Ergonomics at home

Working from home safely

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Introduction

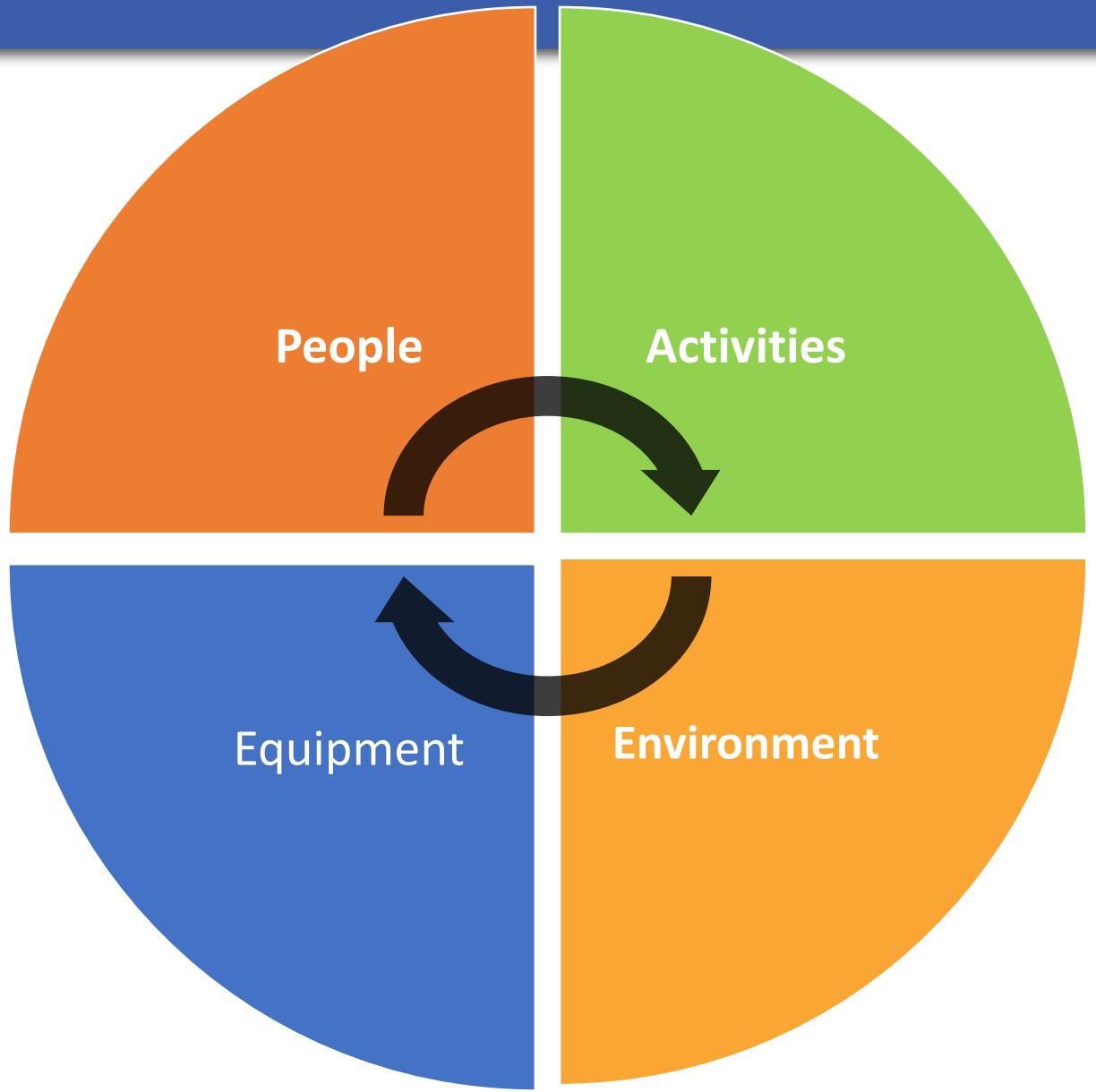
My name is Stacie Goodrich. I am an Occupational Therapist with SFM's rehabilitation subsidiary CompRehab, Inc.

I have worked in ergonomics and disability management for 20 years.

This presentation is designed to address common sources of work-at-home discomfort, provide education and offer ideas to improve your home work space.

What is ergonomics?

Ergonomics is the study of the relationship between:



Ergonomics defined

Ergonomics can either be:

Reactive

Proactive

Goals of ergonomics

Ergonomics aim to:

- Enhance performance and productivity while improving health, comfort, safety and job satisfaction
- Reduce the development of musculoskeletal disorders (MSDs)

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What are musculoskeletal disorders?

Affected areas

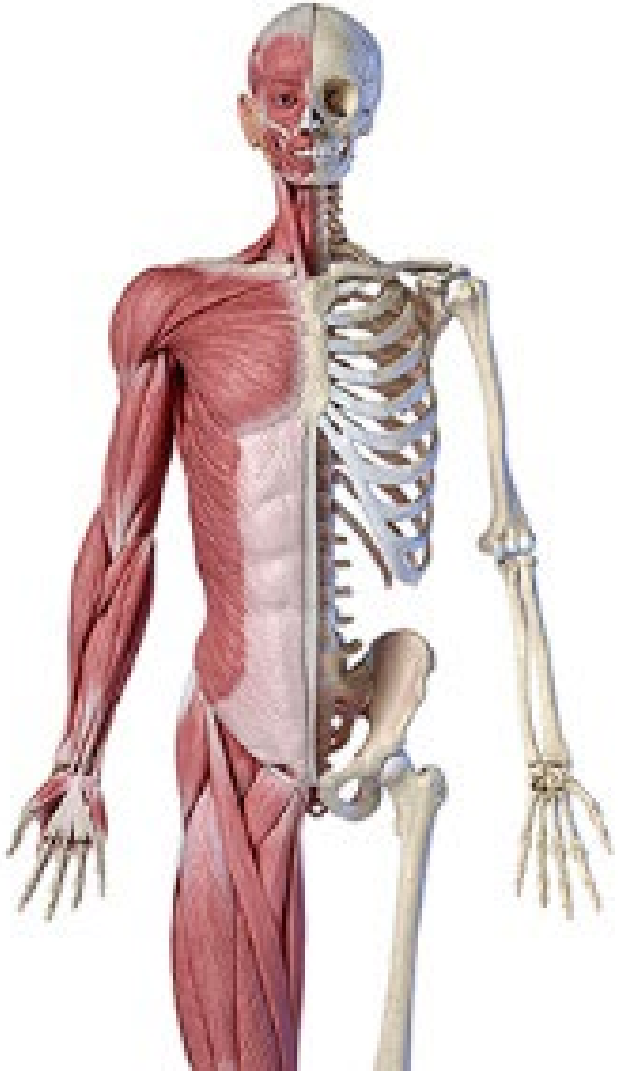
- Neck
- Back
- Upper extremities
- Lower extremities
- Eyes

Types of disorders

- Muscle strain/sprain
- Nerve irritation/compression
- Tendon inflammation
- Joint discomfort/inflammation

Symptoms

- Soreness
- Swelling
- Skin discoloration
- Numbness
- Tingling
- Burning
- Radiating pain
- Decreased strength
- Decreased movement



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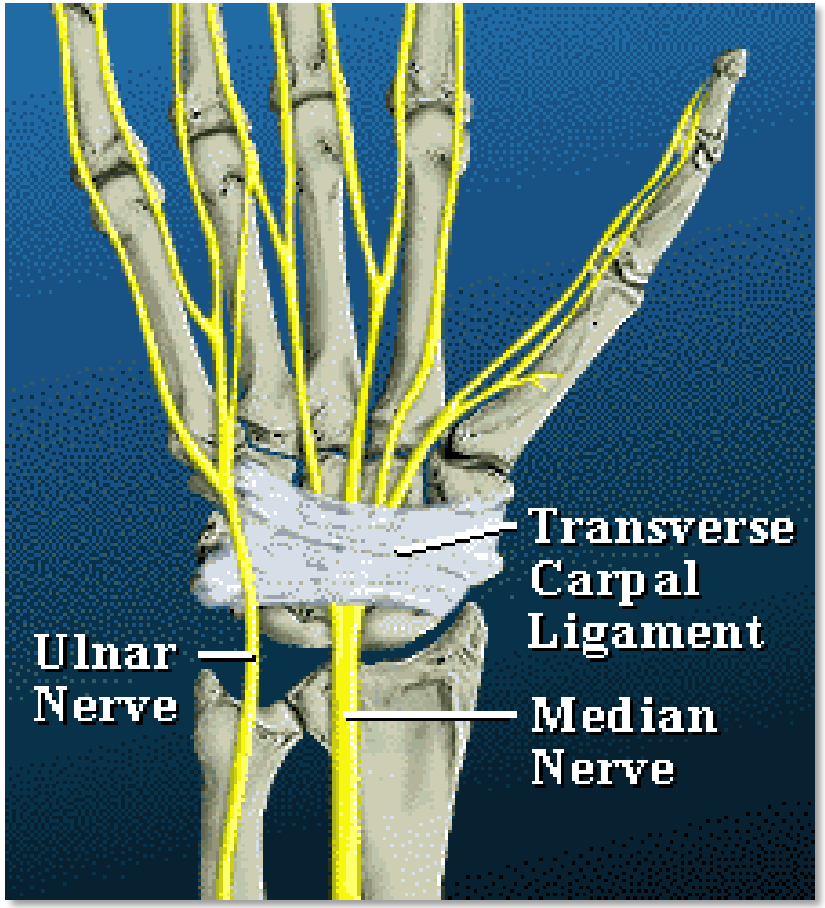
Common upper extremity injuries

- Carpal tunnel syndrome
- Ulnar nerve compression
- Epicondylitis
- Rotator cuff impingement



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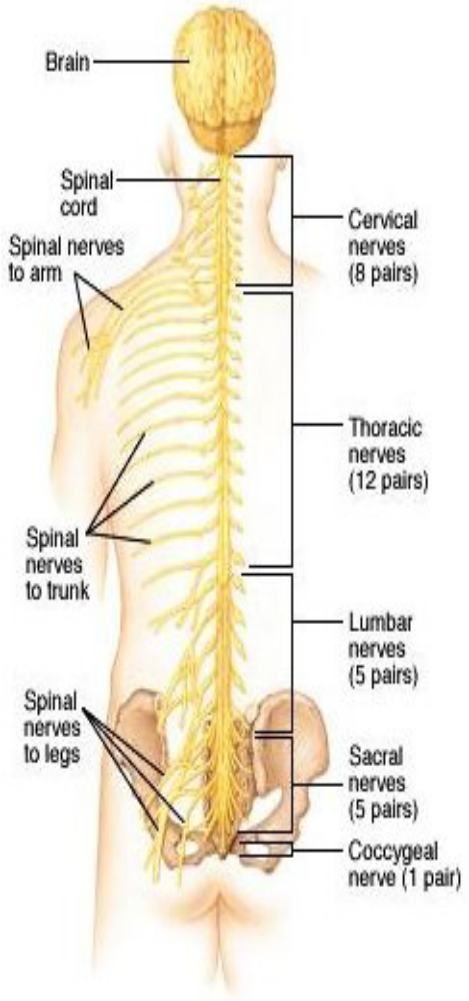
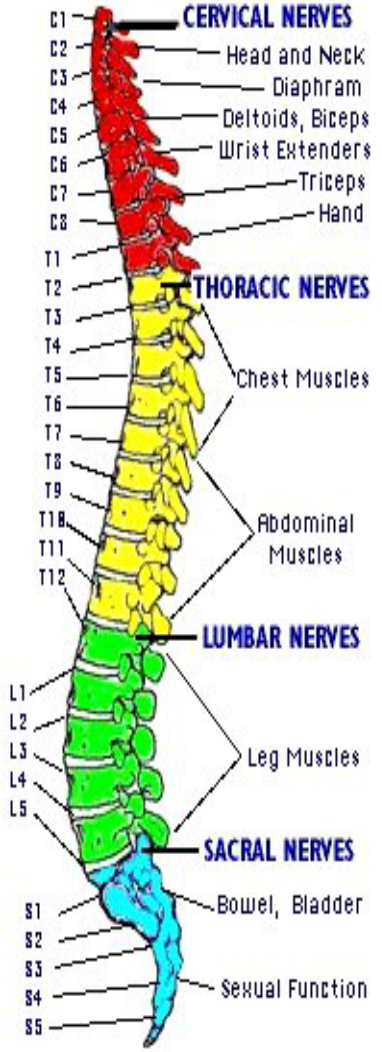
Common back injuries

- Muscle strain/ sprain/spasm
- Disc bulge
- Disc herniation (with nerve root compression)





Risk factors

Risk factors that potentially contribute to "slow onset" injury or work-related musculoskeletal disorder include:

- Posture
- Force
- Localized pressure / contact stress
- Repetition
- Lack of recovery time

When **risk factors are combined** the likelihood of **injury is increased**.

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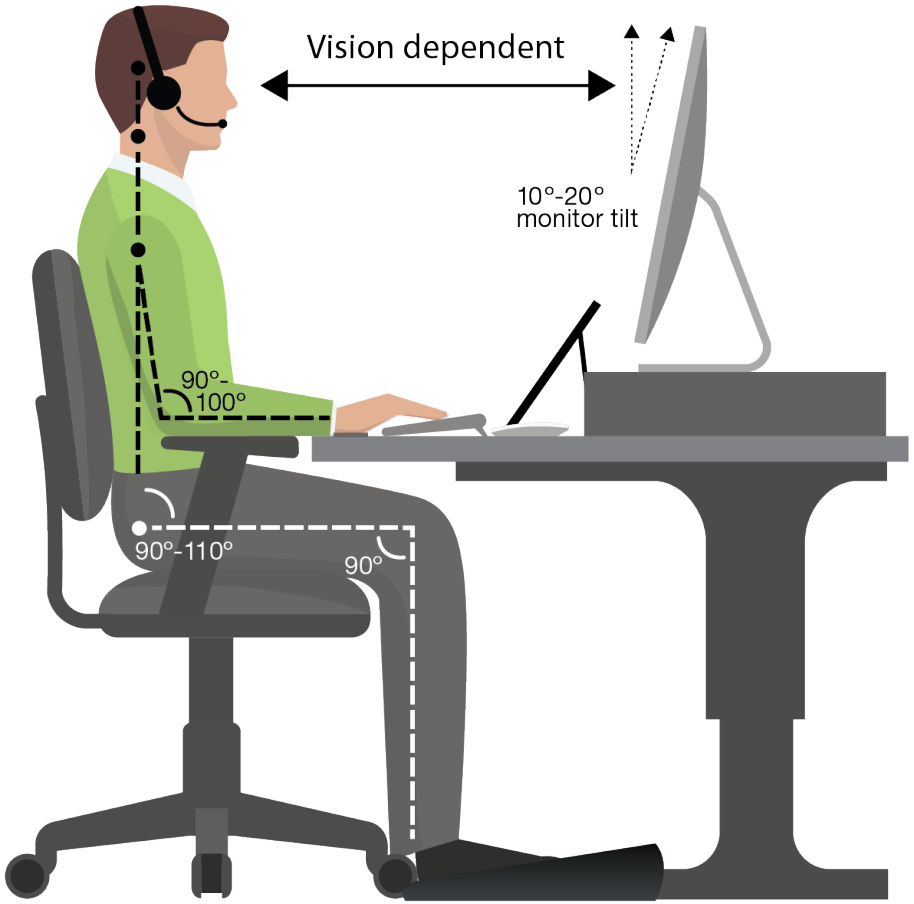
Ideal neutral posture when seated



- Feet resting comfortably on the floor or footrest*
- Thighs fully supported by the chair seat
- Hip angle 90-110 degrees with knees slightly lower than hips
- Chair backrest supports the natural curve of the back
- Upper arm rests comfortably at the side
- Elbow angle 90-100 degrees
- Wrists straight/flat
- Head centered over neck and shoulders

***Chair and work surface can be adjusted to facilitate neutral posture.**

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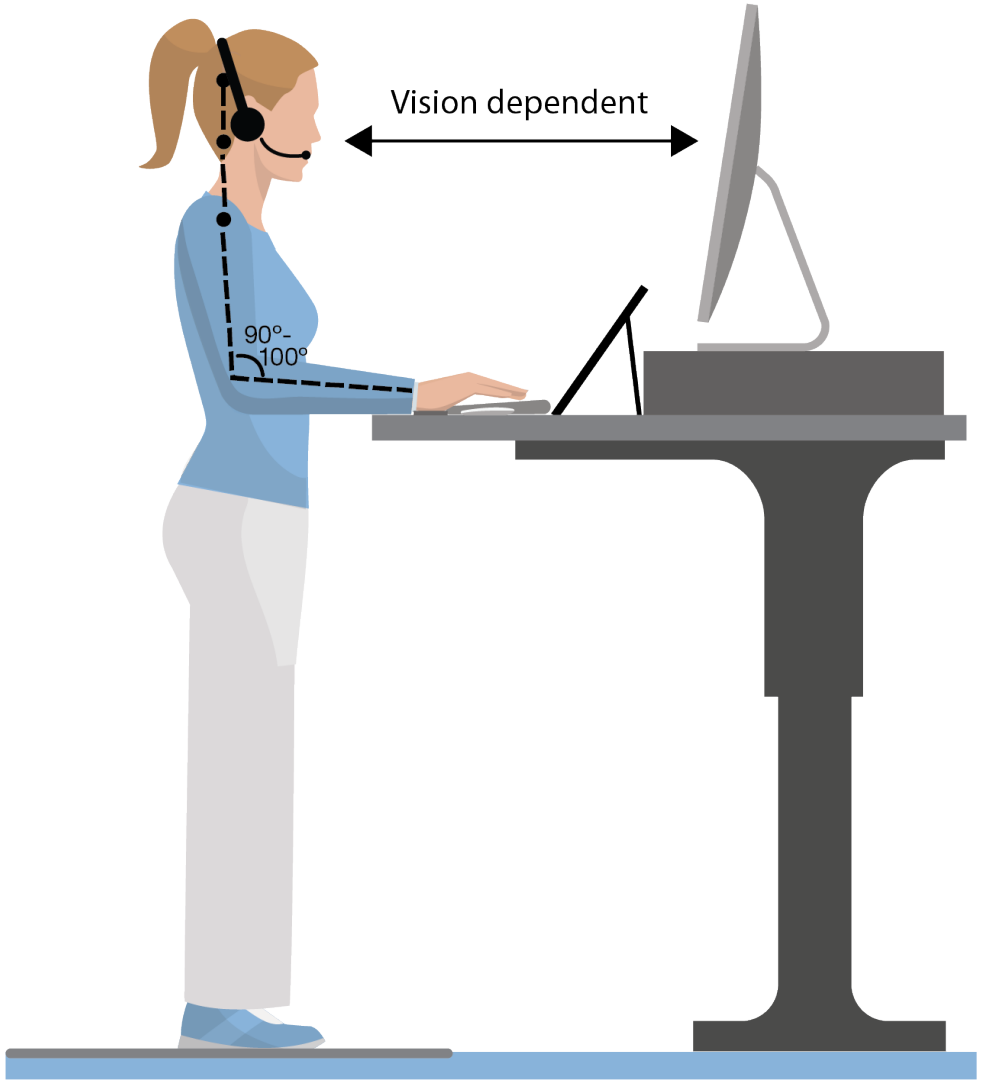
Ideal neutral posture when standing



- Feet on the floor, knees unlocked*
- Upper arm rests comfortably at the side
- Elbow angle 90-100 degrees
- Wrists straight/flat
- Head centered over neck and shoulders

***Work surface can be adjusted to facilitate neutral posture**

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Options for supported posture look different at home

Seated posture

Avoid “C”-shaped spine postures

Maintain natural spine curvatures with back support when seated

- The intervertebral discs in your spine act as cushions or “shock absorbers”
- When the spine is out of alignment, pressure on the discs is unevenly distributed
- Sustained, static postures out of alignment can cause wear and tear or “degeneration” in the discs over time

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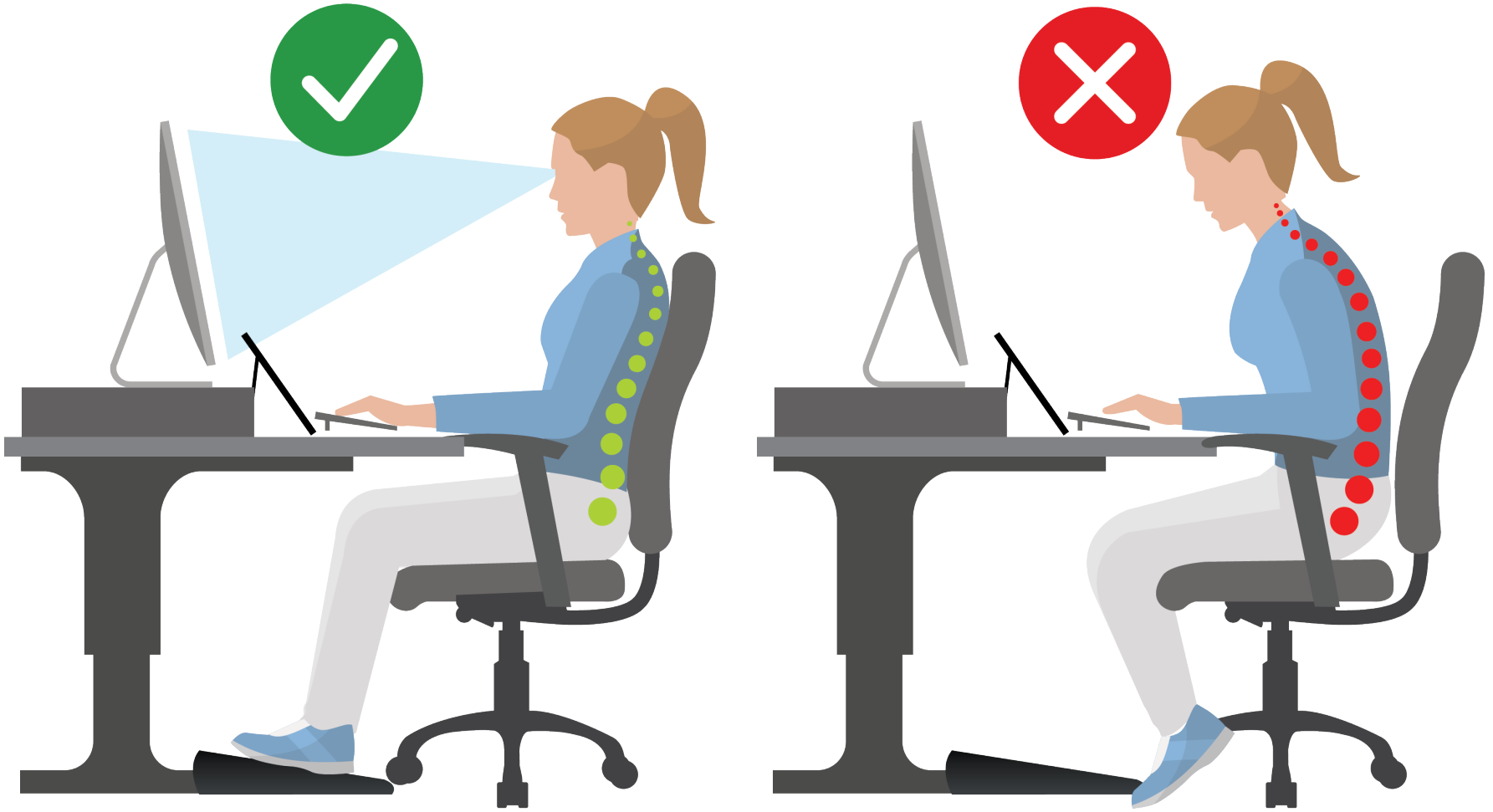
Seated posture

At home, it is important to find a chair that offers back support. Add pillows and/or a rolled up towel for added support.



Chair Adjustments

Seat Surface

- Comfortable
- Slightly wider than hips/thighs
- Proper length
- Adjustable height
- Adjustable tilt

Chair Adjustments

Back and arms

- Backrest with adjustable angle and lumbar support
- Armrest broad and cushioned to support shoulders, elbows, and wrists
- Armrests independently adjustable in height and side to side

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Elbow and wrist position

- Dining room table surfaces are typically too high for most of us to obtain at least a 90 degree angle at the elbow
- Add pillows to chair to increase height and/or back support
- Use step stool or box as footrest if needed
- Key and mouse with your elbows at your sides and shoulders relaxed
- Control the mouse with your arm as opposed to your wrist and keep your wrist straight
- Switch hands using the mouse if you feel discomfort

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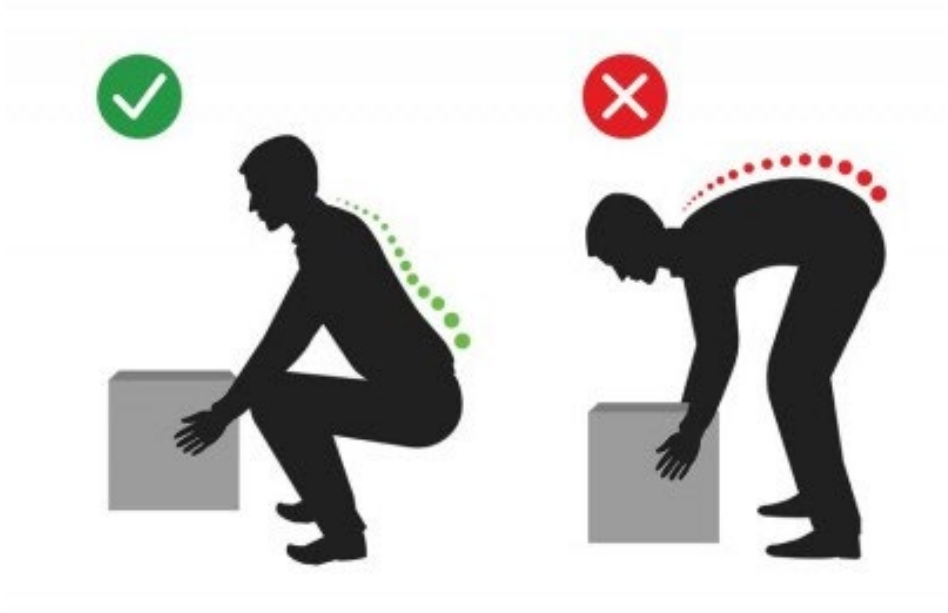
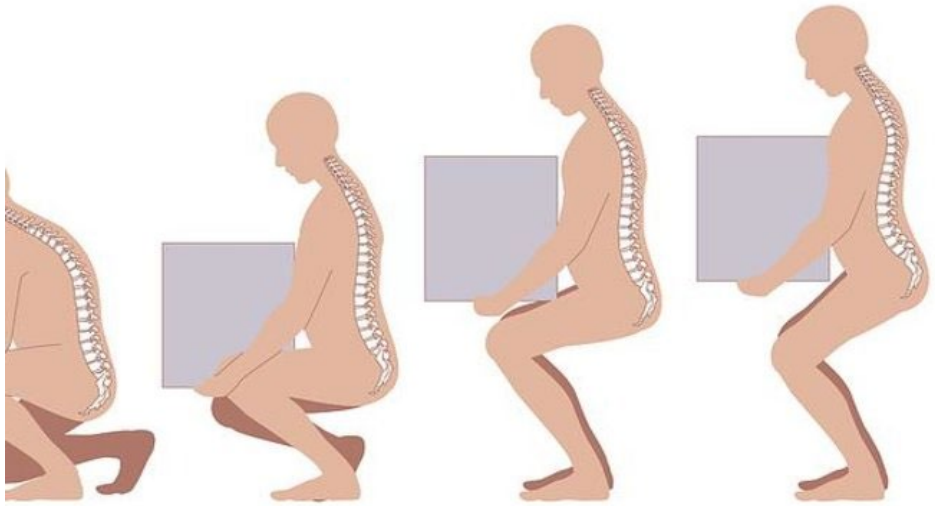
Lifting

- Maintain the natural curve of your back
- Hold the load close and let your legs do the work
- Breathe – move slowly – change direction with your feet





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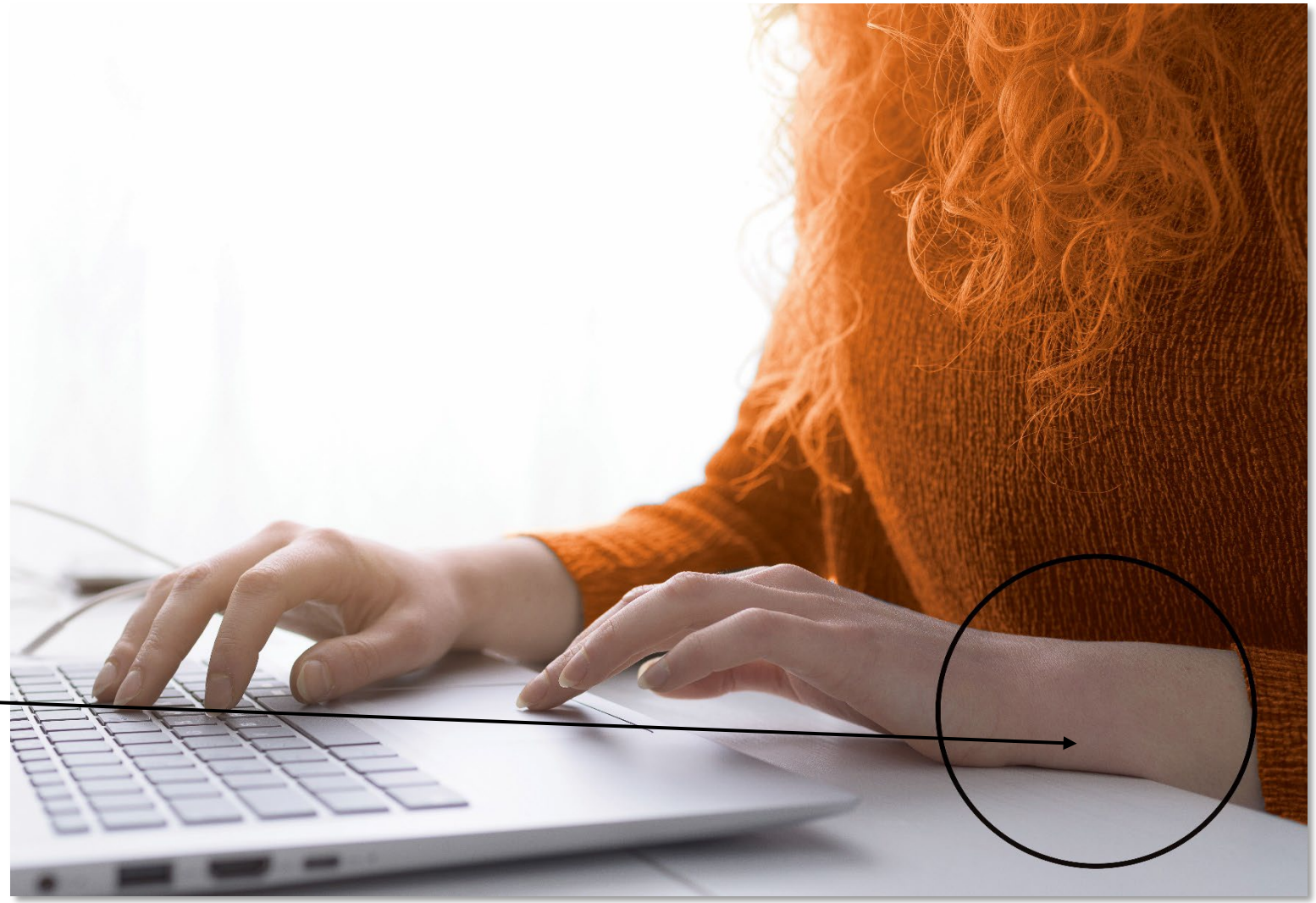
Avoid contact stress

Resting the forearm, wrist or hand on hard or sharp surfaces can compress and damage muscles, nerves and blood vessels.



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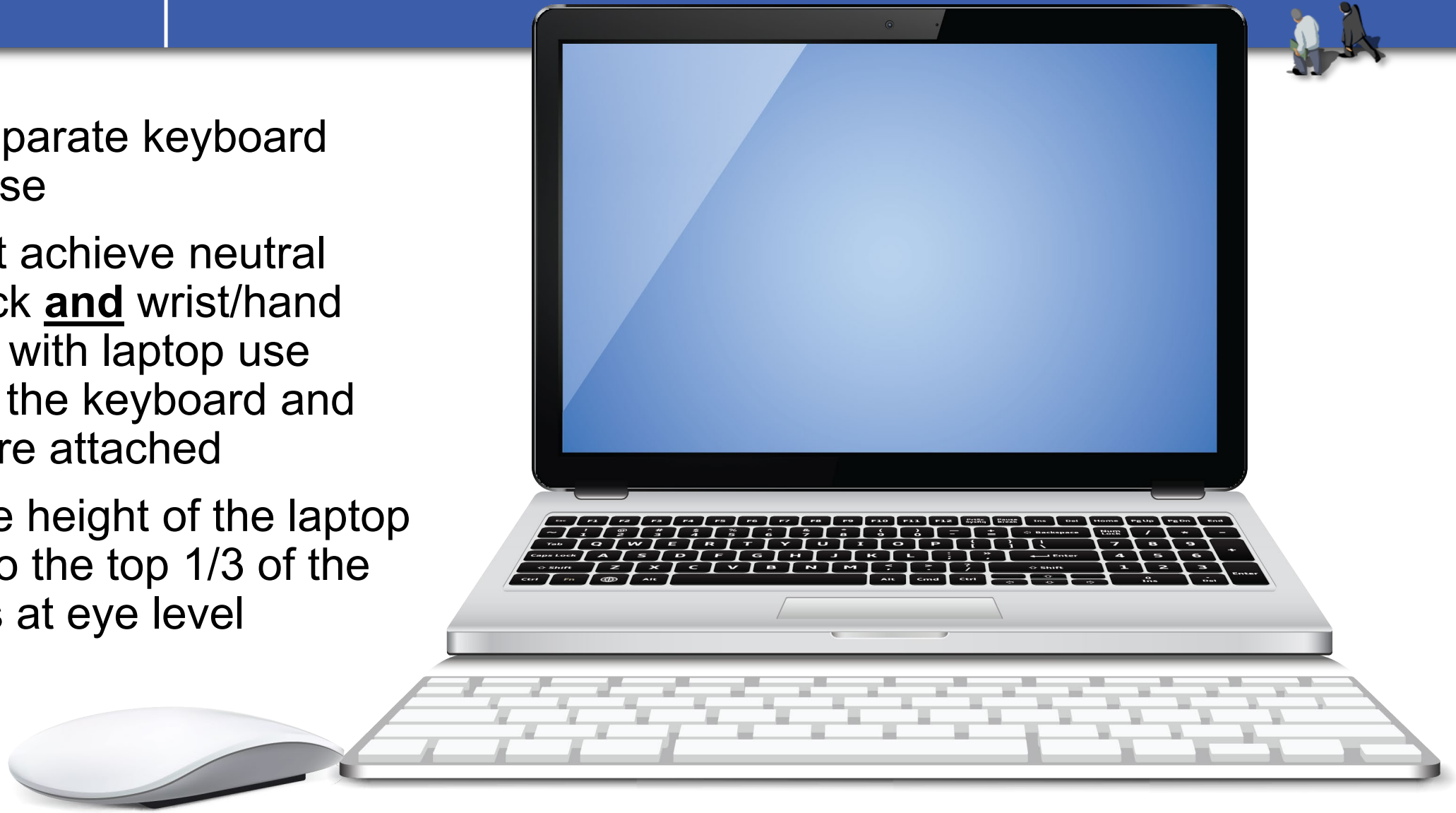
Using a laptop

- Use a separate keyboard and mouse
- You can't achieve neutral head/neck **and** wrist/hand postures with laptop use because the keyboard and screen are attached
- Raise the height of the laptop screen so the top 1/3 of the screen is at eye level



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Ideas to improve your home office setup

- ***Raise*** your chair height with pillows
- Add a foot rest if needed for lower body support
- Add a rolled up towel for lumbar support
- Use an ironing board supported by the wall for a stand-up desk

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Eyes and lighting

- Take a break from your screen and look away every 20 minutes, looking at something 20 feet away for 20 seconds
- Be aware of lighting and position your work area near natural light, if possible
- Monitor your neck position and adjust your screen(s) accordingly to maintain neutral alignment

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Get up and move

- The **MOST** important ergonomic change you can make is to increase movement and change postures and positions throughout the work day
- Professor Hedge from Cornell University documented an ideal work pattern: For every 30 minutes of work, sit for 20 minutes, stand for 8 and stretch or move for 2.
- Movement allows for increased blood flow and muscle recovery following periods of static positioning
- Movement reduces fatigue and improves concentration
- Exercise is cumulative – three 10-minute walks equals 30 minutes of daily exercise

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Hedge's 3S's Ideal Work Pattern

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Movement ideas

- Stand up when you are on the phone
- Run/walk up and down the stairs
- Walk around the house or block
- Post stretches by your monitor as a reminder
- Drink more water and refill frequently
- Use the bathroom farthest away from you

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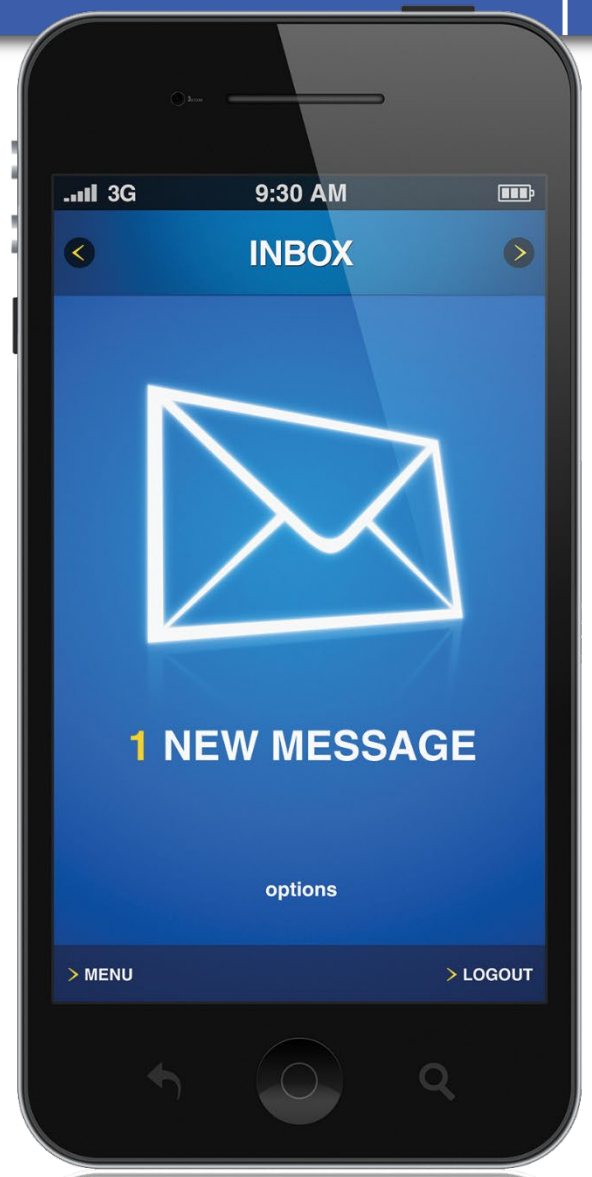
Tips and considerations



- Maintain a regular work day with consistent start and end times – learn to shut it off
- Plan your day – include time for movement and set reminders
- Complete a task before moving onto another
- Avoid habitual interruptions to check emails or your phone. It takes time for your brain to re-engage and you are less productive.
- Utilize manageable “To Do” lists for organization and goal completion

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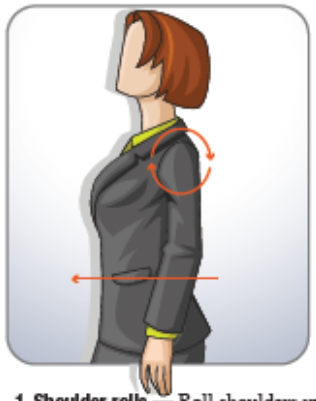
ATTN: Employees: It's time to 'GET UP & MOVE'

Movement throughout your work day will help you stay fit and will help keep your energy up. It does the body good!

Begin with a few warm ups



1. Shoulder rolls — Roll shoulders up and back. Switch direction.

2. Small arm circles — Move arms in small circles. Switch direction.

3. Large arm circles — Roll arms in large circles. Switch direction.

4. Raise the roof — March in place. Push palms toward the ceiling with thumbs almost touching your shoulders.

5. High reach — Reach arms up high. Hold it.

6. Shoulder shrugs — Shrug shoulders up. Hold and relax.

7. Walk in place (or around the work-place) — Walking is a great form of exercise and is a great way to warm up.

8. Hamstring curl — Swing arms while bringing one foot up toward your rear end. Your hands are down when your foot is up.

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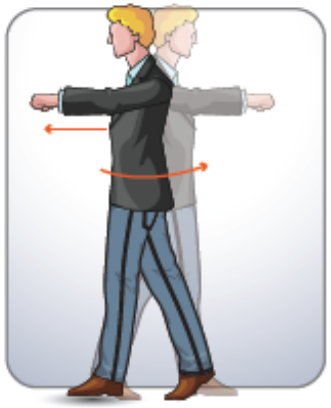
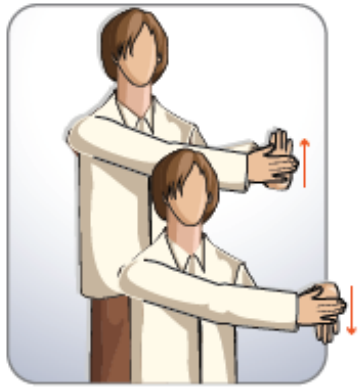
Now, let's stretch!

- Do each stretch slowly and smoothly. No bouncing.
- Stretch to the point of comfortable tension. Then relax and hold the stretch.
- If a stretch causes pain, stop stretching and make sure your technique is correct.
- Remember to let your supervisor know if you have any issues while stretching.



1. Punching — Rock from foot to foot while punching with alternating arms. Do not fully straighten your arm.

2. Hand stretch — Make fists. Hold it. Open hands wide. Repeat motion to the front, sides and above head.



3. Wrist stretch — Bend your wrist upward and then downward. Hold it.

4. Neck stretch — Grasp top of head and bend your neck gently. Hold it. Switch sides.

5. Rotation stretch — Reach up high and rotate at the hips in both directions.

6. Backward bend — Hands on hips. Bend your back, shoulders and head backward.

7. Squat — Use a wide stance. Maintain balance, bend to squatting position. Hold it.

8. Hamstring stretch — Support upper body with hands on upper leg. Stretch hamstring. Hold it.

Resources

- Your supervisor
- Human Resource Generalist
- Risk Management and Safety – 612-673-2175
- Stacie Goodrich – Occupational Therapist
  - 952-838-4407
  - stacie.goodrich@comprehab.com

- **Questions?**

- **Feedback**
  - Is the content pertinent and valuable?
  - Additions or changes?
  - Other challenges at home?
  - How do you rate this training?
    - Poor – Average – Good – Excellent