

# Sinding Larsen Johansson

## What Is SLJ Syndrome?

- SLJ is a **traction apophysitis** – a type of inflammation where the **patellar tendon pulls on the bottom tip of the kneecap (patella)**.
- It occurs during **growth spurts**, when bones grow faster than muscles and tendons can adapt.
- It's sometimes referred to as the **“little brother”** of Osgood-Schlatter disease, which affects the upper shinbone instead.

## Causes and Risk Factors

- **Repetitive stress** from jumping, sprinting, and kneeling.
- **Tight quadriceps** and **hamstring muscles** increasing tension on the knee.
- **Rapid growth** during adolescence.
- Poor footwear or playing on hard surfaces.

## Symptoms

- Pain at the **bottom of the kneecap**, especially during or after activity.
- Swelling or tenderness over the patellar tendon.
- Pain when squatting, jumping, or kneeling.

- A visible bump or thickening may develop in chronic cases.

## What It's NOT

- SLJ is **not a fracture** or **permanent damage**.
- It's **not caused by a single injury**, but by repeated stress over time.
- It is **self-limiting** — symptoms usually resolve once growth plates close.

Exercises are most effective when guided by a qualified professional, such as a physiotherapist, athletic therapist, or strength and conditioning coach. If you have any concerns, it's always a good idea to consult with an expert.

## Phase 1: Acute Phase - Pain Inflammation

### Goals:

- Reduce pain and inflammation
- Avoid aggravating activities

### Interventions:

- Rest from high-impact activity (jumping, sprinting, kneeling)
- Ice therapy (15–20 min, 2–3x/day)
- NSAIDs if prescribed
- Compression and elevation
- Activity modification (e.g., cycling instead of running)

### Can Progress to Phase 2 When:

- Pain at rest is gone
- Mild or no pain with walking and daily activities

### 1. Quadriceps Release (Foam Roller)

Duration: 3-5 minutes | Frequency: Daily

#### Preparation:

- Position yourself on foam roller as shown

#### Execution:

- Roll up and down on the foam roller to release the muscles on the front of the thigh



Start Position



If you feel a tender point, you can hold and allow the muscle to relax

### 2. Hamstring Release (Foam Roller)

Duration: 3-5 minutes | Frequency: Daily

#### Execution:

- Roll your the back of thigh as shown
- Stop on tight portions of the muscle to allow them to release.



Roll back of thigh on foam roll



Stop over tight areas and let them melt away



Continue rolling

### 3. Gluteus Release (Foam Roller)

Duration: 3-5 minutes | Frequency: Daily

#### Execution:

- Roll your buttock muscles out on the foam roll.
- Stop on tight portions of the muscle to allow them to release.



Roll buttock muscles on foam roll



Stop over tight muscles

### 4. Thigh Release (Foam Roller)

Duration: 3-5 minutes | Frequency: Daily

#### Execution:

- Position foam roll beneath hip, as shown.
- Roll along the foam, towards your knee.
- Whenever you find a sore spot, pause for as long as you can, to stretch this area out.

**Note:** This exercise is normally quite uncomfortable. If it gets to be too much, give yourself a break.



Start Position



Roll out along foam

### 5. Cycling Stationary Bike

Duration: 15-30 minutes | Frequency: 3-4x/week

Cycling Stationary Bike



Cycling Stationary Bike

## Phase 2: Stretching and Mobility

### Goals:

- Improve flexibility of surrounding muscle groups (quads, hamstrings, calves)
- Decrease tension on the patella

### Key Stretches:

- **Quadriceps stretch** (standing or prone)
- **Hamstring stretch**
- **IT band stretch**
- **Calf stretch**

### Can Progress to Phase 3 When:

- Stretching can be done **without pain**
- Knee remains pain-free during daily activities and light stretching
- Full range of motion (ROM) in the knee without discomfort

### 1. Quads Stretch (Wall)

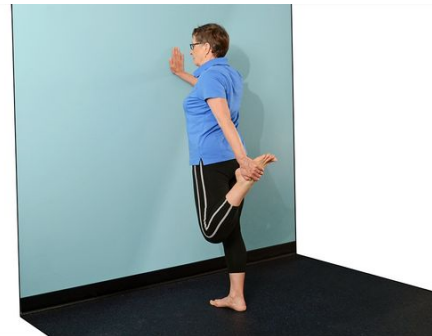
Sets: 3 | Duration: 30-90sec | Frequency: Daily

#### Preparation:

- Stand tall with one hand on wall
- Grab your foot with the other hand

#### Execution:

- Pull your heel towards your buttock to stretch the front of the thigh



Avoid arching through the lower back, keep tailbone tucked

### 2. Quad Stretch Prone

Sets: 3 | Duration: 30-90 sec | Frequency: Daily

#### Preparation:

- Lie on stomach
- Hold ankle with hand

#### Execution:

- Gently pull ankle toward the buttock
- You should feel a stretch in the front of your thigh



Gently pull ankle toward the buttock

### 3. Hamstring Stretch (Stool)

Sets: 3 | Duration: 30-90 sec | Frequency: Daily

#### Preparation:

- Child stands tall with leg straight and heel on a stool

#### Execution

- Child stretches the back of the leg by bending forwards
- Leg stays straight and back stays flat as the child bends forward



Heel on stool and leg straight



Lean forward while keeping your back straight

### 4. Hamstring Stretch

Sets: 3 | Duration: 30-90 sec | Frequency: Daily

#### Preparation:

- Sit on the floor, one leg out front, other leg bent with foot tucked into upper thigh

#### Execution:

- Bending at your hips and keeping your back straight, reach gently over front leg to feel a stretch in the back of your thigh



Sitting tall, lean forward from the hips, keeping lower back flat

### 5. Gluteus Stretch (Wall)

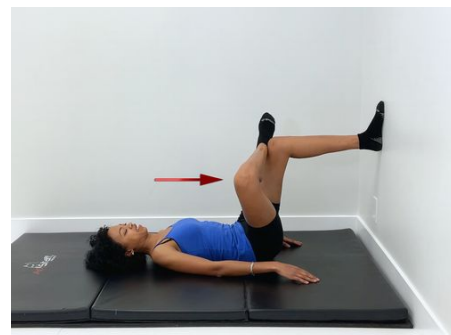
Sets: 3 | Duration: 30-90 sec | Frequency: Daily

#### Preparation:

- Lie on back, knees and hips bent, feet flat on wall

#### Execution:

- Rest ankle on top of opposite knee
- The closer you are to the wall, the more intense the stretch will be
- You can push your knee toward wall for a more intense stretch



Cross ankle over leg. Push knee toward wall for a more intense stretch

## 6. Seated Twist

Sets: 3 | Duration: 30-90 sec | Frequency: Daily

### Execution:

- Sitting tall grounded through sit bones
- Bring one leg up and cross it over the other
- Reach opposite arm around the leg
- Twist through the upper back



Cross one leg over



Twist through upper back



Back is tall grounded firmly through sit bones



Inhale grow tall, exhale twist further

## 7. Calf Stretch (Wall)

Sets: 3 | Duration: 30-90 sec | Frequency: Daily

### Preparation:

- Stand close to a wall
- Place bottom of foot up on the wall
- Heel is on the floor

### Execution:

- Lean forward until you feel a stretch in your upper calf
- Bend knee while leaning forward to feel a stretch in your lower calf



Toes against wall, heel on floor



Lean forward with knee straight to stretch upper calf



Bend knee to stretch lower calf

## 8. Cycling Stationary Bike

Duration: 20-40 minutes | Frequency: 3-4x/week

Cycling Stationary Bike



Cycling Stationary Bike

## Phase 3: Strengthening

### Goals:

- Strengthen quads, hamstrings, glutes, and core
- Improve stability around the knee

### Key Exercises:

- Straight leg raises
- Clamshells
- Wall sits (short duration to start)
- Mini squats (pain-free range)
- Step-ups
- Glute bridges
- Continue stretches from Phase 1-2

**Dosage:** 2–3 sets of 10–15 reps, 3–4x/week

### Can Progress to Phase 4 When:

- Exercises can be completed **without pain**
- Good control during strength and balance tasks
- Knee is pain-free with stairs, walking, and light jogging

### 1. Straight Leg Raise (Block)

**Sets:** 3 | **Reps:** 10-15 | **Frequency:** 3-4x/week

#### Preparation:

- Sit on the floor with your legs straight out in front of you
- Place an object between your legs

#### Execution:

- Lift your leg straight up and over the object
- Lower leg on the other side of the object
- Lift leg back up and over the object back to the start position
- Repeat



Start Position



Lift leg straight up and over object



Lower leg on the other side of the object

### 2. Clamshell

**Sets:** 3 | **Reps:** 10-15 | **Frequency:** 3-4x/week

#### Preparation:

- Lie on your side with your hips at 45 degrees and your knees at 90 degrees
- Position your hand on your front hip and buttock muscles

#### Execution:

- Lift your top knee keeping your feet together
- Keep your pelvis stable while you lift your leg



Start position



Contract buttock muscle



Lift top knee up (open like a clam) keeping your pelvis stable



### 3. Wall Sit

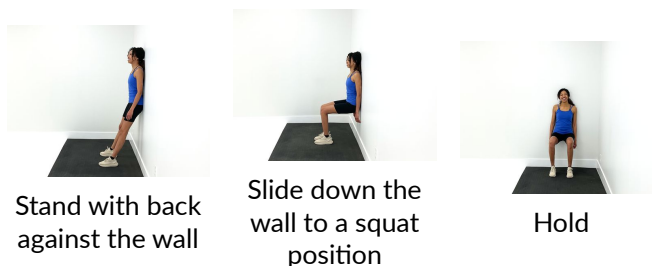
Sets: 3 | Hold: 20-60 sec | Frequency: 3-4x/week

#### Preparation:

- Stand with back against the wall
- Position feet away from the wall

#### Execution:

- Slide down the wall in a squat position
- Squat as far as you can and hold



### 4. Squat | Hand Support (Counter)

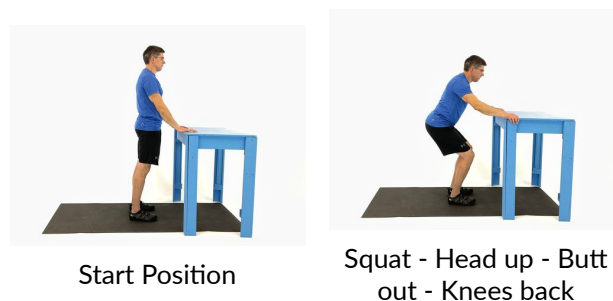
Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

#### Preparation:

- Stand with good posture
- Feet shoulder width apart, knees slightly bent
- Rest hands on chair or counter for support

#### Execution:

- Initiate squat by bending at the hip
- Squat as low as you can under control
- Rise up straight using the back of your hips



### 5. Step Up

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

#### Preparation:

- Stand in front of a box or step

#### Execution:

- Step up onto the box
- Lower down in a controlled manner
- Repeat, alternating legs



### 6. Bridge | Arms Flat

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

#### Preparation:

- Lie flat on your back with your arms straight beside you
- Bend knees with your feet flat on the floor

#### Execution:

- Lift your hips up in the air to make a bridge
- Lower down in a controlled manner



## 7. Cycling Stationary Bike

**Duration:** 30-60 minutes

**Frequency:** 3-4x/week

Cycling Stationary Bike



Cycling Stationary Bike

## Phase 4: Functional and Return to Sport Training

### Goals:

- Gradual return to running, jumping, and sport-specific drills
- Prevent recurrence of symptoms

### Activities:

- Jogging → Running → Sprinting (progress gradually)
- Agility drills (e.g., lateral movements, ladder drills)
- Jumping/landing mechanics
- Sport-specific practice (non-contact to full play)
- Continue stretches from Phase 1 and two

### Return to Sport When:

- Full strength and flexibility compared to the other leg
- No pain with running, jumping, or sport-specific movements
- No tenderness at the Patella
- Cleared by a physician or physiotherapist (if needed)

### 1. Graduated Return to Jogging

**Graduated return to running suggested program:** Week 1:  
(start and finish with 5 min walk)

- 4x (1' run / 1' walk)
- 5x (1' run / 1' walk)
- 6x (1' run / 1' walk)
- 8x (1' run / 1' walk)

Week 2: (start and finish with 5 min walk)

- 10x (1' run / 1' walk)
- 11x (1' run / 1' walk)
- 13x (1' run / 1' walk)
- 4x (2' run / 1' walk)

Week 3: (start and finish with 5 min walk)

- 4x (2' run / 1' walk)
- 5x (2' run / 1' walk)
- 6x (2' run / 1' walk)
- 7x (2' run / 1' walk)



Graduated Return to Jogging

## 2. Clamshell (Band)

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

### Preparation:

- Lie on your side with your hips at 45° and your knees at 90°
- Band around you knees

### Execution:

- Open your top knee up against the resistance of the band keeping your feet together
- Lower knee back down with control



Hips slightly bent, knees bent to 90 degrees



Open top knee up like a clamshell

## 3. Bridge + LE Stabilization (Band)

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

### Preparation:

- Lie flat on your back
- Bend knees with your feet flat on the floor
- Put a resistive band around your knees

### Execution:

- Push your knees out against the belt around your legs
- Lift your hips up in the air to make a bridge
- Lower down in a controlled manner



Start Position, band above knees



Lift hips off the floor keeping your knees apart

## 4. Squat - add in jump when able

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

### Preparation:

- Stand with good posture, feet are shoulder width apart

### Execution:

- Perform a squat by bending at the hip
- Stop at the point where you cannot keep your lower back flat
- Rise up by straightening at the hip



Feet shoulder width apart



Squat down keeping your knees apart



Rise up using your hips



Bend at your hips



Continue to lower keeping back flat and pelvis in neutral

## 5. Single Leg Squat

Sets: 3 | Reps: 10-15 | Intensity: 3-4x/week

### Preparation:

- Stand with good posture on one leg

### Execution:

- Begin to squat with one leg by bending at the hip and knee
- Rise up by straightening at the hip



Start position



Squat - Keep opposite leg knee bent



Rise up using your hip



Keep knee in line with your toes

## 6. Lateral Lunge (Bosu)

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

### Preparation:

- Stand with good posture

### Execution:

- Lunge to the side onto the blue side of a Bosu
- Keep your hip and knee aligned with your middle toe



Start Position



Keep hip and knee inline with foot

## 7. Lateral Forward Bounding

Sets: 3 | Reps: 10-15 | Frequency: 3-4x/week

### Preparation:

- Stand balancing on one foot

### Execution:

- Perform a small single leg squat
- Take a small hop forward and to the side onto the other foot
- Absorb the shock by bending at the hip, knee and ankle (triple flexion)
- Immediately hop forward and to the side back onto other foot with control



Start position



Load and hop forward and to the side onto the other foot



Quickly hop back onto the other foot continuing forward and to the side



Stay in control while increasing your speed and distance

## Sport Specific Training

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### Activities:

- Jogging → Running → Sprinting (progress gradually)
- Agility drills (e.g., lateral movements, ladder drills)
- Jumping/landing mechanics
- Sport-specific practice (non-contact to full play)
- Continue stretches from Phase 1 and 2