

PROFESSIONAL AND HOME USE

STRETCHING FOR PAIN RELIEF

TRUNK AND SPINE

NIEL ASHER EDUCATION / LAWFORD COLLEGE

Fitness and Flexibility

An individual's physical fitness depends on a vast number of components, and flexibility is only one of these. Although flexibility is a vital part of physical fitness, it is important to see it as only one "spoke" in the "fitness wheel." Other components include strength, power, speed, endurance, balance, co-ordination, agility, and skill.

Whilst particular sports require different levels of each fitness component, it is essential to plan a regular exercise or training program that covers all the components of physical fitness. Rugby and American football (gridiron), for example, rely heavily on strength and power; however, the exclusion of skill drills and flexibility training could lead to serious injury and poor performance. Strength and flexibility are of prime concern to a gymnast, but a sound training program would also improve power, speed, and endurance.

The same is true for each individual: while some people seem to be naturally strong or flexible, it would be foolish for such persons to completely ignore the other components of physical fitness. And just because an individual exhibits good flexibility at one joint or muscle group, it does not mean that the entire individual will be flexible. Therefore, flexibility must be viewed as specific to a particular joint or muscle group.

The Dangers and Limitations of Poor Flexibility

Muscles that are tight and stiff limit our normal range of motion. In some cases, lack of flexibility can be a major contributing factor to muscle and joint pain. In the extreme, lack of flexibility can mean it is difficult, for example, to even bend down or look over the shoulder.

Tight, stiff muscles also interfere with proper muscle action. If the muscles cannot contract and relax efficiently, the result will be a decrease in performance and a lack of muscle movement control. Moreover, short, tight muscles cause a dramatic loss of strength, power, and efficiency during physical activity.

In a very small percentage of cases, muscles that are tight and stiff can even restrict blood circulation. Good blood circulation is vitally important in helping the muscles receive adequate amounts of oxygen and nutrients. Poor circulation can result in increased muscle fatigue and, ultimately, will impede the muscles' repair process and the ability to recover from strenuous exercise.

Any one of these factors can greatly increase the chances of becoming injured. Together they present a package that includes muscular discomfort, loss of performance, an increased risk of injury, and a greater likelihood of repeated injury.

Causes of Restricted Flexibility

The muscular system needs to be flexible in order to achieve peak performance, and stretching is the most effective way of developing and retaining flexible muscles and tendons. However, a number of other factors also contribute to a decrease in flexibility.

Flexibility, or range of motion, can be restricted by both internal and external factors. Internal factors such as bones, ligaments, muscle bulk, muscle length, tendons, and skin all restrict the amount of movement at any particular joint. As an example, the human leg cannot bend forward beyond a straight position, because of the structure of the bones and ligaments that make up the knee joint.

External factors such as age, gender, temperature, restrictive clothing, and of course any injury or disability will also have an impact on one's flexibility.

Flexibility and the Ageing Process

It is no secret that with each passing year, the muscles and joints seem to become stiffer and tighter. This is part of the ageing process and is caused by a combination of physical degeneration and inactivity. Although we cannot help getting older, this should not mean that we give up trying to improve our flexibility.

Age should not be a barrier to a fit and active lifestyle, but certain precautions should be taken as we get older. Participants just need to work at it for longer, be a little more patient, and take a lot more care.

Stretching

Stretching has a host of benefits, including:

- Improved range of motion
- Increased power
- Diminished post-treatment soreness
- Reduced fatigue

Stretching the muscles with trigger points, or the muscles that you are trying to strengthen, is important for breaking old holding patterns, restoring range of motion, and preventing injury. Gently stretching after a trigger point treatment session or after strengthening exercises can help reduce muscle soreness and keep your muscles long and flexible.

Types of Stretching

There are many different ways to stretch, each with its advantages and disadvantages. The two most recommended techniques are: (1) passive/static stretching, best used at home or after treatment; and (2) proprioceptive neuromuscular facilitation (PNF), best used when working with a partner.

The effects of different techniques vary from person to person. It is advised to warm up for 10 minutes before stretching, whether with some cardiovascular exercises or a warm/hot shower.

Passive/Static Stretching Technique

This technique is safe and effective for the novice:

1. Place the body in a position where the muscle you want to stretch can be put under tension.
2. Slowly and cautiously approach the stretch.

Do not stretch to the point of pain—discomfort is expected, but be cautious not to force the stretch.

3. Hold for a minimum of 20 seconds (45–60 is best) and allow the muscle to lengthen.
4. Breathe and relax
5. Gently come away and rest for 45–60 seconds.
6. Repeat the stretch 2–3 times
7. Repeat 2–3 times daily.

Increase efficiency by stretching the antagonist (the opposite muscle) straight afterwards.

Proprioceptive Neuromuscular Facilitation (PNF)

This is a more advanced technique and may be used for obtaining more permanent results; it also improves muscular strength. There are several forms of PNF stretches, including “hold relax stretch” or “contract relax stretch.”

1. Position the muscle group so that it is under tension, and hold.
2. Contract the stretched muscle for 5–6 seconds while a partner resists you moving the joints.
3. Stretch the muscle again for approximately 30 seconds.
4. Rest/recover for 30 seconds.
5. Repeat the procedure 2–4 times (up to 10 minutes).
6. Repeat 2–3 times daily.

Protocol for Stretching

As a rule any stretching program should be continued for four to six weeks, unless otherwise specified by your practitioner, doctor, or physical therapist. After your recovery, these exercises can be continued as a maintenance program for lifelong protection and health.

Performing the exercises two to three days a week will maintain strength and range of motion. A goal should be to make a regular time at home every day for stretching the affected muscles toward obtaining full range of motion. It is also advised to keep a diary of any stretches that aggravate your trigger point symptoms.

Remember to warm up before doing stretches: perform 5 to 10 minutes of low-impact activity, such as walking or riding a stationary bicycle.

NB: Do not ignore pain. It is important to be aware that overzealous stretching can reactivate latent trigger points. The advice is to progress

gradually from one stretch to another and listen to your body; different stretches work different types of fiber and afford the brain a better sense of self. You should not feel severe pain during or after a stretch: in general, if a stretch activates your trigger point pain, it should be stopped.

Pain on rest can indicate that the trigger points are very active. The advice here is either to rhythmically move the effected area in warm water or to apply moist heat and the gentlest of massage.

Talk to your practitioner, doctor, or physical therapist if you have any pain while stretching.

Foam Roller Stretching

Foam rollers have been used since the 1950s to stretch ease and ‘rebalance’ muscular tension. Dr. Moshe Feldenkrais is credited with having been the first person to use them for therapeutic purposes. Foam rollers come in various shapes, sizes and densities; they are cheap to buy and easy to use. Selecting the best roller is down to personal choice. Often this depends on your height, weight and the area you are looking to stretch.

Rollers can be very effective at deactivating trigger points both on their own, after hands-on techniques, and after dry needling. Using a foam roller is simple; used properly they can be very effective for improving:

- Balance
- Flexibility
- Coordination
- Relaxation
- Range of motion

Medical Disclaimer

The techniques offered in this book are not a substitute for proper therapy from a registered practitioner; although aches and pains from trigger points and muscle injuries are common, there can sometimes be an underlying pathology. It is advisable to always seek a proper diagnosis from a qualified medical practitioner.

You follow the techniques described in this book at your own risk.

If you think you may be suffering from any medical condition you should seek immediate medical attention. You should never delay seeking medical advice, disregard medical advice, or discontinue medical treatment because of information provided herein.



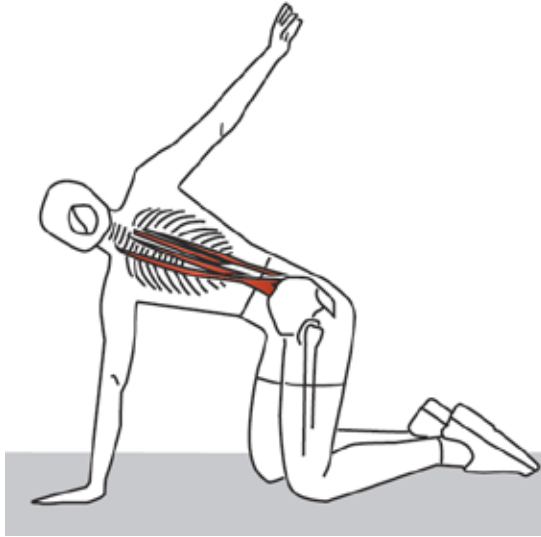
TECHNIQUE: Sit on a Swiss ball and slowly roll the ball forward while leaning back. Allow your back and shoulders to rest on the ball and your arms to hang to each side.

PRIMARY MUSCLES: External and internal intercostals. External and internal obliques. Transversus abdominis. Rectus abdominis.

SECONDARY MUSCLES: Pectoralis major and minor.

INJURY WHERE STRETCH MAY BE USEFUL: Abdominal muscle strain. Chest strain. Pectoral muscle insertion inflammation.

NOTE: For most people who spend their day in a seated position, (office workers, drivers, etc.) the muscles in the front of the body can become extremely tight and inflexible. Exercise caution when performing this stretch for the first time and allow plenty of rest time between each repetition.



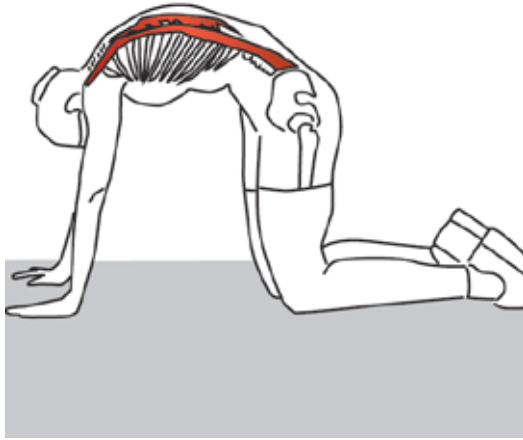
TECHNIQUE: Kneel on the ground and raise one arm. Then rotate your shoulders and middle back while looking upwards.

PRIMARY MUSCLES: Semispinalis thoracis. Spinalis thoracis. Longissimus thoracis. Iliocostalis thoracis. Iliocostalis lumborum. Multifidus. Rotatores. Intertransversarii. Interspinales.

SECONDARY MUSCLES: External and internal obliques. Pectoralis major.

INJURY WHERE STRETCH MAY BE USEFUL: Back muscle strain. Back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Keep your arm pointing straight upward and follow your hand with your eyes. This will help to further extend the stretch into your neck.



TECHNIQUE: Kneel on your hands and knees. Let your head fall forwards and arch your back upwards.

PRIMARY MUSCLES: Semispinalis cervicis and thoracis. Spinalis cervicis and thoracis. Longissimus cervicis and thoracis. Splenius cervicis. Iliocostalis cervicis and thoracis.

SECONDARY MUSCLES: Interspinales. Rotatores.

INJURY WHERE STRETCH MAY BE USEFUL: Neck muscle strain. Whiplash (neck sprain). Cervical nerve stretch syndrome. Wry neck (acute torticollis). Back muscle strain. Back ligament sprain.

NOTE: Perform this stretch slowly and deliberately, resting your weight evenly on both your knees and hands.



TECHNIQUE: Stand with your feet shoulder-width apart. Place your hands across your chest while keeping your back and shoulders upright. Slowly rotate your shoulders to one side.

PRIMARY MUSCLES: Semispinalis thoracis. Spinalis thoracis. Longissimus thoracis. Iliocostalis thoracis. Iliocostalis lumborum. Multifidus. Rotatores. Intertransversarii. Interspinales.

SECONDARY MUSCLES: Quadratus lumborum. External and internal obliques.

INJURY WHERE STRETCH MAY BE USEFUL: Back muscle strain. Back ligament sprain. Abdominal muscle strain (obliques).

NOTE: To further extend this stretch use your hands to pull your upper body further around.



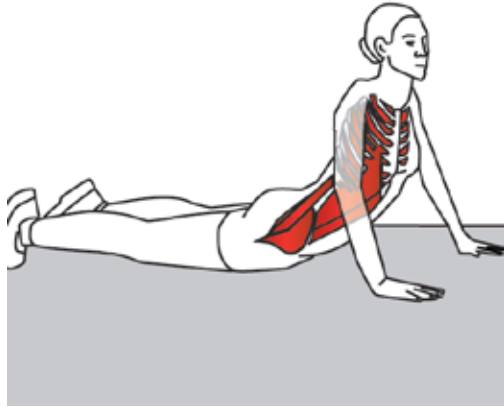
TECHNIQUE: Stand with your feet shoulder-width apart. Place your hands above your head while keeping your back and shoulders upright. Slowly rotate your shoulders to one side.

PRIMARY MUSCLES: Semispinalis thoracis. Spinalis thoracis. Longissimus thoracis. Iliocostalis thoracis. Iliocostalis lumborum. Multifidus. Rotatores. Intertransversarii. Interspinales.

SECONDARY MUSCLES: Quadratus lumborum. External and internal obliques.

INJURY WHERE STRETCH MAY BE USEFUL: Back muscle strain. Back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Lean back slightly to emphasize the oblique muscles. Do not perform if you suffer from lower back pain.



TECHNIQUE: Lie face down and bring your hands close to your shoulders. Keep your hips on the ground, look forward, and rise up by straightening your arms.

PRIMARY MUSCLES: External and internal intercostals. External and internal obliques. Transversus abdominis. Rectus abdominis.

SECONDARY MUSCLES: Psoas major and minor. Iliacus.

INJURY WHERE STRETCH MAY BE USEFUL: Abdominal muscle strain. Hip flexor strain. Iliopsoas tendonitis.

NOTE: For most people who spend their day in a seated position, (office workers, drivers, etc.) the muscles in the front of the body can become extremely tight and inflexible. Exercise caution when performing this stretch for the first time and allow plenty of rest time between each repetition.



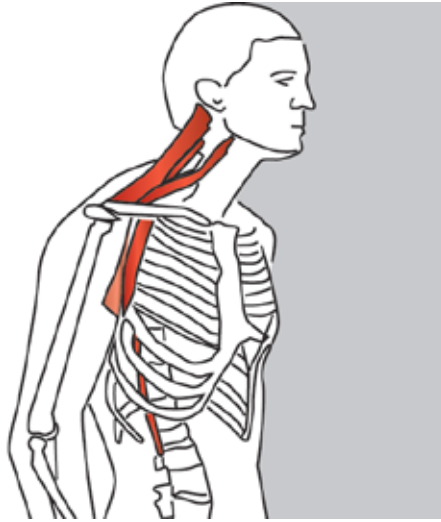
TECHNIQUE: Kneel on one foot and the other knee. If needed, hold on to something to keep your balance. Push your hips forward.

PRIMARY MUSCLES: Iliacus. Psoas major and minor.

SECONDARY MUSCLES: Rectus femoris. Sartorius.

INJURY WHERE STRETCH MAY BE USEFUL: Hip flexor strain. Avulsion fracture in the pelvic area. Osteitis pubis. Iliopsoas tendonitis. Trochanteric bursitis. Quadriceps strain. Quadriceps tendonitis.

NOTE: Regulate the intensity of this stretch by pushing your hips forward. If need be, place a towel or mat under your knee for comfort.



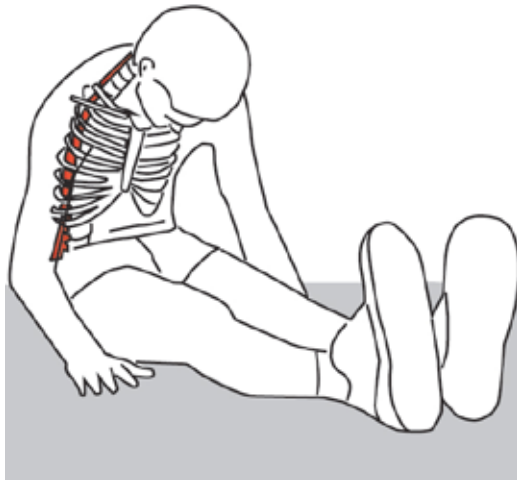
TECHNIQUE: Keep your head up then push your head forward by sticking your chin out.

PRIMARY MUSCLES: Semispinalis cervicis. Spinalis cervicis. Longissimus cervicis. Splenius cervicis.

SECONDARY MUSCLES: Levator scapulae. Trapezius. Rhomboids.

INJURY WHERE STRETCH MAY BE USEFUL: Neck muscle strain. Whiplash (neck sprain). Cervical nerve stretch syndrome. Wry neck (acute torticollis).

NOTE: Keep your head up. Do not let your chin fall towards the ground.



TECHNIQUE: Sit on the ground with your legs straight out in front or at 45 degrees apart. Keep your toes pointing upwards and rest your arms by your side or on your lap. Relax your back and neck and then let your head and chest fall forward.

PRIMARY MUSCLES: Semispinalis cervicis and thoracis. Spinalis cervicis and thoracis. Longissimus cervicis and thoracis. Splenius cervicis. Iliocostalis cervicis and thoracis.

SECONDARY MUSCLES: Interspinales. Rotatores.

INJURY WHERE STRETCH MAY BE USEFUL: Neck muscle strain. Whiplash (neck sprain). Wry neck (acute torticollis). Back muscle strain. Back ligament sprain.

NOTE: Where this stretch is primarily felt will depend on where you are most tight. Some people will feel most tension in the neck and upper back, whereas others will feel most tension in the lower back and hamstrings. This stretch gives a good indication of where you need to improve your flexibility.



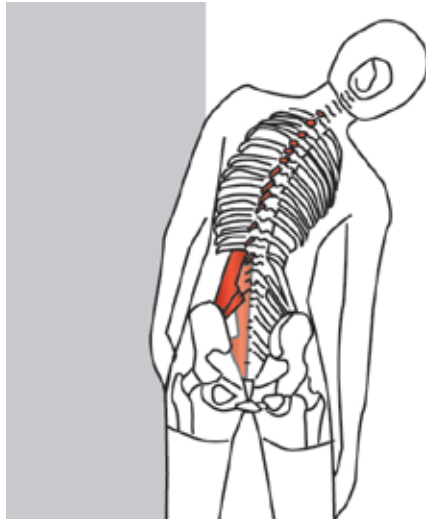
TECHNIQUE: Stand with your feet shoulder-width apart, then slowly bend to the side and reach over the top of your head with your hand. Do not bend forward.

PRIMARY MUSCLES: Quadratus lumborum. External and internal obliques. Latissimus dorsi.

SECONDARY MUSCLES: Teres minor. Iliocostalis lumborum. Intertransversarii. Rotatores. Multifidus.

INJURY WHERE STRETCH MAY BE USEFUL: Lower back muscle strain. Lower back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Do not lean forward or backward; concentrate on keeping your upper body straight.



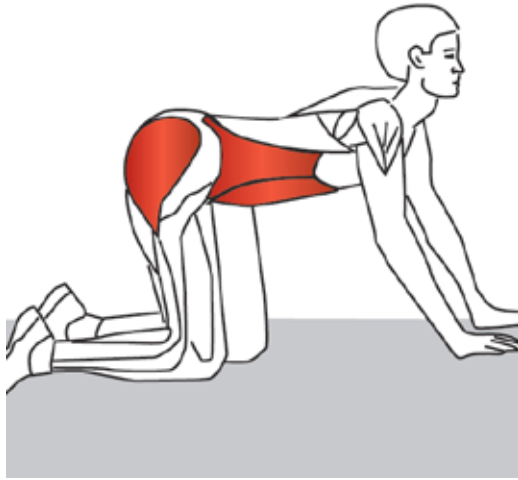
TECHNIQUE: Stand with your feet about shoulder-width apart and look forward. Keep your body upright and slowly bend to the left or right. Reach down your leg with your hand and do not bend forward.

PRIMARY MUSCLES: Quadratus lumborum. External and internal obliques.

SECONDARY MUSCLES: Iliocostalis lumborum. Intertransversarii. Rotatores. Multifidus.

INJURY WHERE STRETCH MAY BE USEFUL: Lower back muscle strain. Lower back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Do not lean forward or backward: concentrate on keeping your upper body straight.



TECHNIQUE: Kneel on your hands and knees. Look up and let your back slump downwards.

PRIMARY MUSCLES: Gluteus maximus.

SECONDARY MUSCLES: Transversus abdominis. Rectus abdominis.

INJURY WHERE STRETCH MAY BE USEFUL: Neck muscle strain. Whiplash (neck sprain). Cervical nerve stretch syndrome. Wry neck (acute torticollis). Back muscle strain. Back ligament sprain.

NOTE: Perform this stretch slowly and deliberately, resting your weight evenly on both your knees and hands.



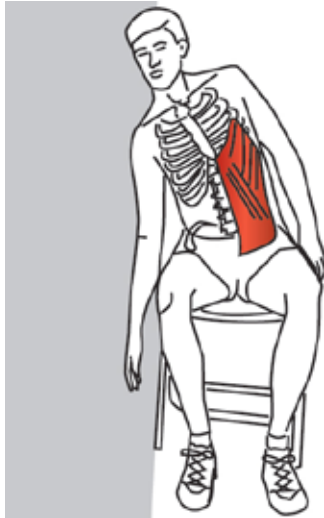
TECHNIQUE: Kneel on the ground and raise one arm. Then rotate your shoulders and middle back while looking upwards.

PRIMARY MUSCLES: Semispinalis thoracis. Spinalis thoracis. Longissimus thoracis. Iliocostalis thoracis. Iliocostalis lumborum. Multifidus. Rotatores. Intertransversarii. Interspinales.

SECONDARY MUSCLES: External and internal obliques. Pectoralis major.

INJURY WHERE STRETCH MAY BE USEFUL: Back muscle strain. Back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Keep your arm pointing straight upward and follow your hand with your eyes. This will help to further extend the stretch into your neck.



TECHNIQUE: While sitting on a chair with your feet flat on the ground, look straight ahead and keep your body upright. Slowly bend to the left or right while reaching towards the ground with one hand. Do not bend forward.

PRIMARY MUSCLES: Quadratus lumborum. External and internal obliques.

SECONDARY MUSCLES: Iliocostalis lumborum. Intertransversarii. Rotatores. Multifidus.

INJURY WHERE STRETCH MAY BE USEFUL: Back muscle strain. Back ligament sprain. Abdominal muscle strain (obliques).

NOTE: Do not lean forward or backward: concentrate on keeping your upper body straight. Use a strong and sturdy chair!

