



Correct Sitting Posture: Driving Safety Guide



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Sitting in a car is no different to sitting in an office

Try to take regular breaks – ideally every 20 minutes, where practical.

Everyone ends up feeling stiff if they travel for long enough. However, people with musculoskeletal disorders (MSDs), especially neck and back disorders, suffer from increased stiffness and pain after much shorter periods of time. This means that the length of time for which you can sit comfortably in a car is dependent upon whether or not you have such a problem.



Driving Posture

First things first – you need to be trying to drive a car that is a suitable size for you. If you are 6ft 10in, then a supermini is not going to enable you to achieve a reasonable posture.

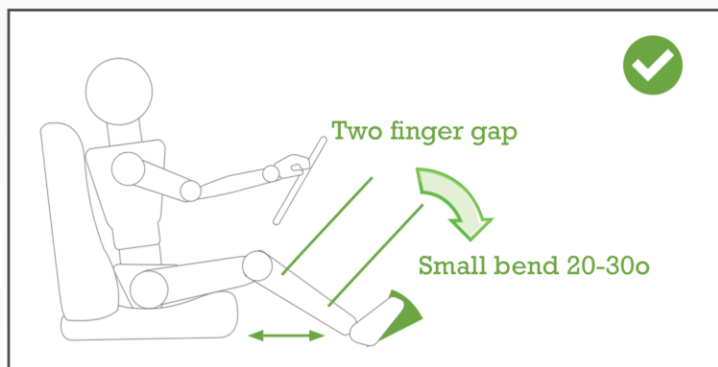
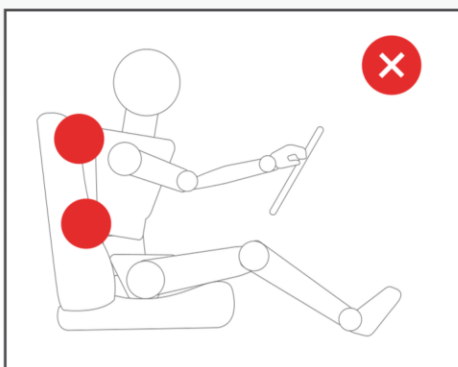
Most cars are not designed for correct sitting posture, however many now offer a vast array of adjustments to both the seat and steering column, allowing for a better overall driving position. To find your ideal position you should start with the seat in the wrong position and then adjust it from there.

Firstly, push the seat all the way back, then lower it as far as possible. Next, recline the back of the seat to about 30-40 degrees and move the steering wheel (if it adjusts) all the way up and in towards the dashboard.

Seat Height

- ① Adjust the seat height up until your hips are at least as high as your knees.
- ② Make sure you can still see the road and the instruments.
- ③ Make sure you are not so high so that you have to bend your head down or to the side in order to see.
- ④ If you are still too low after adjusting to the maximum height, try adding a cushion or wedge to the seat.
- ⑤ Cushions also decrease vibrations from the road which have been shown to contribute to injuries.

Make sure the backs of your knees do not touch the car seat bottom, as this is bad for your knees and your circulation. There should be at least a two finger gap between the back of your knee and the seat.



Seat Position

Next adjust the seat forwards so you can reach and completely depress all the foot pedals without your back moving away from the back of the seat. Make sure you have a small bend in your knees of at least 20-30 degrees – having your knees too straight can cause knee pain.

Your feet should be relaxed with your heels on the floor and the balls of the feet able to press the pedals. The right foot should be able to move easily between the accelerator and brake pedal when the heel is placed roughly in front of the brake pedal.

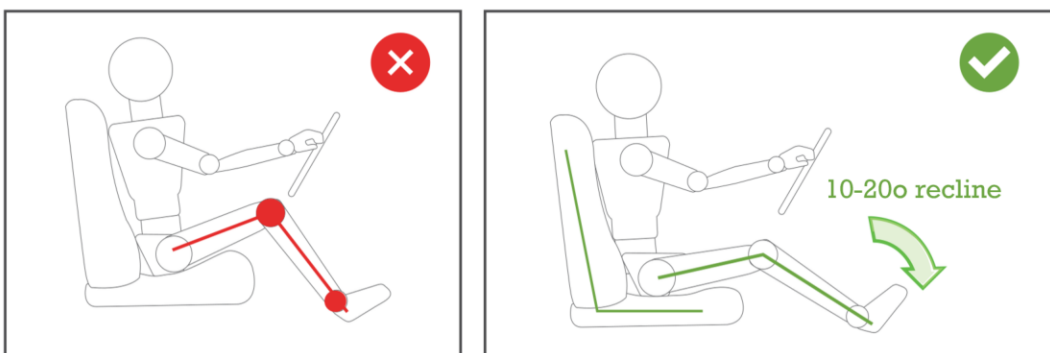


The left foot should be resting on the footrest whenever you are not using the clutch, as this increases support to both the pelvis and back. In this respect, automatic cars have an inherent advantage over manual cars.

Tilt of the Seat

Traditionally the bottom of the car seat is set with the rear of the seat down and the front uppermost. This position is often recommended as it helps to stop you from moving forward on the seat bottom (known as 'submarining') when you brake, or in the event of an accident. However, modern car seats have largely overcome this problem with the addition of seat belt pre-tensioners, which stop you from slipping under the seat belt, and the backwards angle has actually been shown to decrease the hip angle and increase the pressure on your lower back / spine.

Instead, you should position the seat bottom horizontally whenever possible.



The Inclination of the Seat Back

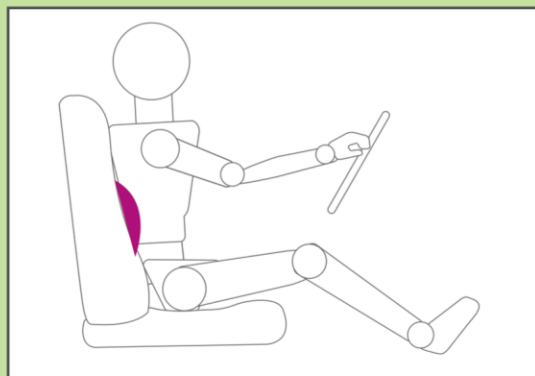
Raise the inclination of the seat back to an angle of 100-110 degrees. This angle decreases the pressure on the discs in your low back.



Lumbar Support

Many car seats have lumbar support. These supports are often both height and depth adjustable.

- Adjust the support to the correct height by positioning it in the curve of your lower back. The lowest edge of the support should be placed at your belt line or at the top of the pelvis.



- Adjust the depth of the lumbar support by moving it from flat until it comfortably fills the arch of your back. As a general rule, if you were to sit fully back and press your back flat into a straight chair, the amount of curve you need is the equivalent of pushing your own hand flat into the small of your back between your lower back and the chair. If you can't get your hand into the gap comfortably, the curve isn't big enough; if you can get your forearm into the gap, the curve is too big. Ideally, your lumbar support should just fill the gap.
- If you don't have lumbar support built in the simplest fix is to use a small rolled up towel in the curve of your lower back. The towel can be rolled less or more to create varying sizes of curve until you find the right one for you. This method is cheap, easy and massively variable, but is not a long term solution – mainly because the towel falls away as you leave the seat and it will squash flatter and flatter over time.



A longer-term solution is to buy a device that attaches to the back of the seat, creating the curve. These are usually foam rolls which sit in the small of your back and maintain the curve, and are available in many depths.

See photo: A 'D' shaped foam support available in many sizes.



Lumbar Cushions

There are shaped lumbar cushions of various sizes, shapes and designs, including solid and ventilated ones. If you don't have a seat with adjustable lumbar support, or you use multiple vehicles, these devices can help to maintain your lumbar curve. However, trial and error is necessary in order to find a design and size that works for you.

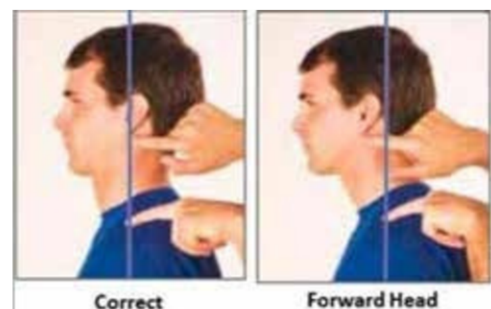
Supporting the Thoracic Spine or Rib Cage

Ideally, the back of your car seat should reach the height of your shoulders. If it is slightly higher or lower but you can still rest into it, it will be fine in most circumstances.

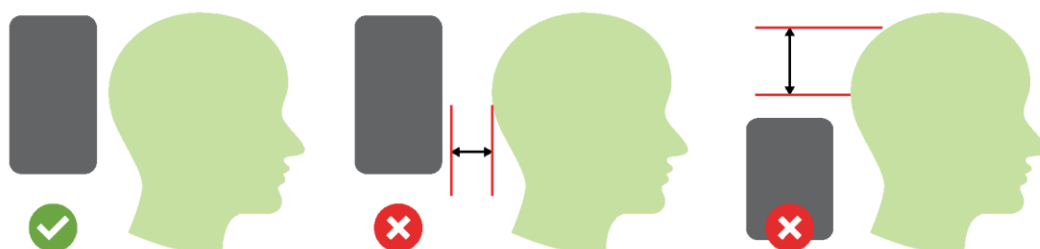


Most car seats come with adjustable headrests

Ideally, you should be able to adjust both the height and the front-to-back position. Adjust the height of the headrest so it rests in the middle of your head. To adjust front-to-back, sit with your head in a 'neutral' position. To do this, first sit upright, then align your earlobe between the collar bone and neck muscles. The easiest way to check you are doing this correctly is to ask someone else to watch you and correct the position. Alternatively, imagine you are tucking your head to hold a small ball under your chin.



Now adjust the headrest forwards until it meets the back of your head:



Adjusting Your Mirrors

Once you are sitting correctly in your seat, adjust the mirrors to give optimal rear visibility. This is vital for both your driving performance and your posture – if you look in a mirror which you have already adjusted and no longer have optimal rear visibility, your posture has probably moved. If this occurs, correct your posture and sit up straight again.



Seat Belts

- 1 Most cars now come with three-point seat belts, which have been proven to reduce injury in the event of an accident, and some have adjustable seat belts.
- 2 When fastening your seat belt, try not to reach for it with the arm on the seat belt side as this puts your shoulder into a bad position (known as the 'closed pack position'). Instead, reach across with the opposite arm and turn from your body, not your shoulder.
- 3 Another consideration when using your seat belt is to ensure the lap portion goes across the pelvis and not the abdomen, so that the belt catches the bones of the pelvis and not your stomach and internal organs in the event of an accident. This is especially important if you are pregnant.
- 4 The upper portion of the seat belt should pass over the clavicle and sternum, not the neck or the shoulder, and never under the arm. Placing the belt over the clavicle and sternum passes stress through the bones rather than the soft tissues, helping to prevent twisting in the event of an impact.

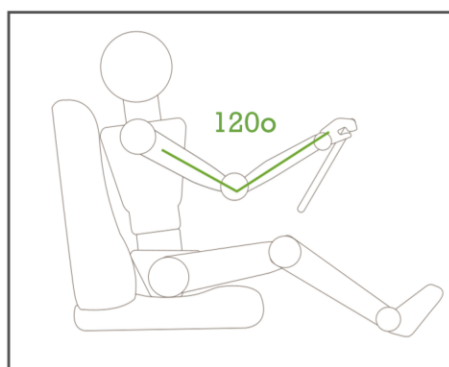
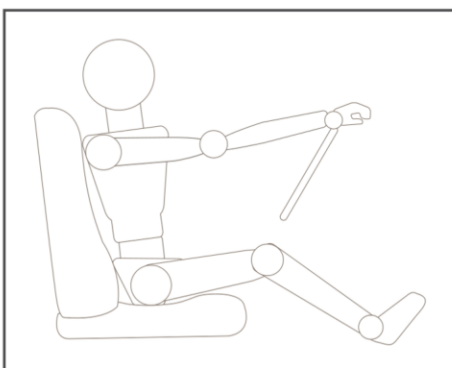


Pelvis not stomach



Steering Wheel and Arm Position

In cars fitted with airbags in the steering wheels, a certain distance is required in order for them to work optimally – anywhere around 10-12 inches (25-30 cm) is a good minimal distance. A car with both height and rake (in and out) steering wheel adjustment capabilities is preferable, as you don't have to adjust the seat front to back to achieve the correct arm / shoulder position. When stationary, you should be able to sit with your shoulder blades pressed back into the chair and, with a straight arm, your wrist should be able to bend over the edge of the steering wheel. Then, when driving, you should find that you have a bend in your arm of around 120 degrees:



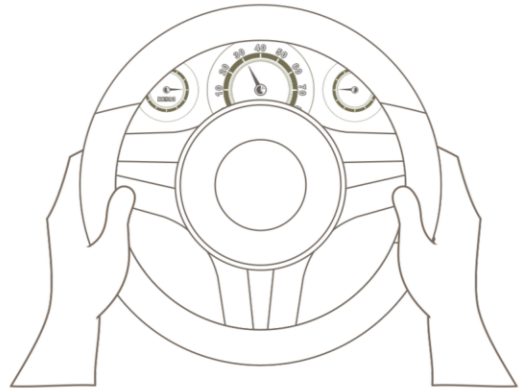
Steering Height

Where adjustable, the steering height should allow a clear view of the dashboard with your palms just lower than your shoulders.

Any adjustment should also allow you to grip the steering wheel in your preferred position. This is normally described in relation to a clock face – some people use the ‘nine and three’ position, whilst those with shoulder and neck problems often prefer the much lower ‘seven and four’ position.

The ‘nine and three’ position gives the best leverage on the wheel but causes you to use your shoulder and neck muscles more. Try to grip the wheel using mainly your fingers and fingertips, and try to keep the grip as light as possible in order to combat fatigue.

Keep both hands on the wheel as much as possible, as steering with one hand causes one shoulder to work harder and can result in a twist of the spine. Never hold the steering wheel at the top with one hand.



Other Factors

Changing gears on either a manual or automatic car can affect shoulder and neck problems. If you suffer from a problem which is on the same side as the gear stick, you may need to adjust your chair to accommodate this. However, this will affect the rest of your sitting position. If possible, try to drive a car where reaching for the gear stick allows the arm to remain in a neutral position – neither reaching to a straight arm, nor bending beyond 90 degrees.

Many cars still have a manually-controlled handbrake or parking brake in the centre console, which people with neck and shoulder problems on that side may find difficult to operate. If this is the case, cars with foot operated or electronic parking / hand brakes are better long term options.





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