

# Ergonomics in the vehicle

## What is ergonomics?

Ergonomics in the workplace is about the interactions between employees and their environment. This can be the tools and equipment you work with, the order you complete work tasks or even your behaviours and how often you take breaks and move.

A well-designed environment means employees can be more comfortable and less likely to experience musculoskeletal symptoms in the workplace.

## Is setting up your car seat the same as setting up an office chair?

While there is an overlap in many ergonomic principles, similar to the office, there is no 'perfect' posture for the vehicle and discomfort is largely a result of remaining in the same position for long periods of time. While we can still make vehicle adjustments to ensure a comfortable position and avoid awkward postures, taking microbreaks to move and break up periods of sitting will be the most effective technique to minimize musculoskeletal discomfort in a vehicle.

Once the car seat is adjusted, the driver should comfortably be able to reach the pedals, steering wheel and other controls without fully extending the legs and arms and should have a good view of the gauges, mirrors and through the front and side windows.

## Going through car adjustments step by step

Before proceeding through any adjustments, please remember safety is always

paramount. Any adjustments you make should not negatively impact your ability to use the safety features in your vehicle.

- 1. Seat height:** The goal for seat height is to be able to see over the steering wheel without the wheel impeding any leg movements such as getting in and out of the vehicle.
- 2. Seat forward/backwards positions:** Move your seat forward until you can reach the pedals with most of your foot and not just your toes. Seat height may need fine tuning to ensure a comfortable angle between your foot and pedal.
- 3. Seat pan length:** There should be space between the back of your knee and the car seat when your leg is operating the pedals.
- 4. Seat back rest:** Adjust the back rest until it supports the full length of your back when you are using the steering wheel. If you are leaning too far back, you may end up bending your head and neck forward for long periods of time, which may cause muscle fatigue and neck or shoulder discomfort.
- 5. Lumbar support:** The lumbar support should fit directly into the curve of your low back. Adjust the lumbar support up-and-down and in-and-out until you feel an even pressure along your back from the hips to shoulder height. The seat back should feel comfortable and there should be no gaps in the back area.
- 6. Steering wheel:** The centre of the steering wheel should be about 25 to 30 cm from the driver's sternum. Your arms should be operating the steering wheel, so they remain below shoulder level.
- 7. Head rest:** Adjust the head restraint until the top of it is level with top of your head.

8. **Fine tune:** Consider fine tuning some of the above adjustments to ensure that you have good visibility, can safely use all the gauges/instruments in your vehicle and ensure that you feel comfortable in your seat.

## Using a laptop in the vehicle

Using a laptop in a vehicle is rarely as comfortable as working at a desk. Typically, you'll have to make compromises due to the lack of independent adjustability of the laptop equipment in the vehicle. Whenever possible, the goal should be to use your laptop at a desk, preferably your office or shared workspace if any prolonged laptop usage is going to occur.

Consider implementing the following when you are required to use a laptop in the vehicle:

- **Using a laptop mount:** Laptop mounts can help create adjustability in the vehicle. They can allow for vertical and horizontal adjustability of the laptop that can reduce the need for twisting or reaching positions. However, as you are working off a laptop there will still be a compromise with screen and keyboard height.
- **Incorporate microbreaks or step outside the vehicle:** If you are required to use the laptop for longer periods, consider taking a microbreak just to walk around the vehicle and move. Alternatively, depending on the shape and model of your vehicle, you may be able to use your laptop by resting it on the trunk/hood of the vehicle and use it while standing. While this may just move which muscles are most impacted by the awkward posture, it will allow us to rest other muscles as necessary and provide easier opportunities to create movement in your workday.

- **Rotate tasks:** Try to break up laptop usage throughout the day. If you have 60 minutes of laptop related work you have to complete each day; try to break this up throughout the day as much as possible, even if it's just two 30-minute sessions instead of a single 60 minute session.

## Getting out of a large vehicle

When exiting a large vehicle with steps or a grab bar, be sure to exit in a controlled manner. The impact forces when jumping out of a vehicle can be a risk factor for injuries particularly if your role requires you to exit and enter the vehicle repetitively throughout the workday. By controlling our movements on the way down, we can reduce the impact force going through your lower limbs.

## Resources

1. [Canadian Centre of Occupational Health and Safety - Driving](#)
2. [myHR Ergonomics](#)

## Vehicle checklist

This checklist is to be used if you have reviewed the vehicle ergonomics education sheet and are looking to perform a quick check-up on your vehicle (A review after an extended period, driving after somebody else drove, etc.)

Checklist	Y	N
Is your seat able to support your back entirely (From hip to shoulders)?		
Are your arms able to reach the steering wheel while elbows remain bent?		
Are your hands below shoulder level while operating the steering wheel?		
Can you push the pedals with your whole foot and not just the toes?		
Is there space between the back of your knees and the edge of the seat when operating the pedals?		
Can the driver reach all vehicle controls (radio, wipers, temperature) while seated?		
If a larger vehicle with steps, can the driver exit vehicle with 3-points of contact?		

Please ensure that any adjustments you make do not interfere with your ability to operate any of the safety mechanisms in your vehicle. The above adjustments should be safely made without compromising your usage of safety tools (mirrors, car horn, seat belt, etc.)

If you have selected 'No' to any of the above questions, review the vehicle ergonomics sheet to ensure your vehicle is appropriately adjusted for yourself.