



Pillar B2

Develop strength and fitness through movement and exercise

The role of 'exercise' in pain management

When we experience pain it often stops us from doing the activities we might enjoy and we might move differently, sit differently and stand differently in an effort to be more comfortable.

Often this leads to what we call deconditioning, where movement is decreased, joints are stiff, muscles aren't as strong as they once were, and sensations are altered.

Often our balance and co-ordination are affected and our awareness of our body changes (we can become less aware or more aware).

When we start to think about exercise for persistent pain, what we are really thinking about is "movement" – starting to get the body moving again, improving body awareness and re-establishing a sense of confidence.

Many people find that they become fearful of movement (and increasing pain) and that this then increases avoidance of movement and expectation of pain.

Starting to move well again is very important in order to normalise input from the periphery and output from the central nervous system and reduce the pain experience.

All the "exercises" in this section are designed to allow you to start experiencing movement again safely, to stretch things that are tight, and to recognise your body position. Often, we will 'cheat' when we move (particularly if muscles are tight or weak), you may not even realise, and 'exercises' will help you to move again in the way we were designed to move.

These are not prescriptive; you need to do them in a way that suits you, starting slowly and building gently.

They may act as a "launch pad" to re-establishing other exercise options and activities.

With all exercise focus should be on quality (not quantity – better a few exercises done well), and awareness of movement (re-establishing a connection with the body).

Recognise that others around you may move differently and do not compare yourself to them or try to keep up. Everyone's start point will be different.

For some people, just visualising (imagining) movement will be where they need to start.

Why movement matters...and why it matters how we move.

Approaches to exercise and movement.

"Much more of the brain is devoted to movement than to language. Language is only a little thing sitting on top of this huge ocean of movement."

Oliver Sacks, neurobiologist and author.

Considering the above quote, our brain is hugely important when it comes to movement; however often when we are moving, our minds are elsewhere, maybe thinking about tasks to be done, or thinking about how we feel about exercising whether we like it or not, or worse still worrying about how we will feel after we have finished exercising!

While our brain is busying itself with these thoughts, our body is left unattended, its efforts can go unnoticed, under-appreciated, and the potential effectiveness of the movements and exercises we are engaged in is reduced.

How I can ensure my brain is more directly involved with my body when exercising/ moving:

"To feel better in your body you first need to feel your body better"

Diane Jacobs, Canadian physio

If you imagine what it was like learning any new skill such as driving a car, or using new technology such as computer the first thing you would usually do is have a good look over the task in hand, handle the objects with which you will be performing the task, and reduce all other demands and disturbances so that you could give your entire focus to learning this new skill. Imagine how your performance might be hampered by; wearing a blindfold, being in a noisy environment, or wearing boxing gloves so you couldn't feel the objects you were dealing with.

Trying to exercise and move when you are in pain and have become switched off from listening to your body can be like the example above. Re-acquainting yourself with all of the

physical sensations of your body can be an important first step in knowing your 'tool' and knowing how to use it successfully.

How can I connect more with the physical sensations in my body?

“Usually I can’t walk more than a few yards, when I was on holiday though I managed to walk round the entire lake with no pain!”

Previous patient.

You may have noticed how the same movement can feel different when carried out in a different context such as when you are on holiday, or when you are particularly relaxed compared to when you may be more stressed.

We may not realise it but part of the complexity of pain is that it can become a habitual response. If pain becomes a regular response to performing a movement such as bending to put on our shoes, we can start to fear the act of putting on our shoes; the body’s response to fear is to tense up which can then create even more pain and we can be in a never ending vicious cycle.

How can I break the habit of anticipating pain when I move?

Good to have internal attentional focus sensation

Accept sensations which are a habitual response to movement.

Focus on pain and accept it is being generated from within ask the question is there anything I am doing which is adding to this sensation – am I holding myself, am I worried about something, am I anxious about the movement

Goldilocks approach - not too much, not too little, but somewhere in the middle is usually just right.

- Experiment or play with different ways to move. Confront your fears.
- Apply a Goldilocks level of exercise stress to the painful area to encourage adaptation without further injury.

Strategies to start us and keep us moving

Planning how to use exercise and movement is a vital step once we have decided that exercise and movement should be part of our pain management plan. This process is something we may return to again and again if we encounter issues with maintaining our movement and exercise regimes.

I'd like to start exercising, but...

Sometimes we have every intention to move more and use exercise, and even have a plan as to which exercises we will do; but something holds us back from starting. At these times there are some questions we can ask ourselves which may help...

How important is it to me that I start this exercise?

0-----10 put an X on the line

How confident am I to start this exercise?

0-----10 put an X on the line

When you answer these 2 simple questions the answers can give you an honest insight into your true motivation (importance question), and any fears (confidence question) relating to your planned exercise.

Recognizing when your motivation is low can prompt you to review your situation and perhaps come up with something you would be more motivated to do.

Recognizing when your confidence low, or possibly fear is high, can prompt you to tackle something less frightening where you feel more confident of success.

If you find you lack confidence in doing the very things you feel your body needs, you may want to look in more detail at what is behind your concerns. By discovering what is behind your concerns you have the opportunity to seek help or advice to address them or adapt your plans to overcome the factors that cause the worry.

The Benefits of Cardiovascular Exercise

Cardiovascular exercise is any activity which makes your heart beat faster. The good news is you don't have to be gasping for breath in order to improve your cardio-vascular fitness. Any activity which makes you feel slightly warm, makes your heart beat slightly faster, and your breathing slightly deeper will be beneficial. Of course if you suddenly do a lot more activity than you have been used to you are likely to irritate grumpy tissues and trigger a flare-up, the key is to look for opportunities throughout the day to fit in small amounts of cardio-vascular activity (little and often). You might decide to do a few step-ups at the bottom of the stairs every time you pass, you might abandon the remote control for an evening and get up to change channel or park the car a bit further away when shopping. Whatever it is, it has to be right for you and fit easily with your lifestyle, over time you can then make gradual increases.

The benefits of exercise - from preventing chronic health conditions to boosting confidence and self-esteem - are hard to ignore and increasing cardiovascular fitness has been proven to be a very important tool in the management of chronic pain.

Here are some of the ways cardiovascular exercise helps:

1. Exercise improves your mood.

Exercise stimulates the production of various brain chemicals, which may leave you feeling happier and more relaxed than you were before exercised. You'll also look better and feel better when you exercise regularly, which can boost your confidence and improve your self-esteem.

Exercise can reduce feelings of depression and anxiety and reduces the effects of stress on the body.

2. Exercise closes the Pain Gate

Gentle activity has an effect to directly close the pain gate and make you feel more comfortable. Improved circulation to the tissues makes them more tolerant and carries away chemical irritants. Exercise stimulates the production of endorphins in the brain (your natural pain killing chemicals).

3. Exercise promotes better sleep.

A good night's sleep can improve your concentration, productivity and mood. Exercise can be the key to better sleep. Regular exercise can help you fall asleep faster and deepen your sleep. The timing is up to you — but if you're having trouble sleeping, you might want to try late afternoon exercise sessions. The natural dip in body temperature five to six hours after you exercise might help you fall asleep.

4. Exercise strengthens your heart and lungs and improves your general health.

Exercise delivers oxygen and nutrients to your tissues. In fact, regular exercise helps your entire cardiovascular system — the circulation of blood through your heart and blood vessels — work more efficiently. When your heart and lungs work more efficiently, you have more energy to do the things you enjoy. Exercise keeps you fit, improves your strength, stamina and range of movement.

5. Exercise can be fun!

Exercise doesn't have to be boring. Enjoy a walk in the countryside or by the sea, involve your family and friends. Find an activity you enjoy, if you get bored, try something new. If you're moving, it counts! Remember that the best exercise is the exercise that is done. You are much more likely to keep going with exercise if it is enjoyable!

6. Exercise combats illness.

Regular exercise can help you prevent — or manage — high blood pressure. Your cholesterol will benefit, too. Regular exercise boosts high-density lipoprotein (HDL), or "good," cholesterol while decreasing low-density lipoprotein (LDL), or "bad," cholesterol. This lowers the risk of heart disease and stroke.

Regular exercise can help you prevent type 2 diabetes, osteoporosis and certain types of cancer.

7. Exercise helps you manage your weight.

Exercise burns calories and helps you normalise your appetite. You don't even need to set aside major chunks of time for exercise. Take the stairs instead of the lift, walk during your lunch break, do 'sit to stands' during TV adverts.

HOW TO SET A BASELINE

It is important to work out your tolerance level or time for each activity or exercise in your plan. The tolerance is how much of the activity or exercise you can do without overdoing it.

Using walking as an example:

- Choose the best time of the day for you to walk and select a good place to start e.g. up and down the garden path.
- Walk at your own pace for a sensible period of time that you can manage today. You may have to make an educated guess at this stage but use your knowledge and experience to work out how much is manageable for you.
- If you know you have a tendency to overdo things at times, then recognise this, deliberately do less of the activity than you would normally.
- Record the amount of time, or distance you have walked.
- Repeat the experience the following day, walking as much as you feel you can manage that day.
- Record the amount of time, or distance you have walked.
- Repeat the experience again on the third day, using the same principles, and record the outcome.
- Average the scores and divide by two to find the baseline (or start point) for walking.

Record Sheet	Activity = Walking
Day one	5 mins
Day two	3 mins
Day three	4 mins
Total	12 mins
Average (divide by 3)	4 mins
Baseline (divide average by 2)	2 mins
Day four	2 mins

Once you have worked out your baseline follow it for at least three days. Then decide how much and how often you would like to progress it.

The baseline is very important. Once you have worked it out it will enable you to start the activity, or exercise, at a level which is manageable for you.

Evaluate

Stick to your baseline each day and make yourself a plan about how to move your baseline up (slowly).

After several days using the plan, look back and decide if changes need to be made. It is often helpful to identify any barriers that prevent you from sticking to your programme; once identified you can start tackling or overcoming these barriers.

Pacing up Exercise and Activity

There may be various activities which you wish to increase, such as your exercise programme, activities around the house like ironing or gardening, shopping etc.

Work out your baseline for each activity you wish to increase. Remember try not to tackle to many things at once.

Daily Target

Set daily targets or goals by which to increase your chosen activities. Do not do more than your target for that day, even if it feels like a good day. This will level out your activity cycling, and helps you begin to plan your activities better.

Re-evaluate at Regular Intervals

Carry out your planned programme for the next week, and at the end of the week look back at the record and set targets for the coming week.

Record

Keep a daily record of achievements. This will help you monitor you progress and adjust as necessary.

WORK OUT YOUR BASELINES

Think of an activity you would like to improve, for example, sitting, walking, driving etc., and fill out the table below. Once you have worked out your baseline try to stick to it for a week.

1.	Choose your activity	
	Is it realistic?	
2.	Measure what you can already do	
	Day 1	
	Day 2	
	Day 3	
	Total	
3.	Work out your average (divide the total by 3)	

4.	Work out your baseline (divide the average by 2)		
5.	Stick to your baseline for a week		
	Day	Time spent doing activity	How do I feel?
1			
2			
3			

	Day	Time spent doing activity	How do I feel?
4			

	5		
	6		
	7		
6.	Review the activity		
	What will be my new target?		

Strong Stand

Standing with your feet hip distance apart, gently move your weight from side to side and then forward and back until you find your “centre”.

Make sure that your thighs and knees are not braced.

Tuck your “tail” under and take your shoulders down and back. Lift through your upper abdomen.

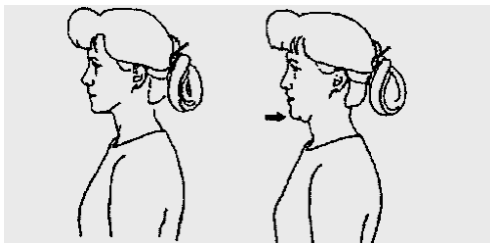
Tuck your chin in and imagine that you are being pulled upwards from the top of your head and STAND TALL for a few seconds.

Repeat at intervals throughout the day.

This exercise will help improve your core stability and postural awareness. Make sure that your abdominal and pelvic floor muscles only tighten gently.

Neck Exercises

EXERCISE 1 – CHIN TUCK

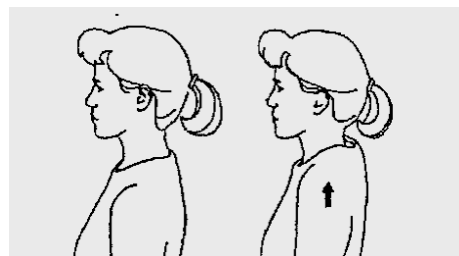


Looking straight forward, tuck chin and hold for up to 5 seconds.

Relax and return to starting position.

Repeat up to 5 times

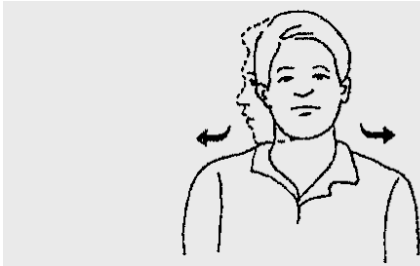
EXERCISE 2 – SHOULDER SHRUG



Shrug both shoulders up while breathing in. Relax and return to starting position while breathing out.

Repeat up to 5 times

EXERCISE 3 – NECK ROTATION



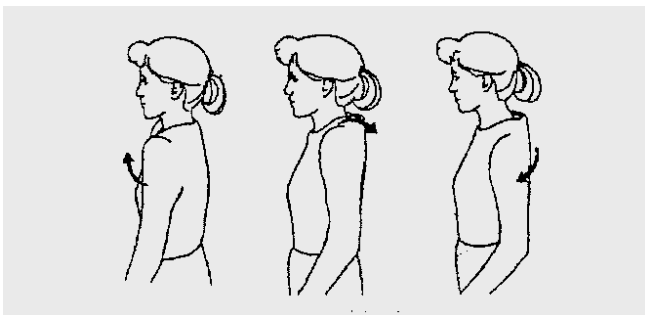
Turn head slowly to look over left shoulder. Return to starting position. Then turn to look over right shoulder. Repeat up to 5 times.

EXERCISE 4 - NECK SIDEWAYS BENDING



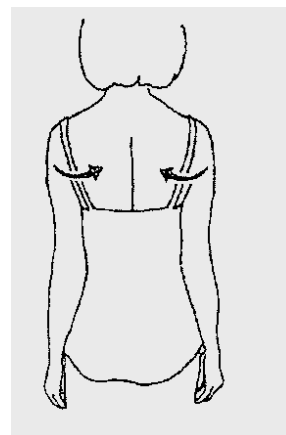
Tilt head sideways to both sides gently. Return to starting position. Repeat up to 5 times.

EXERCISE 5 – SHOULDER ROLL



Roll shoulder forward, up and back, then down to complete a circle up to 5 times.
Reverse direction up to 5 times.

EXERCISE 6 – CHEST LIFT



Maintaining erect posture, draw shoulders back while bringing elbows back and inward. Return to starting position. Repeat up to 5 times

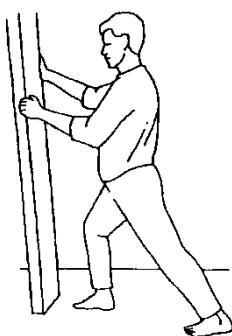
Stretches



WHOLE BODY STRETCH

Stand with your back against a wall, and your hips against the wall. Raise both arms up so that the backs of the hands are moving towards the wall. Make sure your back doesn't arch away from the wall. Feel the stretch under your arms, ribs and abdomen.

Hold for 5 seconds Repeat the stretch.



CALF STRETCH

Stand facing the wall with both hands on the wall, and one foot stepped forward in front of the other, both feet pointing forward. Bend the front knee, taking the hips forward slightly, keep both heels on the floor and feel the stretch in the back of the calf of the back leg.

Hold for 5 seconds. Repeat with the other leg. Stretch each leg twice.



SIDE STRETCH

Stand with your feet hip width apart. Stretch one arm above your head, lifting the hand towards the ceiling. Slide the opposite hand down the side of your leg towards the knee. Feel the stretch under the raised arm, legs and waist.

Hold for 5 seconds. Repeat with the other side. Stretch in each direction twice.



ROTATION STRETCH

Stand with your feet hip width apart, bend your knees slightly. Raise your arms to shoulder height in front of you and bend at the elbow. Turn to the right; starting by turning from the waist, bringing the turn up through the chest, and turn the head last to look over the right shoulder.

Hold for 5 seconds. Repeat with the other side. Stretch in each direction twice.

EXTENSION STRETCH



Stand with feet slightly apart. Place your hands over the small of your back, thumbs around your hips. Push hips forwards, and lift your chest. Feel the stretch in the abdomen and then straighten up.

DO NOT HOLD THIS STRETCH.

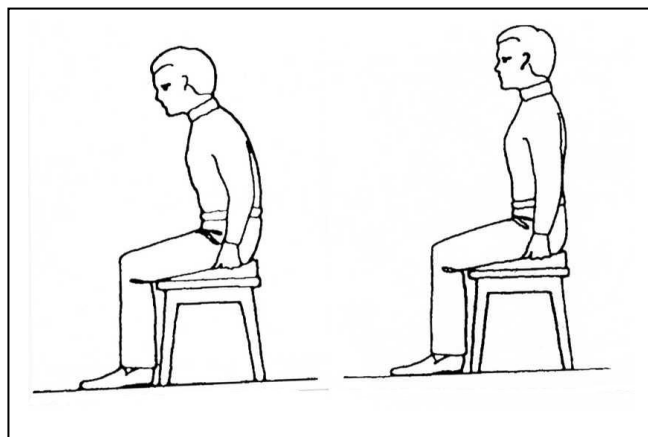
Repeat this movement 5 times.

Mobilising and strengthening Exercises in Sitting

1 Pelvic Tilt

Sit upright and unsupported on a chair with your hands tucked underneath your sitting bones. Slowly 'let go' in the middle to slouch and feel your sitting bones moving forward over your hands. Now slowly reverse the position, lifting your chest upwards and forwards to create an inward curve in your low back, and feel your sitting bones moving back into your hands.

Repeat gently up to 5 times.



2 Hip and Knee Bend

Sit upright and supported on a chair, gently pull one knee towards your stomach, helping with your hands, until you feel a gentle stretch. Press the other foot against the floor. Hold for 5 seconds, repeat with the other leg.

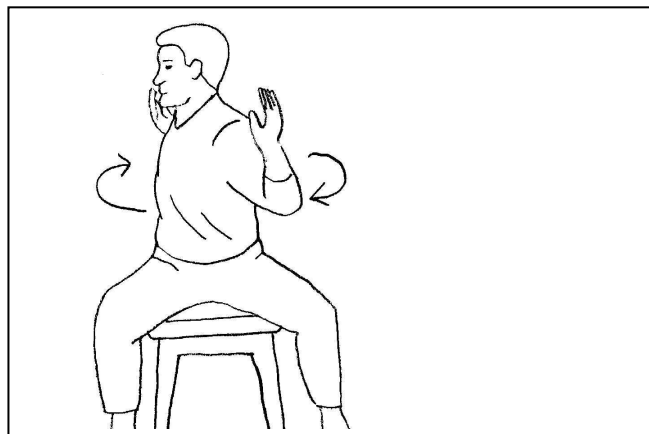
Repeat up to 5 times with each leg.



3 Rotation

Sit upright and unsupported on a chair, raise your arms (with elbows bent, palms forward) to chest height. Keeping your arms still, turn smoothly and gently to one side, feeling the movement happening around the tummy and low back. Turn back to the starting position and repeat the movement to the other side.

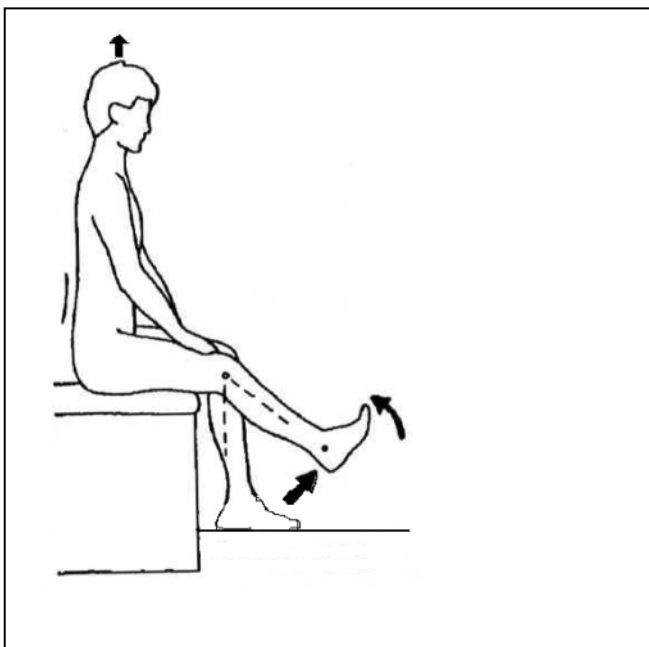
Repeat up to 5 times in each direction.



4 Foot Raise

Sit upright and unsupported on a chair, let your hands rest in your lap, and gently tighten your core muscles. Gently lift your knee a few centimeters, keeping your back and pelvis still. Hold for 5 seconds, then lower and repeat with the other leg.

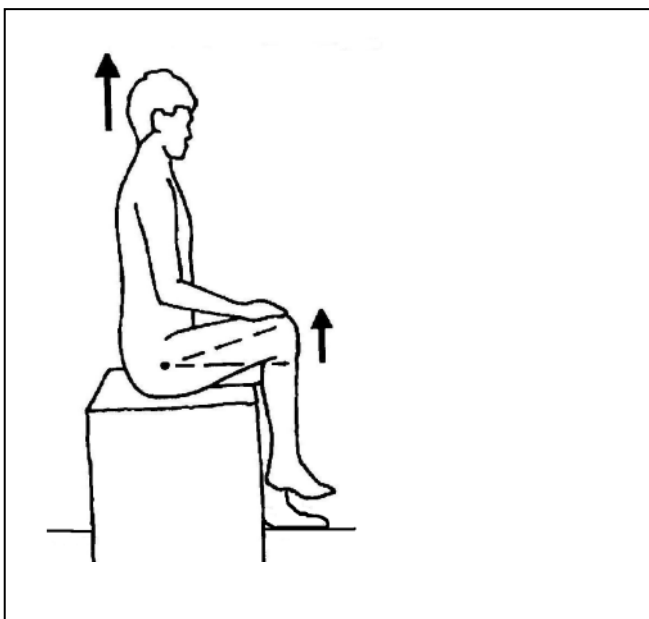
Repeat up to 5 times with each leg.



5 Knee Lift

Sit upright and unsupported on a chair, let your hands rest in your lap, and gently tighten your core muscles. Gently straighten your knee to raise your foot a few centimetres from the floor, keeping your knees at the same height and your back and pelvis still. Hold for 5 seconds, then return the foot to the floor, and repeat with the other leg.

Repeat up to 5 times with each leg.

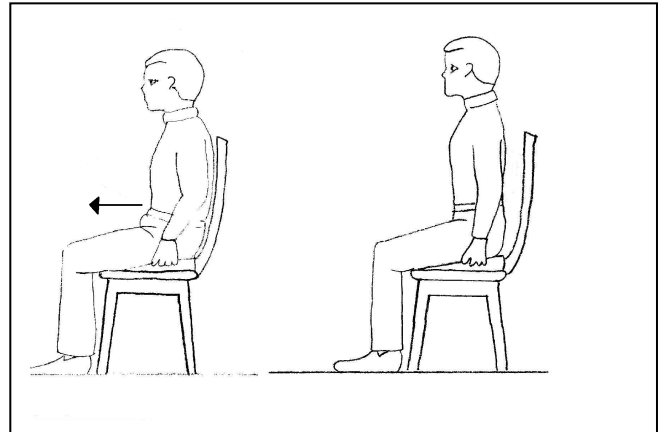


6. Slump Sit-up

Sit up straight in the middle of the chair with your hands resting in your lap, allow yourself to slump back into the chair.

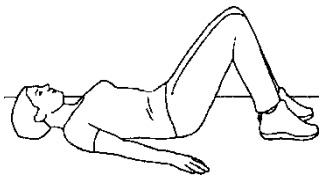
Using all your tummy muscles, move your trunk forward from the back of the chair. Hold for 5 seconds, maintaining a strong trunk, and then gently 'let go' into your slumped position.

Repeat up to 5 times.



Mobilising and Strengthening Exercises in Lying

Pelvic Tilt



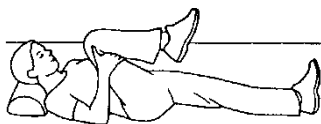
Lie on your back with your hands on your stomach or by your sides. Bend your knees and place your feet flat on the floor or bed.

Tighten your stomach muscles to flatten your lower back against the floor or the bed.

Hold for 5 seconds then relax.

Repeat a maximum of 5 times.

Hip and Knee Bend



Lie on your back with your legs straight.

Grasp under or over one knee, and pull it towards your chest as far as possible. Keep the other leg down and straight with toes pointed to the ceiling.

Hold for 5 seconds then relax.

Repeat with the other leg.

Repeat a maximum of 5 times on each leg.

Hip and Knee Roll

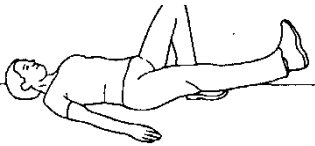


Lie on your back with your knees bent and feet flat on the floor or bed.

Keep your shoulders relaxed and in contact with the bed throughout the exercise. Slowly and gently roll your knees from side to side as far as is comfortable keeping your upper trunk still.

Repeat a maximum of 5 times.

Single Leg Lift

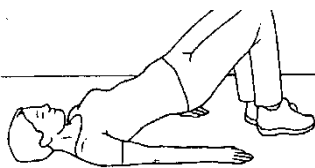


Lie on your back with knees bent and feet flat on the floor.

Keeping the knees at the same level slowly straighten one leg (keeping your ankle at 90 degrees).

Hold for 5 seconds - slowly lower the straightened leg to the floor. Repeat a maximum of 5 times with each leg.

The Bridge



Lie on your back with knees bent and feet on the floor. Relax your arms by your sides.

Start by tilting your pelvis using your stomach muscles and buttocks.

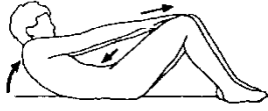
Then lift your pelvis and lower back (gradually vertebra by vertebra) off the floor. Hold the position for 5 seconds.

Lower down slowly returning to start position (let go of pelvis last). Repeat a maximum of 5 times.

Repeat a maximum of 5 times.

Partial Sit-Up

Lie on your back with both knees bent and feet flat on the floor.



Place your hands on the top of your thighs.

Tuck your chin in, tighten your stomach muscles and curl your upper body slowly forwards raising your head and shoulders.

Hold for 5 seconds.

Repeat a maximum of 5 times.

KEEPING MOTIVATED

Barriers to Exercise

We are all human! Stumbling at obstacles and lapsing are all part of human nature!

Learn to anticipate the obstacles and have a plan to overcome them.

Common Barriers that Challenge Motivation

- **Fear**
Remember that hurt does not mean harm. Set realistic goals, pace yourself and ensure a good warm up and cool down.
- **Low Energy**
Try exercising at different times of the day and remember exercise will give you energy!
- **Lack of Time**
Incorporate exercise into your daily life, for example, get off the bus earlier, park further away from work or the shops. Plan, and schedule an appointment with yourself to exercise.
- **No Money**
Use everyday equipment like chairs, stairs, tins and walls! Get fitness DVDs from the library. Remember walking is a good form of exercise.
- **Don't Enjoy Exercise**
Try exercising with a friend. Make cleaning fun, put your music on and get stuck in! Reward yourself each week for your achievements.