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# *Get Moving!* PLUS



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 **Arthritis**  
NEW SOUTH WALES

# Get Moving! PLUS

## Disclaimer

*The content in this booklet contains general information and advice. Every effort has been made to ensure that the information is accurate and reliable. The content is not a substitute for individual treatment advice of your doctor or health care professional. Always consult with your doctor or health care professional to obtain individual medical, treatment or management advice.*

*Kat has demonstrated only a few repetitions (reps) of each exercise. Start with the number of reps that you are comfortable with and slowly increase over time. Additionally, Kat has demonstrated some exercises from various angles for the purpose of illustrating technique only. You do not need to change your position mid-way through a set as Kat has done.*

*For your safety, it is advised that you READ and understand the accompanying exercise information sheet before participating in the exercises shown, and seek advice if needed.*

## Get Moving! PLUS

*Get Moving! PLUS* is not an exercise library for 'fitness' purposes *per se*, instead, it's an exercise library dedicated to promoting and improving the mobility and strength of joints and muscles that are affected by arthritis and other musculoskeletal conditions. Many of the mobility exercises included are low risk of injury and are easy to perform, though some are a little complex. For example, some require a resistance band, towel or other equipment, other exercises are self-assisted (using your hands to create force or a block, or to promote a specific direction of movement), while some require a certain range of motion (ROM), balance and/or coordination ability.

Unlike the *Get Moving!* Series, there are no 'fitness' profiling levels, which means that anyone at any age can perform the exercises given their circumstance and ability. These exercises are not to get you 'fit' but to get your joint 'fit' in a specific context, ie. pre and/or post rehabilitation settings, severe arthritis and/or pain. Exercises are grouped by joint and mobility attribute with a range of regressed and progressed exercises that can be used for a variety of purposes.

Please note: we highly recommend that the use of this resource is a collaborative one, ie. you work with your allied healthcare professional for exercise recommendation and assistance.

### Why was it created?

*Get Moving! PLUS* was created out of both demand from consumers wanting exercises for specific joints and the need for freely available, high quality, joint specific mobility exercises. *Get Moving! PLUS* may be used to complement treatment from a physiotherapist, exercise physiologist or myotherapist for either prehabilitation or rehabilitation from a joint replacement (or other) surgery, chronic pain and/or restricted movement in the context of arthritis.

## Get Moving! PLUS in focus

### Key focus 1: Mobility

Broadly speaking, mobility is an umbrella term used to describe the act of stretching, moving and strengthening a variety of tissues that surround the joint and the joint itself. Mobility is an indication of how well and efficiently we move. Flexibility, strength, coordination, and body awareness are all attributes of mobility. Thus, mobility of a joint can be promoted a number of different ways, eg. by 'traditional' stretches (active static and dynamic stretches or movements), passive stretches or mobilisations (where a musculoskeletal therapist does the movement for you), balance and strengthening exercises. In this booklet, 'mobility' indicates the exercises targeted at mobilising the joint.

### Benefits of mobility

Regularly performing and practicing mobility attributes is key to maintaining and promoting the health of joints, regardless of their condition. In particular, mobility exercises are significant for those with arthritic conditions (especially if they have loss of motion), those who may be waiting for a joint replacement (or anything similar), and those who have undergone a joint replacement or some other kind orthopaedic surgery to treat arthritis or other musculoskeletal condition. Movement at this point is critical; engaging in exercise post-surgery can predict the outcome of quality and quantity of joint ROM in the following ways:

- facilitate range of motion and technique
- help improve and maintain joint health and function
- can be used as a warm-up routine or an active recovery exercise
- may help reduce pain and feelings of stiffness or discomfort
- potentially reduce future injury.

## Key focus 2: Rehabilitation

When you have knee or hip replacement surgery, your doctor will suggest you do physical ‘rehab’ afterward. Once at home, you will likely see a physiotherapist regularly to receive rehab treatment as well as do exercises on your own. Your home exercise program will include activities to help reduce swelling and increase the ROM and strength in the muscles around your new joint. This will help you move more easily and get back to your normal activities more quickly. *Get Moving!* PLUS includes exercises that can be used in this capacity. We highly recommend you ask your physiotherapist to help choose exercises appropriate to your individual circumstance and stage of post-surgery rehab.

### Benefits of rehab

- restores normal movement in your joint
- builds up strength in the joint and surrounding muscles
- helps to ease pain and swelling
- lets you get back to your normal activities
- helps with circulation, particularly right after surgery, so you don't have problems with blood clots.

### Rehabilitation once you get home

You should aim to exercise and/or be physically active for 20–30 minutes, two or three times every day, or as much as your doctor/healthcare professional suggests. Walking may help. Start with 5 minutes and work up to 20–30 minutes, several times a day. Whether you work with a therapist or on your own, stay active for your overall health.

### Pre-operative rehabilitation

Pre-operative rehabilitation is exercise-based intervention prescribed before undergoing surgery. It is also known as prehabilitation or prehab. Prehab may help you to recover more quickly from the surgery, have a positive effect on pain pre and post-surgery, and improve post-operative function. This could potentially result in a faster return to work. It is often used before hip and knee joint replacements and can be performed independently or under physiotherapy supervision. A pre-operative exercise program should consist of both strength/resistance training and cardiovascular (cardio) components. The *Get Moving!* PLUS series includes exercises that can be used in a prehab context, although, if you require more challenging exercises then check out the *Get Moving!* exercise library.



## Tips on how to perform mobility exercises

### Pain

1. When rehabilitating from a recent surgery (total hip or knee replacement, anterior cruciate ligament replacement, shoulder reconstruction, other joint/tissue replacement or arthroscopy), injury or you have arthritis (non-inflammatory and inflammatory), pain and discomfort in or around a joint is common, especially during movement and exercise. You can still exercise! You can expect to feel pain, however, when moving through an exercise, slow down or stop at the point of initial pain or discomfort, unless told otherwise. The pain will likely reduce with the number of repetitions performed and/or when you move out of a certain position adopted to perform an exercise. Pain will also reduce over time as you heal.
2. You don't need to be afraid of the pain, especially since you should expect it. Experiencing pain is never pleasant but, in most cases, you don't need to worry that you are doing further damage to your said condition. Pain is normal in this context, however, it should really only last about 24–48 hours post exercise. If you experience severe pain that lasts longer than 48 hours and your condition changes and/or worsens, eg. fever and inflammation, then seek medical attention.
3. If an angle, oscillation or arc/range of movement causes extreme pain or discomfort, regress the movement, reduce the range or change the angle slightly.
4. Use a visual analogue scale (VAS) to measure and monitor your pain. By rating your pain on a scale from 1 (nothing at all) to 10 (extreme pain), you can monitor your pain experience so that it doesn't reach above a 7 or 8 when exercising, or otherwise advised by your healthcare professional. See the Strength exercises section below for further details.

### Speed and other performance tips

1. Try avoiding moving too quickly with your in and out movements. Gently and with control, move in and out of a movement or a stretch so it feels good for you.
2. Keep a normal steady breath throughout the exercises. Try not to hold your breath excessively throughout the exercises.

### How the exercise should feel and exercise parameters

#### Stretches

1. The objective is to increase range of motion by targeting the soft tissue surrounding the affected joint.
2. A stretch shouldn't hurt or be painful *per se*, however, a little discomfort is ok. You need to stress the joint and surrounding tissues a little to ensure you illicit an adaptive response.
3. *Hold a stretch for 15–30sec and perform 3–5 times*, or otherwise prescribed. When you first start out, you may find you can only hold a stretch for 5 seconds before you need to release it. That's ok. Slowly and progressively build the time you can stay in one position. Likewise for the range of a stretch, that is, slowly and progressively move further into the stretch when it's comfortable for you to do so.
4. Stretches can be performed frequently. Every day is safe or as needed. In fact, you may be told to stretch many times per day, every day of the week depending on your situation.

#### Strength exercises

1. The objective is to increase muscular strength and coordination.
2. Strength exercises (isometric and isotonic exercises, body weight and weighted) must be challenging to illicit muscle adaptation. However, timing is key. Strength needs to be built progressively and in this context, when your joint (and related tissues) are ready. Your physiotherapist, or other healthcare professional, will give you the green light when it's ok to start lifting heavier weights.
3. When you engage in strength training, you may find your muscles feeling fatigued and may struggle a little to finish your reps/sets. You may even find your breathing and heart rate increases, and/or you may experience discomfort or slight pain. These are good signs that the weight you are using is challenging, that is, challenging enough to achieve the benefits of strength training.
4. Using a Visual Analogue Scale (VAS) can be helpful to monitor discomfort/pain felt when exercising. Very briefly, a VAS score of 1–2 will feel very easy, no pain or discomfort. On the other hand, a VAS score of 9 or 10 may be extreme pain where you cannot go on or perform the movement – it's too much that you have to stop. Generally, you want to keep your VAS score around 6-8. You want to feel discomfort or a little pain, as if the exercise is 'doing' something; as if you're working the muscles.

5. When performing a strength exercise, eg. squat or hamstring curl, try performing *2–3 sets of 10–15 reps or as otherwise prescribed*. Initially, you may find you can only perform one set or only 5 repetitions and that's ok. Slowly and progressively build the number of sets and reps.
6. For exercises where the position is held still while under tension, try performing *2–3 sets of 5sec holds, then 10sec, 20sec, 30sec* and so on as you progressively increase time held and/or increase the set range, or as prescribed.
7. Depending on context, strength exercises should be performed at least 2–3 days per week. Unlike stretches or mobility exercises, it's important to have at least one full day rest between strength sessions.

## Mobility/range of motion

1. The objective is to increase joint range of movement by targeting the joint itself.
2. Similar to stretching exercises, mobility exercises shouldn't cause excessive pain but can be uncomfortable, and that's ok. You need to stress the joint and surrounding tissues a little to ensure you illicit an adaptive response.
3. Try performing *2–3 sets of 10–15 reps or as otherwise prescribed*.
4. As compared to strength training, rest is less important with mobility exercises and so can be performed every day, multiple times if needed.

## Balance exercises

1. The objective is to improve movement, control and proprioception.
2. Like strength exercises, balance exercises need to be challenging to illicit adaption.
3. You don't need to always perform specific balance exercises to gain benefits. Depending on your situation, standing from a seated position, walking up and down stairs, squatting or lunges all require balance ability
4. You can hold certain positions for time or perform *2–3 sets of 10–15 reps or as otherwise prescribed*. To make any exercise challenging, close your eyes. Your healthcare professional may give you other ideas to help make balance exercises harder.
5. It's ok if your joint, eg. ankle joint, wobbles a little when performing a balance exercise (or any other exercise). That's a good sign your ankle is working hard to stabilise you. If, however, your whole body wobbles and you feel like you're going to fall, ensure you have something stable to hold on to and/or reduce the complexity of the task.
6. For safety reasons, ensure there is a stable prop, bench or wall nearby to use for support.
7. Rest is less important and so, like mobility/range of motion exercises, balance exercises can be performed every day if needed.

## Important

1. Your doctor/surgeon or physiotherapist may not want you rotating or moving a recently reconstruction joint in a certain direction or degree and with force/resistance. If you are unsure about what mobility exercises to do and how to perform them safely, please do not attempt the included exercises and ask for professional guidance first.
2. The guidelines provided here are conservative so they can be generalised for a variety of conditions/contexts. Please clarify with your physiotherapist or exercise physiologist about time, sets and repetition (rep) parameters for any and/or exercises in the Get Moving! PLUS exercise library.

### TERMINOLOGY

- Supine: position whereby you are lying on your spine ie. face up
- Prone: position whereby you are lying on your stomach ie. face down
- Isometric: strength exercises where your muscles contract while you hold a still position
- Isotonic: strength exercises where your muscles are contracting – shortening and lengthening
- Repetitions (reps): a rep is the number of times you perform a specific exercise
- Sets: a set is the number of cycles of reps that you complete, eg. you may complete 10 reps of bicep curls (on each arm) and repeat that rep range 3 times (sets).

## Lower extremity

Joint: Knee and ankle

These exercises are focused on knee and ankle arthritis, to help improve mobility and strength. Everyone's symptoms and impairments will and can be unique, and there may be other exercises that are more appropriate.

There is a variety of mobility exercises included for the knee. Some exercises can be used for early to mid-stage knee rehab or for those with severe knee arthritis, pain and/or reduced muscle tone and strength. Talk to your physiotherapist or exercise physiologist for guidance of which exercises may be best suited to you or for more challenging and advanced options. This section also includes some ankle mobility since most, if not all, lower extremity movements (eg. walking, sitting, standing, stairs etc.) require adequate ankle mobility. Furthermore, many of the exercises below involve movement of the hip, therefore, you may find some of these exercises a little difficult if your hip is compromised. If it is still safe for you to do these exercises, then proceed, however you may like to initially regress the movements or reduce the range of motion.

### General exercise parameters

As these are general guidelines, please consult with your allied healthcare professional for individual prescription.

- When performing a mobility exercise, try performing *2–3 sets of 10–15 reps or as otherwise prescribed*. Initially, you may find you can only perform one set or only 5 repetitions and that's ok. Slowly and progressively build the number of sets and reps.
- For exercises where the position is held still, (a stretch or strength exercise) try performing 2–3 sets of 5sec holds, then 10sec, 20sec, 30sec and so on as you progressively increase time held and/or increase the set range, or as prescribed.
- When moving in and out of joint range, eg. self-assisted knee flexion or ankle dorsiflexion, do so with control and with equal speed. Build up to perform *2–3 sets of 10–15 reps or as otherwise prescribed*.

**NB: your doctor/surgeon or physiotherapist may not want you rotating or moving a recently reconstructed joint in a certain direction or degree and with force/resistance. If you are unsure about what mobility exercises to do and how to perform them safely, please do not attempt the included exercises and ask for professional guidance first.**

## Knee: Flexion



### SEATED: SELF-ASSISTED KNEE FLEXION

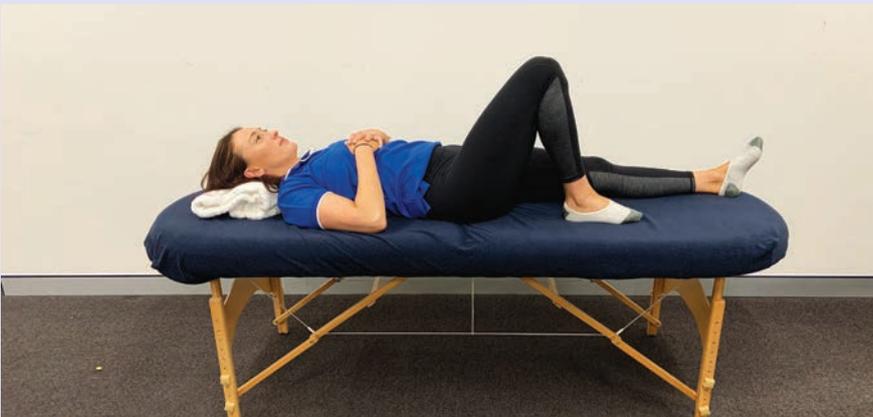
1. In a seated position, place the heel of the non-target leg on top of the target leg, just like crossing your legs.
2. Use the non-target leg to gently push back on the target lower leg, increasing knee flexion as far as possible.

# Knee: Flexion

## SUPINE HEEL SLIDE



1. Lie supine on a flat surface.
2. Bring (slide) your heel slowly towards the buttocks, as far as comfortable (socks can be worn to ensure that the foot slides).
3. After 30sec or so, further flexion may be possible.
4. A towel or strap wrapped around the ankle can be used to assist with the movement.



## Knee: Extension

### BRIDGING



1. Seated or lying supine on a couch/floor with target leg resting straight out in front of you.
2. Use a rolled up towel or foam roller and place it under your target lower leg/foot.
3. Let the position/ gravity facilitate knee extension.
4. Hold for 5, 10, 15sec or whatever time is comfortable, then slowly bend to rest.

**You can add gentle pressure to promote knee extension.**



## Knee: Extension

### OVER PRESSURE SEATED



1. Seated, have target leg resting on your heel straight out in front of you.
2. Place your hands around/on top of your thigh, just above the knee.
3. Gently apply over pressure by pushing straight down towards the floor.
4. Release and repeat.
5. You are gently trying to straighten the knee.



## Knee: Calf stretch

### GASTROCNEMIUS AND SOLEUS



For stretches of the muscles around the knee, refer to the stretches in the *Get Moving! PLUS* Hip booklet.

There is also the calf stretch (gastrocnemius and soleus).

1. Face the wall in a lunge stance
2. Push the heel of the back leg into the ground by pushing through your hands.
3. Keep your back knee **straight** while the heel maintains contact with the ground.
4. This stretches the gastrocnemius muscle.



1. Face the wall in a lunge stance
2. Push the heel of the back leg into the ground by pushing through your hands.
3. Your back knee **bends** while the heel maintains contact with the ground.
4. This stretches the soleus muscle.

## Knee: Quadriceps

### ISOMETRIC QUADS LYING PRONE



1. Lie prone with a rolled-up towel under the ankle so the knee is very slightly bent.
2. Push down on the towel to attempt to straighten the leg and contract the quads.

*Other useful exercises are Seated Knee Extension and Seated Banded Extension in the Get Moving Exercise Library.*

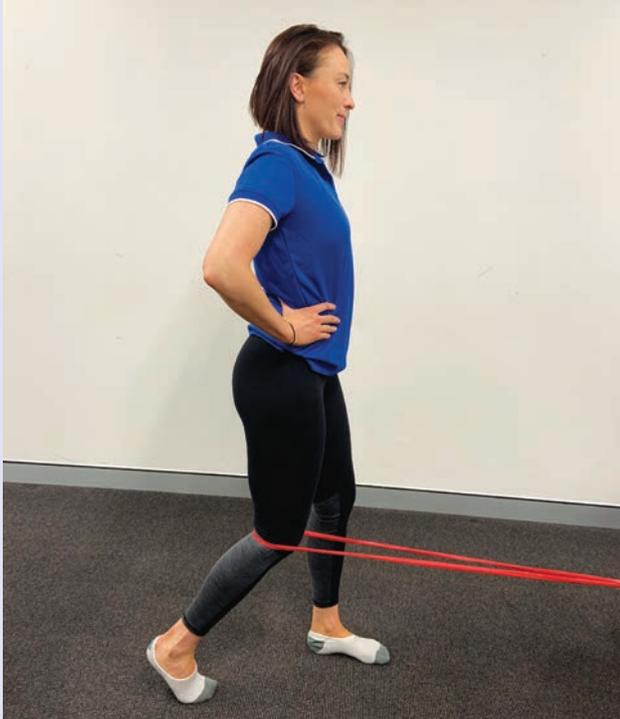
### SEATED/SUPINE



1. Seated or lying supine on a couch/floor, put your target leg resting straight out in front of you.
2. Place a rolled up towel or pillow under your knee.
3. Push down on the towel by squeezing 'on' your quadriceps or thigh muscles.
4. Hold for a second, release and repeat.
5. Once movement and pain has improved, use the same position as above, push down on the towel by squeezing 'on' your quadriceps and focus on lifting your heel off the floor too.

## Knee: Quadriceps

### STANDING TERMINAL KNEE EXTENSION



1. Assume a staggered stance or lunge position.
2. Place a resistance band around the knee of the back leg. Ensure the band is anchored to a table leg or similar stable object.
3. Start with the knee slightly bent
4. Straighten the knee against the resistance of the band.



# Knee: Hamstrings

## LYING HAMSTRING CURL



1. Lie prone with your foot pointing down over the edge of the couch/table.
2. Bend and straighten the knee, repeat.
3. Provided this movement is comfortable, a resistance band or ankle weight can be used to increase difficulty.

**This exercise is about moving in and out of a position repeatedly, usually with weights/resistance.**



### Isometric option

1. Lie prone with the foot pointing down over the edge of the couch
2. Bend the knee and hold for 2, 5, up to 15sec at various angles
3. A resistance band or ankle weight can be used to increase difficulty

**This exercise is about holding your leg under tension in one position for a period of time, then relaxing.**

# Knee: Hamstrings

## HAMSTRING CATCH



1. In a prone position, lift both legs to a 90-degree angle.
2. Ensuring that the leg and the foot are not turned outwards, drop the leg to the couch or bed attempting to stop or 'catch' the lower leg reaching full extension.
3. Alternate the legs.

**To increase the difficulty of this exercise add ankle weights or speed up the rate of the leg catch.**



## Knee: Sit to stand

### FROM A STANDARD CHAIR HEIGHT



1. Feet shoulder width or more apart.
2. Knees at least 90 degrees, or slightly less.
3. Shuffle nearer to edge of the chair.
4. Lean slightly forward.
5. Use legs to push up.
6. Squeeze glutes (buttocks) once standing tall.
7. Lower slowly and controlled.
8. Use arms if needed, both sides evenly.



# Ankle: Knee to wall test



1. Place target foot/toes close to wall in a lunge position.
2. Bending your knee, lean forward to touch target leg knee to wall while keeping your heel in contact with the ground.
3. Shuffle target foot away from the wall until you can touch the wall with knee while maintaining firm heel-to-ground contact.
4. Lean in and out this range 2–3 sets of 10–15 reps. Move foot backwards slightly to challenge this range.
5. Measure the distance from your toes to the wall. Repeat on other leg. Keep a record and try to improve the distance.

**The knee to wall test can test ankle mobility and also be an exercise.**

# Ankle: Dorsi flexion

## HALF KNEELING LUNGE, SELF ASSISTED



1. In a half kneeling position, rock forwards on your top leg, keeping your heel on the ground.
2. Use webbing of your hand and place it across the top of your ankle.
3. Push your hand backwards as you bend ankle and knee forward. Try keeping your heel grounded.



## Ankle: Dorsi flexion

### HALF KNEELING LUNGE, WITH BAND



1. Secure the band at the front of your ankle.
2. In a half kneeling position, rock forwards on your top leg, keeping your heel on the ground.
3. Try keeping your heel grounded.



### FORCED DORSI FLEXION ON BOX



1. Using a box or similar, step target leg up and plant your foot in the middle of the box
2. Lean over your foot with your body weight to force your ankle into dorsiflexion. Try to keep your heel in contact with the box and knee in line with foot.

# Ankle: Plantar flexion

## SEATED ON FOLDED LEGS WITH WEDGE



1. Sit with folded legs under you. If you need, add a pillow or wedge under your legs.
2. Slightly lift one knee at a time and alternately 'march' your legs to increase range.
3. This is also good stretch for anterior lower leg muscles.



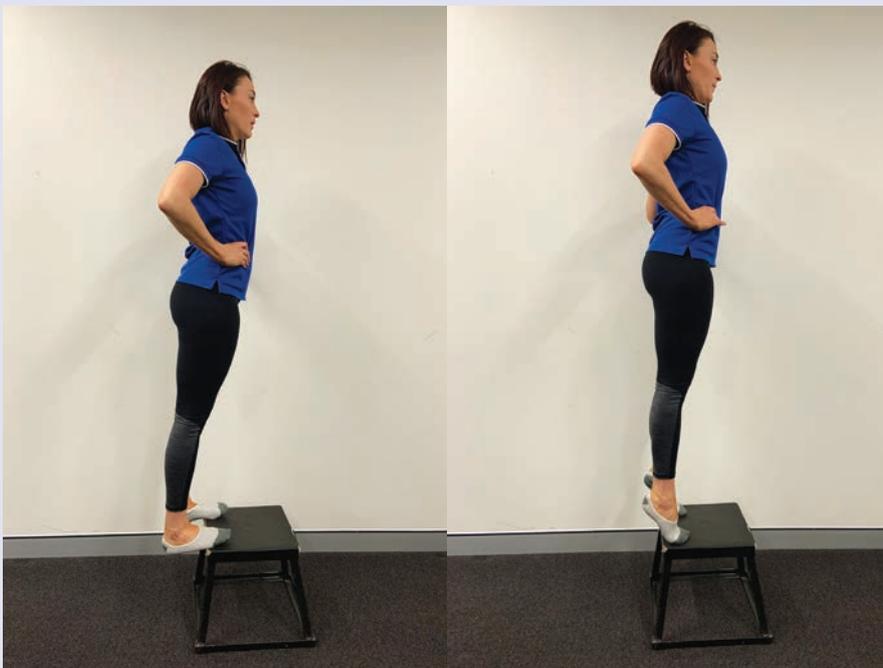
## Ankle: Heel rises

### FROM FLOOR



1. Hold on to something stable if your balance needs support.
2. Standing tall, feet start together or slightly apart.
3. Slowly raise up on to the balls of your feet.
4. Slowly return heels to the ground or off the back of the step. Repeat.

### OFF STEP



STRENGTH