

Knee

Anterior Knee Pain: Osgood Schlatter Disease, Sinding Larsen Johansson, Patellar Tendonitis

- **Osgood Schlatter's Disease (Tibial Tubercle Apophysitis):**

- An injury to the tibial tubercle growth plate.
- The gymnast will have anterior (front) knee pain with tenderness to touch on the **shin bone (tibial tubercle)**.

- **Sinding Larsen Johansson (Inferior Pole of the Patella Apophysitis):**

- An injury to the inferior pole of the patella.
- The gymnast will have anterior knee pain with tenderness to touch on the **lower portion of the knee cap (patella)**.

- **Jumper's Knee (Patellar Tendonitis):**

- Inflammation or swelling to the patellar tendon.
- The gymnast will have anterior knee pain with tenderness to touch on the patellar tendon **between the knee cap (patella) and the shin bone (tibial tubercle)**.



How do you get this?

These injuries occur from repetitive jumping/landing, tight quadriceps muscles, improper landing mechanics, and repetitive pulling from the patellar tendon.

Physical Exam

You may have tenderness to palpation (pushing) on the above areas, decreased knee motion, pain with jumping or squatting, tight quadriceps muscles, and other exam findings.

Diagnostic Images

An x-ray can be used to evaluate the bone. When getting an x-ray the Medical Provider is looking to see if there is an avulsion fracture (a piece of the tibial tubercle or patella has “come off” or avulsed from the bone).

Treatment for anterior knee pain may include but is not limited to:

• Medication:

- Non-steroidal anti-inflammatory medication (NSAIDs) and/or lidocaine patches may be recommended by your Medical Provider.

• RICE:

- Rest (from impact/pounding at gymnastics)
- Ice (ice cup massage or ice pack)
- Compression (brace)
- Elevation

• A brace may be recommended such as:

- [Cho-Pat® strap](#)
- [Cho-Pat® two straps](#)
- [Pre-wrap, 3-4x and then roll](#)

• Physical Therapy should be included in your treatment and should focus on:

- Strength: Hip strength (abductor, ER), Glute in non-lordotic ranges, lower extremity strength (ankle, calf, hamstring, and quadriceps), core/abdominal strength exercises, pelvic tilt (to neutral position), and eventually progress to single leg squats/hops, return to running, and landing mechanics.
- Range of Motion (ROM): Quadriceps, hamstring, hip flexor ROM-iliopsoas and rectus.

- Modalities: Massage, e-stim, heat, ice, cold laser, ultrasound, compression boots.
- Other: Proprioception/balance, posture, and be sure to avoid painful exercises.

• Avoid painful activities such as:

- Jumping
- Pounding
- Impact
- Dismounting
- Landing

• If you are cleared by a Medical Provider at the time of diagnosis, you may be allowed to do the following:

- Non-impact skills at the gym are permitted.
- Uneven bars are permitted, but no landing.
- PT exercises
- Be sure you have a note from your Medical Provider explaining what you can and cannot do with your diagnosis.
- Once you are cleared to progress back to full gymnastics you should have a gradual progression back to all gymnastics. Keep in mind how long you have been out of gymnastics should be at least as long as it takes for you to progress back.

Injury Prevention

To prevent anterior knee pain, consider exercises that focus on increasing quadriceps/hip flexibility, strengthening hips, gluteal muscles, quadriceps, and hamstring muscles, increase proprioception/balance, and work on proper landing mechanics.