

## Pelvis and Hip Apophysitis

**Pelvis and Hip Apophysitis:** Apophysitis is inflammation and irritation of a growth plate (apophysis) where tendons attach to bone. In the hip and pelvis, this often affects sites such as the anterior superior iliac spine (ASIS), anterior inferior iliac spine (AIIIS), or iliac crest in adolescents engaged in running, sprinting, or kicking sports. It is caused by repetitive traction forces during growth spurts, when the apophysis is weaker than surrounding tendons.

### Key Rehabilitation Points:

- **Activity modification** to reduce stress on the irritated growth plate (limit sprinting, kicking, cutting).
- **Pain and inflammation control** with ice and relative rest from aggravating activity.
- **Restore flexibility** of tight muscle groups (hip flexors, quadriceps, hamstrings).
- **Gradual strengthening** of surrounding hip and core muscles to offload the apophysis.
- **Educate on load management** during growth phases to prevent recurrence.

### Exercise Principles:

- **Mobility Work:** Gentle stretching of hip flexors, quadriceps, hamstrings, and gluteals – pain-free range only.
- **Progressive Strengthening:** Core stabilization, glute activation (bridges, clamshells), and controlled hip/knee strengthening.

- **Neuromuscular Training:** Balance and coordination drills to improve mechanics during running and cutting.
- **Gradual Return to Sport:** Begin with low-impact activity (cycling, swimming), progress to running and sport-specific drills once pain-free.

**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.**

## Level 1

Potential Inclusion Criteria:

- Tenderness at tendon insertion
- Pain that gets worse with activities (Running or Jumping)

Goals:

- Improve tolerance to tissue stretching
- Regain/ Maintain full Knee and Hip ROM

Requirements For Progression:

- 10-14 days of adherence
- Significant decrease in pain/ discomfort

Aerobic Exercise:

Avoid Running, Jumping or any exercise that provokes symptoms. You can continue exercise with non-weight bearing activities such as swimming or cycling if tolerated.

### 1. Knee Flexion Isometric

Sets: 2-3 | Reps: 5-10 | Hold: 5-10 Seconds | Frequency: Daily

Preparation:

- Lie flat on your back with your knee slightly bent
- Point your toes straight ahead

Execution:

- Tighten the muscles on the back of your thigh by pulling your heel down into the floor or table
- Relax



Start Position



Pull Heel Down

### 2. Knee Flexion Isometric (Ball or Box)

Sets: 2-3 | Reps: 5-10 | Hold: 5-10 seconds | Frequency: daily

Preparation:

- Sit with good posture, knees at 90°
- Have something behind your heel, like a ball or box

Execution:

- Press heel into ball or box - there should be little or no movement



Press heel into ball or box

### 3. Bridge | Arms Flat

Sets: 2-3 | Reps: 8-12 | Frequency: Daily

#### Preparation:

- Lie flat on your back with your arms straight beside you
- Bend knees up so that your feet are flat

#### Execution:

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



Start Position



Lift hips up

### 4. Hamstring Release (Foam Roller)

Duration: 1-5 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

### 5. Quadriceps Release (Foam Roller)

Duration: 1-5 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

### 6. Gluteus Release (Foam Roller)

Duration: 1-5 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

## 7. Single Leg Balance

Sets: 2-3

Reps: 20-30 Seconds

Frequency: Daily

### Preparation:

- Stand next to a wall, counter or chair if needed

### Execution:

- Stand on one leg



Balance on one leg

## Stage 2

When Can I Start Level 2?

- Completed Level 1 Goals
- Improved tissue tolerance with full knee and hip ROM

Goals:

- Improved tolerance to tissue stretching
- Increased tolerance to light load and strengthening

Aerobic Exercise:

- Avoid Running, Jumping or any exercise that provokes symptoms. Continue exercise with non-weight bearing activities such as swimming or cycling if tolerated.

### 1. Hamstring Release (Foam Roller)

Duration: 1-5 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

### 2. Quadriceps Release (Foam Roller)

Duration: 1-5 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

### 3. Gluteus Release (Foam Roller)

Duration: 1-5 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. Hamstring Stretch

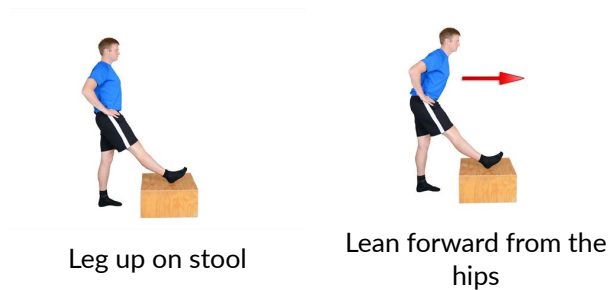
Sets: 2-3 | Rest: 30-45 sec | Frequency: Daily

##### Preparation:

- Stand with one leg on a medium sized stool as shown

##### Execution:

- Keeping your back straight, slowly lean forwards from the hips



#### 5. Iliopsoas & Quad Stretch

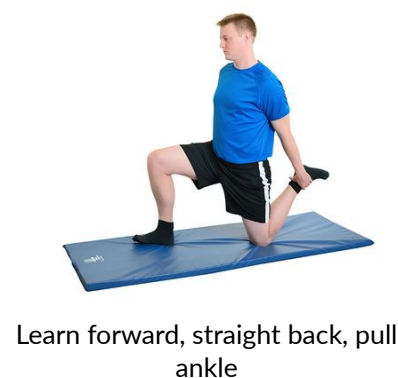
Sets: 2-3 | Hold: 30-45 sec | Frequency: daily

##### Preparation:

- Kneel on the ground in a lunge position, uninvolved leg forwards
- Rotate your pelvis slightly backward, flattening your lower back

##### Execution:

- Lean forwards, while maintaining straight posture and keeping your head up
- Reach back and pull your ankle towards your buttock



#### 6. Gluteus Stretch (Wall)

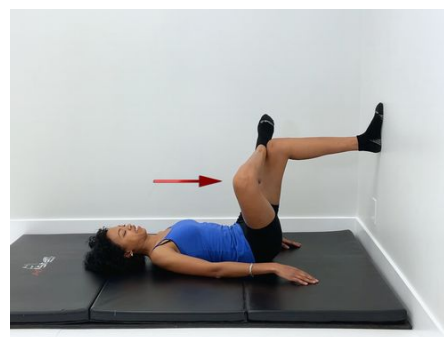
Sets: 2-3 | Hold: 30-45sec | Frequency: daily

##### 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

## 7. Leg Cycling

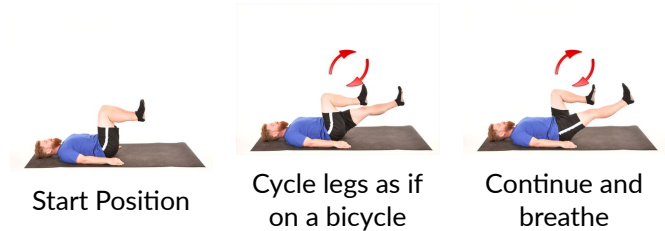
Sets: 2-3 | Duration: 20-30 sec | Frequency: daily

### Preparation:

- Lie on your back, hips and knees at 90 degrees as shown

### Execution:

- Cycle legs as if on a bicycle



## 8. Knee Flexion (Band)

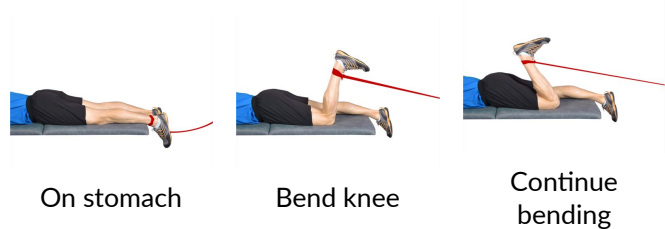
Sets: 2-3 | Reps: 8-12 | Frequency: Daily

### Preparation:

- Lay flat on your stomach with your legs straight
- Attach a band to foot

### Execution:

- Lift your heel up towards your buttocks, bending your knee against resistance



## 9. Knee Extension Concentric (Band)

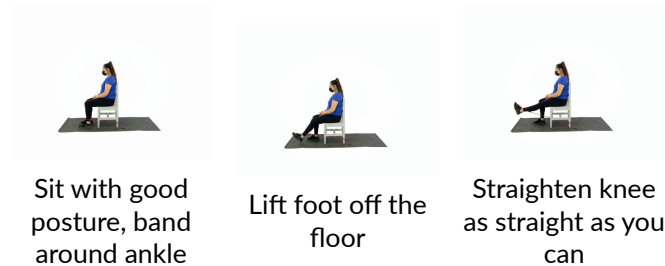
Sets: 2-3 | Reps: 8-12 | Frequency: Daily

### Preparation:

- Sit in a chair with good posture with a band around your ankle

### Execution:

- Straighten your knee
- Return your foot to the floor with control



## 10. Bridge | Arms Flat

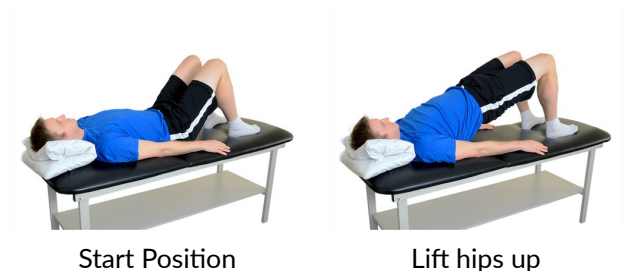
Sets: 2-3 | Reps: 8-12 | Frequency: Daily

### Preparation:

- Lie flat on your back with your arms straight beside you
- Bend knees up so that your feet are flat

### Execution:

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





## 11. Front Squat Form

Sets: 2-3 | Reps: 8-12 | Frequency: Daily

### Preparation:

- Stand with good posture, feet shoulder width apart
- Cross arms at shoulder height as shown

### Execution:

- Perform a squat by bending at the hip
- Rise up by straightening at the hip



Start  
Position



Squat -  
Knees  
aligned over  
toes



Side view



Squat -  
Straight  
back, knees  
aligned over  
toes

## 12. Monster Walk (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: Daily

### Preparation:

- Attach tubing to ankles as shown
- Wide stance, knees and hips slightly bent

### Execution:

- Perform a partial squat
- Walk forward, keeping legs wide
- Keep tension on tubing throughout the whole exercise



Wide stance



Walk forward,  
keeping legs  
wide



Walk wide -  
Keep tubing  
under tension

## Stage 3

When Can I Start Level 3?

- Completed Level 2 Goals
- Improved tissue tolerance to light loads

Goals:

- Increase tolerance to load and able to tolerate full weight bearing activities without any pain or symptoms

Aerobic Exercise:

- Return to running or jumping activities as long as there is no pain or symptoms present before or during activity. Continue swimming and cycling.

### 1. Hamstring Release (Foam Roller)

**Duration:** 1-5 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

### 2. Quadriceps Release (Foam Roller)

**Duration:** 1-5 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

### 3. Gluteus Release (Foam Roller)

**Duration:** 1-5 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. Hamstring Stretch

Sets: 2-3 | Rest: 30-45 sec | Frequency: Daily

##### Preparation:

- Stand with one leg on a medium sized stool as shown

##### Execution:

- Keeping your back straight, slowly lean forwards from the hips



#### 5. Iliopsoas & Quad Stretch

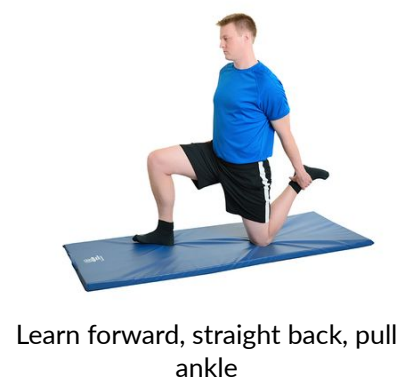
Sets: 2-3 | Hold: 30-45 sec | Frequency: daily

##### Preparation:

- Kneel on the ground in a lunge position, uninvolved leg forwards
- Rotate your pelvis slightly backward, flattening your lower back

##### Execution:

- Lean forwards, while maintaining straight posture and keeping your head up
- Reach back and pull your ankle towards your buttock



#### 6. Gluteus Stretch (Wall)

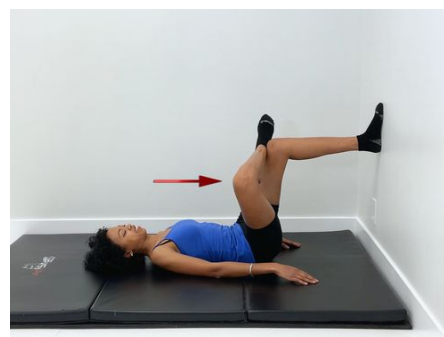
Sets: 2-3 | Hold: 30-45sec | Frequency: daily

##### 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

## 7. Front Plank | Hands and Feet

Sets: 2-3

Duration: 30-45sec

Frequency: Alternate days

### Preparation:

- Lie flat on the floor

### Execution:

- Rise up on hands and feet, holding your body flat as a plank



Plank hands and feet

## 8. Monster Walk (Band)

Sets: 2-3

Reps: 8-12

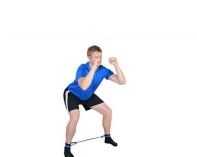
Frequency: Alternate days

### Preparation:

- Attach tubing to ankles as shown
- Wide stance, knees and hips slightly bent

### Execution:

- Perform a partial squat
- Walk forward, keeping legs wide
- Keep tension on tubing throughout the whole exercise



Wide stance



Walk forward,  
keeping legs  
wide



Walk wide -  
Keep tubing  
under tension

## 9. Forward Lunge

Sets: 2-3

Reps: 8-12

Frequency: Alternate days

### Preparation:

- Stand with good posture

### Execution:

- Lunge forward
- Keep back shoulder, hip and knee in line
- Rise up and return to the start position
- Repeat



Stand with good  
posture



Lunge forward



Return to  
standing and  
repeat

## 10. Reverse Lunge

Sets: 2-3 | Reps: 8-12 | Frequency: Alternate days

### Preparation:

- Stand with good posture

### Execution:

- Lunge backwards keeping your back knee in line with your hip and shoulder
- Return to start position
- Repeat

### NOTE:

- Keep your front knee aligned with your middle toe



Stand with good posture



Lunge backward



Return to standing and repeat

## 11. Squat (Dumbbells)

Sets: 2-3 | Reps: 8-12 | Frequency: Alternate Days

### Preparation:

- Stand with good posture, feet shoulder width apart
- Free weight in either hand

### Execution:

- Initiate squat by bending at the hips
- Rise up at the hips



Front view



Squat -  
Knees  
aligned over  
toes



Side view



Squat -  
Knees over  
toes, straight  
back

## 12. Step Down Touch

Sets: 2-3 | Reps: 8-12 | Frequency: Alternate Days

### Preparation:

- Stand on a step or box

### Execution:

- Lower your leg down as far as you can under control until your heel slightly touches the ground
- Rise up in a controlled manner



Stand on a box



Touch heel to floor -  
Maintain control