

## Introduction to Exercising

- Some of the exercises require you to use a piece of **Thera-Band** for muscle strengthening. If required you can buy it from [Physio Med](#). I would suggest red for the upper limb exercises, and green for the lower limb exercises. Depending on your physical capabilities, you may need to go higher or lower in the range.
- The purpose of these exercises is to stretch muscles which are shortened and in spasm, and to strengthen muscles which are weak.
- **What makes a happy muscle** - Happy muscles is one that is supple, strong, and emotionally calm ([good descending inhibition](#)). An unhappy muscle is one that is shortened, weak, and emotionally distressed ([poor descending inhibition](#)). You may ask "How do I stay emotionally calm in the presence of severe pain?" My answer would be that you should learn as much about the cause of the pain as possible, and try to develop a set of beliefs that are simple and have some basis in science. Try to avoid distressing adjectives, superstitious ideas about the pain, and dangerous labels like "crumbling discs", "spinal arthritis". Hopefully this website will help you to this end.
- If you are in the middle of an acute pain episode, then all of these exercises can be attempted, but need to be done gently, and without excessive force. Severe pain means you have over done it, and you need to be gentler. If you are experiencing just a little pulling feeling or mild pain, then that's about just right. On one hand you have to listen to your body so that you don't over do things, and on the other, you don't have to be frightened of it. Remember it's just muscle pain and it won't kill you. Gentle exercises such as these are very unlikely to cause harm. As the pain and spasm begins to ease, you can gently increase the length of time you spend stretching, and how far you push the stretch.
- I would suggest that you take the duvet off your bed and use the bed as a comfortable exercise mat. If you have an exercise mat then that would be fine also.
- Muscles relax when warm, and contract when cold. I would therefore suggest soaking in a hot bath before stretching, particularly during an acute attack.
- If you have [acute sciatica](#) with severe pain in the leg down to the foot, I would advise having [treatment](#) for the sciatica, before starting on this program. The stretches on this page also apply to those with [non-nerve root sciatica](#). Look at [exercises for sciatica](#) also.
- Those who have **chronic back pain** should pace themselves, not being too impatient at the start. Set yourself a small goal and take your time getting there. You cannot undo several years of back pain in five minutes. Starting too vigorously is likely to increase the muscle spasm not reduce it. If you haven't done it for years, then it is bound to hurt a little at the beginning. Have courage and don't be frightened. Stretching regularly plus general aerobic exercise like swimming and walking is the key to success. It may take you months or years to achieve some of the movements on this page. [Muscle Energy Techniques](#) may be more suitable for this group of sufferers. Some people may have to accept that they cannot achieve the full stretch, but even 50% achievement is better than nothing!!
- Those with severe heart and breathing problems should consult their own doctor before starting.
- These exercises should be safe for those with osteoporosis, but if you have any doubts please consult your own doctor.

## Muscle Energy Technique

- Muscle Energy Technique (MET) was invented by a USA osteopath, it is also known as Post Isometric Relaxation (PIR).
- It is basically an electro-physiological trick to encourage muscles to relax more quickly. You contract the muscle that you want to stretch against a fixed resistance for 5 seconds in one direction, and then gently stretch it in the opposite direction during the first 3 seconds after the contraction has stopped.
- The initial muscle contraction is known as an isometric contraction i.e. making the muscle work whilst it is kept at a fixed length. It appears that because of the way that agonist/antagonist pairs of muscles are connected to the dorsal horn of the spinal cord, a muscle can readily relax during the 3 second window just after a 5 second isometric contraction. Once you understand the basic principles of the technique, you can figure out how to stretch any muscle in the body!!
- You can also incorporate breathing into MET to aid muscle relaxation. Try to follow the sequence below:
  1. Gently stretch the muscle in question to the point where it begins to pull - this is the initial barrier point.
  2. Take a big breath in and hold it (don't let it escape).
  3. Whilst remaining at the barrier point, contract the muscle you want to stretch against a fixed resistance for FIVE seconds in one direction, at about 25% of maximum effort. You don't get any extra benefit by being macho - 25% is the best, not 100%.
  4. Quickly let your breath go with your mouth open (not slowly through pursed lips), and during the next THREE seconds gently stretch the muscle a little further in the opposite direction until you feel a gentle pull again - this is the new barrier point. You must not force the muscle to stretch, as this will cause it to contract rather than relax.
  5. Hold this new barrier point and start again at no.2, going round the loop several times.
- At the end of a 5 minute session you should find that the muscle has considerably lengthened, that it feels looser, and with a greater range of active and passive movement.
- It is common to find in an agonist/antagonist pair of muscles, that one muscle is over-developed, supple and strong, with the other muscle being under-developed, weak and short e.g. strong supple quadriceps in the front of the thigh with weak short hamstrings in the back of the thigh. For proper muscle balance it is worth stretching and strengthening the weak short one.
- For a practical demonstration of MET look at the MET stretch in [Flexion \(Lying\)](#).

## Neck

**Warning** - those with [vertebrobasilar insufficiency](#), [cervical spine instability](#) (e.g. rheumatoid arthritis), a large [cervical spine disc prolapse](#), a trapped nerve in the neck, or other serious neck conditions should consult their doctor before attempting any of these exercises.

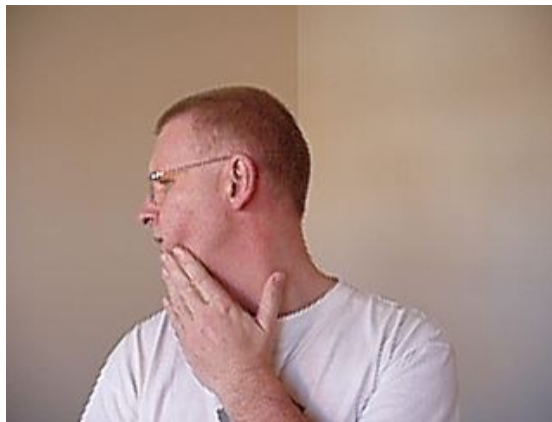
### Posterior Neck Muscles (including Splenius Capitis and Splenius Cervicis)

1. Sitting on a chair, let your head drop forwards as far as you are comfortable.
2. Place one or both of your hands over the top of your head, so that your finger tips are nearly at the back of your skull bone.
3. Whilst breathing out, let the weight of your arms carry your head further forwards, feeling the stretch at the back of your neck.
4. Do this for 1 - 2 minutes. Doing it in the shower may help your neck muscles relax further.
5. Try doing 1 - 4 with your head rotated to the left, and then with your head rotated to the right. Each time you will feel a pull in slightly different places.



## Neck Rotation

1. Start with your head in the neutral looking ahead position and your head above your shoulders.
2. Turn your head gently to the right until you feel tightness in your neck. Make sure that you are doing a pure rotation movement without any bending to the side.
3. Make sure that your mouth is closed and that your teeth are together. Place the middle three fingers of your left hand against the left hand side of your chin.
4. Whilst breathing out, gently push with the fingers of your left hand, to produce a few more degrees of rotation to the right. Spend a few minutes doing this gently using breathing out to help you relax.
5. Try doing 2 - 4 rotating your head to the left side, using your right hand on the right side of your chin to encourage rotation left.



## Anterior Neck Muscles (including Sternocleidomastoid and Scalenes)

1. Lie on the floor with your left arm behind your back.
2. With your head in the neutral looking ahead position, place your right arm so that your hand rests over the top of your head. Gently pull your head to the right until you feel the stretch.
3. Relax your right hand and rotate your head a few degrees to the left, and then pull your head gently sideways to the right using your right hand, until you feel the stretch. Breathe out as you stretch.
4. Relax your right hand and rotate your head to the right. Once again use your right hand to gently pull your head sideways until you feel the stretch. Breathe out as you stretch.
5. Try doing 1 - 4 for the other side of your neck.



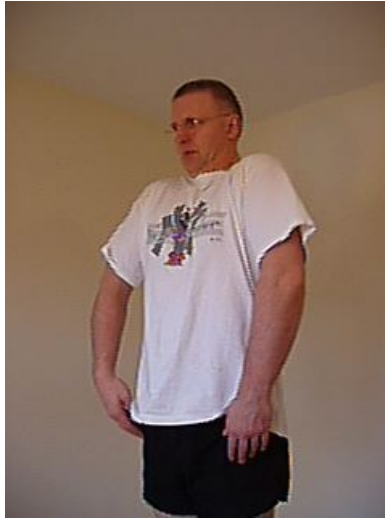
### **Sub-occipital Muscles**

1. Stand or sit up straight with your head above your body.
2. With your mouth closed and teeth together, place three fingers on the front of your chin.
3. Keeping your neck straight, push backwards on your chin with your fingers until you feel a pulling sensation in the back of your neck just under the base of the skull. Breathe out as you stretch.
4. If you're doing this stretch correctly you will feel as though you're producing a double chin.



### **Shoulder Rolls (including Trapezius)**

1. The name implies this is an exercise for the shoulder, but its main use is for the root of the neck (cervico-dorsal junction), trapezius, clavicle (collar bone), and the upper thoracic spine (also functionally part of the neck).
2. Sit in a chair or stand up with your arms hanging loosely by your side.
3. Pretend that you are going to draw circles with the tips of your shoulders.
4. The circles should be as round as possible, and with as big a radius as possible.
5. Spend 1 -2 minutes rotating your shoulders clockwise, and then repeat rotating them anti-clockwise.
6. You may notice some popping of the neck and upper thoracic facet joints whilst doing this exercise fairly vigorously. Don't worry about it - it's just your old bones beginning to move again.



## Upper Thoracic

1. While standing hold hands behind your back.
2. Try to make your shoulder blades touch (like squeezing an orange between your shoulder blades) whilst pulling gently downwards with your hands. Feel the stretch in your pectoral muscles in the front of your chest.



## Shoulder

### Posterior Shoulder Muscles (including Infraspinatus and Rhomboids)

1. This stretch is also known as the Scarf Stretch.
2. Wrap your right arm over your left shoulder (like a scarf). Let your right shoulder relax and sag downwards - try not to hold it up in the air.
3. Place your left hand on the back of your right elbow.
4. Pull gently with your left hand, trying to get the inside edge of your right elbow close to the front of your left shoulder, dropping your right hand over the back of your left shoulder.
5. Whilst breathing out, feel the pull between the thoracic spine and the right shoulder blade.
6. Try doing 2 - 5 for the left shoulder.



### **Lateral Shoulder Muscles** (including Teres and Triceps)

1. In the standing position, slide the palm of your right hand behind the base of your neck.
2. Bring your left arm across behind your head so that you can grab your right elbow with your left hand.
3. Whilst breathing out, use your left arm to pull on your right elbow, so that your right hand slides further down your back. Feel the pull on the lateral edge of your shoulder blade (and also down the back of your right arm if triceps is tight).



### **Anterior Shoulder Muscles** (including Subscapularis, Pectoralis Major and Minor)

1. Pectoralis major has 3 parts - upper, middle and lower. Use the following stretch for all 3 parts as well as subscapularis and pectoralis minor.
2. Stand in a suitable doorway with your feet 6 inches away from the threshold. Place your palms and forearms flat against the frame of the door way.
3. To stretch the upper fibres start with your thumbs level with your ears.
4. Whilst breathing out, let your body fall forwards so that you can feel the pull in the front of the chest. If you are comfortable, let your body hang there for 30 seconds or so.
5. To stretch the middle fibres, slide your hands and forearms a little further up the door frame and repeat no.4.
6. To stretch the lower fibres slide your hands and forearms even further up the door frame and repeat no.4.
7. You can make this stretch easy or hard by changing the distance your feet away from the threshold of the doorway. The further your feet are away, the harder the stretch and vice versa.



**Towel Stretch** (good for those recovering from a Frozen Shoulder)

1. Hold a hand towel firmly in your right hand.
2. Swing your right arm over your head so that the towel dangles down behind your back.
3. Grab the lower end of the towel with your left hand firmly.
4. Letting your left arm and shoulder muscles relax, keeping hold of the towel in your left hand, raise your right arm in the air, pulling your left arm up behind your back.
5. Lower your right arm allowing your left arm to drop down again. The exercise is just like you're drying your back with a towel.
6. Repeat steps 4 - 6 again trying to get your left hand further up your back each time.
7. Try it for the other arm.



**Chasing Spiders** (good for those recovering from a Frozen Shoulder)

1. Stand facing a wall with your toes touching the skirting board.
2. Place the palms of your hands on the wall ahead of you.
3. Keeping your trunk fairly close to the wall, pretend that you're chasing a spider up to wall, by walking up the wall with your fingers.
4. Repeat steps 2 - 3 trying to get as high as you can with your fingers up the wall.



### **Scapular Elevation Thera-Band Exercise**

1. Sit comfortably on a dining chair.
2. Loop a 50 cm piece of Thera-Band under your left foot and hold the other end in your left hand.
3. Let your left arm hang at the side of the chair.
4. Making sure you can feel some initial tension in the band, raise your left shoulder upwards whilst keeping your left arm straight. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Scapular Protraction Thera-Band Exercise**

1. Stand with your back to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding on to the other end with your left hand.
3. Move away from the door slightly to pretension the band.
4. Start with your left fist close to your chest.
5. Slowly extend your arm out in front of you, feeling the tension build in the band.
6. Release the tension slowly back to the starting point.
7. Repeat 5 - 10 times. Repeat on the other side.



### **Scapular Retraction Thera-Band Exercise**

1. Stand facing the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding the other end in your right hand.
3. Move away from the door slightly to pretension the band.
4. Move your arm backwards keeping the forearm horizontal, feeling the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Abduction Thera-Band Exercise**

1. Stand with your left side towards the door.
2. Loop a 50 cm piece of Thera-Band around the door handle and hold the other end in your right hand.
3. Move away from the door slightly to pretension the band.
4. Elevate the arm away from your right side, keeping your arm straight at the elbow, and making sure your arm doesn't wander forwards.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Adduction Thera-Band Exercise**

1. Stand with your left side towards the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding the other end in your left hand.
3. Move away from the door so that your arm is elevated to the side and the band is pretensioned.
4. Bring your down with the elbow kept straight, so that it lies against the side of your body.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Flexion Thera-Band Exercise**

1. Stand with your back to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding the other end in your left hand.
3. Move away from the door slightly to pretension the band.
4. Elevate your arm forwards keeping your elbow straight.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Extension Thera-Band Exercise**

1. Stand facing the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding the other end in your right hand.
3. Step backwards so that your arm is straight out in front of you and the band is pretensioned.
4. Bring your right arm down to your side, keeping your elbow straight, feeling the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Internal Rotation Thera-Band Exercise**

1. Stand with your left side to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle and hold the other end in your left hand.
3. Bend your left elbow to 90 degrees. Place your right hand over your left elbow to keep the left elbow in place.
4. Pretension the band by moving away from the door.
5. Rotate your left arm at the shoulder so that the left arm comes across the front of your body. Keep your elbow bent at 90 degrees. Feel the tension build in the band.
6. Release the tension slowly back to the starting point.
7. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder External Rotation Thera-Band Exercise**

1. Stand with your left side to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle and hold the other end in your right hand.
3. Bend your right elbow to 90 degrees. Place your left hand over your right elbow to keep the right elbow in place.
4. Pretension the band by moving away from the door.
5. Rotate your right arm outwards at the shoulder so that your right arm moves away from your body. Keep your right elbow bent at 90 degrees and make sure your right elbow stays tucked into your side. Feel the tension build in the band.
6. Release the tension slowly back to the starting point.
7. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Horizontal Abduction Thera-Band Exercise**

1. Stand with your left side to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, and hold the other end in your right hand.
3. Move your right arm across your body at chest level, and move away from the door to pretension the band.
4. Keeping your arm straight at the elbow, move your right arm away from the door, all the while keeping it at chest level. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Horizontal Adduction Thera-Band Exercise**

1. Stand with your left side to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, and hold the other end in your left hand.
3. Hold your left arm out in front of you at chest level, and move away from the door to pretension the band.
4. Keeping your arm straight at the elbow, move your left arm across your chest, keeping the elbow straight. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Shoulder Diagonal Extension Thera-Band Exercise**

1. Stand with your left side to the door.
2. Loop a 50 cm piece of Thera-Band around the door handle and hold the other end in your right hand.
3. Place your right arm across your body, at hip level, keeping it straight at the elbow. Move away from the door to pretension the band.
4. Move your right arm away from the door, and in an upwards diagonal direction, keeping the elbow straight. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Chest Pull Thera-Band Exercise**

1. Hold a 50 cm loop of Thera-Band with your hands at either end.
2. Raise your arms in front of you horizontally.
3. Pretension the band by separating your arms slightly.
4. Keeping your elbows straight, move both arms outwards, keeping them at chest height. Try to get the band to touch your chest - don't worry if you can't at first.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times.



**Arms**

### **Biceps Thera-Band Exercise**

1. Sit comfortably on a dining chair.
2. Loop a 50 cm piece of Thera-Band under your left foot, holding the other end in your left hand.
3. Rest your left forearm on your left thigh.
4. Bend your left elbow as far as you can feel the tension build in the band. Keep your elbows resting on your thigh.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Triceps Thera-Band Exercise**

1. Stand facing the door.
2. Loop a 50 cm piece of Thera-Band around the door handle, holding the other end in your right hand palm up.
3. Bend your right elbow to 90 degrees, and move away from the door to pretension the band.
4. Keeping your right elbow tucked into your side, straighten the elbow trying to get the arm as straight as possible. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Wrist Flexion Thera-Band Exercise**

1. Sit comfortably on a dining chair.
2. Loop a 50 cm piece of Thera-Band under your left foot and hold the other end in your left hand palm up.
3. Rest your left forearm on your left thigh, with the wrist and hand protruding beyond your knee.
4. Starting with your wrist in the extended position, flex it upwards, keeping your forearm on your thigh. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Wrist Extension Thera-Band Exercise**

1. Sit comfortably on a dining chair.
2. Loop a 50 cm piece of Thera-Band under your left foot, holding the other end in your left hand palm down.
3. Rest your left forearm on your left thigh, with your left wrist and hand protruding beyond the knee.
4. Starting with your wrist in the flexed position, extend it upwards, keeping your forearm on your thigh. Feel the tension build in the band.
5. Release the tension slowly back to the starting point.
6. Repeat 5 - 10 times. Repeat on the other side.



### **Back Exercises:**

#### **Flexion (Lying )**

### **Basic Stretch**

1. Clasp your hands in front of your knees, interlacing your fingers together. Make sure your neck is comfortable on a pillow.
2. Keep your knees together and gently use your arms to pull your knees towards your chest, stopping when you feel tightness in your lower lumbar region. This is the barrier point.

3. You can now gently use your arms to move your knees backwards and forwards, in and out of this barrier point, for 5 minutes. Gradually you will feel that your knees are able to move closer to your chest as your back muscles begin to increase in length. A good tip is to breathe out as you pull your knees up, preventing your muscles from going into spasm.
4. The end point to this stretch is when you can get your knees right up to your chest, whilst raising your tail bone in the air.
5. If you can get your knees all the way up to your chest without any pulling sensation in the lower lumbar spine, then you have no significant muscle spasm in the lower lumbar area.
6. If it is too painful to clasp both your hands in front of both knees, try doing it with just one knee at a time, alternating between knees. Alternatively try the MET stretch below first.
7. These stretches may not be suitable for those with severe hip arthritis as it may cause pain in the groin. Those with large stomachs and/or breasts may find it hard - but this should not be an excuse not to try!!



### **MET stretch**

1. Clasp your hands in front of both of your knees, interlacing your fingers together. Make sure your neck is comfortable on a pillow.
2. Keep your knees together and gently use your arms to pull your knees towards your chest, stopping when you feel tightness in your lower lumbar region. This is the barrier point.
3. At the barrier point, take a breath in and hold it (don't let it go), push your knees against your hands for FIVE seconds, at about 25% maximum effort, not letting your knees move away from you. N.B. You are contracting your back muscles when you push against your knees like this.
4. Breathe out quickly through your mouth, and relax all your muscles, but don't let your knees move away from you. During the next THREE seconds, use your arms to move your knees 1-2 cm closer to your chest. Stop when you feel a pull in the back, this is your new barrier point. Hold your knees there using your arms, and don't let your knees drift away from you.
5. Go to No.3 and start again. Go round this loop for 5 minutes, and you will find that gradually you will be able to get your knees all the way to your chest.
6. Those with severe back spasm will only be able to move their knees closer to their chest in small jumps, taking several days to achieve the goal. It is sometimes useful to try this technique with one leg at a time, and then progress to both legs. Those with lesser spasm will be able to achieve their goal more rapidly.

## **Flexion (Kneeling)**

This is a powerful stretch to encourage Flexion in the thoracic-lumbar spine.

1. Kneel on the bed with your knees together, and with your feet and bottom over the edge of the mattress. Be careful not to fall off.
2. Whilst breathing out, curl up in a ball, with hands out in front of you on the bed, and your face tucked down towards your knees - like "Praying to Mecca". Hold this position for several minutes, using gentle breathing to aid relaxation.
3. You can make this a much more powerful stretch by clasping your hands in front of your shin bones, and using your arms to increase the amount forward flexion. Again hold this position for a few minutes, using gentle breathing to aid relaxation.



## **Rotation (Lying)**

These are stretches to encourage rotation in the lower thoracic spine and around the thoracic-lumbar junction. In the neutral position the lumbar spine will not rotate due to bony facet joint locking.

### **Easy Stretch**

1. Lie on your back with your feet and knees together, knees bent to 90 degrees and feet flat on the bed.
2. Whilst breathing out, let your knees drop to the left until they reach the bed, keeping your shoulders flat. Don't hold your breath or close your voice box on the way down, as this will encourage the back muscles to tighten. Don't rotate your upper trunk with your knees, as this will not produce any stretch at all.
3. Bring your knees back up again, and try the same thing to the right, again whilst breathing out.
4. When you are more confident, try swinging your knees from side to side rhythmically like a pendulum. If you can do this easily, then move on to the harder stretch.



## Harder Stretch

1. Lie on your back, flexed at the hip with your thigh bones perpendicular, knees bent, and with your feet together not touching the bed. Have your arms away from your body at 90 degrees (like Jesus on the cross), holding on to the edge of the mattress, to help stabilize the upper trunk.
2. Whilst breathing out, let your knees drop to the left until they reach the bed, keeping your shoulders flat. Don't hold your breath or close your voice box on the way down, as this will encourage the back muscles to tighten. Don't rotate your upper trunk with your knees, as this will not produce any stretch at all.
3. Bring your knees back up again, and try the same thing to the right, again whilst breathing out.
4. When you are more confident, try swinging your knees from side to side rhythmically like a pendulum. If you can do this stretch easily then you don't have significant thoracic-lumbar spasm.



## Side Bending (Lying)

- This is a stretch to encourage side bending in the lumbar spine.
  1. Lie on your back with your legs flat, knees and feet together.
  2. Bend your elbows and fix your thumbs on top of the bony prominences on the front of your hip bones, and place your other fingers backwards around your hips/buttocks. You are trying to hold your pelvic bone in both hands.
  3. Push down with your left hand trying to make your left leg longer than the right, whilst hitching your right hip upwards. Don't let your knees bend.
  4. Then push down with your right hand trying to make your right leg longer than the left, whilst hitching your left hip upwards. Again don't let your knees bend.
  5. Try doing alternate movements smoothly and rhythmically, so that you end up doing a "buttock shuffle".
  6. Women seem to be more coordinated at this than men for some reason!!

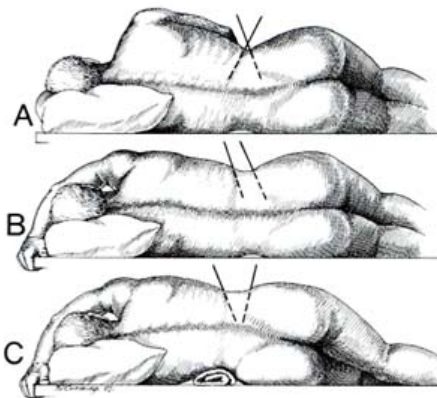


## Quadratus Lumborum

### Basic Stretch

This stretch helps encourage side bending in the lumbar spine.

1. Lie on your side (bad side uppermost) with your head supported on a pillow.
2. Place a rolled up towel in the gap between your ribs and hip bone.
3. Bend your lower leg up at the hip and knee, allowing your upper leg to drop down.
4. Raise your upper arm over your head encouraging side bending in the lumbar spine.
5. Try doing it on the other side as well.



## Extension (Face Down)

This is a stretch to encourage **Extension** of the lower thoracic and lumbar spine. It will also produce stretching of the abdominal muscles. People with spinal stenosis, foraminal stenosis, or an acute disc should not perform this stretch unless they have been instructed to do so by their doctor or physiotherapist.

1. Lie on your front with your feet together.
2. Prop yourself up on your elbows, arching your back and gently tipping your head backwards.
3. This stretch can be made more powerful by propping yourself up on your arms, either with the elbows bent, or the elbows straight. At all times your pelvis should be in contact with the surface of the mattress. Hold this stretch for a few minutes, using gentle breathing to aid relaxation.



### Active Extensions

These exercises are to strengthen the back and buttock muscles.

#### Back Extensions

1. Lie on your front with your feet together.
2. Hold hands behind your bottom.
3. Move your hands downwards, whilst lifting your head and upper trunk off the bed and hold for FIVE seconds, dropping back down on to the mattress afterwards. You may need someone to hold on to your ankles for you.
4. Rest for a moment, before trying No.3 again.
5. Set an initial target of 10 repetitions, increasing the number by an extra 10 and so on, when you feel confident.



#### Leg Extensions

1. Lie on your front with your head resting on your forearms.
2. Lift your left leg backwards behind you, keeping the knee straight, and pointing your toes.
3. Hold for FIVE seconds, dropping back down on to the mattress afterwards.
4. Rest for a moment, before trying No.3 again.
5. Do the same sequence for the right leg.

6. Set an initial target of 10 repetitions for each leg, increasing the number by an extra 10 and so on, when you feel more confident.



### General Co-ordination

1. Get onto your hands and knees on the mattress, keeping your arms, thighs and back fairly straight.
2. Hold your left arm out in front of you horizontally in line with your body, as well as extending your right leg behind you horizontally in line with your body, ending up balancing on the mattress supported on your right hand and left knee (just like a lizard in the desert standing on hot sand !!)
3. Hold this for FIVE seconds, releasing the position so that you end up on your hands and knees again.
4. Hold your right arm out in front of you horizontally in line with your body, as well as extending your left leg behind you horizontally in line with your body, ending up balancing on the mattress supported on your left hand and right knee (mirror image of No.2 above).
5. Set an initial target of 10 repetitions for each version, increasing the number by an extra 10 and so on, when you feel confident.



### Abdominal Muscles

These exercises are to strengthen the abdominal muscles. About 50% of the support for the spine comes from these muscles, and they also have a very important role during lifting. Therefore strong abdominal muscles are crucial to prevent the spine being vulnerable to injury. For **abdominal muscles stretches** look at [Extension \(Face Down\)](#).

### Upper Abdominal Exercises

- **Part 1**

- Lie on your back with your feet and knees together, knees bent to 90 degrees and feet flat on the bed.
- With your arms out stretched place your finger tips on your knees.
- Hold this position for FIVE seconds, dropping back down on to the bed afterwards.
- Pause for a moment, before trying it again.



- **Part 2**

- Do the same exercise placing your right finger tips on your left knee.
- Hold this position for FIVE seconds, dropping back down on to the bed afterwards.
- Pause for a moment, before trying it again.
- Do the same exercise placing your left finger tips on your right knee.
- Set an initial target of 10 repetitions for each of the three exercises, increasing the number by an extra 10 and so on, when you feel confident.



## Lower Abdominal Exercises

- **Easy**

1. Lie on your back with your legs flat and feet together.
2. Slowly bring your knees up together, so that your hips and knees are each bent at 90 degrees, with your thigh bones perpendicular to the mattress.
3. Whilst breathing out, slowly lower your legs down to the mattress over about FIVE seconds, keeping your knees together, ending up with your legs straight, and being careful not to arch your back.
4. Set an initial target of 10 repetitions, increasing the number by an extra 10 and so on, when you feel confident.



- **Hard** (don't do this one if you have moderate / severe back pain)
  5. Lie on your back with your legs flat and feet together.
  6. Slowly raise both legs up together with your knees straight, until they are pointing up at the ceiling, bent 90 degrees at the hip.
  7. Whilst breathing out, slowly lower your legs down to the mattress over about FIVE seconds, keeping your knees together, ending up with your legs straight, being careful not to arch your back.
  8. Set an initial target of 10 repetitions, increasing the number by an extra 10 and so on, when you feel confident.



## CAT Exercise

Designed to train Transversus Abdominis the deepest abdominal muscle and important for spinal stability and strength.

- **Part 1**
  - Get onto your hands and knees on the mattress, keeping your back fairly straight. Relax your back and abdominal muscles, allowing them both to sag downwards as much as possible, and hold for a few seconds. Don't let your arms bend.



- **Part 2**

- Next arch your back upwards "like an angry cat", whilst trying to suck your abdominal muscles upwards. Tip - try closing your voice box and breathing in at the same time. Imagine that you are trying to make your tummy button touch your spine. Hold for a few seconds then relax.
- Repeat Parts 1 and 2 in sequence, setting an initial target of 10 repetitions, increasing the number by an extra 10 and so on, when you feel confident.



## Pelvic Tilts

1. Lie on your back with both feet on the floor, knees and hips flexed, hands palm down beside you.
2. Push you bottom into the floor arching your lower back as far as possible, and hold for a few seconds.
3. Do the reverse movement by lifting your bottom off the floor whilst thrusting you pelvis forwards, and hold for a few seconds. Keep as much of your lower back in contact with the floor as possible, this concentrates the exercise around the lumbar-pelvic junction.
4. Go to No.2 and repeat.
5. Set an initial target of 10 repetitions, increasing the number by an extra 10 and so on, when you feel confident.
6. When you are confident try developing a continuous movement from 2 to 3 without pausing in between.

