

# Patellar Tracking Dysfunction

Patellar tracking dysfunction happens whenever the kneecap slides slightly out of place when the leg straightens or bends. In the majority of cases, the kneecap will end up shifting too far toward the outside part of the leg, although there are a few individuals who will have it shift toward the inside part of the leg. Knee joints are complex hinges joining the lower part of the leg bones with that of the thighbone. The kneecap is secured in place to the front of the joint by the tendons along the top and bottom and with ligaments along the sides, and sheath around the kneecap called the retinaculum. A cartilage layer lines the underneath part of the kneecap, which helps it glide along the grooved part at the thighbone end.

The kneecap can rotate or shift off track if the groove isn't deep enough or if the cartilage becomes damaged. Tendons, ligaments or muscles that aren't tight enough or ones that are too tight can also lead to the kneecap becoming misaligned.

## Patellar Tracking Dysfunction Anatomy

The knee is one of the biggest and most complex of all joints found in the body. It joins the shin bone and the thigh bone together. The smaller bone running alongside of the tibia and the kneecap are the two other bones that complete the knee joint. Tendons keep the leg muscles and knee bones connected to enable the knee joint to move. Ligaments join all of the knee bones and deliver stability to the knee.

The anterior cruciate ligament is the one that prevents the femur from sliding backward along the tibia. The medial and lateral collateral ligaments make sure the femur doesn't slide from one side to the other. It is the posterior cruciate ligament that prevents the femur from sliding forward along the tibia.

## How to Treat Patellar Tracking Dysfunction:

### 1. Rest

Take some time away from those activities that are causing you pain in the first place. Allow the knee time to heal. Activities like squatting can further aggravate the site and cause additional swelling and pain.

### 2. Ice

Apply ice to the affected area for 5-10 minutes at a time three to five times per day. Make sure to wrap the ice in a thin towel before applying it to the skin so as to avoid getting an ice burn.

### 3. Therapy

Physical therapists may use taping techniques to stabilize the kneecap and help it move within its correct groove. Mobilisations to a stiff kneecap can also aid recovery as well as soft tissue massage to lengthen tight muscles around the knee. One particularly tight muscle tends to be the vastus lateralis which is the outer muscle of the front of the thigh, and this muscle can pull the kneecap to the outside.

### 4. Taping

The McConnell taping method is one way to tape the kneecap. It helps to hold the kneecap on the inside of the knee slightly, and the taping can also be used to tilt the kneecap. It is best done by a therapist or under the supervision of a therapist.

## 5. Strengthening and Stretching Exercises

As the pain in the knee declines, you can begin engaging in strengthening and stretching exercises. Strengthening the muscles in the thigh will help maintain stability in the kneecap. One such strengthening exercises are the “VMO” exercises (VMO = vastus medialis obliquus which is the inside muscle of the front of the thigh). This will help to pull the kneecap slightly more to the inside.



### Tips:

- Avoid engaging in activities that cause overloads and overusing the knee.
- Stretch the hips and legs well, both before and after doing any activities.
- Swimming and cycling are two great activities for you to keep the knee moving and healthy.
- Maintain an adequate weight to help reduce the amount of stress placed on the knee joint.
- Learn the best methods for participating in various sporting activities. Always wear the proper equipment and shoes for whatever sport you are participating in.
- Participate in certain types of muscle-conditioning exercises and stretches to help the knee regain strength and flexibility.
- Work with your therapist as they will likely solve the problem.