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**Practical approaches to self-diagnosis
and treatment of MSDs – TLG Stretching,
flexibility and strength Program.**

**Manual and program
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Introduction and organisation of this manual

Each flexibility or strengthening approach in this introductory manual is intended to identify and treat areas of restriction, discomfort or weakness. They are general exercises that target commonly restricted movements and weakness. Pre-existing injury may prevent you from performing some movements in the full form, as depicted - don't worry as these can be modified to your needs.

Commonly, injuries cause weakness of some muscles and tension in others. This means that even when an injury has resolved that imbalances remain - these predispose to further overuse injury.

It is these patterns of weakness and tension and changes in associated movements that contribute to repetitive injury and pain.

As with all new skills it is important to be alert and aware when performing these techniques. Stay attuned to the breath and to all sensations arising from the body. When working with a partner, establish a clear system of communication to keep the stretches safe and effective. These approaches will improve your overall function, coordination and comfort and enhance the quality of life at work and at home. These are skills for self-cultivation and for some of you, might be the beginning of exploring more comprehensive systems of movement practice such as yoga.

In this document, each exercise is described in full and the areas targeted indicated. There are also some anatomical and cautionary notes. You should make further notes for yourself if that helps you remember the material. In the description of stretches, only one side is discussed. Obviously you need to perform both sides in each case. Rather than focusing on arbitrary length of time or number of breathes in each technique, you should focus on the change in the target tissue and ask; has there been a softening or lengthening, am I more comfortable? If the answer is Yes, then change sides or move on to the next technique. Finally, this stuff is learnt through the body, by observation and practice – the text is just to remind you!

Spinal bending and rotation using a chair



Both these stretches use a chair to support and facilitate motion and are ideal for the workplace, ideally on an empty stomach. They release postural back muscles that are constantly in use throughout the day

Flexion

Sit on the edge of a stable chair with the feet apart, firmly on the ground. Bend forward between the knees, slowly releasing the back, hamstrings and buttock as you walk the hands to the ground or elevated stable object.

Rotation

Sit at 90 degrees and to the outer edge of a stable chair. Rotate spine towards the back of the chair, focusing on keeping the naval area drawn in and back ribs expanded. If the back arches your rotation will lock up so keep the navel in! Using the breath, deepen the rotation, keeping the shoulders relaxed and shoulder blades drawn down.

Swiss Ball spinal flexion and extension



The number of stretches and strengthening techniques you can perform with a Swiss ball is limited only by your imagination. Just sitting and shifting your buttock from side-to-side frees up the entire spine. Subtle tilts back and forward strengthen the abdomen and back muscles.

The illustrated moves are simple and strong.

Hold them for as long as they are comfortable and you continue to feel muscles lengthening.

Flexion

This is essentially the same stretch as the seated version. Sit just forward of the middle of the ball then gently lower the spine between widely



Variations

1. To deepen the move, hug the back of the ball! (as illustrated)
2. To stretch hamstrings, straighten the knees.



Extension

The need to open the front of the body is a recurring theme in yoga and stretching in general. This is largely due to the relative shortening of the front of the body associated with manipulating objects and orientation in space. The gentle curved surface of a Swiss ball is ideal for the purpose.

Walk the feet slowly away from the ball, allow the buttock to roll towards the ground. Using the abdominal muscles and hands, lower you back towards the top of the ball then extend your arms above the head, folding them loosely together. Roll about a little to isolate different spinal segments. Allow the spine to elongate in these different positions.



Lying flexion/rotation of the spine

Flexion



These motions are good first and last thing in the day. Draw the knees towards the chest, either interlocking the fingers or grasping the knees to hold them close to the chest. Rock gently, using the breath to increase spinal motion. Focus on lengthening the base of the spine away, along the ground.

Rotation



Lying on your back take the right thigh towards the chest, then drop the shin, knee and thigh towards the left side, allowing the spine to twist. As motion improves you will be able to keep the left arm on the ground.

Rotating the head in the opposite direction will increase the intensity of the stretch as will straightening the knee. These are intense variations, so build up slowly and give the muscles, connective tissue and nervous system time to adapt.

Rotated triangle pose



These motions activate the abdominal area, mobilise the ribs and spine and also stretch the hamstrings. The limiting aspect for some is hamstring flexibility. This can be addressed by using a stable prop to enable rotation without taxing the hamstrings.

Step the feet apart, pointing them forwards. Drop the left hand down to between the feet, just in front of a line drawn between the toes. Twist the spine and upper right chest towards the ceiling, taking the right arm overhead in the same line as the left arm. Keep the navel drawn in but be careful not to kill the breath. Finally rotate the head and look towards the right hand. Do not force this final movement and stay focused on the spinal rotation

Back and hip extensions



This sequence of spinal and hip extensions re-organise motion patterns that have been shown to contribute to chronic back pain. They look simple but require practice and often the input of a partner to help you develop awareness of muscle contractions. Work progressively through these variations with caution and attention to excessive tensions in the back or throat.

Basic I

Lying on the stomach, feet and hands stretched backwards. Pressing the backs of the hands into the floor, gently extend the spine, lifting the chest of the ground. Keep the area above the bladder relaxed.



Basic II

Start as Basic I. Bend the knees to 90° then extend the hips upwards, towards the ceiling, keeping the back muscles as relaxed as possible. Keep the hands and chest on the ground. Get a partner to check the tension of the buttock and back muscles and to assess when they are switched on. Play with the sequence of muscle contraction to establish whether you contract the back or buttock first. Use this strengthening technique to fire up the buttock first. You may also identify that one side is stronger than the other.

Back and hip extensions

Intermediate

As with Basic II, except now lift the chest and hands, extending each vertebrae, expanding the chest forwards and outwards.



Advanced I

This variation is a continuation of the intermediate version, except now you straighten the knees.



Advanced II

Alternate use of the arm and opposite buttock is functionally important to the stability of the sacrum, the base of your spine. This version helps to build this pattern of stability and strength. Lying again on your stomach, arms stretched above the head, alternately lift the opposite arm and leg, working again to activate the buttock first. You may need to bend the knee if this is too strong. Let the forehead come off the ground as you perform the movement, resting it between sides.

Door jam side-bending



Many people are stiff in this plane of motion, so this counter-levered movement can be intense. Some caution should be exercised. Stand inside a door jam, feet together and close to the vertical member. Take the hand that is close to the jam and get hold of the jam at waist height, thumb towards the ceiling. Take the opposite hand and reach above the head towards the jam on the same side. The thumb on this hand will point down. Once you are in position, both hands firmly on the jam, allow the side waist and outer hip to drop away from the jam, stretching the space between the hip and ribs, right up into the armpit and even down the outer thigh. Roll forward and slowly step out of the final position, gently and slowly straightening the spine.

Dog poses



These variations of the dog pose are based on the traditional yogic form which is performed with both hands and feet on the ground. They are a little less intense but still target the same restrictions. Each individual will experience different patterns of tightness.

Version I

With the feet hip width and hands roughly shoulder width apart form a 90° angle to the wall. Deepen the groins and lift the sitting bones towards the ceiling by working through the hips and spine. Extend the waist all the way to the little finger. Keeping the thumb down, rotate the upper arm outward, creating space around the ears, and openness in the armpits.

Version II

In this version, the elbows are bent and forearms and hands are placed on the wall. This is more focused on the armpit and upper back. Keep the forearms parallel then extend the side waist and armpit like the previous version. Work the legs in the same manner.

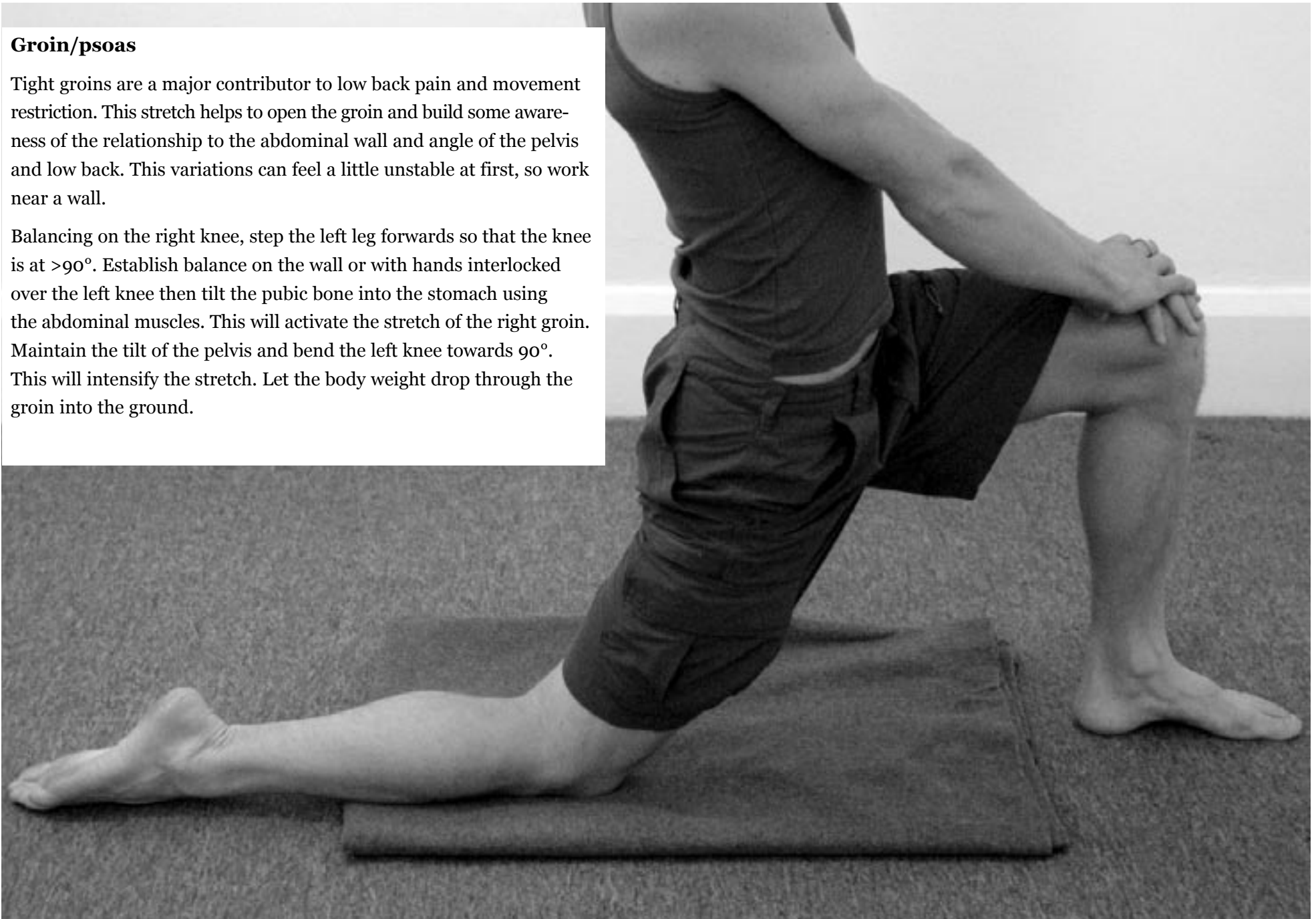
Version III (not illustrated)

Same as version II except that the hands are interlocked. This may be more comfortable for people with shoulder problems.

Groin/psoas

Tight groins are a major contributor to low back pain and movement restriction. This stretch helps to open the groin and build some awareness of the relationship to the abdominal wall and angle of the pelvis and low back. This variations can feel a little unstable at first, so work near a wall.

Balancing on the right knee, step the left leg forwards so that the knee is at $>90^\circ$. Establish balance on the wall or with hands interlocked over the left knee then tilt the pubic bone into the stomach using the abdominal muscles. This will activate the stretch of the right groin. Maintain the tilt of the pelvis and bend the left knee towards 90° . This will intensify the stretch. Let the body weight drop through the groin into the ground.



Neck stretching

There are numerous layers of muscles that pass through and into the neck and head from the shoulder girdle and spine. The whole region is full of massive tubes and other vital structures. These include veins, arteries, the windpipe and oesophagus (food tube). There are also many delicate nerves, some supplying the face, head and neck and others that go through the neck and into the upper digestive system. Problems in this area can cause headache, jaw ache, effect balance, vision, emotions and overall sense of wellbeing. Working on this area can stir things up so be gentle!



General mobilisation

Can be performed seated on a chair or on the ground. Take the right hand and rest it on the back of the left and back aspect of the head. Let the chin drop down, allowing the weight of the head and arm to stretch the neck from the shoulder to the base of the skull. As the muscles release, change the plane of the stretch by rotating the head towards the left, repositioning the hand near the temple/ear area.



Trapezius partner assisted

This variation is best performed on the ground, sitting on your calf muscles. If your knees can't handle it, place a pillow between the buttocks and calves. Have your partner support your back with their knees whilst they slowly depress the shoulders. Experiment with different handholds. Once the stretch is maximal, try to contract the trapezius and have your partner resist this motion. After a few seconds relax the muscles and allow your partner to further depress the shoulders, intensifying the stretch. Repeat this for a few cycles.



Eagle pose

This tricky move takes some practice but reveals and treats imbalances in the muscles of the shoulders and shoulder blade. Take both arms in front of the body, thumbs up. Keep the thumbs pointing towards the face throughout the following moves! Cross the left arm past the right elbow, then bend and drop both elbows so that the finger and palms of each hand touch and thumbs point at your face. Allow the area at the back of the shoulders and between the shoulder blades to spread - a burning sensation is normal!



Uncoupling of upper trapezius

Dominance of particular muscles can cause problems of overuse and repetitive strain. The upper part of trapezius is a notorious troublemaker and source of both neck and shoulder problems. Learning how to move the shoulder without using the trapezius is referred to as uncoupling. Simply take the arm, at first one at a time, in an arc out to the sides above the head. Use the other hand to monitor the upper trapezius. Observe for bunching up and tension. Repeat the motion, each time trying to keep the tension as low as possible. Experiment in other planes and at various workstations and situations.



Shoulder decompression

Get hold of a tin can or light dumbbell. Balancing on the opposite arm on a bench or table, allow the weighted arm to be dragged out of the shoulder joint, decompressing the area. Move the arm in a pendular/circular motion. This is excellent for tendon inflammation resulting from overuse.

Seated wrist flexor stretch



Movement at the wrist involves simultaneous activity of flexor and extensor muscles. Some of these muscles also flex and extend the fingers. These are small and easily fatigued/overused muscles. They need to be stretched throughout the day if subjected to repetitive loading.



This can be done seated or onto a bench/table top. To stretch the wrist flexors, extend the wrist then put some body weight through it by leaning over the joint. Subtle adjustment of the wrist will isolate and exaggerate the effect on different muscles.

Seated wrist extensor stretch



This stretch effects the muscles on the back of the forearm. Turn the wrist over so that the back of the wrist is on a stable surface then drop some body weight through it by leaning over the joint. The back of the hand is more sensitive so use a blanket/towel.

Hand-rolls



This is a general mobilization of the wrist that can be used as a warm up or cool down.

Follow a figure-8 pattern, keeping the shoulders and elbows relaxed. Focus on keeping the inner wrists together, hugging the chest with your inner elbows. Change directions. Ten rotations in each direction should mobilise the area and release mild strains in the wrist.

Pectoral/Chest stretch



Many of the stretches in this manual deal with opening areas that become tight through day-to-day repetitive activities. This is no exception. These muscles, pectoralis major and the anterior deltoid are involved in pulling the arm across the front of the body.

They are perpetually being used and are prone to tightness that is a contributing factor in rotator cuff tendonitis, adhesive capsulitis (frozen shoulder) and problems affecting the forearm and wrists.

Standing close and parallel to a wall, take the arm closest to the wall backwards and just above horizontal. You can have either the elbow

straight or bent. Balance on the wall using the finger tips of the opposite hand and then attempt to turn the body forward as if to open the chest further. To increase the intensity, turn the head as well - be gentle as this stretches nerves .

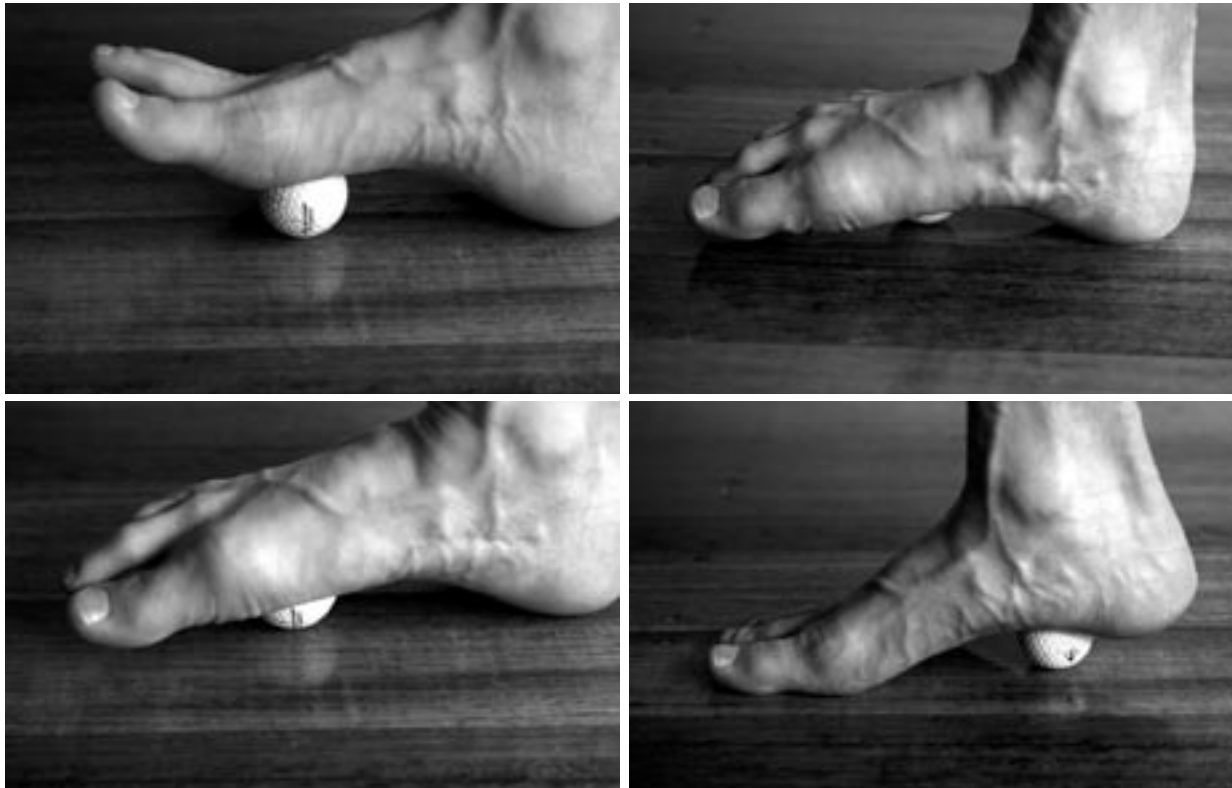
'Mill's Maneuver' – A diagnostic test and stretch for wrist extensors



A stretch used to diagnose tendonitis affecting the wrist extensors. This commonly affects tool workers and people involved in manual handling, word processing etc.

Insert thumb into hand and clench gently. Flex and turn wrist inwards then straighten the elbow downwards. This may cause pain at the common attachment of wrist extensors (back of elbow), indicating tightness and possible inflammation. Perform the maneuver numerous times daily until pain diminishes and stretching improves.

Ligamentous and muscular release of foot – golf ball



The function and integrity of the arch of the foot is influenced by many factors that include: occupation, footwear, postural pattern, weight distribution and leg length difference. Many people suffer from flat feet that become uncomfortable as the day progresses. For some this may be exaggerated by a bunion and associated tendon failure. The bones, ligaments and muscles that make up the inner, outer and transverse arches benefit from frequent release.

The golf ball is a practical, inexpensive way to treat strains through the feet. Stand on a ball, slowly increasing the amount of weight that goes through the foot. This can be intense so go gently at first! Work the ball around, identifying and stimulating tender points until you feel some release. Often people feel sensations into the calf and thigh as a result of work through the feet.

Simple Crossed legged forward bend



Sitting crossed legged has never been a feature of western civilization. Chairs, industrialization, social convention and pompous notions of civility prevent most of us from being comfortable in a position that most of the world enjoy with grace, comfort and ease. It is a position that opens the groins and hip joints, lengthens and stretches buttock muscles and encourages us to engage the spine. Bending forward from this position intensifies these processes.

Using your hands, spread the buttock flesh from under your sitting-bones. Position the ankles and knees roughly hip-width apart, resting on the outer blades of your feet. If your groins and hips are tight and the knees are left floating, wedge some blankets between the inner and outer shins.

Once you are comfortable simply sitting in the open cross leg position, gently lean forward, taking your hands to a wall or alternatively the ground, though this is obviously much more intense. Relax the abdominal muscles and continue breathing deeply into the back of the body, keep the throat relaxed and neck long.

Draining the legs



This pose encourages drainage of the passive venous (used blood) system of the entire lower extremity and pelvis. The venous system is composed of soft and floppy blood vessels that contain one way valves. Drainage relies on the dynamic use of the calf muscles coupled to alternating valve closure. Prolonged standing with insufficient movement, causes blood to pool and overload the capacity of these valves. In the short term this can cause accumulation of waste metabolites leading to heavy, achy and restless legs. The most overt sign of venous overload is varicose veins.

Use some incompressible blankets to form a stable roll. Place this parallel to a wall then sit on the edge, roll back and simultaneously lift the legs up the wall as your body slides into place, keeping the buttock close to or touching the wall and low back/sacral area supported by the roll. This elevates the legs vertically above the heart, diaphragm and pelvis, allowing complete drainage of the lower extremity. For some this may also stretch the hamstrings.

Most of you will experience some tingling sensations, mild numbness and heaviness as the legs drain over a 10 minute period. Rather than coming straight down, loosely cross the legs for a minute or so then slide out of the position.

Traditionally used in yoga as a restorative pose, when people are run down or exhausted - ideal at the end of a working day.