

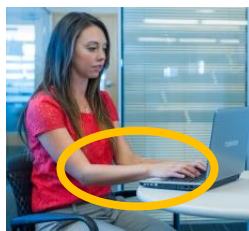


Laptop use

The main benefits of laptops are their portability. Unfortunately, a laptop's portability also leads to a significant ergonomics issue. As the screen and the keyboard are fixed to each other, they cannot both achieve an optimal angle for ease of use. This is primarily a concern if you are using a laptop more than 2 hours per day.

Two of the basic ergonomics principles (CSA Z412-Office Ergonomics) are that elbows should be at approximately 90 degrees while typing and that the top line of text should be approximately at eye level. Due to the fixation of the screen to the laptop, it is impossible to achieve both these principles.

Risks	
Elbows not at 90° while typing	Contact pressure (wrist pain), Wrist extension (wrist pain), Shoulder hiking (shoulder pain),
Top line of text not at eye level	Neck flexion (neck pain), Forward lean (upper back pain), Slouched posture (upper back pain),



Laptop use may come with increased risks with prolonged use. You may not notice these items as the risk is much lower for short term use (1-2 hours at a time). Longer sessions (2+ hours a day) increase the likelihood of developing symptoms. If you are working on a laptop for long periods of time, use an external keyboard and mouse and, either raise the laptop screen or use an external monitor.

Additionally, laptop screens are often smaller and may cause more visual strain after long periods, ensure adequate font and window size. The space for the track-pad on most laptops also increases risk of contact pressure on wrists by reaching for keys on the keyboard. To decrease this risk, ensure wrists are not resting on the edge while typing (hover typing) and take hands off keyboard when typing is finished.



Options	
External Keyboard and Mouse	Allows elbows to be at 90° with keyboard/mouse just below elbow level May need keyboard tray or footrest as well
Raise Monitor OR External Monitor	Raise the laptop screen or use an external monitor Top of text to eye level,

In short, if you have to work for long periods of time on a laptop (>2hrs a day), consider an external keyboard or external monitor. Hover while you type and rest with hands off keyboard.