Clinical Computer Workstations - Ergonomics Training

Ergonomic Services
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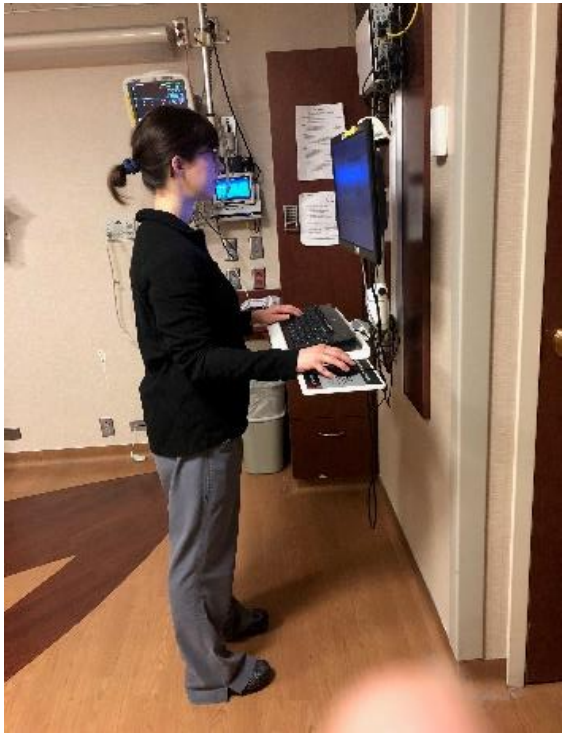
Nebraska Medicine

SERIOUS MEDICINE. EXTRAORDINARY CARE.®

Ergonomics is the study of people at work.

It is a discipline which aims to design work places, tools and processes with human capacities and limitations in mind, to ensure safety and productivity in the workplace.



Purpose of the training:

Learn what you can do to eliminate risk factors, to avoid common pain conditions.

Know how to make simple, quick adjustments to your computer workstation to create a more ergonomic and functional setup.

Based on current American National Standards Institute/Human Factors and Ergonomics Society(ANSI/HFES 100-2007) guidelines for computer workstations

Current ergonomic guidelines for computer workstations:

- ✓ Focus on more neutral and optimal work postures
- ✓ Key adjustments for adapting a station for an individual user
- ✓ Movement for better blood circulation
- ✓ Suitable postural support

The following slides will describe standard guidelines for promoting better comfort and health when working at your computer.

As always, there may be exceptions to the rule, based on special needs.

Following this training, please go to the link below, to complete your own assessment: Computer Workstation - Ergonomics Self-Assessment(Link on the NOW page, under MyHR and Lawson/My Safety/Ergonomics).

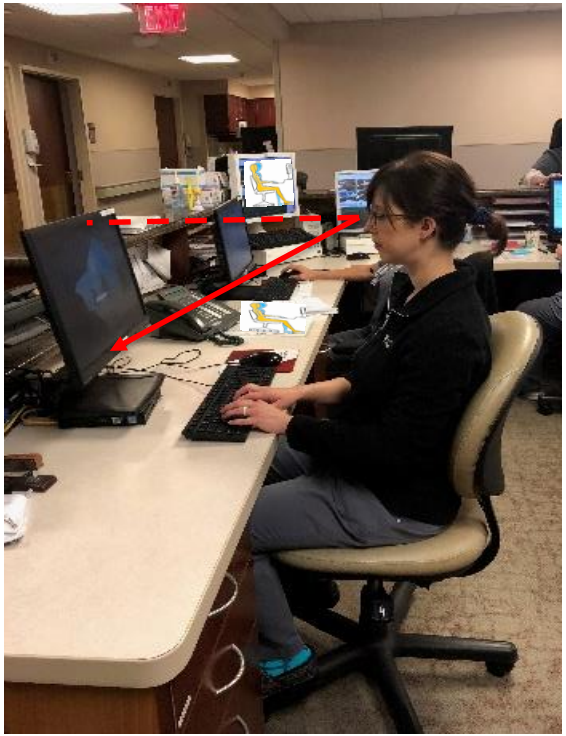
The slides will guide you to correct many of the common sources of discomfort.

If you continue to experience discomfort, please speak to your manager and complete a request in MyHR, for an Ergonomics Assessment.

Computer Monitor

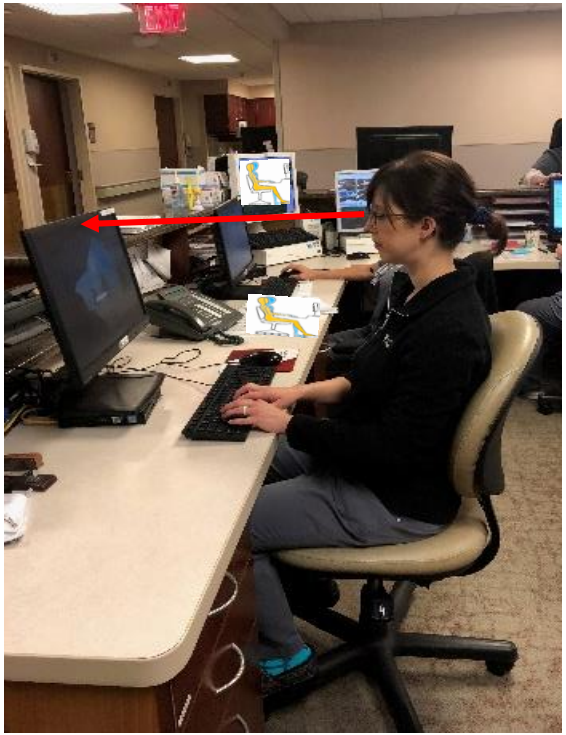
Adjust your monitor to:

- ✓ Support optimum visual work
- ✓ Facilitate neutral head and neck postures
- ✓ Prevent visual strain



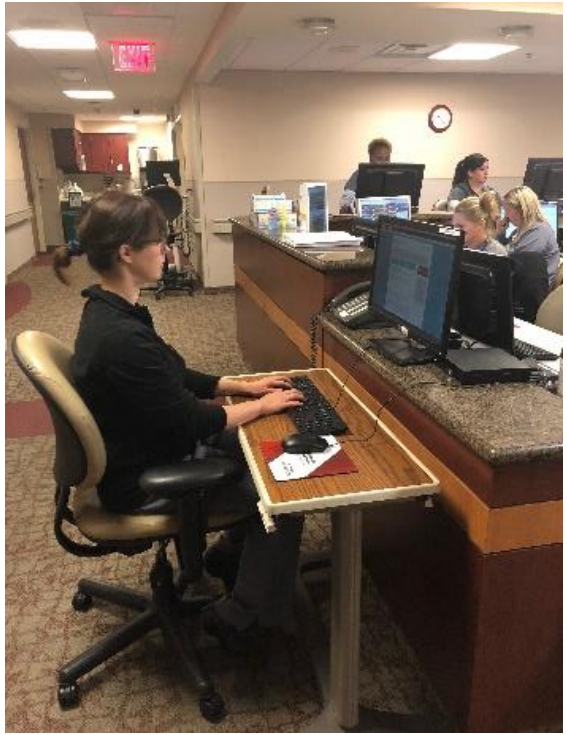
Computer Monitor

- ✓ Set the monitor, 20 to 29 inches away from your eyes.
- ✓ There may be exceptions based on special needs. Based on your focal distance, you may need it closer.



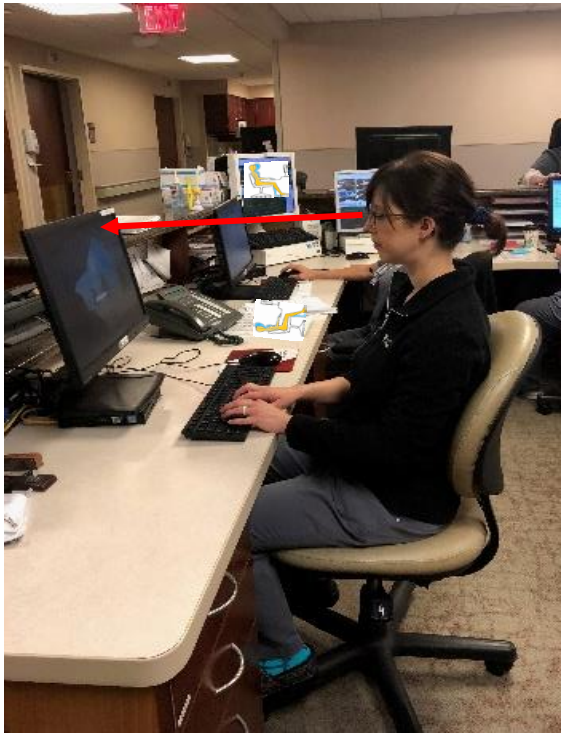
Computer Monitor

- ✓ Set your monitor squarely in front of you
- ✓ If you have two monitors, set them close together and center them in front of you.
- ✓ If the monitor is set off to one side and requiring frequent sideways rotation of the head at the neck, based on how much you are rotating your head(more than a mild 20 degrees sideways rotation) - it can exacerbate neck discomfort.



Computer Monitor

If you either have perfect vision or if you wear one power corrective lenses for your vision, the top of the monitor screen should be at your eye level.

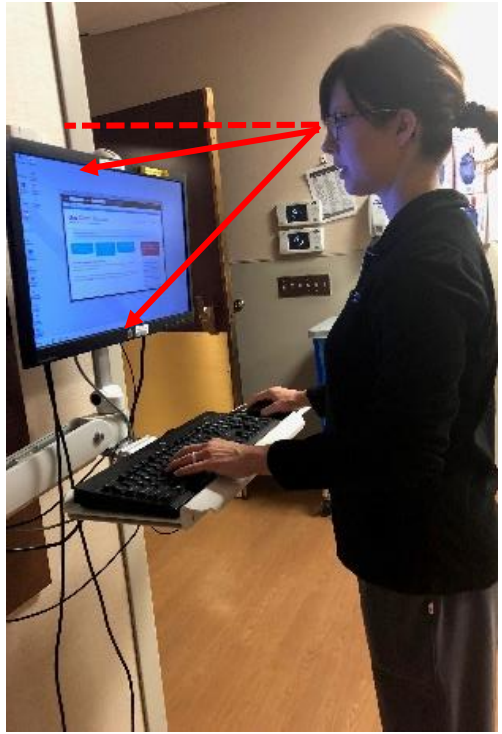


Computer Monitor

If you wear bifocals, trifocals or progressive lenses for vision, and you read from a lower zone of your lenses, the top of the monitor screen should be set lower than your eye level :

- the top of the monitor screen may need to be set 2 to 4 inches or more, lower than your eye level, to prevent frequent backwards bending of the head at the neck.

In addition to avoiding backwards bending, moderate or greater downwards bending of the head at the neck(more than 20 degrees of downwards bending) on a frequent or constant basis should also be avoided, to avoid neck discomfort.

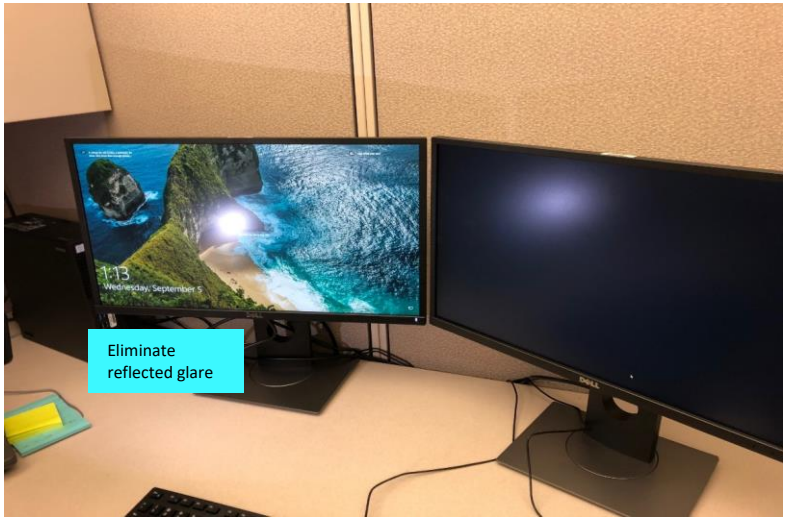


Computer Monitor

You should not see reflections from your computer screen, to prevent glare.

If you are seeing reflections:

- close window blinds
- set the monitor at a right angle to bright light sources
- use a glare guard



Keyboard and Mouse

Set up your keyboard and mouse to facilitate optimum work postures for the shoulders, arms, hands and wrists.

The keyboard and mouse should be set close to the neutral elbow height of the user. The neutral elbow height is measured with the shoulders relaxed and elbows close to the body.

Keyboard and Mouse

You should be able to reach the keyboard and mouse, within a forearm's reach distance

Keep your elbows held close to the body and the shoulders relaxed.

Keyboard

Type with no repetitive or constant bending of the hands at the wrist – either upwards, downwards, or sideways.

Mouse

Move your whole arm to move the mouse cursor. Avoid repeated sideways movements of the hand at the wrist to prevent mechanical irritation to the tendons of the hand.

Seating

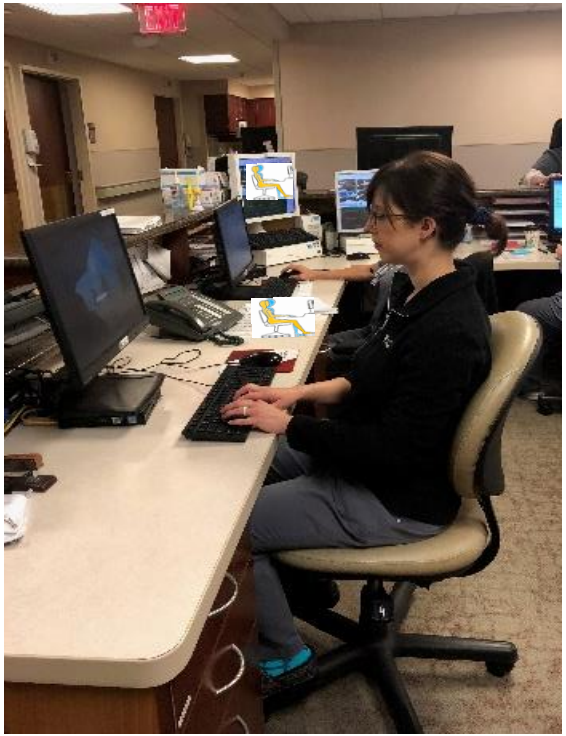
Adjust your chair for a good fit and comfortable postural support.

Adjust your seat height on your stool, for optimum work postures and functionality.

Task Chair

There is no one “good” posture that you should be maintaining all day!

Some movement and some changes in posture are necessary for healthy blood circulation.

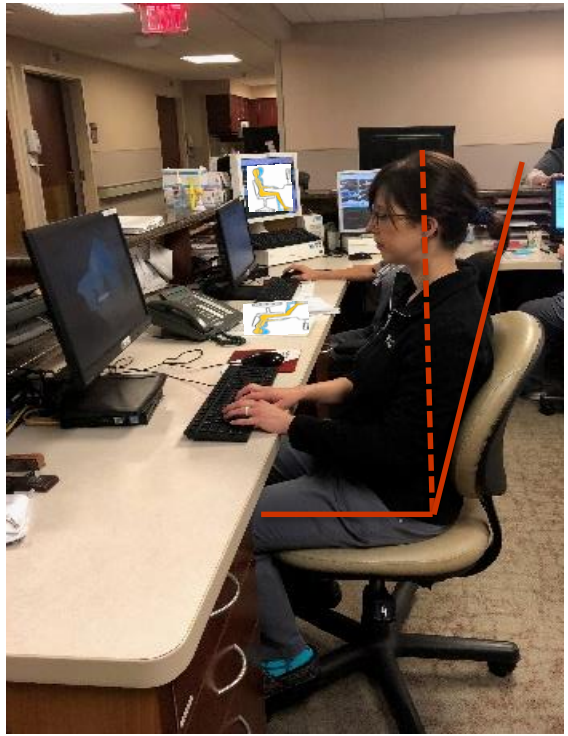


Task Chair

Back Support and Back Angle

If sitting in a chair with a backrest, sit without rounding out your back or slouching. Sit all the way back in your seat and relax onto your backrest. You can vary your postures from sitting up straight with back support, to leaning straight backwards, up to approximately a 120 degree angle between the truck and the thighs.

Adjust the height of the lumbar support to fit you and to support your low back.



Task Chair

Seat Depth

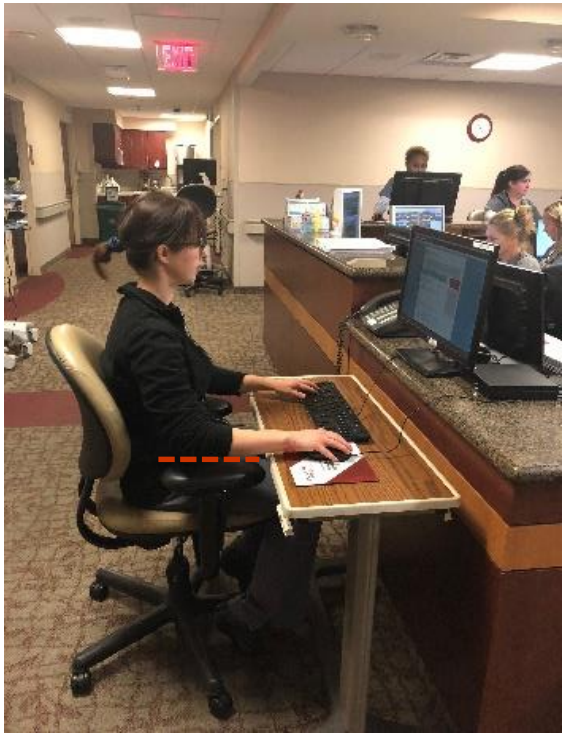
The **seat depth** should be such that there will be 2 to 4 inches gap between the edge of the seat and the angle behind your knee, when sitting all the way back in your chair.

This will ensure good low back support and avoid excessive compression of the soft tissue behind the knee.

Task Chair

Armrests

Adjust the armrests to sit slightly below your elbow height, to ensure that they don’t raise your elbow height and your shoulders, for extended periods of time, when at the computer.



Task Chair

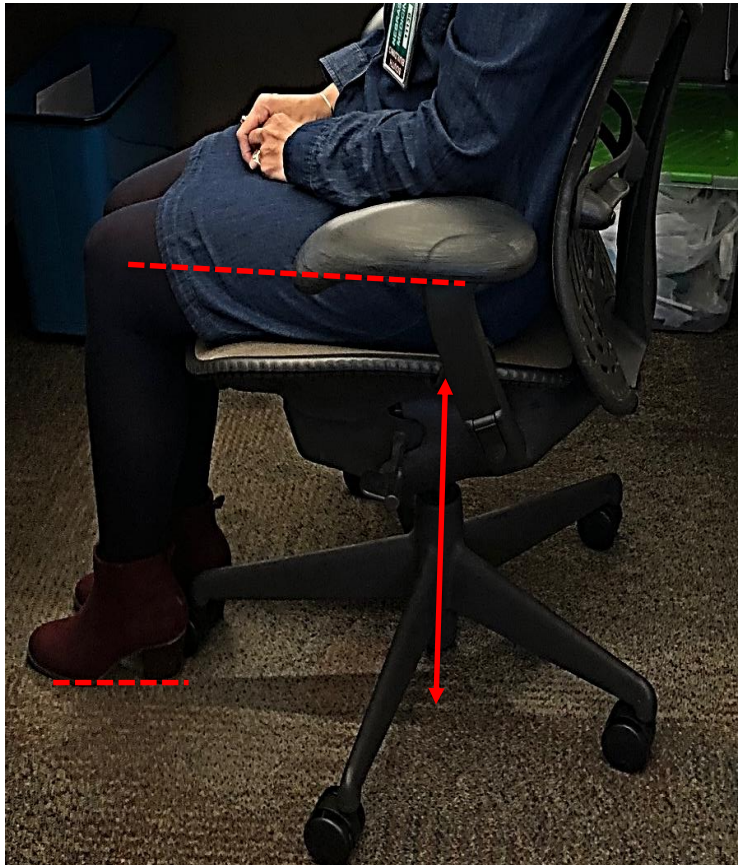
Seat Height

Adjust your seat height such that your elbows are about one inch higher than the surface your keyboard and mouse will be set on.

Your feet should either be flat on the floor or on a footrest.

Sit with your knees either level with your hips or slightly lower than your hips.

Use a keyboard/mouse tray if necessary, to allow a more comfortable seated height for your shoulders, hands, wrists, legs, back and spine.



Stool

Seat Height

<u>When adjusting seat height consider that:</u>

1) **Your keyboard and mouse should be at your elbow height.**

- Either adjust your seat height, or set your keyboard and mouse onto a height adjustable keyboard/mouse tray, if necessary.

- Adjust work surface height, if adjustable.

2) **Your knees should be close to level with your hips, to keep your low back relaxed.**

- If sitting on a high stool at a standing level station, use a high industrial footrest if necessary to raise your knees to hip level.

3) **If sitting on a stool with no backrest in a patient exam room, sitting in a straddle position**, can also help with assuming more neutral postures for the back and spine, particularly when the stool has to be raised higher than knee height.

Telephones and Workstation Accessories

For the long term health of your neck and cervical spine, for tasks carried out on a frequent or sustained basis, maintain your head upright.

Avoid twisting and/or sideways bending of your head at your neck, to complete frequent or sustained tasks.

Keep your shoulders relaxed.

Do not cradle the phone handset between your head and shoulders.

Use hands-free headsets as necessary.

If needed, use a document holder that is set at the same height and distance as the monitor, to facilitate more optimal head and neck postures.

Micro-breaks: 30-30 Rule

As and when possible, take a 30 second micro-break after approximately 30 minutes of working at your computer.

It is fine to miss a micro-break when busy. Try to fit as many of the micro-breaks in during your day, as possible.

Exercises for Micro-breaks:

1. Sit all the way back in your seat. Place your hands in your lap in a relaxed handshake position and take three slow deep breaths.

2. Stand and stretch.

3. Walk for 30 seconds to a minutes.

Please see the next section of this training PowerPoint by Zach Turbes, Fitness Center Coordinator – on stretches you can do at your workstation.

Next Steps

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Stretches and Self-Message Techniques

By
Zach Turbes, **CSCS**
Fitness Center Coordinator

Staying in any one posture for extended periods of time can lead to general discomfort and even in some instances chronic pain. The following slides provide some techniques to relieve tense muscles and counteract some of the ill-effects which can be associated with too little variation in your work postures.

Hips

What to do:
Place one leg forward with a moderate bend in the knee and the other leg back (keeping it as straight as possible). Sit your hips forward, moving them in the direction of the bended knee and maintain an upright posture (you should feel a stretch in the straightened leg, near the front of the hip). Hold for 30 seconds and repeat for the opposing leg.

What it does:
Over time, sitting can shorten your hip flexors which, if short/tight, can lead to poor posture and chronic pain. This stretch helps guard against that.

Lower Back

What to do:
While sitting in your chair, lean forward until you notice a “rounding” in your lumbar spine (low back). Hold the position for 15 seconds.

Note: *You may also add a gentle and slow tilt, side to side, to further stretch the area.*

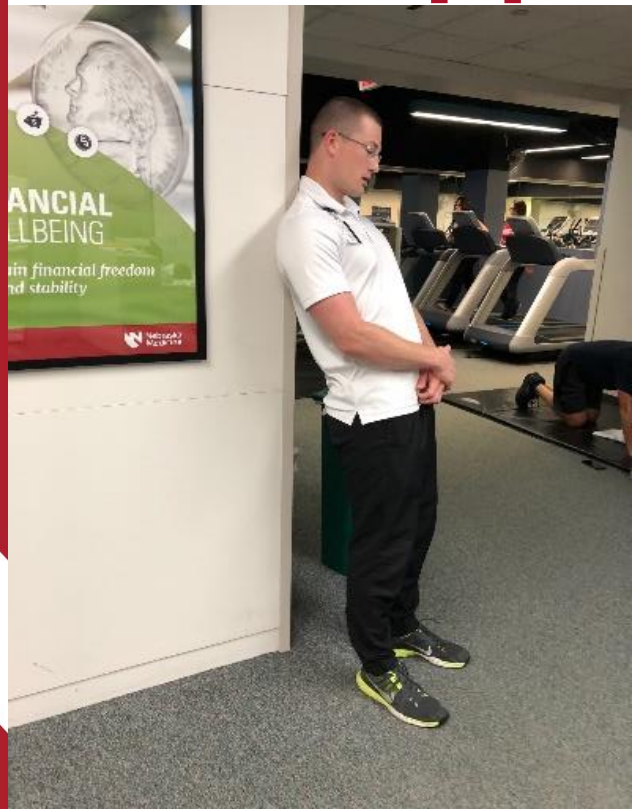
What it does:
Stretches the shortened and tight muscles of the low back (relieving tension) and helping to correct potentially harmful changes to the muscle and body.

Chest and Shoulders

What to do:
Pinch your shoulder blades together (without shrugging your shoulders) and try to rotate your rib-cage so that your chest is tilted towards the ceiling. Hands at waist level with the palms either forward or facing up.

What it does:
Stretches the shortened and tight muscles of the chest and shoulders (relieving tension), and activates the mid-back musculature to further reinforce correct posture.

Mid/Upper-Back



What to do:
Leaning against the corner or a wall and positioning it between your spine and shoulder blade– gently rock back and forth so that the wall passes over your mid/upper-back (applying pressure to the area).

What it does:
Relieves tension in the mid/upper-back (Rhomboids and Lower Traps).

Upper back and Neck

What to do:
Reach back behind your neck to just above your shoulder blade. Find the spot between this area and your spine and press down (applying consistent pressure). Rub this area up down and up until you experience a sense of relief in your neck and upper back.

What it does:
Relieves muscle tightness

Neck

What to do:
Beginning at the base of your neck (on either side of your spine), press down and slide your fingers to the base of your skull (repeat multiple times).

What it does:
This can loosen up sore and stiff necks, and sometimes relieve headaches.

Wrists

What to do:
Beginning at your wrist (just under your palm), apply pressure with your thumb to the inner part of your forearm and move it back and forth– over the tendons and muscles. Repeat the movement, moving down your forearm, until you reach the elbow.

What it does:
Relaxes the wrists and can aid in preventing Carpal Tunnel Syndrome.

Additionally

Back pain can be the result of a variety of conditions, like weak and tight musculature, awkward work setup, and poor body mechanics. A strength training routine can be one of the key factors in eliminating chronic back pain and improving your quality of life.

If you would like to schedule your free assessment and training session, email Zac at zturbes@nebraskamed.com.

* Sessions are available Monday through Thursday from 6:00 am to 3:30 pm

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