Maximizing Comfort While Using Your Laptop
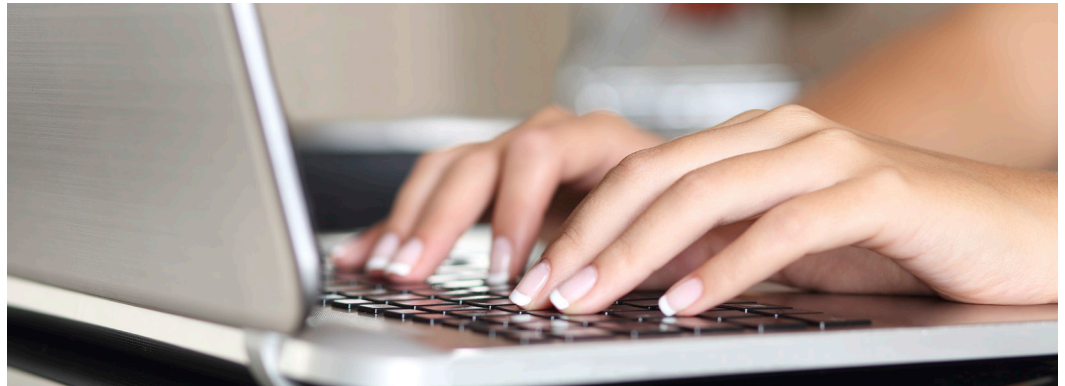
Laptops have allowed us to be untethered from the desktop, allowing us to travel and complete business anywhere in the world. This new freedom finds us using laptops in a wide variety of environments, which may be difficult and challenging at best.

The goal of this guide is to provide users with tips and guidelines for the comfortable use of their laptop, whether in the office or while traveling.

Laptops have keyboards in uncomfortable positions, displays that force you to look down at them and wonky little pointing devices. While all these factors may allow the devices to be portable, practicing good ergonomics can become a challenge.

Below are some guidelines that will help you become more comfortable when using your laptop.

- **Adjusting the Chair's Height** – First, start with your chair. Adjust the chair height so that the feet are firmly supported on the floor surface or an adequate footrest. The lower legs should also be at least 90 degrees with the upper legs. Adequate leg and knee clearance is also desired.

- **Adjusting the Chair's Back** – Adjust the chair's back to ensure the lower-back is properly supported. In most cases, this requires adjusting the seat back height, as well as the seat back fore-aft and tilt positions. Some chairs have separate adjustment controls just for the lumbar support. In some cases, additional support from a lumbar pillow or lumbar roll may be required to maintain the back's natural curvatures.

- **Laptop User Type** – How do you use your laptop? Are you an **occasional user** who works on your laptop for short periods of time or are you a **full-time user** with the laptop as your primary computer? While all users should pay attention to how they use their laptops, occasional users will have a lower risk of problems than full-time users.

- **Laptop Posture** – As indicated above, laptops violate basic ergonomic design requirements; therefore, using a laptop is a trade-off between poor neck/head posture and poor hand/wrist posture.

Occasional Users

Because the neck/head position is determined by the actions of large muscles, it is better to sacrifice neck posture rather than wrist posture. For occasional use:

- Position your laptop in your lap when using it away from your desk to achieve the most neutral wrist posture possible.

- Angle the laptop display so that you can see this with the least amount of neck deviation and eye strain. If there are adjacent windows, position the display so that the line of sight is parallel to the windows in order to minimize glare. Use an anti-glare screen only as a last resort.

Full-Time Users

If you use your laptop at work as your primary computer you should:

- Position the laptop on your desk/work surface in front of you so that you can see the screen without bending your neck. The laptop can be placed on risers so the top edge of the viewing area is at or slightly below eye level. Move the laptop so that it is approximately at arm's length away to enhance visual comfort. Again, adjust the tilt of the display to minimize glare. If there are adjacent windows, position the monitor perpendicular to the windows. Use an anti-glare screen only as a last resort.

- Use a separate keyboard and mouse. You should be able to connect a keyboard and mouse directly to the back of the laptop or to a docking station.

- Pay attention to the angle of your forearms and upper arms. The laptop keyboard height should allow the elbow angle to be close to 90 degrees. This may require that the keyboard and mouse be placed on a keyboard/mouse tray. If the chair has armrests, these need to be adjusted to properly support the elbows and forearms close to the side of the body. These steps will ensure that good hand, wrist and arm positions are maintained.

- When keying from documents, use document holders to minimize neck and shoulder strain. Position the document holder preferably next to the monitor and at about the same height and distance to the eyes. Depending on which is the primary focus point, the monitor or document holder should be positioned directly in front of the user.

- Position all frequently used materials and equipment close to the body to avoid twisting and excessive reaching.

- Vary tasks regularly and take more frequent micro-breaks to allow the body to recover from performing intensive and repetitive tasks. Perform simple stretching exercises as often as possible.

- Intensive keying tasks should be done with as close to an upright posture as possible. Non-intensive keying tasks which are alternated with other tasks should be done in a slightly reclined posture (105 to 120 degrees). Avoid leaning forward without proper chair support.

In a Hotel

Most hotels rooms are not designed for laptop computer use. The desks and chairs are not adjustable, which can create posture issues with the arms, wrist, neck and head. If you must work at the desk, you may have to sit on a pillow to improve the posture of the arms and wrist to achieve neutral postures to the keyboard.

If a couch is provided in the room, you may want to place your laptop on the desk chair. Often, this may achieve a neutral posture easier than sitting at a desk. You may have to place a pillow behind your back to provide the proper support.

The laptops are provided with tiny and constricted touchpads or track balls, which create poor postures of the wrists and hands. It may be a good idea to travel with an external mouse to get away from having to use the small touchpads and track balls that are provided on the laptop.

In a Plane

The airplane may be the most challenging work environment to navigate, as it has very unique issues for comfortable computing. Consideration should be given to the following points on making computing more comfortable on a plane:

Try to reserve a bulkhead seat or exit row for your trip. The exit row provides more seat to seat spacing allowing you to position your arms comfortably while working. In the bulkhead seat, you will not have to deal with another passenger reclining their seat.

If you are sitting in a regular seat and the passenger decides to fully recline their seat, it may facilitate a situation where the seat hits the laptop and makes it very difficult to use. It may be better at this point not to use the laptop due to the poor viewing angles and postures that would have to be assumed.

Here is a Quick Guide to Laptop Accessories and Their Uses:

External keyboards allow you to more freely position your keyboard, meaning that you can independently adjust both the screen and the keys to obtain a better ergonomic position.

Document holders keep documents positioned properly while you're working from them, helping you avoid pain and save space on your desk. Chances are that you lay documents or worksheets flat on your desk, repeatedly tilting or twisting your head when returning attention to the screen. Document holders raise papers off your desk, keeping them in the line of sight (and at the same height as) your screen. Some even attach directly to your laptop's screen; this means less head movement and increased comfort.

Laptop stands resemble a music stand; laptops are placed on a height-adjustable platform which allows a wider variety of adjustment. In essence, it's a portable desk – meaning you're not confined to the height of whatever desks or countertops happen to be convenient. Laptop stands are great for people who have a favorite chair from which they work; it lets them bring the desk to them.

External mice are often used by people who find the laptop's built-in touchpad or track ball difficult to negotiate. The bigger size of a traditional mouse lets you use your entire hand to move the mouse, distributing the motion over a wider area and leading to a more comfortable experience for many users.

Laptop lights are a good idea. Since most mobile users don't have an adjustable task light like the one at their office, getting proper lighting to reduce eye strain can be difficult. Laptop lights attach to your notebook (using either battery power or your USB port) to provide a focused, adjustable task light. This accessory is commonly used for night-time work or on airplanes.

Ergonomic carrying bags are generally designed with broader shoulder straps to more evenly distribute the weight, and often have wheels to let you remove the burden from your shoulders entirely.

Laptop supports are cushions or pillows used to adjust the height of the notebook on your lap. Companies also make desk-based models that raise the laptop off the desk, saving space and bringing the monitor height closer to an optimal viewing position.

Docking stations allow laptop users to enjoy the comfort of full-sized peripherals at the office, while preserving a notebook's portability for travel. Docking stations contain connections for standard-size peripherals such as keyboards, monitors and mice. When at your desk, you simply plug the notebook into the docking station, which serves as an interface between the components, essentially creating a desktop computer. When you're ready to leave, you can simply remove the notebook from the docking station.

## Maximizing Comfort Using Your Laptop in the Office

1. Adjust the chair height so the feet are firmly supported on the floor surface or on an adequate footrest. The lower legs should be equal to or slightly greater than 90 degrees. Adequate leg and knee clearance is also desired.

2. Adjust the chair back so the lower back is properly supported. In most cases, this requires adjusting the seat back height as well as the seat back fore-aft and tilt positions. Some chairs have separate adjustment controls just for the lumbar support. In some cases, additional support from a lumbar roll maybe required to maintain the back's natural curvatures.
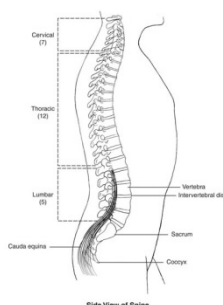
3. Next, place the laptop on your work surface and adjust the screen for comfortable viewing. Attach an external adjustable keyboard holder and mouse/track ball to your laptop. Pay attention to the angle of your forearms and wrist. The laptop keyboard height should allow the elbow angle to be close to 90 degrees. The keyboard tilt should be adjusted so the hands and wrists are maintained in the same pane during keying tasks.
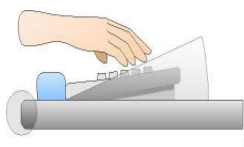
4. If the keyboard height is too high: Raise your seat height to achieve the proper arm position and place a footrest under your feet also that your legs are properly positioned.
Acquire an adjustable keyboard/mouse platform for the external keyboard and mouse that can be properly positioned.
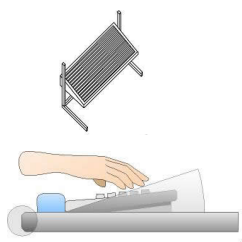
5. Adjust the position of the mouse so it is at the same height as the keyboard and no more than 3" to 4" away. If needed for comfort, alternate the mouse location between the right and left sides of the keyboard.

6. Position the laptop screen so the top character line on the screen is at or slightly below eye level to minimize eye and neck strain. Move the laptop so the display is approximately at arm's length away to enhance visual comfort. Use monitor risers to elevate the laptop if needed.
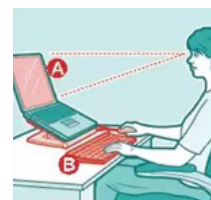
7. Adjust the tilt of the laptop screen to minimize screen glare. If there are adjacent windows, position the laptop screen perpendicular to those windows. Use an anti-glare screen only as a last resort.
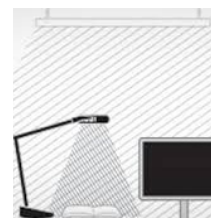
8. When keying from documents, use document holders to minimize neck and shoulder strain. Position the document holder preferably next to the laptop screen and at about the same height and distance to the eyes. Depending on which is the primary focus point, the monitor or document holder should be directly in front of the user.

9. Position frequently used materials and equipment close to the front of the body to avoid twisting and reaching.

10. Vary tasks regularly and take more frequent micro-breaks to allow the body to recover from performing intensive and repetitive tasks. Perform simple stretching exercises whenever possible.

11. Intensive keying tasks should be completed with as close to an upright posture as possible (90 to 100 degrees). Non-intensive keying tasks which are alternated with other tasks should be done between 105 and 120 degrees. Avoid leaning forward without the proper chair support.