



YOUR

DRIVING GUIDE

MUSCULOSKELETAL

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Introduction

Please take note of the following before starting any of these exercises in this guide:

- The intention of this guide is to provide you with advice and exercises which can be done both while on the road and at home.
- This guide is based on the latest research in this field and contains the best advice available to the best of our knowledge.
- The exercises in this guide are general stretching and range of movement exercises that can be done both on the road and at home. However, if you are suffering from any

current conditions it is important to seek medical advice before starting to perform any of the exercises within this pack.

- If consulting a health professional because of any other injuries, it is wise to take this guide with you to show them.
- **It is important not to disregard medical advice given or delay in seeking advice because of something that you have read in this guide.**

What are the risks of driving for long periods of time?

Anyone driving more than 15,000 miles per year carries an above average risk of developing back problems. Back pain has been found to be common in jobs which involve driving for long periods of time or over rough ground resulting in jolting and vibrations. Research suggests that the professional driver is exposed to risks such as whole body vibration, awkward postures, improper and prolonged sitting postures, manual tasks such as the lifting of heavy or awkward objects and shocks/jolts.

1. LONG PERIODS OF SITTING

Regular driving without a break in a space constrained by the car seat, pedals and steering wheel, forces you to be in one position for long periods of time. In a seated position, your pelvis tilts backwards resulting in the small of your back becoming flattened, and the pressure in the discs of your spine is increased. Prolonged sitting causes a reduction of fluid in the discs and therefore their ability to protect and cushion the spine is also reduced, making them less effective in dealing with vibrations, jolts or shocks from your car or truck. Reaching, twisting and leaning to one side while driving can also put increased pressure on the discs between your vertebrae, and should therefore be avoided where possible.

You also have ligaments in your

back which help to provide support and stability to your spine which become stretched if you sit down for long periods of time. They will also remain stretched for a while after standing up and therefore cannot support your spine as well as normal. This will increase the risk of a lifting or carrying injury if you try to perform a manual task after sitting for long periods, as your ligaments and muscles will not be prepared for the strain being put on them. Long periods of sitting can also result in increased pressure in the buttocks and back of the legs, especially if the seat is not correctly positioned to ensure effective support of the back. Even when you are sitting still, your muscles are still working statically to hold you in the right position and this is particularly true in the car where the muscles of your neck and back work to control your head, arm and postural positions while driving. The muscles are asked to work even harder if there is vibration present.

2. WHOLE BODY VIBRATIONS

When the surface that the person is standing or sitting on vibrates, whole body vibrations occur. Therefore vibration that occurs in a vehicle from a number of different sources such as; the engine, the surface being driven on and the shifting of gears, is transferred through body tissues and creates vibration of the bony

structures as well as the soft tissues. If the vibration that occurs is at the same frequency as your body tissues, resonance can occur which is the point at which structures suffer the most stress and strain. Therefore it is at the point of resonance that there is the greatest chance of injury occurring especially if it occurs over a long period of time. There are studies that have shown that exposure to long term vibration can cause ligaments and other soft tissues to become weaker and softer, as well as musculature becoming fatigued. Therefore individuals who are exposed to long periods of whole body vibration are at a greater risk of injury to the soft tissues of the spine. Implementing simple strategies such as; taking regular breaks, performing stretches (when the vehicle is stationary) and making changes to seated positions and supports, will help reduce the stress placed on the joints and soft tissue structures.

3. SHOCKS AND JOLTS

A shock or jolt can include anything that involves a sudden movement in either the vertical or horizontal plane that is unexpected and can therefore not be braced for by the driver. There are a number of things that can cause shocks or jolts whilst driving such as potholes, bumps in the road and accidents. Another source in truck drivers is the force applied to the spine when exiting the vehicle without

using the stairs. Truck drivers therefore need to ensure that they exit their vehicle using the stairs, as jumping down from the vehicle will result in increased force through the spine, which would already have been affected by prolonged sitting and whole body vibrations. Other measures that can be taken include; wearing supportive, shock absorbing shoes, and performing correct techniques when entering and exiting your vehicle to limit the shock or jolt on your spine.

4. PSYCHOSOCIAL STRESS

Research highlights the importance of acknowledging the impact that psychosocial stresses can have, both physically and psychologically on professional drivers. Mental demands which include; concentrating for long periods of time, dealing with traffic as well as general factors of job satisfaction, can all impact the drivers physical and psychological well being. Taking regular breaks and performing regular exercise can reduce both the physical and psychological impact of long periods of driving and help to prevent injury or accidents from occurring.

What is ergonomics and how does it relate to driving?

Ergonomics is a phrase that is commonly used when addressing health and safety in the work place. It involves the combining of human and technological sciences with the aim of designing appliances, systems and tasks in such a way that human health, safety, comfort and performance are improved. It therefore involves adapting the workplace and environment to fit the

individual's needs. Since driving for long periods of time can result in; back, neck and shoulder pain, as well as other physiological problems such as poor circulation and cramping, it is essential that effective changes are made to your vehicle that ensure the best possible postural position. This will serve to reduce the stress on your joints and soft tissue structures.

What do I need to consider when adjusting my vehicle?

The goal of vehicle ergonomics is to ensure that your vehicle is set up in a way that maximises your bodies' natural ability to move and respond to physical stress. This will serve to minimise the stress on your body while driving and help to prevent injury or illness.

SEATING

- The seat should be raised to the correct height to ensure that you have good vision of the road.
- The seat should be comfortable and should be an adequate length to ensure that your thighs are supported but also that you have adequate space between the edge of the seat and your knees (2-3 fingers) to avoid

pressure behind the knee which will affect circulation in the legs.

- The seat should be at a position so that your knees are at a 70° angle i.e. only slightly straightened even when you are using the pedals, and your thighs should be no more than 15° above the horizontal i.e. so when the pedals are being used there is no pressure at the lower end of your thighs.
- Adjust your backrest so that there is continuous support along the length of your back and is in contact up to shoulder height.
- The angle of the backrest should be set so that you can reach the steering wheel comfortably with your elbows slightly bent.

- Avoid reclining the seat too far, as this will cause excessive forward bending of the head and neck, and you will also probably slide forward in the seat increasing the pressure on the spine.
- It is also important that you do not feel any pressure points or gaps along the back support.
- The top of the head rest should be set to the same height as the top of your head.

LUMBAR SUPPORT

- The back rest should support the entire length of your back.
- Some vehicles can provide extra lumbar support. If so it is important to adjust the lumbar support to ensure that your lumbar spine is in a neutral position i.e. slightly curved with hip bones facing forwards.
- If no lumbar support is present in the seat, a lumbar support can be placed in the arch of your back to provide the necessary support. A rolled up towel can be used as a substitute if you do not have a lumbar roll. A lumbar support will help to prevent flattening of your lower back and increased pressure on the discs.
- It is important to ensure if using a lumbar support, that your lumbar spine is in a neutral position i.e. hip bones facing forwards (not down or up).

STEERING WHEEL

- Adjust the steering wheel rearwards and downwards for easy reach.
- When holding the steering wheel your hands should be at ten to two and below shoulder height, with your elbows slightly bent at all times.
- It should also be at the correct height to ensure that your display panel is in full view and not obstructed.
- It is important to check for clearance of your knees/thighs when using the pedals

OTHER CONSIDERATIONS

- Make sure that you remove all items from your pockets which may press on the soft tissue when you sit down. This compression can reduce circulation and press on nerves or other soft tissues while seated for long periods of time.
- Your seat belt should be at a comfortable height, and if it is putting pressure on your shoulder, foam can be attached to the under side of it to reduce the pressure.
- Mirrors should be adjusted to a position which allows you to see clearly while maintaining a good seated position (i.e. without leaning).
- If you drive a large vehicle, make sure that you do not jump out of the vehicle as this will cause shocks and jolts to your spine, as well as other joints. Make sure that you use the steps and hand rails provided.

- Regular rest breaks are important for both concentration while driving and to reduce the stress placed on joints and soft tissue structures.

- Stretching and range of movement exercises can also be done during rest periods to maintain the length of soft tissue, maintain range of movement in joints and encourage circulation.

What exercises can I do?

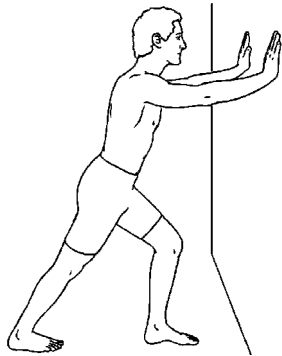
If you are doing a lot of travelling or you are experiencing back or neck problems when driving, it is advisable to do these stretches and mobility exercises. Some of these stretches can be done whilst sitting in or standing outside your vehicle if you are at a services or stopped

somewhere for a break. It is important to do these exercises regularly i.e. a few times a day or while stopped for a break, to relieve the stress that is placed on your joints and soft tissue structures when sitting for long periods of time.

Exercises

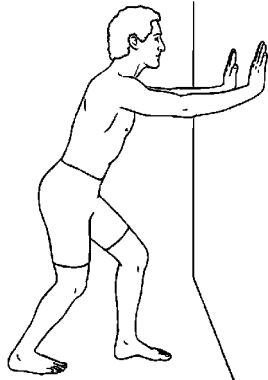
STRETCHES

- Hold for 30 seconds and repeat 2-3 times.
- Never bounce a stretch
- Always stretch in a pain free range of motion. You should only feel a good pull in the muscle, not pain.



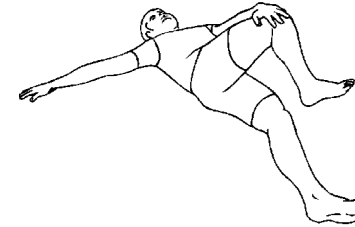
CALF STRETCH

Stand about a metre away from a wall (or the side of your vehicle). Place both hands against the wall/vehicle with one foot further back than the other. Now lean in towards the wall/vehicle, bending the front knee and keeping the back knee straight and your heel on the floor.



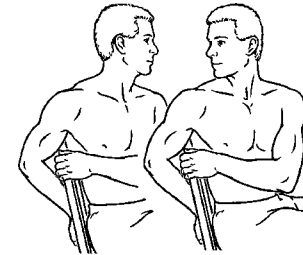
SOLEUS STRETCH

In the above position, keep back leg slightly bent. Keep your heel on the floor and lean into the wall/vehicle until a stretch is felt in the lower calf.

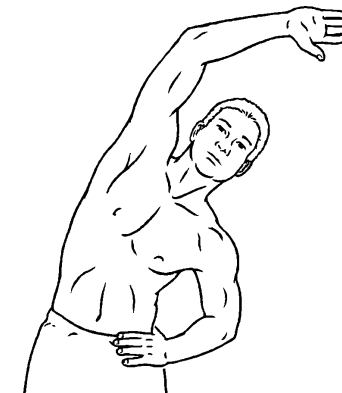


SPINAL ROTATION STRETCH

Lying: Raise one leg up and over the other one. Gently pull your knee across your body. Look in the direction of the outstretched hand. Make sure that your shoulder stays on the floor.



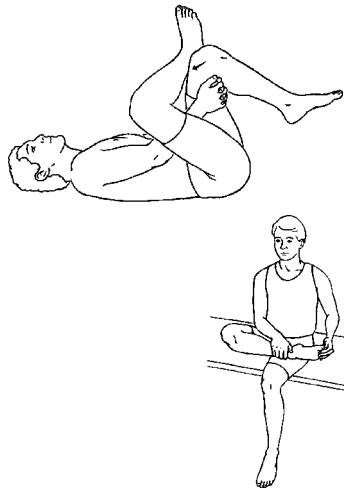
Seated: Place your left hand next to your right hip, hold onto the side of the seat, and rotate your upper body around so that you are looking over your right shoulder. Repeat the same on the opposite side.



SIDE STRETCH

Sitting/standing in a good, upright posture, drop your left shoulder, reaching your left hand towards the floor, and right hand over your head so that you feel a stretch down your right side. Return to the start position. Repeat on the opposite side. Make sure that you do not push your hips forwards, keep them in a neutral position.

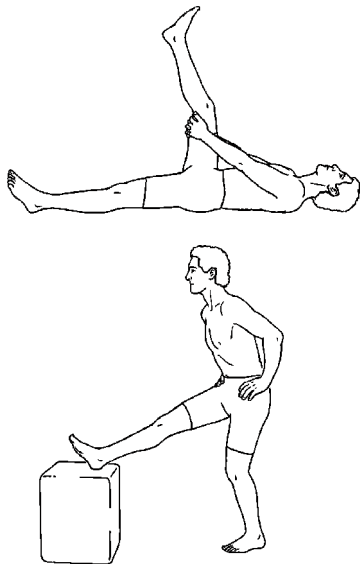
Exercises



BUTTOCKS STRETCH

Lying: Lying on your back, rest your right ankle on your left knee. Using your hands lift your left leg into the air, bending your knee at 90°. Pull your left leg gently towards your body. You should feel a stretch in the upper back part of your right buttock. A towel can be used to aid you in this stretch if you are unable to reach your leg.

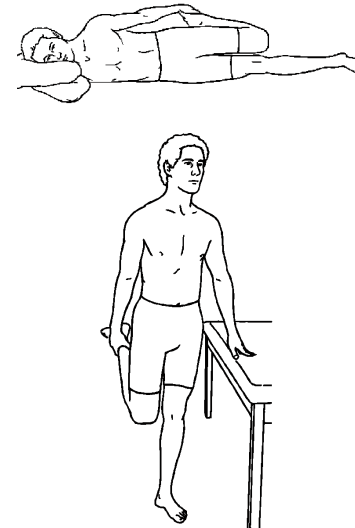
Seated: Sitting in an upright position with knees bent and feet on the floor. Place your right ankle on your left knee, lean forwards at your hips, and press down on your right knee. Repeat on the opposite side.



HAMSTRING STRETCH

Lying: Lying on your back, one leg straight and one knee bent. Raise the bent leg up towards your chest until your knee is in line with your hip. Now straighten the knee. You should feel a stretch at the back of your leg. You can use a towel if necessary to aid you in lifting your leg for the stretch.

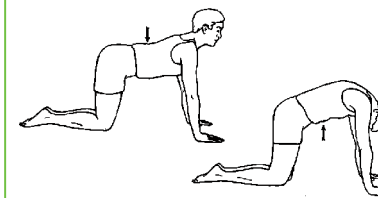
Standing: Place one foot on a step, or slightly out in front of the other. Keep the front leg straight, bend the back leg slightly, and lean forwards from the hip. Make sure that you feel the stretch in your leg, not your back.



QUADRICEPS

Lying: Lying on your right side, your right arm extended up to cushion your head, use your left hand to grasp your left ankle as you bend your left knee backwards. You should feel the stretch along the front of your thigh. Repeat this twice. It is important to keep the other leg bent at both the hip and the knee, so as not to hyperextend your back. A towel can be used to aid you in this stretch if you are unable to reach your ankle or bend your knee too far.

Standing: Standing on your left leg, bring your right foot up towards your buttock with your hand, and bending your knee. Make sure that your back is straight your knee is in line with your hip. Repeat the same on the opposite leg.



CAT CURLS

On all Fours: Breathe out as you let the spine curve inwards, and pull the shoulder blades together. Keep the knees directly under the hips and hands under shoulders. Breathe in as you tuck your chin in and starting at the top, curve your back upwards. Don't hold each position.



POSTERIOR CUFF

Take one arm across your chest, taking care to keep your shoulders level. Use the other hand to pull your arm across your body. You should feel a stretch along the back of your shoulder.

Exercises



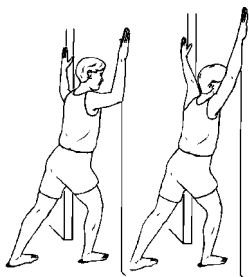
UNDER CUFF

Take one arm up and behind your head, so that your hand is against your upper back. Gently push down on the raised elbow with your other hand. You should feel a stretch in your triceps muscles (back of your arm).



NECK STRETCHES:

Sitting on the end of a chair, with your right hand touching your left ear, gently bring your right ear towards your shoulder and hold for 30 seconds. Now rotate your head to 45°, place your right hand over your head so that your nose is facing into your elbow. Gently lower your chin towards your collar bone and hold for 30 seconds. Now facing forwards with both hands touching the back of your head, gently bring your chin towards your chest. Repeat the above routine on the opposite side.



DOOR STRETCH

Stand in a doorway or corner. Bend your elbow and support the forearm against the doorframe. The stretch can be felt in the chest muscles.

MOBILITY & STABILITY EXERCISES

- Perform as instructed within each exercise
- Make sure that you work in a pain

free range of motion with each exercise and gradually try and increase this range.



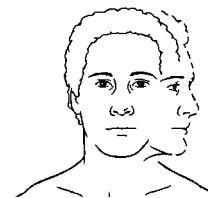
NECK FLEXION

Bend your head forwards and return to the start position. **DO NOT** combine this with the neck extension exercise; always bring your head back to the start position. Repeat 10-15 times.



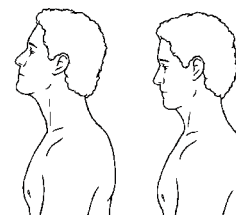
NECK EXTENSION

Bend your head backwards and return to the start position. **DO NOT** combine this with the neck flexion exercise; always bring your head back to the start position. Repeat 10-15 times.



NECK ROTATION

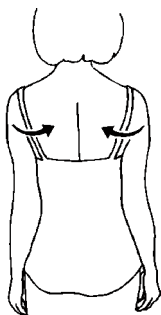
Turn your head slowly to look over your left shoulder and then turn it to look over your right shoulder. The movement should be slow and controlled. Repeat 10-15 times.



NECK RETRACTION

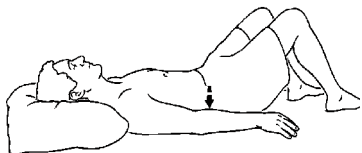
Pull your head straight back keeping your jaw and eyes level. Hold for 5 seconds and repeat 5-10 times.

Exercises



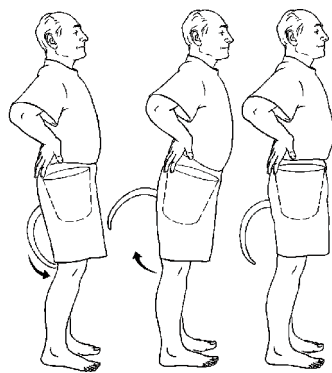
SHOULDER STABILITY

Sitting slightly forwards in your seat, with both feet flat on the floor, your shoulders back, your stomach in, and with good posture. Keeping your shoulders level and down, retract them, by pulling your shoulder blades slightly down your back and in towards each other. Hold this position for 10 seconds and then relax the retraction. Repeat 10 times.



NEUTRAL AND TA/PELVIC FLOOR STABILITY EXERCISES

Lying: Lying on your back with your knees bent. Find your neutral pelvic position, which is mid way between your back being completely flat on the floor, and completely arched. In neutral your hips should be facing the ceiling. Now pull your belly button towards your spine (i.e. contract your Transverse Abdominus muscle or TA), without changing your pelvic position. You should be able to continue to breathe throughout the contraction. Hold for 10 seconds and repeat 10 times.



Seated/Standing: The above exercise can be performed in any position. In seated and standing, make sure that your hip bones are facing forwards (not down towards floor, or up towards ceiling) and pull belly button in towards spine.

Contact us

This guide is designed to assist you in the prevention of an injury occurring due to driving for long periods of time. If you have any uncertainties or queries regarding the information, please do not hesitate to contact us on:

Phone 017890400999 / 07870166861

www.mdphysiotherapy.co.uk