

# Iselin's Apophysitis

**Iselin's apophysitis** is a common overuse injury in growing children, typically between the ages of 8 and 13. It involves inflammation of the **apophysis** (a growth plate) at the **base of the 5th metatarsal bone** in the foot, where the **peroneus brevis tendon** attaches.

## Causes

- Repetitive stress or traction on the apophysis due to activities like running, jumping, and cutting (especially in sports like soccer, basketball, and dance).
- Most common during growth spurts, when bones grow faster than muscles and tendons can adapt.

## Symptoms

- Pain and tenderness on the outside of the foot (at the base of the 5th metatarsal).
- Swelling and warmth over the area.
- Pain worsens with physical activity and improves with rest.
- Limping or difficulty bearing weight on the affected foot.

## Diagnosis

- Clinical evaluation based on symptoms and activity history.
- X-rays may be used to rule out fractures or confirm the open apophysis.

## **Prevention Tips**

- Avoid overtraining and ensure adequate rest between practices.
- Wear proper footwear for sport and surface.
- Include regular flexibility and strengthening exercises in training.
- Monitor growth spurts closely, as they increase the risk of apophyseal injuries.

**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 (1–2 weeks)

**Goals:** Pain relief, reduce inflammation, protect the foot.

- **Rest** from aggravating activities (sports, running).
- **Ice** the affected area for 15–20 minutes, 2–3 times/day.
- **NSAIDs** (e.g., ibuprofen) as advised by a doctor to reduce pain and swelling.
- **Footwear:** Supportive shoes or orthotics to reduce tension on the tendon.
- **Immobilization** (optional): In severe cases, a walking boot may be used temporarily.

### 1. Calf Stretch (Chair)

**Sets:** 3 | **Reps:** 30sec | **Frequency:** Daily

#### Preparation:

- Child holds a stable chair or counter in a lunge position as shown

#### Execution:

- Child leans forward bending their front knee
- Child keeps their back leg straight with the heel on ground
- Repeat with knee bent



Stretch the back leg,  
back heel on the floor,  
keeping knee straight



Knee Bent

### 2. Calf Stretch (Wall)

**Sets:** 3 | **Duration:** 30 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

### 3. Peroneal Release (Ball)

Duration: 2-3 mins | Frequency: Daily

#### Preparation:

- Kneel on one knee
- Hold a ball on the outside of your calf as shown

#### Execution:

- Roll the ball up and down the outside of your calf



Roll a firm ball up and down the outside of your calf

### 4. Peroneal Release (Ball) if tolerated

Duration: 1-2 minutes | Frequency: Daily

#### Preparation:

- Sit with the outside of your calf on a firm ball

#### Execution:

- Roll the outside of your calf up and down on the ball
- Stop on tight portions of the calf muscle to allow them to release



Roll the outside of your calf up and down on the ball

## Phase 2: Subacute Phase (2–4 weeks)

**Goals:** Restore mobility, begin gentle strengthening, avoid re-irritation.

- **Stretching:**

- Gentle calf stretches (gastrocnemius and soleus).
- Peroneal muscle release (side of the lower leg).

- **Strengthening:**

- Toe curls with a towel.
- Ankle resistance exercises using a resistance band (plantarflexion, dorsiflexion, inversion, and eversion).

- **Balance exercises:**

- Single-leg stand on a firm surface progressing to a soft surface.

### 1. Calf Stretch (Chair)

**Sets:** 3 | **Reps:** 30sec | **Frequency:** Daily

**Preparation:**

- Child holds a stable chair or counter in a lunge position as shown

**Execution:**

- Child leans forward bending their front knee
- Child keeps their back leg straight with the heel on ground
- Repeat with knee bent



Stretch the back leg,  
back heel on the floor,  
keeping knee straight



Knee Bent

### 2. Calf Stretch (Wall)

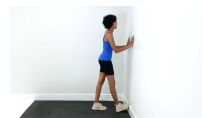
**Sets:** 3 | **Duration:** 30 sec | **Frequency:** daily

**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

### 3. Peroneal Release (Ball)

Duration: 2-3 mins | Frequency: Daily

#### Preparation:

- Kneel on one knee
- Hold a ball on the outside of your calf as shown

#### Execution:

- Roll the ball up and down the outside of your calf



Roll a firm ball up and down the outside of your calf

### 4. Peroneal Release (Ball) if tolerated

Duration: 1-2 minutes | Frequency: Daily

#### Preparation:

- Sit with the outside of your calf on a firm ball

#### Execution:

- Roll the outside of your calf up and down on the ball
- Stop on tight portions of the calf muscle to allow them to release



Roll the outside of your calf up and down on the ball

### 5. Toe-Towel Pick-Ups

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

#### Preparation:

- Sit with towel under your foot

#### Execution:

- Use your foot to pick up the towel



Use the small muscles in the foot to grab the towel



Now pick up the towel

## 6. Foot Scrunching (Towel)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Sit with foot on towel

### Execution:

- Scrunch the towel with your toes



Sit with foot on towel



Scrunch the towel with your toes

## 7. Ankle Dorsiflexion Concentric (Band)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Sit with your leg straight in front of you

### Execution:

- Pull your toes towards your nose, bending at the ankle



Attach band over the top of your foot



Toes to nose

## 8. Ankle Inversion Concentric (Band)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Sit with your leg straight in front of you
- Attach a band around your top foot pulling from the side as shown

### Execution:

- Bend your foot in against the resistance
- Do not move your leg while you are bending your ankle
- Relax your foot back to the start position in a controlled manner



Start position, band around foot



Turn foot inward without rolling your leg

## 9. Ankle Eversion Concentric (Band)

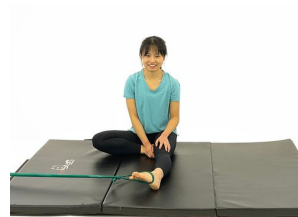
Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Sit with your leg straight in front of you
- Attach a band around your top foot pulling from the other side as shown

### Execution:

- Bend your foot to the side against the resistance
- Do not move your leg while you are bending your ankle
- Relax your foot back to the start position in a controlled manner



Start position, band around foot



Turn foot outward without rolling your leg

## 10. Single Leg Balance

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

### Execution

- Encourage your child to balance on one leg



Single leg balance



Other side

## 11. Single Leg Balance (Foam) If able

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

### Preparation:

- Child stands on foam

### Execution:

- Encourage your child to stand on one leg



Balance on one leg

## 12. Calf Raise | Bilateral (Chair)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Child holds a stable chair or counter

### Execution:

- Encourage your child to lift their heels, rising up on their toes



Holding chair for support



Raise heels



### 13. Calf Raise | Unilateral (Chair) If able

Sets: 3 | Reps: 5-10 | Frequency: 3-4x/week

#### Preparation:

- Child holds a stable chair or counter standing on one leg

#### Execution:

- Encourage your child to lift their heel, rising up on their toe on one leg



Standing on one leg  
holding chair for support



Single leg heel raise

## Phase 3: Return to Activity (4–6+ weeks)

**Goals:** Gradual return to full activity with proper mechanics and no pain.

- **Activity modification:** Gradually increase sport-specific activities.
- **Continue strengthening and stretching.**
- **Proper footwear** and consider **orthotics** for long-term support.

Emphasize **dynamic warm-ups** and **cooldowns** before/after activity.

### 1. Peroneal Release (Ball)

Sets: 3

Duration: 2-3 min

Frequency: 3-4x/week

#### Preparation:

- Kneel on one knee
- Hold a ball on the outside of your calf as shown

#### Execution:

- Roll the ball up and down the outside of your calf



Roll a firm ball up and down the outside of your calf

### 2. Peroneal Release (Ball)

Sets: 3

Duration: 1-2 min

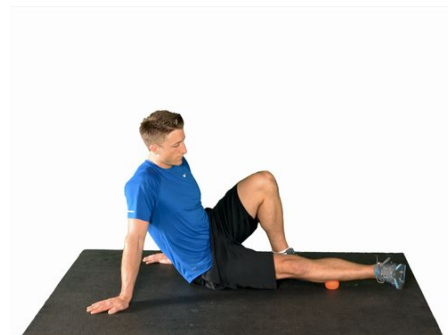
Frequency: 3-4x/week

#### Preparation:

- Sit with the outside of your calf on a firm ball

#### Execution:

- Roll the outside of your calf up and down on the ball
- Stop on tight portions of the calf muscle to allow them to release



Roll the outside of your calf up and down on the ball

### 3. Calf Stretch (Chair)

Sets: 3 | Duration: 30sec | Frequency: 3-4x/week

#### Preparation:

- Child holds a stable chair or counter in a lunge position as shown

#### Execution:

- Child leans forward bending their front knee
- Child keeps their back leg straight with the heel on ground
- Repeat with knee bent



Stretch the back leg,  
back heel on the floor,  
keeping knee straight



Knee Bent

### 4. Calf Stretch (Wall)

Sets: 3 | Duration: 30sec | Frequency: 3-4x/week

#### 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

### 5. Foot Scrunching (Towel)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

#### Preparation:

- Sit with foot on towel

#### Execution:

- Scrunch the towel with your toes



Sit with foot on towel



Scrunch the towel with  
your toes

## 6. Ankle Figure 8's | Eversion (Band)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Sit with your leg straight out in front of you
- Attach a band around your foot pulling from the other side as shown

### Execution:

- Trace figure 8's with your big toe with the band pulling from across your body
- Do not move your leg while you are bending your ankle



Band around foot, trace figure 8's with your foot



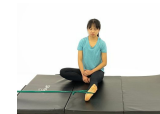
Make 8's as big as you can without pain



Go slow and controlled



Repeat in opposite direction



## 7. Ankle Figure 8's | Inversion (Band)

### Preparation:

- Sit with one leg straight in front of you
- Attach a band around your foot pulling from the side as shown

### Execution:

- Trace figure 8's with your big toe with the band pulling from the side
- Do not move your leg while you are bending your ankle



Band around foot, trace figure 8's with your foot



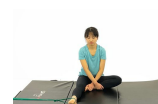
Make 8's as big as you can without pain



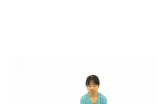
Go slow



Maintain control



Repeat in opposite direction



## 8. Calf Raise | Bilateral (Stool, Chair)

Sets: 3 | Reps: 8-12 | Frequency: 3-4x/week

### Preparation:

- Child stands on a stool holding a stable chair or counter
- Child's heels are off the edge of the stool

### Execution:

- Encourage your child to lift their heels, rising up on their toes



Heels off the edge of stool, holding chair or counter for support



Child lifts heels, rising onto the balls of the feet

## 9. Calf Raise | Unilateral (Stool, Chair)

Sets: 3 | Reps: 5-10 | Frequency: 3-4x/week

### Preparation:

- Child stands on a stool holding a stable chair or counter
- Child's heels are off the edge of the stool

### Execution:

- Encourage your child to lift their heel, rising up on their toe on one leg



Heels off the edge of stool, holding chair or counter for support



Child lifts heel using one leg only

## 10. Single Leg Balance (Foam)

Sets: 3 | Duration: 30sec | Frequency: 3-4x/week

### Preparation:

- Child stands on foam

### Execution:

- Encourage your child to stand on one leg



Balance on one leg