ergonow
ERGONOMIC SOLUTIONS

Home Office Ergo Tips

WORKING FROM HOME

- The same ergonomics principles apply at home as at work.
    - At its most basic, ergonomics is about modifying the environment to make it more suitable for human interaction, increasing productivity and ideally, reducing risk of injury.
- Typically, the most significant ergonomics hazard associated with computer work is poor posture.
- Spending some time working at home is likely not new to many people.
- In the past, for most people, significantly less time was spent working at home than in the office.
    - For this reason, you may not have ever experienced discomfort while working from home.
    - This may have changed/may yet change if you have begun working from home *full-time.*
        - When assessing ergonomics risk factors, effects must be considered in combination. Working with a poor posture for a short time may or may not cause discomfort – but when working with a poor posture for extended durations, the risk obviously increases.
- Everyone likely has a few locations where they use their laptop.
    - (e.g., the dining room table, kitchen counter, couch, etc.)
- Ideally, a simple desk and office style chair are available, but these are not necessary (nor are they always sufficient) to achieve a neutral working posture.
- *If you do not have a designated home office, or if your home office is shared and you don't always have access, alternatives are discussed below.*

IDEAL POSTURE FOR COMPUTER WORK

Commonly agreed postural guidelines for computer tasks are as follows:

- Feet supported

- Knees at approximately 90°

- Thighs parallel to the floor

    - with approximately 2 to 3 finger widths between the front edge of the seat and the back of the knee

- Hips flexed at approximately 90 to 100°

- Neutral spinal posture with support from the chair's backrest

- Shoulders relaxed

- Elbows at 90° and close to body

- Wrists straight and not in contact with hard surfaces

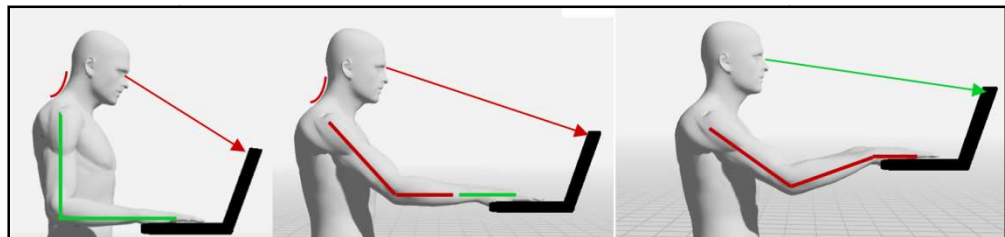- Chin level and ears in-line with shoulders (neutral neck posture)
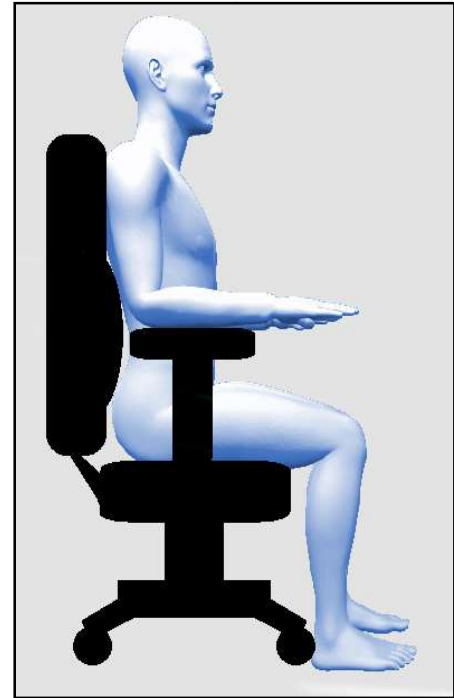
LAPTOP USE

- Unfortunately, achieving the posture shown above is prohibited by laptop design.

- This is due to the fact that the keyboard and screen are coupled adjacent to each other

- Therefore, laptop use – over long durations – may lead to discomfort in the neck and shoulders and/or arms and wrists.

- In order to avoiding these awkward postures, you'll need:

    - a laptop riser, stand, or platform to allow you to position the monitor at the proper height

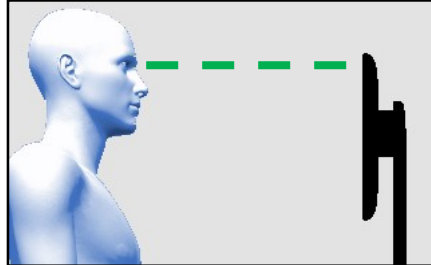   - an external keyboard and mouse to allow you to maintain proper upper limb posture

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MONITOR PLACEMENT

- The key to maintaining a neutral neck posture is proper monitor placement.

- Typically, this means placing the top of your screen at eye level to allow you to view your screen without elevating or lowering your chin.


However, if you wear glasses with progressive lenses or bifocals:

- Determine which part of your lenses you view your screen out of.

- If you look through the lower portion of your lenses, position the top of your screen *below* eye-level in order to avoid the need to extend your neck to view the *upper* portion of your screen.

It is also important to consider the distance from your eyes to your screen.

- A monitor that is positioned too far away creates a tendency toward neck *protraction*.

    - The general guideline is to keep your monitor approximately an arm's length away

- To be more certain that your monitor is correctly positioned, perform a check to make sure your ears are in line with your shoulders.

    - If you find that you often protract your neck to read or view your monitor more clearly, you likely need to move your monitor closer.
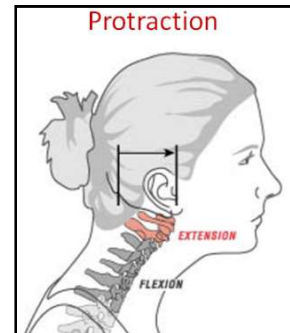
Also, remember to give your eyes a break.

- Use the 20-20-20 rule: every 20 minutes, look at something 20 feet away, for 20 seconds.

- Working in a smaller room?

    - Try a window (but beware glare!)

    - Simply looking away from your screen to rest your eyes will help.

WHERE YOU SET UP…

Many people who do not have a designated home office space will choose to set up their laptop at their dining room table. This will typically result in a posture that looks approximately like that shown in the image.
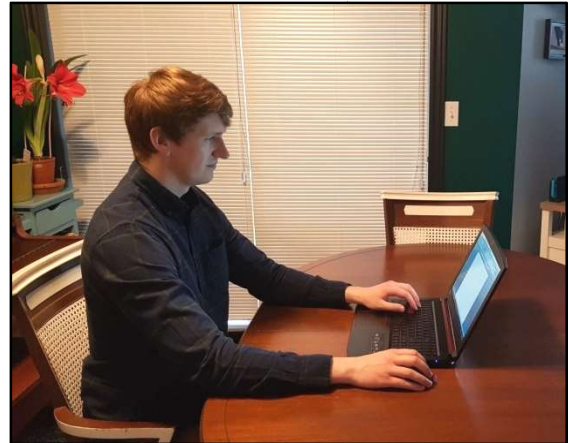

This setup may result in a posture that is reasonable for short durations, but there are limitations that make it unsuitable for extended use.

The exhibited posture deviates from neutral in the following ways:

- shoulders are flexed
- elbows are extended
- elbows and wrists resting on hard surfaces
- neck is flexed
- back is entirely unsupported

A lack of back support means that the upright posture shown is being maintained entirely by the musculature of the back. These muscles will fatigue over time, and the result will be a classic, "slouched" posture. In addition to poor spinal posture, this will result in increased weight and compression on the elbows and forearms as well as protraction of the neck.

To facilitate an improved posture, the laptop screen should be elevated to the correct height, and an external keyboard and mouse should be used.
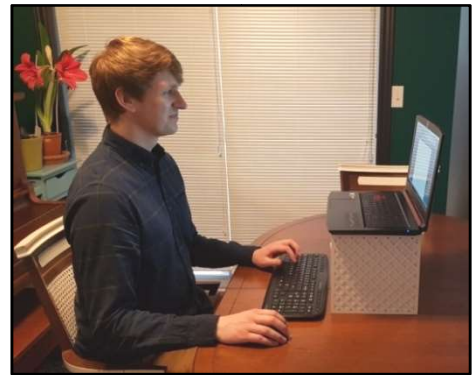
In order to provide *support* for a neutral spinal posture, a rectangular throw pillow, or a folded-up towel or blanket can significantly improve the lumbar support offered by your chair

In order to maintain a proper upper limb posture and reduce contact forces from the table, it is important that your elbow height (when your shoulders are in a relaxed posture) be in line with the height of the surface of the table.

- A cushion can help raise your elbows up to the correct height.
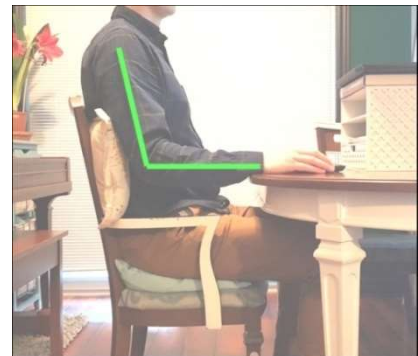
Finally, if your seat is too high for you to maintain a neutral lower limb posture (as shown below):

- Place a sturdy, flat object under your feet as a footrest.

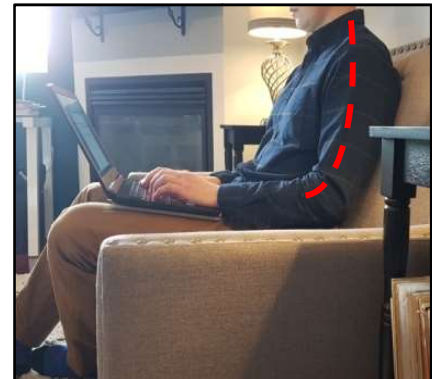- In this example, a shoebox is the perfect height to facilitate a *neutral seated posture*.
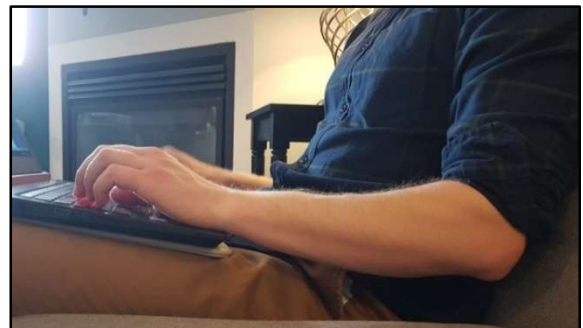

WHAT ABOUT THE COUCH?

- shoulder posture is reasonable

- wrists are likely experiencing significant contact pressures

- neck is significantly flexed

- spine is flexed (see dashed line)

With regards to the wrist:

Some of the weight of the arm is being supported by tissues in the shoulder. But given that the wrist and palm are higher than the elbow, much of the weight is placed on the wrist/palm, creating pressure on the tissues in that area. Combining that pressure with the highly repetitive nature of typing as well as potential warmth from the laptop can cause increased risk for injury or discomfort in those tissues

To facilitate a safer, more neutral seated posture:

- Add a pillow behind your back to increase lumbar support and improve your spinal posture.

- Add pillows on either side to act as armrests.

    - This can alleviate some of the pressure from the wrists.

Note: Your laptop *may* require ventilation – do not block fans. Instead, place the laptop on a hard surface for use in your lap.

Even after implementing the changes above, neck posture is likely to be significantly flexed. Therefore, this is not recommended as a primary working posture, and should only be maintained over shorter durations. Instead, the couch can be used to increase variety in the postures maintained through the day, or if a more suitable workstation is unavailable.

STANDING!

Standing workstations offer an excellent means to increase postural variety throughout the workday, allowing us to extend or knees and hips for a better pelvic posture

- Standing typically allows for a more neutral spinal posture as well, though a lack of support means that durations should be limited if possible.

Creating a standing workstation can be as simple as setting your laptop on a surface that brings the keyboard up to elbow height:

- In this example, an upside-down laundry basket on a counter elevates the keyboard of the laptop up to the appropriate height, facilitating fairly neutral shoulder and elbow postures.

- The significant issue of poor neck posture remains.

- Therefore, it is not recommended that this posture be maintained for extended durations.
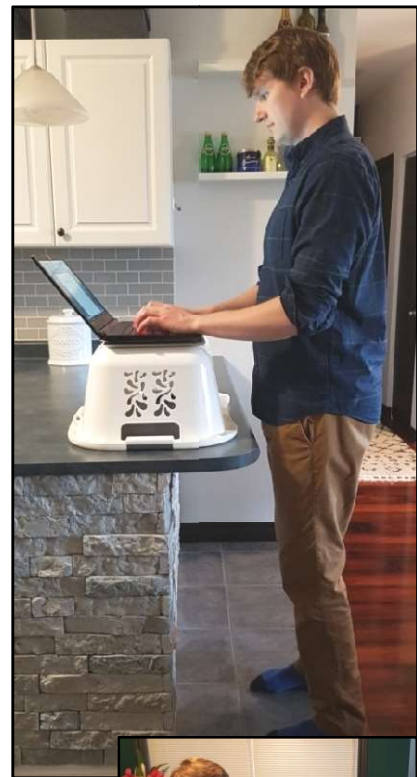
To improve this workstation further, the laptop could be set up on a riser with an external keyboard and mouse (as in the image to the right). This does require that the surface be somewhat larger and sturdier, but it will allow for a much more *sustainable* posture.

Alternatively, if you're able to cast or connect your computer to a television, you may be able to maintain a more neutral neck posture while standing, as in this image.

Note: this still requires that your keyboard and mouse be positioned at the correct height.

SUMMARY

- Working in any static posture for an extended period of time can cause issues.

- Changing postures frequently allows for different regions of the body to get breaks throughout the day, and can prevent any one area from being overloaded.

- Primary workstation should be one where you can achieve a good overall posture.

- From there, move to other locations to reduce time spent in the same static posture, and to give your body breaks as needed.

- Stand-up, even for a 1 to 2 minutes, every hour.