

# Hip Osteoarthritis

Osteoarthritis (OA) is a common condition that affects the cartilage in joints, causing pain, stiffness, and reduced mobility. Exercise is crucial in managing OA, as it strengthens muscles, supports the joint, and helps hydrate the cartilage.

Important Exercise Guidelines:

1. **Alignment:** Ensure proper joint alignment to avoid unnecessary strain and improve muscle activation.
2. **Pain vs. Harm:** It's normal to experience some soreness, but pain should stay within a 0-5/10 range, and soreness should settle within 24 hours.
3. **Progressive Loading:** Gradually increase the intensity of exercises to continue improving strength. Typically, significant changes in strength take 4-6 weeks.

Aim to start with 2-3 exercise sessions per week, gradually progressing to 4-5 sessions, and adjust intensity based on your progress.

**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 Function

Potential inclusion criteria:

- Able to walk 0 to 15 min
- Able to sit to stand from chair without use of hands 0-10 times in 1 minute
- Slow walking speed with high reliance on gait aids
- Irritability - high

### Goals

- Low impact aerobic exercise 150 min/week
- Daily stretching 2 x 20 sec/stretch
- Strength 2-3 x/week, 2-3 sets of 8-12 reps

Low impact aerobic exercise:

Ideas: walking, biking, swimming, water walking or aerobics, elliptical, tai chi

### 1. Heel Slides

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Lie on back with knee straight

#### Execution:

- Keeping the heel in contact with the floor, slowly slide heel up toward buttocks
- Relax back to the start position.



Start Position



Slide heel up

### 2. Quadriceps Stretch (Chair)

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand tall with foot on the seat of a chair

#### Execution:

- Push your hip forwards and feel a stretch in the front of your thigh



Push your hip forward and avoid arching through lower back



Maintain straight alignment, thighs are parallel

### 3. Gastrocs Stretch (Wall)

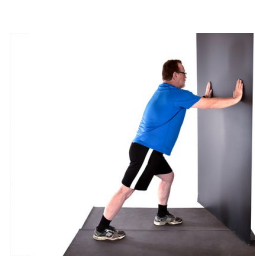
Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand in front of a wall with one leg forward and one leg back

#### Execution:

- Keeping your back leg straight and heel on ground, lean forward bending your front knee



Eyes and head forward, hands relaxed on wall, belly button pulled in



Bend elbows to move closer to the wall to stretch the back leg, keep front knee behind toes

### 4. Hamstring Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit on the edge of a chair

#### Execution:

- Put one leg out front
- Keep your knee locked
- Lean forward from the hips
- You should feel a stretch in the back of your leg



Eyes and head forward, hands resting on thigh, toes toward the ceiling



Hinge at hips to feel stretch in the back of the thigh

### 5. Piriformis Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit with good posture
- Have one knee crossed over the other as shown

#### Execution:

- Bring knee towards opposite shoulder



Start Position



Keep good posture



Bring knee towards opposite shoulder

## 6. Hip Adductor Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

### Preparation:

- Begin in the side lunge position as shown
- Your leg should be out to the side and slightly behind you, both feet flat on the floor

### Execution:

- Keeping your back straight, lunge deeper to the side until you feel a stretch along the inside of your leg.



Lunge to side - You should feel a stretch on the inside of your leg

## 7. Partial Wall Squat | Isometric

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

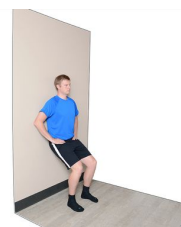
- Stand with back against wall

### Execution:

- Perform a squatting motion, sliding down the wall
- Stop at desired depth and hold



Back against wall , feet one stride length from wall



Partial squat, hold wall

## 8. Hip Extension (Countertop, Band)

### Preparation:

- Stand with hands on countertop, holding a band
- Loop the band around your foot

### Execution:

- Press your leg down and back against the resistance of the band



Band looped around foot, hands holding countertop



Press band down and back



Leg finishes straight and slightly behind you body



## 9. Clamshell

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Lie on your side with your hips at 45 degrees and your knees bent to 90 degrees.
- Your heels are in line with your buttocks.
- Tilt your hips forward towards the ground slightly.

### Execution:

- Lift your knees apart (like a clam opening)



Start position



Lift knees apart

### 10. Knee Flexion (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Attach band to ankle
- Sit on a chair with good posture

#### Execution:

- Curl knee against resistance



Start position

Curl knee against resistance

### 11. Knee Extension (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Attach band to ankle
- Sit in a chair with good posture

#### Execution:

- Straighten knee against resistance



Sit in a chair with good posture

Straighten knee against resistance

### 12. Calf Raise | Hand Support (Countertop)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Standing in front of a countertop
- Place your hands on the countertop

#### Execution:

- Stand on your tip toes, lifting your heels as high as you can



Holding countertop for support

Lift heels

Standing on tip toes, Lower back down with control

### 13. Bridge

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Lie on your back with arms resting at your sides, palms up
- Bend hips and knees, placing feet on flat surface
- Pull belly button in

#### Execution:

- Lift your hips off the surface to make a bridge
- Do not arch your back
- Keep belly button pulled and squeeze glutes during movement
- Lower slowly



Lie on back, arms resting at your side, palms up; Bend hips and knees, place feet on flat surface

Keep belly button pulled and squeeze glutes during movement

Lower slowly back to start position

## Level 2 Function

### Requirements for progression

- Able to walk 15-30 min
- Able to sit to stand from chair without use of hands 10-15 times in 1 minute
- Medium gait speed with low to no use of gait aids
- Irritability – medium

### Potential inclusion criteria:

- Able to walk 15-30 min
- Able to sit to stand from chair without use of hands 10-15 times in 1 minute
- Medium gait speed with low to no use of gait aids
- Irritability – medium

### Goals

- Low impact aerobic exercise 150 min/week
- Daily stretching 2 x 30 sec/stretch
- Strength 3-4 x/week, 3 sets of 8-12 reps

### Requirements for progression

- Able to walk 30+ min
- Able to sit to stand from chair without use of hands 15+ times in 1 minute
- High gait speed with no use of gait aids
- Irritability – low

### 1. Heel Slides

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

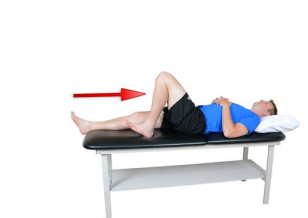
- Lie on back with knee straight

#### Execution:

- Keeping the heel in contact with the floor, slowly slide heel up toward buttocks
- Relax back to the start position.



Start Position



Slide heel up

### 2. Quadriceps Stretch (Chair)

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand tall with foot on the seat of a chair

#### Execution:

- Push your hip forwards and feel a stretch in the front of your thigh



Push your hip forward and avoid arching through lower back



Maintain straight alignment, thighs are parallel

### 3. Gastrocs Stretch (Wall)

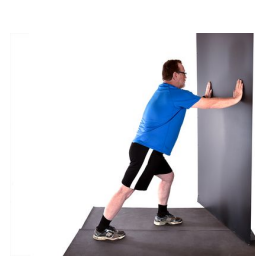
Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand in front of a wall with one leg forward and one leg back

#### Execution:

- Keeping your back leg straight and heel on ground, lean forward bending your front knee



Eyes and head forward, hands relaxed on wall, belly button pulled in



Bend elbows to move closer to the wall to stretch the back leg, keep front knee behind toes

### 4. Hamstring Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit on the edge of a chair

#### Execution:

- Put one leg out front
- Keep your knee locked
- Lean forward from the hips
- You should feel a stretch in the back of your leg



Eyes and head forward, hands resting on thigh, toes toward the ceiling



Hinge at hips to feel stretch in the back of the thigh

### 5. Piriformis Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit with good posture
- Have one knee crossed over the other as shown

#### Execution:

- Bring knee towards opposite shoulder



Start Position



Keep good posture



Bring knee towards opposite shoulder

## 6. Hip Adductor Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

### Preparation:

- Begin in the side lunge position as shown
- Your leg should be out to the side and slightly behind you, both feet flat on the floor

### Execution:

- Keeping your back straight, lunge deeper to the side until you feel a stretch along the inside of your leg.



Lunge to side - You should feel a stretch on the inside of your leg

## 7. Wall Squat (Band)

Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Stand with back against wall, band or belt around knees
- Feet away from the wall

### Execution:

- Perform a squatting motion, sliding down the wall
- Rise up, straightening at the hip



Back against wall, feet one stride length forward



Squat - Squeeze knees gently against band/belt

## 8. Hip Extension Eccentric (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Stand with good posture, feet shoulder width apart
- Hold onto a counter or object for support

### Execution:

- Lift one straight leg behind you as if stepping back
- SLOWLY return to the starting position



Lift leg back



Using buttocks, slowly relax against resistance



## 9. Clamshell

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Lie on your side with your hips at 45 degrees and your knees bent to 90 degrees.
- Your heels are in line with your buttocks.
- Tilt your hips forward towards the ground slightly.

### Execution:

- Lift your knees apart (like a clam opening)



Start position



Lift knees apart

## 10. Knee Flexion Concentric (Band)

Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Attach an ankle weight or tubing to your foot as shown.
- Stand with good posture. Use a table or countertop for support.

### Execution:

- Lift your heel up towards your buttocks as far as you can, bending your knee.
- Relax your leg, returning to the start position.



Start position



Bend knee

## 11. Knee Extension (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Attach band to ankle
- Sit in a chair with good posture

### Execution:

- Straighten knee against resistance



Sit in a chair with good posture



Straighten knee against resistance

## 12. Calf Raise Eccentric | Bilateral (Chair)

Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Stand holding a chair as shown

### Execution:

- Stand on your tip toes, lifting your heels as high as you can
- SLOWLY lower heels to floor
- Return to start position



Start Position



SLOWLY lower to start position

## Level 3 Function

Potential inclusion criteria:

- Able to walk 30+ min
- Able to sit to stand from chair without use of hands 15+ times in 1 minute
- High gait speed with no use of gait aids
- Irritability – low

### Goals

- Low impact aerobic exercise 150 min/week
- Daily stretching 2 x 30 sec/stretch
- Strength 4-5 x/week, 3 sets of 8-12 reps

### 1. Heel Slides

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

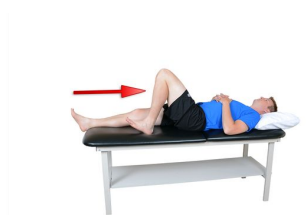
- Lie on back with knee straight

#### Execution:

- Keeping the heel in contact with the floor, slowly slide heel up toward buttocks
- Relax back to the start position.



Start Position



Slide heel up

### 2. Quadriceps Stretch (Chair)

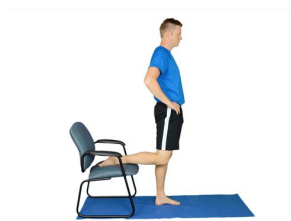
Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand tall with foot on the seat of a chair

#### Execution:

- Push your hip forwards and feel a stretch in the front of your thigh



Push your hip forward and avoid arching through lower back



Maintain straight alignment, thighs are parallel

### 3. Gastrocs Stretch (Wall)

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Stand in front of a wall with one leg forward and one leg back

#### Execution:

- Keeping your back leg straight and heel on ground, lean forward bending your front knee



Eyes and head forward, hands relaxed on wall, belly button pulled in



Bend elbows to move closer to the wall to stretch the back leg, keep front knee behind toes

### 4. Hamstring Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit on the edge of a chair

#### Execution:

- Put one leg out front
- Keep your knee locked
- Lean forward from the hips
- You should feel a stretch in the back of your leg



Eyes and head forward, hands resting on thigh, toes toward the ceiling



Hinge at hips to feel stretch in the back of the thigh

### 5. Piriformis Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

#### Preparation:

- Sit with good posture
- Have one knee crossed over the other as shown

#### Execution:

- Bring knee towards opposite shoulder



Start Position



Keep good posture



Bring knee towards opposite shoulder

## 6. Hip Adductor Stretch

Sets: 2 | Hold: 20 seconds | Frequency: daily

### Preparation:

- Begin in the side lunge position as shown
- Your leg should be out to the side and slightly behind you, both feet flat on the floor

### Execution:

- Keeping your back straight, lunge deeper to the side until you feel a stretch along the inside of your leg.



Lunge to side - You should feel a stretch on the inside of your leg

## 7. Wall Squat on Ball | 2 Down, 1 Up (Band at Knees)

### Preparation:

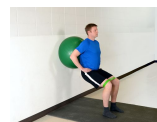
- Stand with back on ball as shown
- Have band around knees

### Execution:

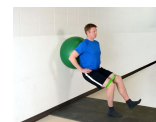
- Perform a squatting motion using both legs
- At the bottom, shift weight onto one leg
- Return to the start position using one leg



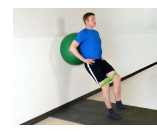
Stand with back on ball



Perform a squatting motion using both legs



At the bottom, shift weight onto one leg



Return to the start position using one leg

## 8. Hip Extension Eccentric (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Stand with good posture, feet shoulder width apart
- Hold onto a counter or object for support

### Execution:

- Lift one straight leg behind you as if stepping back
- SLOWLY return to the starting position



Lift leg back



Using buttocks, slowly relax against resistance

## 9. Clamshell Side Plank (Band)

Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

### Preparation:

- Band around knees
- Go into a side plank

### Execution:

- Perform a clamshell with the top leg
- Do not twist through your trunk



Go into a side plank



Perform a clamshell with the top leg

### 10. Knee Flexion Concentric (Band)

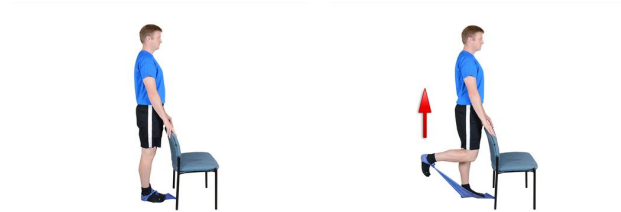
Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Attach an ankle weight or tubing to your foot as shown.
- Stand with good posture. Use a table or countertop for support.

#### Execution:

- Lift your heel up towards your buttocks as far as you can, bending your knee.
- Relax your leg, returning to the start position.



Start position

Bend knee

### 11. Knee Extension (Band)

Sets: 2-3 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Attach band to ankle
- Sit in a chair with good posture

#### Execution:

- Straighten knee against resistance



Sit in a chair with good posture

Straighten knee against resistance

### 12. Bent Knee Calf Raise | Single Leg

Sets: 2 | Reps: 8-12 | Frequency: 2-3x per week

#### Preparation:

- Stand on one foot at the edge of a step, knees bent as shown

#### Execution:

- Raise up onto toes
- Return to start position



Start Position

Raise up onto toes

### 13. Elevated Front Plank | Forearms

Sets: 2-3 | Hold: 30 seconds | Frequency: 2-3x per week

#### Preparation:

- Position yourself in plank position on a bench as shown

#### Execution:

- Hold



Hold plank position on a bench