What is Patellar Instability?

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Patellar instability happens when the kneecap (called the patella) moves out of place. This can be a small slip (subluxation) or a full dislocation. It can happen because of an injury, loose ligaments, or the way the knee is shaped.

Risk Factors
Some kids are more likely to have patellar instability because of certain risk factors. These usually fall into two main groups:

1. General Risk Factors

- Loose ligaments – Some people are just naturally more flexible, which can make the kneecap less stable.
- Previous kneecap problems – If the kneecap has popped out before, it's more likely to happen again.
- "Miserable malalignment syndrome" – This means the bones in the leg don't line up just right, which can affect how the kneecap moves.

2. How Your Body Is Built (Anatomy)
Sometimes the shape of your bones or muscles can make patellar instability more likely. These include:

- Patella alta – This means the kneecap sits higher than usual.
- Genu Valgum — Also called "knock knees," this is when a the knees touch but the ankles stay apart when standing straight.
- Trochlear dysplasia – The groove where the kneecap should sit is too shallow.
- Tilted kneecap – The kneecap leans too far to the outside.
- Small outer thigh bone bump (lateral femoral condyle) – This bump usually helps keep the kneecap in place. If it's too small, the kneecap may slip out.
- Muscle imbalances – If the muscles around the knee are not balanced, the kneecap can get pulled in the wrong direction.
- Weak inner thigh muscle (VMO)
- Tight outer thigh muscles (IT Band and vastus lateralis)

How does a patellar subluxation or dislocation happen?
A patellar subluxation or dislocation usually happens when the knee twists in just the wrong way. It often happens without even getting hit—like during sports or a sudden change in direction.

Here's how it can happen:

- The knee is straight and the foot turns outward (this is called external rotation).
- While this happens, the person might twist or move quickly.
- The thigh muscles (especially the quadriceps) usually tighten right away to try to pull the kneecap back into place.

Sometimes, as the kneecap slides back into place, a small piece of bone or cartilage can break off. This is called an osteochondral fracture.

Less commonly, the kneecap can also be pushed out of place by a direct hit to the knee.

Signs and Symptoms
If someone has a kneecap that slips or pops out of place, they might notice:

- A feeling like the knee is unstable or might "give out"
- Pain in the front of the knee
- A painful "pop" or "clunk" when the kneecap moves out of place
- Sometimes the kneecap goes back into place on its own

How do you treat a patellar subluxation or dislocation?
If it's the first time the kneecap has slipped or dislocated, doctors usually start with non-surgical treatments, such as:

- Changing activities to avoid things that make the pain worse
- Anti-inflammatory medicine to help with swelling and pain
  - Ibuprofen (Advil or Motrin)
  - Naproxen (Aleve)
- Wearing a brace to help keep the kneecap in place
- A short time of resting the knee or using a brace/splint
- A home exercise program to strengthen the muscles
- Physical therapy to improve movement and build strength

If the kneecap keeps popping out more than once, your doctor might talk to you about surgery to fix the problem.

Every treatment plan is different, and your care team will help choose what's best for you and your knee.

Returning to Activities and Sports

When can I go back to activities and sports?

Once your knee has healed and you've gotten back your strength and full movement, your healthcare provider will probably let you slowly start doing your usual activities again.

Getting back to sports or more intense activities may take longer—everyone's body heals at a different pace, and that's okay!

What's most important is that you feel ready and confident before jumping back into things.

To help keep your kneecap stable and prevent future problems, it's a good idea to keep doing exercises—even after you feel better. Activities like biking are great for building strong thigh muscles (quadriceps), which help protect your knee.

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