

PROFESSIONAL AND HOME USE

STRETCHING FOR PAIN RELIEF

LEG AND FOOT

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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:

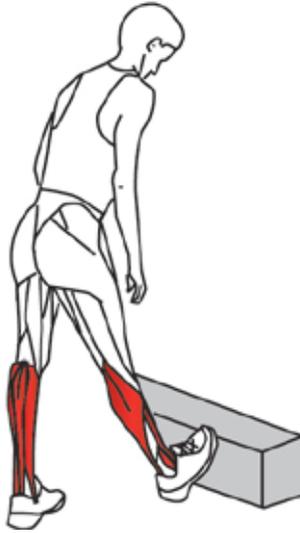
- Balance
- Flexibility
- Coordination
- Relaxation
- Range of motion

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: Stand upright and place your toes on a step or raised object. Keep your leg straight and lean towards your toes.

PRIMARY MUSCLES: Gastrocnemius.

SECONDARY MUSCLES: Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus. Peroneus longus and brevis. Plantaris

INJURY WHERE STRETCH MAY BE USEFUL: Calf strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints).

NOTE: Regulate the intensity of this stretch by keeping your back straight and leaning forward.



TECHNIQUE: Stand upright and place the top of your toes on the ground behind you. Push your ankle to the ground.

PRIMARY MUSCLES: Tibialis anterior.

SECONDARY MUSCLES: Extensor hallucis longus. Extensor digitorum longus. Peroneus tertius.

INJURY WHERE STRETCH MAY BE USEFUL: Anterior compartment syndrome. Medial tibial pain syndrome (shin splints). Ankle sprain. Peroneal tendon subluxation. Peroneal tendonitis.

NOTE: Regulate the intensity of this stretch by lowering your body and pushing your ankle to the ground. If need be, hold onto something for balance.



TECHNIQUE: Sit with your knees and feet flat on the ground. Sit back on your ankles and keep your heels and knees together. Place your hands next to your knees and slowly lean backwards. Slowly raise your knees off the ground.

PRIMARY MUSCLES: Tibialis anterior.

SECONDARY MUSCLES: Extensor hallucis longus. Extensor digitorum longus. Peroneus tertius.

INJURY WHERE STRETCH MAY BE USEFUL: Anterior compartment syndrome. Medial tibial pain syndrome (shin splints). Ankle sprain. Peroneal tendon subluxation. Peroneal tendonitis.

NOTE: This stretch can put a lot of pressure on your knees and ankles. Do not attempt this stretch if you suffer from knee or ankle pain.



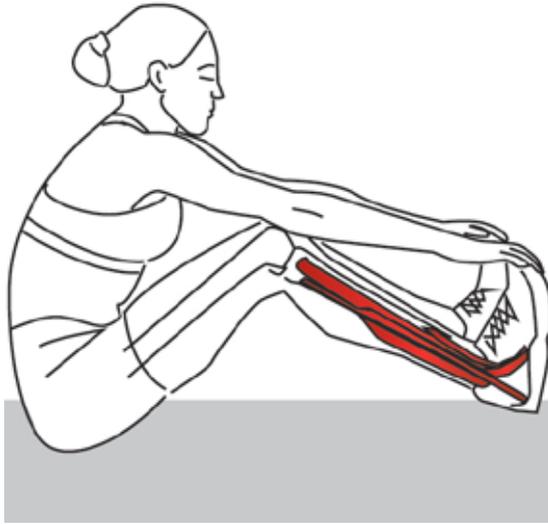
TECHNIQUE: Raise one foot off the ground and slowly rotate your foot and ankle in all directions.

PRIMARY MUSCLES: Tibialis anterior. Soleus.

SECONDARY MUSCLES: Extensor hallucis longus. Extensor digitorum longus. Peroneus longus, brevis, and tertius. Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus.

INJURY WHERE STRETCH MAY BE USEFUL: Anterior compartment syndrome. Medial tibial pain syndrome (shin splints). Ankle sprain. Posterior tibial tendonitis. Peroneal tendon subluxation. Peroneal tendonitis.

NOTE: If needed, hold onto something strong and sturdy for abalance.



TECHNIQUE: Sit with your legs out in front and bend both knees. Grab hold of your toes and pull them towards your knees.

PRIMARY MUSCLES: Soleus.

SECONDARY MUSCLES: Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus. Peroneus longus and brevis.

INJURY WHERE STRETCH MAY BE USEFUL: Calf strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints). Posterior tibial tendonitis.

NOTE: Regulate the intensity of this stretch by pushing your heels forward and pulling your toes back.



TECHNIQUE: Kneel on one foot and place your body weight over your knee. Keep your heel on the ground and lean forward.

PRIMARY MUSCLES: Soleus.

SECONDARY MUSCLES: Secondary muscles: Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus. Peroneus longus and brevis.

INJURY WHERE STRETCH MAY BE USEFUL: Calf strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints). Posterior tibial tendonitis.

NOTE: This stretch can put a lot of pressure on the Achilles tendon. Ease into this stretch by slowly leaning forward.



TECHNIQUE: Stand upright and lean against a wall. Place one foot as far from the wall as is comfortable and make sure that both toes are facing forward and your heel is on the ground. Keep your back leg straight and lean towards the wall.

PRIMARY MUSCLES: Gastrocnemius.

SECONDARY MUSCLES: Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus. Peroneus longus and brevis. Plantaris.

INJURY WHERE STRETCH MAY BE USEFUL: Calf strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints).

NOTE: This stretch can put a lot of pressure on the Achilles tendon. Ease into this stretch by slowly lowering your heel.



TECHNIQUE: Stand on a raised object or step. Put the toes of one foot on the edge of the step and keep your leg straight. Let your heel drop towards the ground.

PRIMARY MUSCLES: Gastrocnemius.

SECONDARY MUSCLES: Tibialis posterior. Flexor hallucis longus. Flexor digitorum longus. Peroneus longus and brevis. Plantaris.

INJURY WHERE STRETCH MAY BE USEFUL: Calf strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints).

NOTE: Make sure the toes of your back leg are facing forward. Letting your toes point to one side will cause this stretch to put uneven tension on the calf muscles. Over an extended period of time, this could lead to a muscle imbalance.



TECHNIQUE: Sit with one leg straight out in front and keep your toes pointing up. Cross your other leg over and rest your foot on your thigh. Lean forward, keep your back straight and reach for your toes.

PRIMARY MUSCLES: Semimembranosus. Semitendinosus. Biceps femoris.

SECONDARY MUSCLES: Soleus.

INJURY WHERE STRETCH MAY BE USEFUL: Hamstring strain. Calf strain.

NOTE: It is not important to be able to touch your toes. Simply reaching towards your toes is sufficient.



TECHNIQUE: Stand with one foot raised onto a chair or an object. Keep your leg slightly bent and let your heel drop off the edge of the object. Keep your back straight and move your chest towards your thigh.

PRIMARY MUSCLES: Semimembranosus. Semitendinosus. Biceps femoris.

SECONDARY MUSCLES: Soleus.

INJURY WHERE STRETCH MAY BE USEFUL: Hamstring strain. Achilles tendon strain. Achilles tendonitis. Medial tibial pain syndrome (shin splints).

NOTE: Pushing your heel down towards the ground will help to intensify this stretch.



TECHNIQUE: Kneel on one foot with your hands on the ground. Place your body weight over your knee and slowly move your knee forward. Keep your toes on the ground and arch your foot.

PRIMARY MUSCLES: Flexor digitorum brevis. Abductor hallucis. Abductor digiti minimi. Quadratus plantae.

SECONDARY MUSCLES: Flexor hallucis brevis. Adductor hallucis. Flexor digiti minimi brevis.

INJURY WHERE STRETCH MAY BE USEFUL: Posterior tibial tendonitis. Peroneal tendon subluxation. Peroneal tendonitis. Flexor tendonitis. Sesamoiditis. Plantar fasciitis.

NOTE: The muscles and tendons underneath the foot can be very tight; do not apply too much force too quickly when doing this stretch.



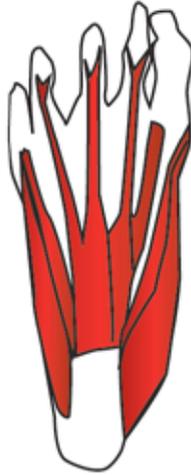
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TECHNIQUE: Stand upright and place the top of your toes on the ground in front of your other foot. Slowly bend your other leg to force your ankle to the ground.

PRIMARY MUSCLES: Tibialis anterior.

SECONDARY MUSCLES: Extensor hallucis longus. Extensor digitorum longus. Peroneus tertius.

INJURY WHERE STRETCH MAY BE USEFUL: Anterior compartment syndrome. Medial tibial pain syndrome (shin splints). Ankle sprain. Peroneal tendon subluxation. Peroneal tendonitis.

NOTE: Regulate the intensity of this stretch by lowering your body.

