



# Tibial Tubercle Fracture

## What is a tibial tubercle fracture?

The tibial tubercle is a bony bump on the upper part of the shin where the patellar tendon attaches the quadriceps muscles (or quads) to the leg. A tibial tubercle fracture is a break or crack at this location, which usually occurs as a result of the patellar tendon pulling off a piece of the bone.

## What causes this injury?

This injury typically occurs in adolescents because the tibial tubercle is still growing and the bone is softer there. The patellar tendon is structurally stronger than the tubercle until it fully matures, so a hard tug by the tendon can cause a fracture.

We often see this injury occur with activities such as running, jumping, pivoting or cutting, where there is a strong, fast contraction of the muscle. Patients report a sudden sharp pain, and may even hear or feel a pop in their knee.

## How is this injury treated?

When we review your child's x-ray we will evaluate the displacement of the fracture, which is how much the broken fragments have separated. If the fracture is severely displaced, it's likely that surgery is needed to properly align the bone to heal. If the fracture is not displaced or is minimally displaced, we typically start treatment with a long leg cast or knee brace that keeps the leg completely straight, taking tension off of the patellar tendon.

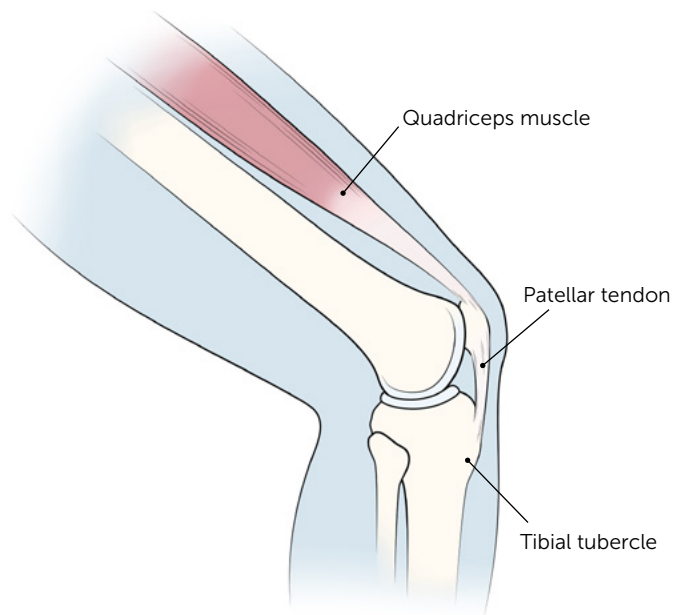
We may bivalve or split the first cast in order to allow room for swelling. We tape the sides of the cast with cloth medical tape, which you can buy at a pharmacy and replace if the tape starts to peel off. You may also use cloth athletic tape or duct tape, but avoid these if your child has a latex allergy. The cast is secured from the inside at the top and bottom, so if the tape starts to peel, the cast should not fall apart. We usually do not apply waterproof casts for these first casts because of swelling.

## Will my child be in pain?

Soreness is usually at its worst in the first few days through the first week. Pain from soreness can be treated with acetaminophen (Tylenol®) or ibuprofen (Advil®) as needed. **Always talk with your provider about allergies your child may have before giving over-the-counter medication.**

If your child has surgery, we may supply a small amount of prescription pain medicine if appropriate.

Elevating the leg (toes above nose) is very important, especially in the first three to four days after injury. This helps keep the swelling from drifting down and getting stuck in the leg and foot, which slows recovery. A good way to elevate the leg at night is to take a few extra blankets or pillows and stick them under the mattress at the foot of the bed.



## Can my child be active?

Your child should avoid any activities that include running, jumping, pivoting, planting or cutting until we give clearance to return to these activities.

## How long will my child be out of sports?

We will assess your child and make recommendations based on how the injury looks and the potential injury risks of the sport your child plays.

Your child may not be able to play contact sports or do playground activities for three to six months depending on the severity of the injury.

## Will my child need physical therapy or treatments after bracing or casting?

Physical therapy (PT) is a part of the recovery from this injury. PT is crucial for strengthening the quadriceps to build stability and prevent re-injury of the knee.

We will provide a detailed prescription for PT once the bone has healed well enough to tolerate exercise, probably around four to six weeks after the injury. The physical therapist will work with your child to stretch and strengthen the muscles around the knee and wean them out of the knee brace. The progressive training will also help prepare your child to return to activities and sports.

