PEAK

Physiotherapy **E**xercise and physical **A**ctivity for **K**nee osteoarthritis

EXERCISE BOOKLET

This booklet contains exercise instructions and photos for your strengthening program.

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We gratefully acknowledge the support of Medibank Private in the designing of this booklet

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Background information & tips

This booklet contains helpful information to make your strengthening exercise program as effective as possible. It contains pictures of the exercises with instructions and technique tips to assist you.

Muscle strengthening exercises are recommended for all people with knee osteoarthritis. Doing a regular strengthening program makes your leg stronger, reduces pain, and improves physical function.

Please have this booklet handy during each consultation with your physiotherapist so that you can refer to the information as needed.

Regularly performing specific strengthening exercises has been shown to reduce pain and improve function in people with knee osteoarthritis. The exercises will have the greatest possible effect if they are done:

- **with good technique**
- **at the correct intensity (how hard you work the muscle each session)**
- **frequently enough to improve muscle strength (the number of repetitions and sessions per week)**
- **safely and in a way that does not increase your symptoms unreasonably**

Your physiotherapist will make recommendations about which exercises to start with and help you to perform them effectively. In most cases, performing 5-6 different exercises from this booklet, three times per week, will improve your muscle strength.

Your physiotherapist will advise how many repetitions of each exercise you should do- write this down in your "Knee Plan and Log Book".

Your physiotherapist will explain how to perform each of your exercises and if possible, ask you to practice them during your consultation. It is best to discuss and resolve any difficulties straight away.

Exercise elastic bands:

To assist you in strengthening your muscles, your physiotherapist may provide you with four different coloured stretchy bands: Red, Green, Blue, and Black.

RED = Lightest resistance

GREEN = Medium resistance

BLUE = Hard resistance.

BLACK = Hardest resistance

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Exercising at the correct intensity:

- To get stronger, you need to feel like the exercise is 'hard' or 'very hard' when you do it. If it feels easy, you will probably not gain any strength.
- When you first start exercising, pain may limit you from exercising at the desired intensity - aim for hard to very hard, within acceptable limits of pain
- As your muscles get stronger, it is important you change and progress your exercise program over time to make sure the exercise remain challenging enough. You may also need to reduce your program in times of illness or a flare up of knee symptoms.
- Your physiotherapist will help you with this, but you need to know how to change the program yourself in between physiotherapy sessions and especially for the future once you have finished seeing your physiotherapist.
- Use the following scale when you are exercising to check each exercise is hard enough for you:

RATING	DESCRIPTOR
0	**Rest**
1	**Very, Very Easy**
2	**Easy**
3	**Moderate**
4	**Somewhat Hard**
5	**Hard**
6	–
7	**Very Hard**
8	–
9	–
10	**Maximal**

Modifying your exercise program:

- If an exercise feels too EASY, tell your physiotherapist. If you are confident to increase the intensity of exercises yourself, you can do this by:

  Changing the colour of the elastic band to provide MORE resistance

  Increase the dosage- by increasing the number of sets and/or repetitions (within each set) you perform

  Trying any of the harder variations described underneath the exercise

  Stopping the easy exercise and choosing a new harder exercise from the booklet
- If an exercise feels too HARD, tell your physiotherapist. If you are confident to decrease the intensity of exercises yourself, you can do this by:

  Changing the colour of the elastic band to provide LESS resistance

  Reducing the dosage- by decreasing the number of sets and/or repetitions (within each set) you perform

  Trying any of the easier variations described underneath the exercise

  Stopping the hard exercise and choosing a new easier exercise from the booklet
- Ongoing strengthening exercises are needed to MAINTAIN your muscle strength, so it is important you continue with your strengthening program into the future. You may wish to vary your program from time to time to keep it interesting and keep yourself motivated- it is OK to change the exercises as long as you choose exercises that feel 'hard' or 'very hard'.

Exercising with knee pain

- It is normal to experience some pain/discomfort during the exercises. In fact, FEELING SOME PAIN DURING EXERCISE MAY HELP reduce knee pain in the long-term
- Your knee is painful because it has become deconditioned and is not used to movement. Pain is NOT a sign that the exercises are causing tissue damage. You need to exercise your knee, so it will become strong and enable you to do what you need/want to do.
- Remember that it is normal to feel some soreness in the muscles for a few days when you start exercising or when you increase the intensity. This is actually a good sign as it means you have been working the muscles.

Doing painful exercises may change the way your brain processes pain and the way you think about pain, helping you to re-start movements that were previously fearful of.

Exercise triggers the brain to release chemicals (endorphins) that have an analgesic (pain-relieving) effect- exercising at an intensity that causes some pain may release more endorphins than pain-free exercise.

Managing a flare-up of knee pain

- If the pain during the exercises is more than you find acceptable, or flares up for longer than 24 hours after the exercises (or causes increased knee swelling), then decrease the amount of exercise until you're coping with it again. You can do this by:
    i) Reducing the dosage (by decreasing the number of sets and/or repetitions) until the flare-up has settled, and then gradually increase dosage again
    ii) Changing the colour of the elastic band to provide LESS resistance
    iii) Trying any of the easier variations described underneath the exercise
    iv) Stopping the exercise that caused you pain, and replacing it with a different exercise from the booklet once the flare-up has settled
- Talk to your physiotherapist during your next consultation so that the exercises can be reviewed and modified if necessary.
- Don't stop all the exercises completely as complete rest is unlikely to solve the problem.

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Other important safety aspects

- Perform each exercise carefully and at a slow controlled speed.
- If you "hold" a position, avoid holding your breath. Breathe as you hold so that you don't place unnecessary strain on your heart.
- To minimize the chances of falling, slipping or tripping when performing exercises in a standing position, wear appropriate footwear and use a stable chair or bench for support and balance.

Dealing with lapses and set-backs

- Most of us occasionally lapse when trying to stick with an exercise program. Expect this! Plan for this! When this happens, it's very important to forgive yourself.
- Use the experience as a learning opportunity, so in the future you are less likely to make the same mistakes. When some people have a lapse, they give up completely. You don't need to! Instead, reflect on what may have led up to the lapse, and on healthy ways to handle those causes of lapses and set-backs in the future.
- Review your long-and short-term goals to re-motivate yourself. Get help from your support network. Remember, lapses will happen from time to time, but this is not a reason to think that you have failed.

After a setback, people often have a negative "inner voice" that chides them. Turn this inner voice into something more constructive. For example, if you miss a day of exercise, you should tell yourself "That's okay, I will do better tomorrow" rather than "I'm hopeless; I'll never be able to maintain a physical activity program."

A good analogy is what happens when you make a mistake and dent your car. Instead of abandoning the car in a junkyard, you keep driving it. Once you've fixed the car, there isn't a trace of the dent. You are certainly worth fixing as much as your car! Learn from your experiences, get back on track, and stay focused on your goals.

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Quads strengthening exercise options

Exercise Q1. Seated knee extension

Starting position

Sit in a firm chair (one that is higher if possible).

Exercise

Slowly lift your foot up and straighten the knee until it is fully straight.

Keep the back of your thigh on the chair.

Hold for 5 seconds and lower slowly.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

Variation: with elastic band

Tie your elastic band into a loop.

Place the looped elastic band around the front or back leg of a chair.

Sit on the chair and put your leg into the loop with the band around the front of your foot.

Change colour of elastic band – red through to black.

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Exercise Q2. Inner range quads over roll

Starting position

Lie on a mat on the floor or on a firm bed.

Put a rolled up towel under your arthritis knee. Your knee will be slightly bent.

Keep the knee cap and toes pointing toward the roof.

Exercise

Keeping the back of the knee in contact with the towel, push the back of your knee down into the towel and straighten your arthritis leg and SLOWLY lift the heel off the surface over 2 seconds.

Hold leg as straight as it will go for 5 seconds then SLOWLY lower down over 2 seconds.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

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Exercise Q3. Sit to stand

Starting position

Sit in a firm chair. Place the chair back against a wall for support if needed.

Place your feet shoulder width apart.

Exercise

Slowly stand without using your hands to help.

Start by leaning forward bringing your nose over your toes.

Keep your knees in line with your toes.

As you lift up from the chair, straighten your legs until you are fully straight.

Sit back down *slowly.*

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Variations

1. Use a lower chair to make it more challenging to stand up.
2. Hold for 3 seconds with the buttocks just off the chair without touching down.
3. Add a loop of elastic band around your knees and push outwards against this as you stand up, keeping your knees over your toes.

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Exercise Q4: Chair stands with more weight on arthritis leg

Starting position

Sit in a chair. Place the chair back against a wall for support if needed.

Place your feet shoulder width apart.

Take **more weight on your arthritis leg** by either (a) placing your unaffected leg further forward, or (b) shifting both your feet sideways so your arthritis leg is lined up with the middle of your body.

Exercise

Stand up from the chair slowly (count 4 seconds) without using your hands.

Slowly return to sitting (count 4 seconds).

"Up, 2, 3, 4, down, 2, 3, 4".

Keep your knee in line with your foot during the exercise.

Try to have more than half your body weight on your arthritis leg through the whole exercise.

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Exercise Q5. Step ups

Starting position

Place your arthritis leg onto a step in front of you.

Be safe!! Use a hand support (back of chair or handrail) for balance if required.

Exercise

Step up onto the step slowly and steadily.

Just lightly touch your other leg to the step, and then step it back down slowly to the start position.

Your weight should be on your arthritis leg through the whole exercise.

Concentrate on keeping **your knee positioned over your foot** throughout.

Variation

Lower the step height to make it easier / use a higher step to make it more challenging.

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Exercise Q6. Forward touch downs from a step

Starting position

Stand with both feet on a step.

Be safe!! Use a hand support (back of chair or handrail) for balance if required.

Exercise

Slowly and steadily bend your arthritis knee while you reach your opposite foot towards the floor in front. If you can reach the floor, just touch it lightly.

Then return to the starting position.

Your weight should be on your arthritis leg through the whole exercise.

Concentrate on keeping **your knee positioned over your foot** throughout.

Variation

1. Lower the step height to make it easier / use a higher step to make it more challenging.
2. Don't touch the floor.

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Exercise Q7: Step ups with weight

Starting position

Hold 2kg of weight either (a) against your chest, (b) in each hand, (c) in one hand while holding on for balance with the other, or (d) in a backpack worn on your back.

Place your arthritis leg onto a step in front of you.

Weight can be a 2L milk bottle filled (2kg) or half filled (1kg) with water.

Be safe! Use a hand support (back of chair or hand rail) for balance if required.

Exercise

Step up onto the step slowly and steadily.

Just lightly touch your other leg to the step, and then step it back down slowly to the start position.

Your weight should be on your arthritis leg through the whole exercise.

Concentrate on keeping **your knee positioned over your foot** throughout

Variation

1. Lower the step height to make it easier / use a higher step to make it more challenging.
2. Increase the weight.

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Exercise Q8: Forward touch downs with weight

Starting position

Stand with both feet on a step.

Hold 2kg of weight either (a) against your chest, (b) in each hand, (c) in one hand while holding on for balance with the other, or (d) in a backpack worn on your back.

Weight can be a 2L milk bottle filled (2kg) or half filled (1kg) with water.

Be safe! Use a hand support (back of chair or hand rail) for balance if required.

Exercise

Slowly and steadily bend your arthritis knee while you reach your opposite foot towards the floor in front. If you can reach the floor, just touch it lightly.

Then return to the starting position.

Your weight should be on your arthritis leg through the whole exercise.

Concentrate on keeping **your knee positioned over your foot** throughout.

Variation

1. Lower the step height to make it easier / use a higher step to make it more challenging.

2. Increase the weight.

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Exercise Q9. Partial wall squats

Starting position

Gently lean against a wall. Keep your buttocks, back, and shoulders resting against the wall.

Step your feet away from the wall (about 30cm) with your feet hip-width apart.

Slightly turn your feet outwards.

Exercise

Slowly slide down the wall. Stop before your knees cover up your toes (or less if it is painful).

Hold for 5 seconds.

Slowly slide back up the wall.

"Slowly down, hold, 2, 3, 4, 5, slowly up".

During the exercise:

Keep your buttocks, back, and shoulders resting against the wall.

Keep your knees over your feet. Don't let your knees collapse in.

Keep your heels on the ground.

Variation

1. Half way hold - Hold for 5 seconds in bent-knee position *"Slowly down, hold, 2, 3, 4, 5, slowly up".*
2. Increase the amount of body weight taken through your arthritis knee by
   (a) placing your unaffected leg further forward, or
   (b) shifting both your feet sideways so your arthritis leg is lined up with the middle of your body.

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Exercise Q10. Split leg wall squats

Starting position

Gently lean against a wall. Keep your buttocks, back, and shoulders resting against the wall.

Step your feet away from the wall (about 30cm) with your feet hip-width apart.

Move your non-arthritis leg a further 15cm away from the wall. Your arthritis leg will be slightly behind your non-arthritis leg.

Exercise

Slowly slide down the wall. Take more weight through your arthritis leg (the leg closest to the wall).

Stop before your knees go past your toes (or less if it is painful).

Hold for 5 seconds.

Slowly slide back up the wall.

"Slowly down, hold, 2, 3, 4, 5, slowly up".

During the exercise:

Keep your buttocks, back, and shoulders resting against the wall.

Keep your hips level.

Keep your knees over your feet. Don't let your knees collapse in.

Keep your heels on the ground.

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Exercise Q11. Controlled squats

Starting position

Stand holding onto the back of a chair or table.

Start with your feet about shoulder width apart.

Exercise

Slowly bend your knees as far as comfortable.

Keep your knees in line with your toes.

Hold for 5 seconds.

Slowly straighten your knees and return to standing.

"Slowly down, hold, 2, 3, 4, 5, slowly up".

Exercise Q12: Forwards/backwards sliding

Starting position

Stand on a sliding surface.

Sliding can be achieved by using a towel on smooth flooring or a plastic bag under the moving foot on carpet.

Use hand support (e.g. a chair) for balance.

Exercise

Slowly slide backwards and forwards with the 'sliding leg' (non-arthritis leg) while bending and straightening the arthritis leg.

Start with sliding just a few inches forwards and backwards and progress to larger slides as you gain control.

Keep your weight on the arthritis leg.

Concentrate on keeping **your knee positioned over your foot** throughout.

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Exercise Q13: Forwards/backwards sliding with elastic band

Starting position

Place a loop of elastic band around your arthritis knee and the leg of a table or chair. This will provide a pull outwards on your knee that you must resist by keeping your knee in line with your foot through the whole exercise.

Stand on a sliding surface.

Sliding can be achieved by using a towel on smooth flooring or a plastic bag under the moving foot on the carpet.

Use hand support (e.g. a chair) for balance.

Exercise

Slowly slide backwards and forwards with the 'sliding leg' (non-arthritis leg) while bending and straightening the arthritis leg.

Start with sliding just a few inches forwards and backwards and progress to larger slides as you gain control.

Keep your weight on the arthritis leg.

Concentrate on keeping **your knee positioned over your foot** throughout.

Variation

Change elastic band colour.

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Exercise Q14: Step to standing balance on one leg

Starting position

Stand with your feet shoulder width apart.

Stand close to a wall for support in case you over balance, if required.

Exercise

Take a step forwards with your arthritis leg, keeping your knee bent to about 30°. Allow your non-arthritis leg to lift off the floor and practice balancing for as long as you can.

Repeat until you have balanced for approx. 2 minutes in total. Count how many touch downs of your other leg you take in the 2 minutes.

Concentrate on keeping **your knee positioned over your foot** throughout.

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Exercise Q15: Step to standing balance on one leg with arm movements

Starting position

Stand with your feet shoulder width apart.

Stand close to a wall for support in case you over balance, if required.

Use hand support (e.g. a chair) for balance.

Exercise

Take a step forwards with your arthritis leg keeping your knee bent to about 30°. Allow your non-arthritis leg to lift off the floor and practice balancing for as long as you can, while **raising your arms out to the side and above the head in an arc.**

Repeat until you have balanced for approx. 2 minutes in total. Count how many touch downs you take in the 2 minutes.

Concentrate on keeping **your knee positioned over your foot** throughout.

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Exercise Q16: Sideways sliding

Starting position

Stand on a sliding surface.

Sliding can be achieved by using a towel on smooth flooring or a plastic bag under the moving foot on carpet.

Use hand support (e.g. a chair) for balance.

Exercise

Slowly slide out sideways with the 'sliding leg' (non-arthritis leg) while bending the arthritis leg. Then slide back to the starting position.

Start with sliding just a few inches and progress to larger slides as you gain control.

Keep your weight on your arthritis leg through the whole exercise.

Concentrate on keeping **your knee positioned over your foot** throughout.

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Exercise Q17: Sideways sliding with elastic band

Starting position

Place a loop of elastic band around your arthritis knee and the leg of a table or chair. This will provide a pull outwards on your knee that you must resist by positioning your knee over your foot through the whole exercise.

Stand on a sliding surface.

Sliding can be achieved by using a towel on smooth flooring or a piece of plastic under your moving foot on the carpet.

Use hand support (e.g. a chair) for balance.

Exercise

Slowly slide out sideways with the non-arthritis leg while bending your arthritis knee.

Start with sliding just a few inches and progress to larger slides as you gain control.

Keep your weight on your arthritis leg through the whole exercise.

Concentrate on keeping your knee positioned over your foot throughout.

Variations:

Change elastic band colour.

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Hip abductor/gluteal strengthening exercise options

Exercise HA1. Side leg raises in standing

Starting position

Use the back of a chair or a wall to provide support.

Keep your back straight and facing forward.

Don't twist as this will mean the wrong muscles are being exercised.

Loop your elastic band around your ankles.

Exercise

Keep your back straight. Try not to tilt to the side.

Keep your knee straight and your toes pointing forward.

Lift your arthritis leg out a small way to the side, leading with the heel.

Hold for 5 seconds and then lower slowly.

"Slowly out, hold, 2, 3, 4, 5, slowly in".

Variations:

1. Change elastic band colour.
2. Add another 5 sec hold half way.

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Exercise HA2: Crab walking

Starting position

Place a loop of elastic band around your thighs/ knee level (easier) or around your ankles (harder) so that there is tension when legs are separated 10cm. Slightly bend both knees.

For safety, you should stand facing a table, a kitchen bench or a wall which you can reach if you lose balance.

Exercise

Step sideways against the pull of the elastic band.

Do not twist or turn your body or legs. Your feet must point forwards while you are stepping sideways.

Concentrate on keeping **your knee positioned over your foot** throughout.

Take 3 steps to the left. Then take 3 steps to the right to return to the start.

Variations:

Change elastic band colour.

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Exercise HA3. Wall push

Starting position

Stand sideways to a wall with your non-arthritis leg against the wall.

Exercise

Lift the non-arthritis leg just off the floor so that hip, thigh and knee are touching the wall.

Push your non-arthritis leg into the wall and hold for 20 seconds. Return your foot to the floor and rest for a few seconds.

"Push, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, relax".

Variations:

1. Hold a weight in your hand
2. Increase the hold time

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Exercise HA4: Wall push with deeper knee bending

Starting position

Stand sideways to a wall with non-arthritis leg against the wall.

Exercise

Lift the non-arthritis leg just off the floor so that hip, thigh and knee are touching the wall.

Push your non-arthritis leg into the wall.

While continuing to push into the wall, slowly bend your arthritis knee to a maximum of 45°.

Straighten your knee and return your foot to the floor and rest for a few seconds.

Concentrate on **keeping your knee positioned over your foot** throughout.

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Hamstring/gluteal strengthening exercise options

Exercise HG1: Bridging

Starting position

Lie on a mat on the floor or on a firm bed.

Place your feet hip-width apart.

Exercise

Lift your bottom off the floor/ bed. Keep shoulder blades on the floor/bed. Hold for 5 seconds.

Slowly lower your bottom back to the floor/bed.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

Keep your hips level as you lift up.

Stop when you've made a straight line between your shoulders and your knee.

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Exercise HG2: Split leg bridge

Starting position

Lie on a mat on the floor or on a firm bed.

Place your feet hip-width apart, then move your arthritis leg slightly closer to your bottom and slightly in towards the centre.

Exercise

Keep your feet in the starting position. Your arthritis leg should be closer to your bottom and your non-arthritis leg slightly further away.

Lift your bottom. Take more weight through your arthritis leg.

Hold for 5 seconds.

Slowly lower your bottom back to the floor/bed.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

During the exercise:

Keep your hips level.

Don't lift your bottom as far as you can possibly go. Stop just before you reach this point.

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Exercise HG3: Single-leg bridge

Starting position

Lie on a mat on the floor or on a firm bed.

Place your feet about 10cm apart (slightly closer than hip-width apart).

Exercise

Version A:

Lift your bottom. Keeping your hips level, lift your non-arthritis leg off the floor/bed.

Hold for 5 seconds.

Slowly lower your non-arthritis leg back to the floor/bed.

Then slowly lower your bottom back to the floor/bed.

"Slowly up, lift the leg, hold, 2, 3, 4, 5, lower the leg, then slowly down"

Version B:

Lift your non-arthritis leg off the floor/bed.

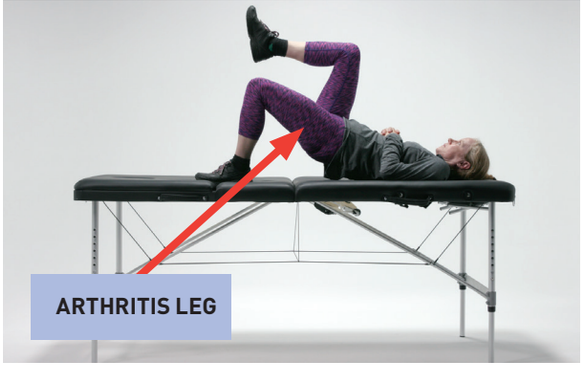
Lift your bottom and take all your weight through your non-arthritis leg.

Hold for five seconds.

Slowly lower your bottom back to the floor/bed.

Slowly lower your non-arthritis leg back to the floor.

"Lift the leg. Slowly up, hold, 2, 3, 4, 5, slowly down. Lower the leg".



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Exercise HG4: Hamstring curls – standing over bench

Starting position

Stand in front of a table and lean forward onto your forearms.

Exercise

Slowly bend your arthritis knee so that your heel comes up toward your bottom.

Hold for 5 seconds and lower slowly.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

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Exercise HG5: Hamstring curls – with elastic band

Starting position

Place one end of an elastic band securely around the ankle of your arthritis leg. Place the other end of the elastic around your opposite foot so you are standing on it.

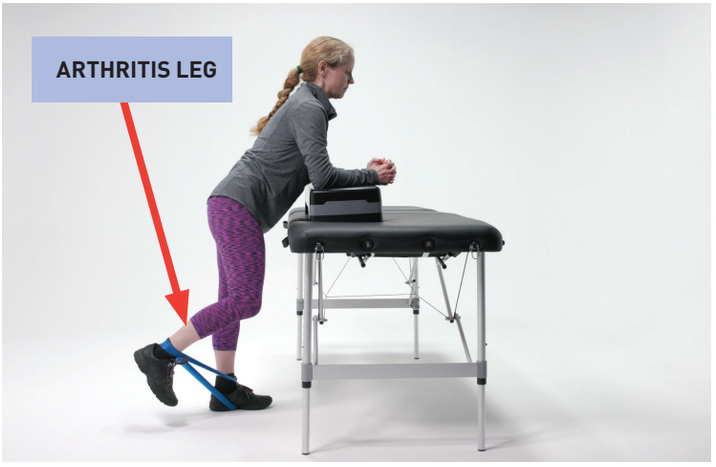
Stand and lean forward on your forearms over a table.

Exercise

Slowly bend your arthritis knee, pulling against the resistance band, so that your heel comes up towards your bottom.

Hold for 5 seconds and lower slowly.

"Slowly up, hold, 2, 3, 4, 5, slowly down".



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Exercise HG6: Seated knee flexion

Starting position

Sit upright in a chair. Move forward if needed so you are sitting toward the front of the chair (so you have enough room to bend your knee under the chair).

Place one end of an elastic band securely around a stable object (e.g. a heavy table leg). Loop the other end around the ankle of your arthritis leg.

Exercise

Keeping your opposite foot on the floor, pull against the elastic band and bend your knee more. Your foot should move back further under the chair.

"Bend, hold, 2, 3, 4, 5, return".

Variation:

Change elastic band colour.

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Exercise HG7: Hip extension with knee bent

Starting position

Stand and lean forward on forearms over a table or bench.

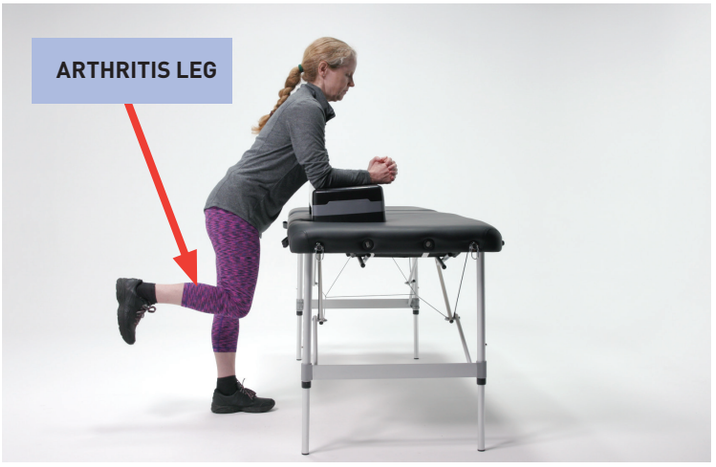
Exercise

Bend your arthritis knee to around 90 degrees.

Push your foot backwards behind you so you are extending at your hip joint, while keeping your knee in the bent position.

Hold for 5 seconds then slowly return to the starting position.

"Push behind, hold, 2, 3, 4, 5, slowly return".



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Exercise HG8: Hip extension with knee straight

Starting position

Stand and lean forward on forearms over a table or bench.

Keep both legs straight.

Exercise

Lift your arthritis leg backwards behind you, keeping your knee straight. Lead with your heel, so you are extending at your hip joint. Keep the leg straight.

Hold for 5 seconds then slowly return to the starting position.

"Move behind, hold, 2, 3, 4, 5, slowly return".

Keep both legs straight. Keep your hips facing forwards. Don't twist your hips. Be careful not to over arch your back.

If you feel discomfort in your lower back don't move the leg back as far.

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Exercise HG9: Hip extension with knee straight – with elastic band

Starting position

Place one end of an elastic band securely around the ankle of your arthritis leg. Place the other end of the elastic around your opposite foot so you are standing on it.

Stand and lean forward on your forearms over a table.

Exercise

Lift your arthritis leg backwards behind you, keeping your knee straight. Lead with your heel, so you are extending at your hip joint. Keep the leg straight.

Hold for 5 seconds then slowly return to the starting position.

"Move behind, hold, 2, 3, 4, 5, slowly return".

Keep both legs straight.
Keep your hips facing forwards.
Don't twist your hips. Be careful not to over arch your back.

If you feel discomfort in your lower back don't move the leg back as far.

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Calf strengthening exercise options

Exercise C1: Double calf raises

Starting position

Stand holding onto back of the chair.

Exercise

Slowly rise up onto your toes.

Hold for 5 seconds.

Slowly lower.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

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Exercise C2: Single calf raises

Starting position

Stand holding onto back of the chair.

Stand on your arthritis leg.

Exercise

Slowly rise up onto your toes.

Hold for 5 seconds.

Slowly lower.

"Slowly up, hold, 2, 3, 4, 5, slowly down".

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Exercise C3: Double calf raises over edge of step

Starting position

Stand on a step with your heels over the edge.

Hold onto the back of a chair for support.

Exercise

Slowly rise up onto your toes.

Hold for 5 seconds.

Slowly lower down, so your heels are below the step.

"Slowly up, hold, 2, 3, 4, 5, slowly lower all the way down".

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Exercise C4: Single calf raises over edge of step

Starting position

Stand on your arthritis leg on a step with your heel over the edge.

Hold onto the back of a chair for support.

Exercise

Slowly rise up onto your toes.

Hold for 5 seconds.

Slowly lower down, so your heel is below the step.

"Slowly up, hold, 2, 3, 4, 5, slowly lower all the way down".

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Exercise B1: Tandem stance

Starting position

Stand on a firm surface. Looking forwards focusing on a point on the wall.

Use hand support (e.g. a chair) for balance if required.

Exercise

Place one foot in front of the other so that feet make a straight line.

Hold for 10 seconds.

"Hold, 2, 3, 4, 5, 6, 7, 8, 9, relax".

Switch foot position so that the foot that was in front is now in the back.

Hold for 10 seconds.

"Hold, 2, 3, 4, 5, 6, 7, 8, 9, relax".

Variation

Let go of hand support (if required) as you feel stable.

Maintain balance while slowly raising arms in the air.

Eyes closed.

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Exercise B2: Forwards tap

Starting position

Stand on a firm surface.

Use hand support (e.g. a chair) for balance if required.

Exercise

Slowly tap forwards and back with the 'tapping leg' (non-arthritis leg) while balancing on the arthritis leg.

Start with tapping just a few inches forwards and backwards and progress to larger taps as you gain control.

Keep your weight on the arthritis leg.

Concentrate on keeping **your knee positioned over your foot** throughout.

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Exercise B3: Single leg balance

Starting position

Stand with your feet shoulder width apart.

Stand close to a wall for support in case you over balance, if required.

Use hand support (e.g. a chair) for balance, if required.

Exercise

Stand on single leg.

Try to hold for 10 seconds.

"Lift, 2, 3, 4, 5, 6, 7, 8, 9, relax".

Keep your weight on the arthritis leg.

Concentrate on keeping **your knee positioned over your foot** throughout.

Variation

Increase hold time for up to 30 secs, as you feel stable.

Maintain balance while slowly raising and lowering your arms in the air.

Eyes closed.

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