the cast.

Will my child need physical therapy?

Yes, physical therapy will start right away. We want your child to walk as much as possible while the cast is on.

When will my child need to return to see the doctor or get X-rays?

Your child will come back for X-rays and pin removal about four weeks after surgery. If healing is on schedule, the pin will be removed during this appointment. Two weeks later, it will be time to come back to get the cast off. Please be aware that if an X-ray at four weeks shows that the bone needs longer to heal, your child may stay in the cast longer than the typical six weeks.

When will my child be able to return to school and the school bus?

Your child may go back to school and ride the school bus as soon as he or she is comfortable and ready.

How long until my child is completely recovered?

Recovery times vary. Most children who have tibial torsion surgery also have other procedures to release the muscles in the leg or foot or both. Full recovery may take three to four months.

What are the possible complications with this surgery?

It is unlikely that a pin will break or an incision will become infected, but it can happen. These are fairly minor issues. In the case of severe tibial torsion, there is a more serious risk that nerves and arteries could be overstretched when the bone is rotated. Your child's surgeon will be watching out for this possibility. We are very careful to avoid overstretching.

Will this surgery ever need to be repeated?

No, this kind of surgery is usually permanent.