

Managing and Relieving the Repetitive Stress

Thia Hoff, MAT, MAcOM, L.Ac
(Reed College)



Today's Ambition

This interactive 3-part workshop hopes to help you relieve the repetitive stress your body endures from working in a library setting.

Part one is a series of gentle stretches to relieve the repetitive stress on our muscles and posture stress that results from doing our work. We'll focus on the neck, shoulders, arms, hands, and upper back.

Part two focuses on the ergonomics of a work station that protects our spine and muscles. We will also look at how to lift and move objects safely.

Part three focuses on the eyes, perhaps the most neglected muscles in the body. We'll do exercises to relax and increase the flexibility of the eyes.



Disclaimer

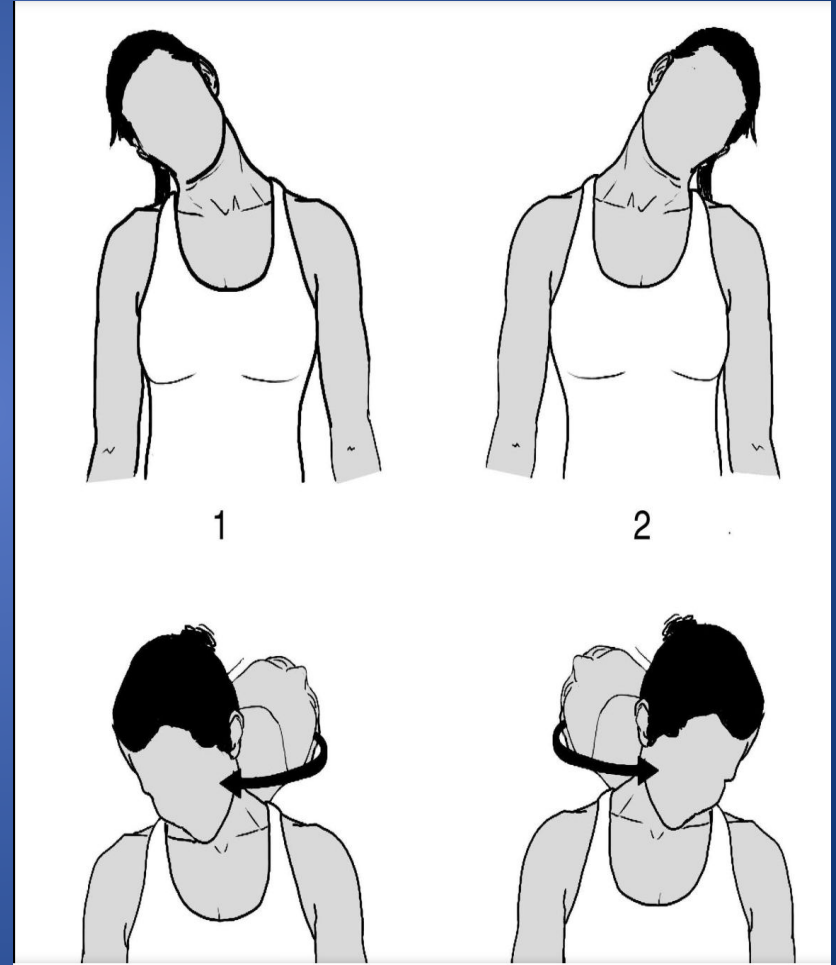
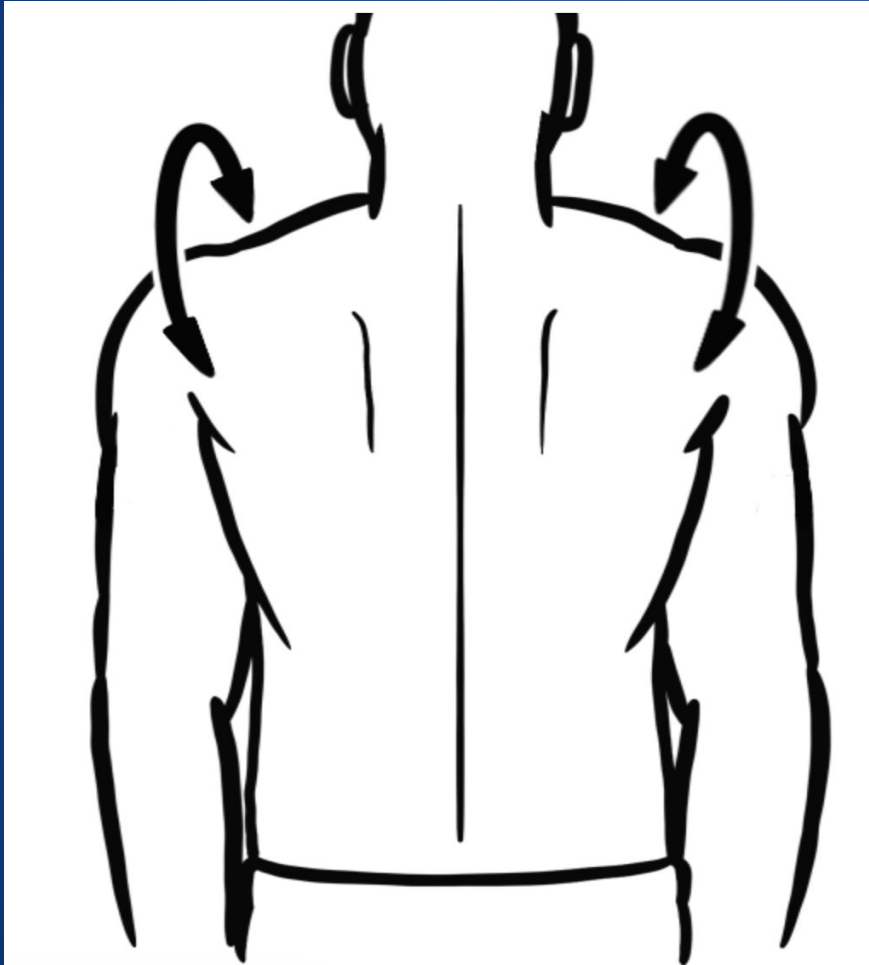
The information provided in this workshop and slides is strictly for educational/informational purposes only. None of the material constitutes medical, health or other advice of any kind. Always ask your physician if the content is appropriate for you as some of the movements/exercises/stretching may cause harm if used inappropriately.

Ways to increase blood flow in the muscles = ways to bring in the repair crew, drop off nutrients and pick up waste products

- joint mobility rotations
- self massage - work any knots (trigger points)
- muscle isolation strengthening exercises
- dynamic stretches - lengthening muscles
- isometric stretches - contracting muscles without lengthening

Gentle Shoulder & Neck Rolls

7-10x in each direction

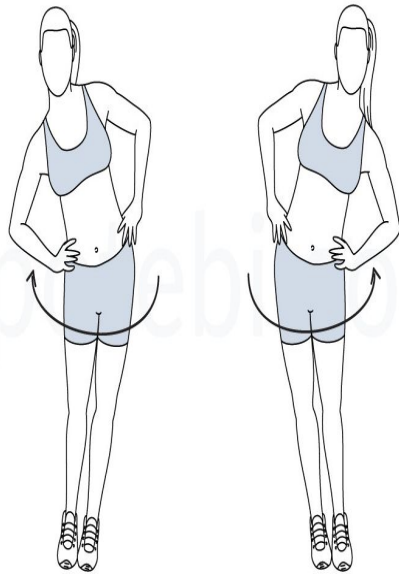


Neck roll image from Southern Ain't Fried Sundays

<https://exer-pedia.com/exercise/video-shoulder-rolls>

Hip Rotation & Pelvic Tilt/CatCow

7-10x in each direction



Standing Cat Cow Pose

Hip rotation image from Spotebi Fitness Online

Trunk Rotation



image by Dr. Jo

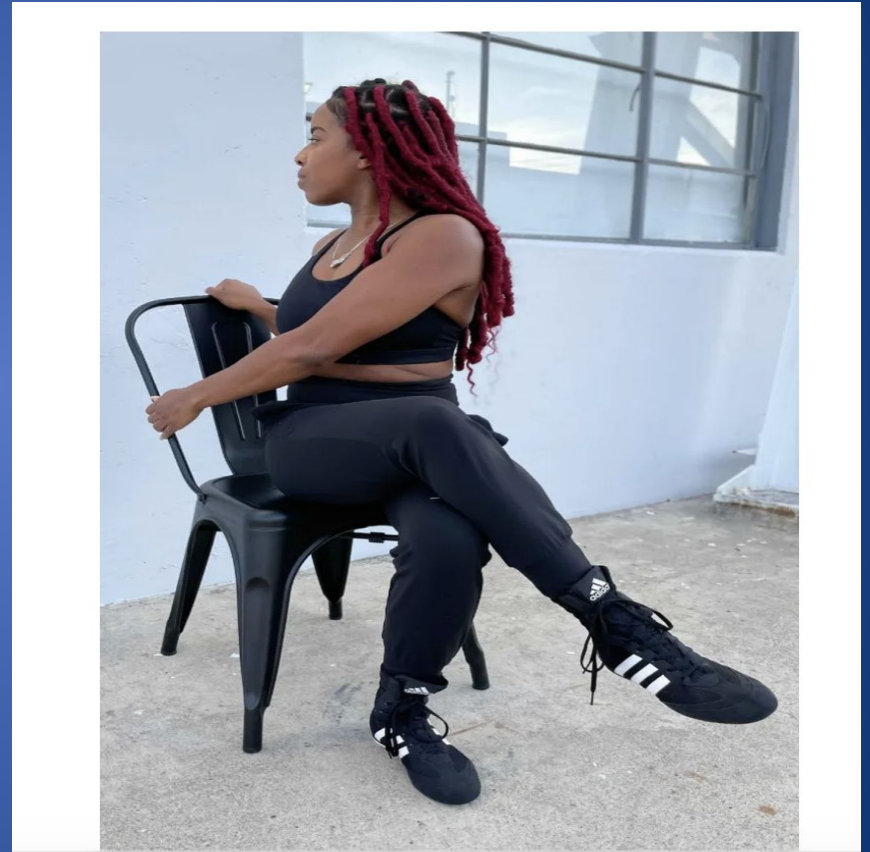
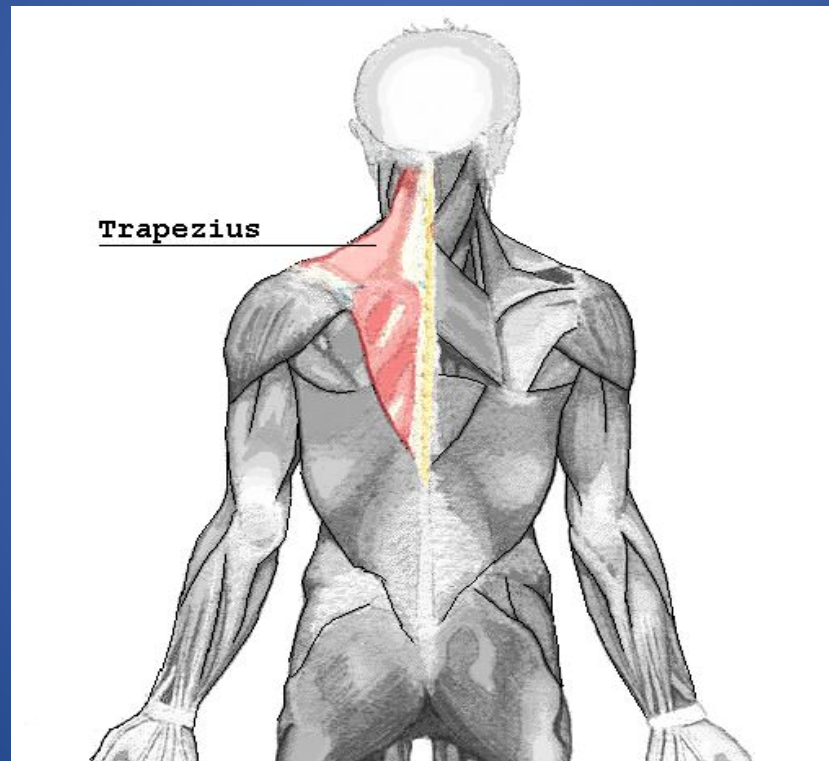


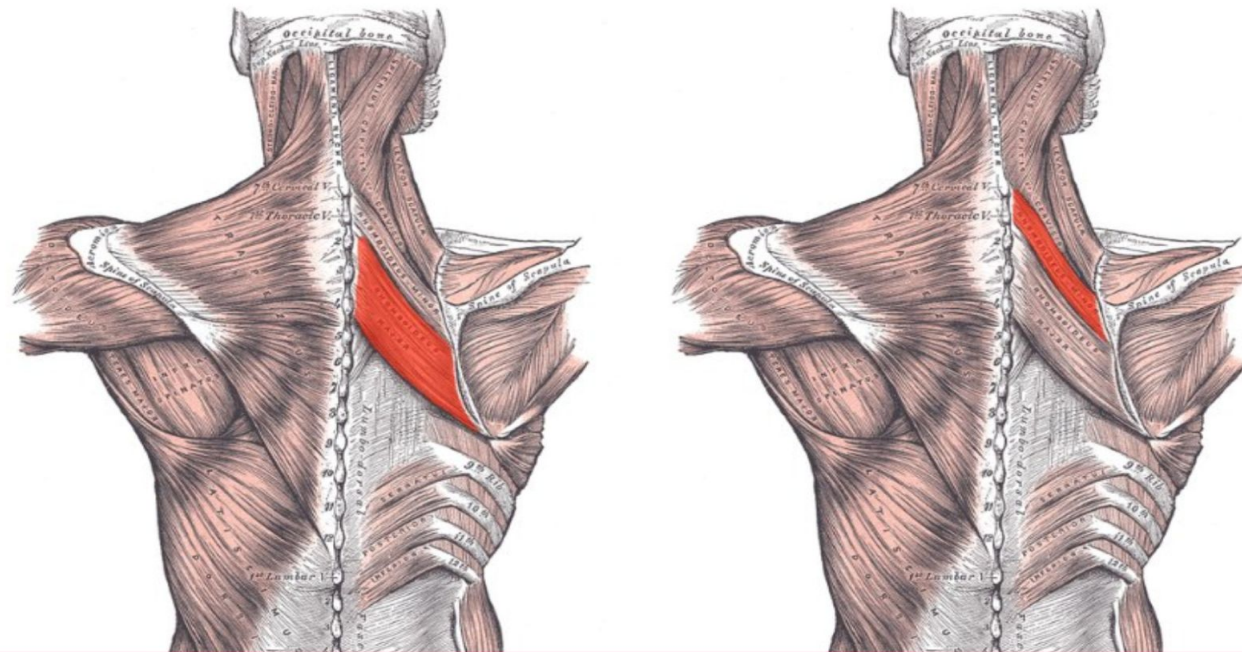
image by Raquel "Rocky" Harris

Trapezius Muscle



Strong, Engaged Rhomboids = Upright Posture

Rhomboid Anatomy: What Are the Rhomboid Muscles?



Get your muscles online

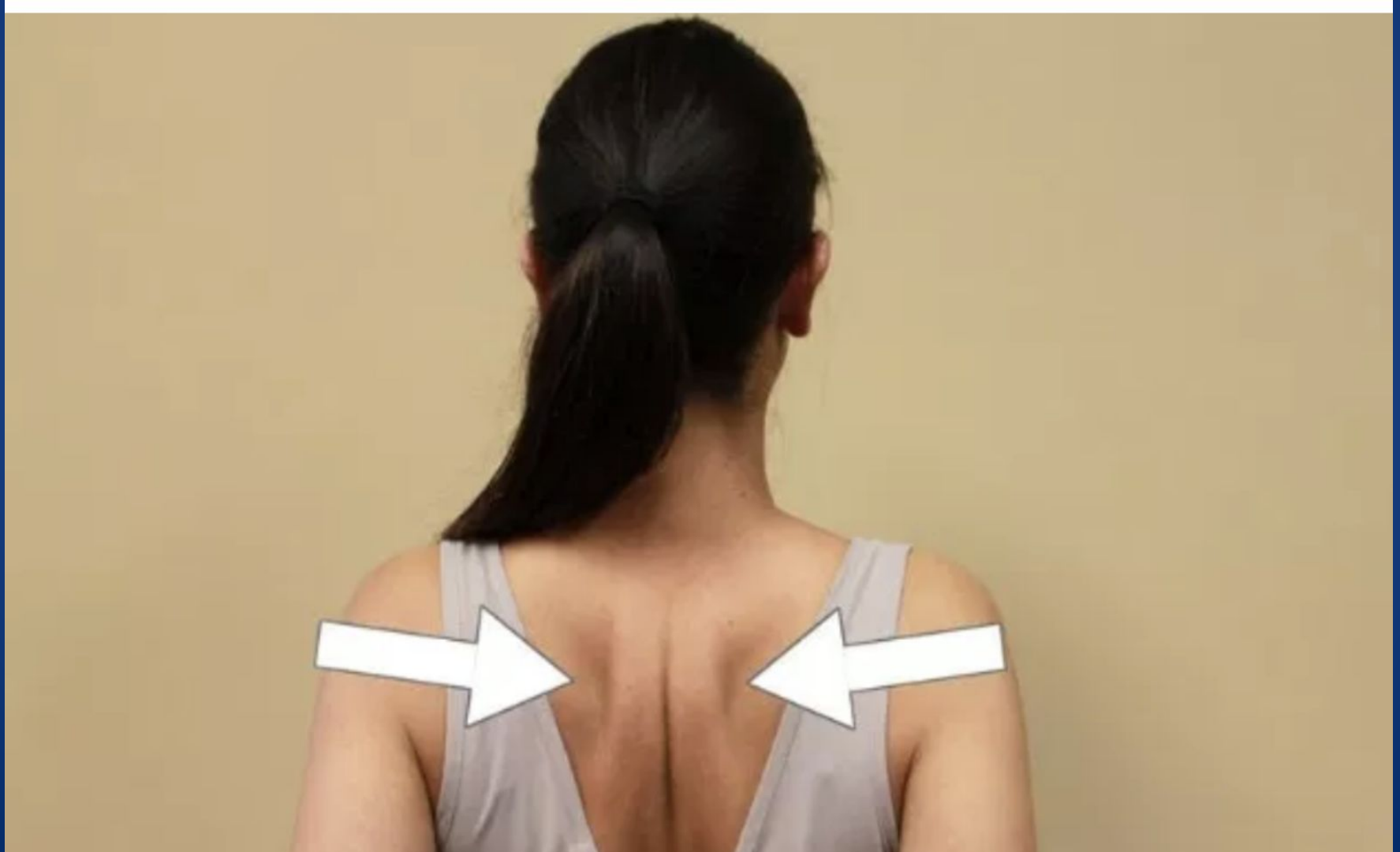
Even doing a couple repetitions of an exercise tells our muscles, “Hey, time to get online.”

- Imagine string attached to top of head pulling you up.
- Chin tuck (retraction) to strengthen & protect your neck.
- Rhomboid squeeze.
- Shoulder shrug.
- Squeeze your gluteal muscles (buttock muscles) and engage your core to protect your low back.
- Get up at least every hour for 5 minutes and move around, every half hour is best.



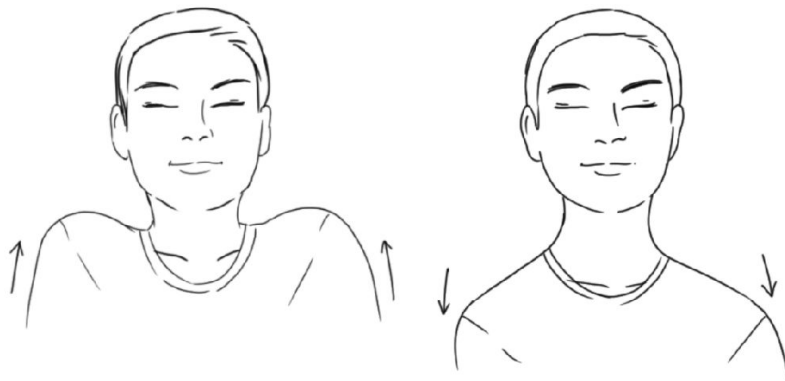
Chin tuck back, not down. Hold 5 seconds and release. 7 - 10x. Chin retractions help train your upper body to bring muscles online so they do their jobs when you aren't thinking about your posture.

Shoulder Blade Retraction



Shoulder Shrug

Shoulders



Shoulder shrug: Lift your shoulders toward your ears as high as you can as if doing an exaggerated shrug. Hold for a few seconds, then drop your shoulders back down, relaxing them. Repeat four more times.



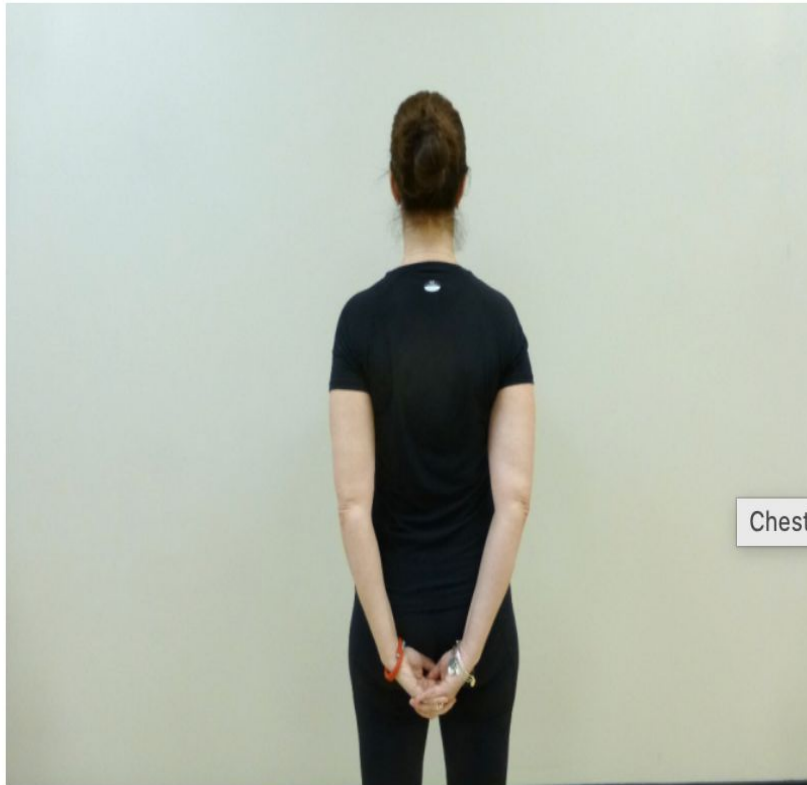
- Don't roll your shoulders, go straight up, keep chin slightly retracted.
- No need for hand weights, but can use if you like (1 - 5 lbs)
- Shoulder shrug engages the trapezius and brings in fresh blood, strengthens and relaxes the muscle.

Shoulder shrug for strong trapezius

A strong trapezius pulls your shoulders back and helps stabilize your neck and upper back.

- Start with your feet flat on the floor, shoulder width apart.
- With your arms at your sides, turn your palms to face each other. If you're doing the exercise with weights, bend down and grab them now.
- Bend your knees slightly so that they line up with (not past) your toes. Keep your chin up, facing straight ahead, and your neck straight.
- While you inhale, bring your shoulders as high up toward your ears as you can. Do the movement slowly so that you feel the resistance of your muscles.
- Lower your shoulders back down and breathe out before repeating the movement.
- Aim for 2 sets of 7 repetitions to start. You can increase the number of reps as you build up your shoulder strength.

Chest Opener



Chest 3



Clasp hands behind your back. Squeeze shoulder blades together. For additional stretch lift hands off back.

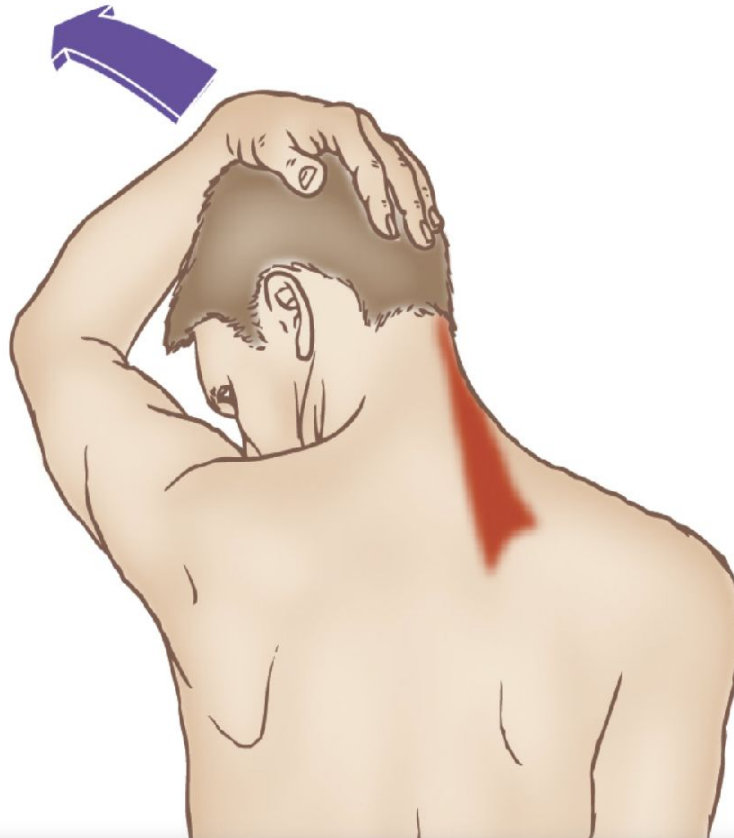
opens path for nerves & blood vessels

Rhomboid Stretches



Levator Scapula Stretch

Same-side hand behind back to anchor shoulder and the other hand on top of head.
Head looks down into arm pit of opposite side being stretched..



Upper Trapezius Stretch

The upper trapezius is stretched with opposite-side side flexion and same-side rotation.
The right shoulder is stabilized downward, with hand anchored behind the back.



□ CERVICAL FLEXION

- Bend your neck slightly forward and put your hand on your forehead.
- Try to bend your head forward while pushing back with your hand.



CERVICAL EXTENSION

- Keep your up and your neck straight and place your hands at the back of your head.
- Try to push your head backwards while pushing forward with your hands.

□ CERVICAL SIDE BENDING

- Keep your head straight and your chin level. Put your right hand on the right side of your head.
- Try to bring your head down to your right shoulder while pushing up with your right hand.
- **REPEAT** the Side Bending, but to the left side with your left hand.



□ CERVICAL ROTATION

- Put your left hand at chin level and turn your head slightly to the right.
- Put your right hand on the right side of your face.
- Turn your head to the right while pushing it back with your right hand.
- **REPEAT** the Rotation Exercise, but on the left side of your face and with left hand.

Isometric Stretches

Orthopaedic Specialists of North Carolina

One of the primary benefits of cervical isometrics is its ability to target the deep stabilizing muscles of the neck

Hold for 3 - 5 seconds at intensity of 5 out of 10

Forearm & Wrist Stretches

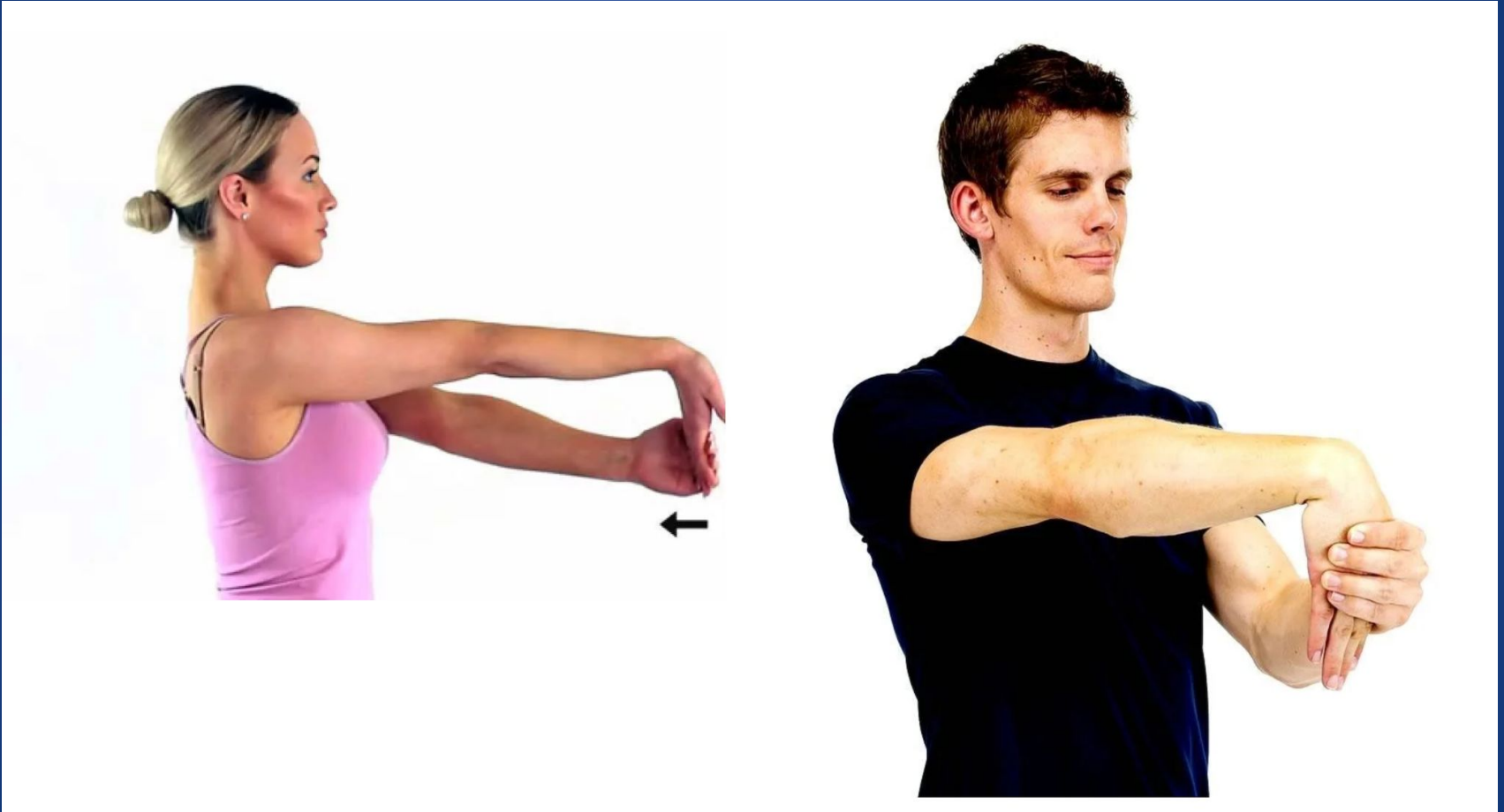


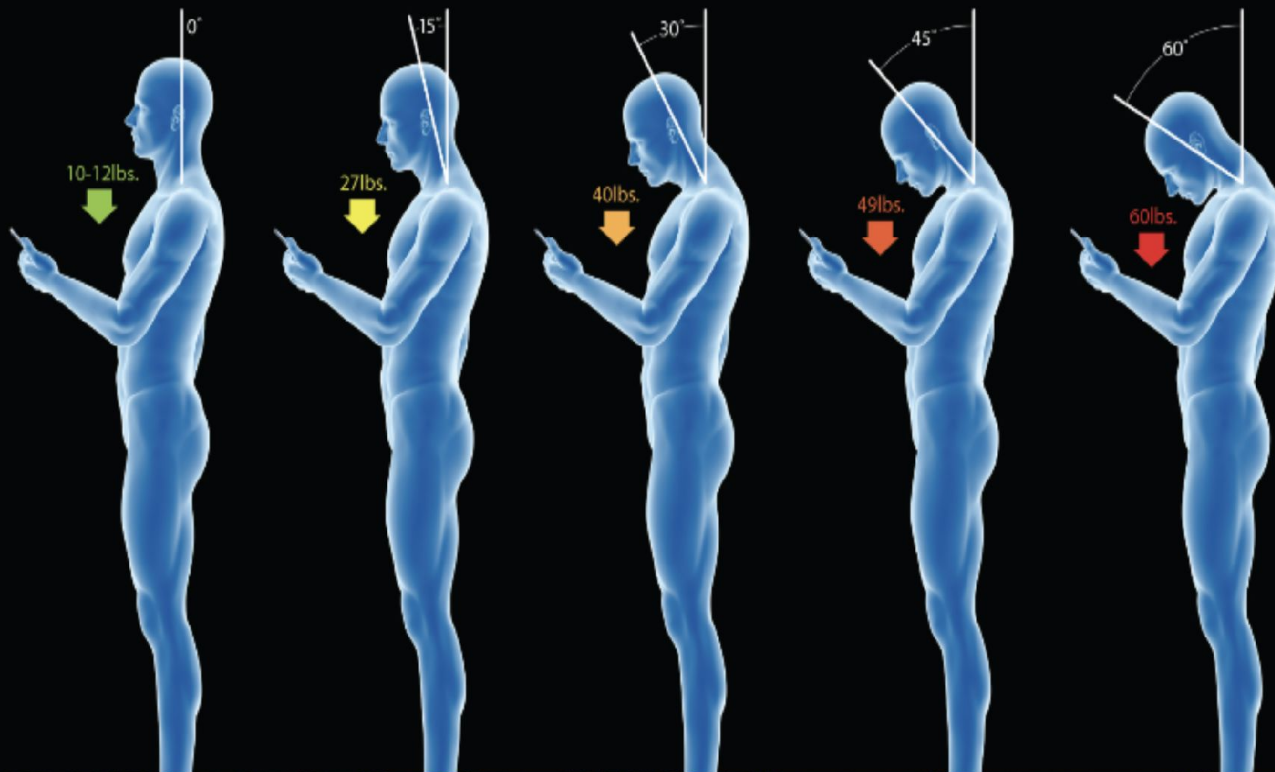
Image from Restore Physical Therapy, Cranston, RI

What's wrong with this picture?



Modern life and our necks

How modern life is giving many of us broken necks. The force to the cervical spine changes when flexing the neck at varying degrees. An adult head weighs 10-12lbs. in the neutral position. As the head tilts forward, the force on the neck increases significantly!



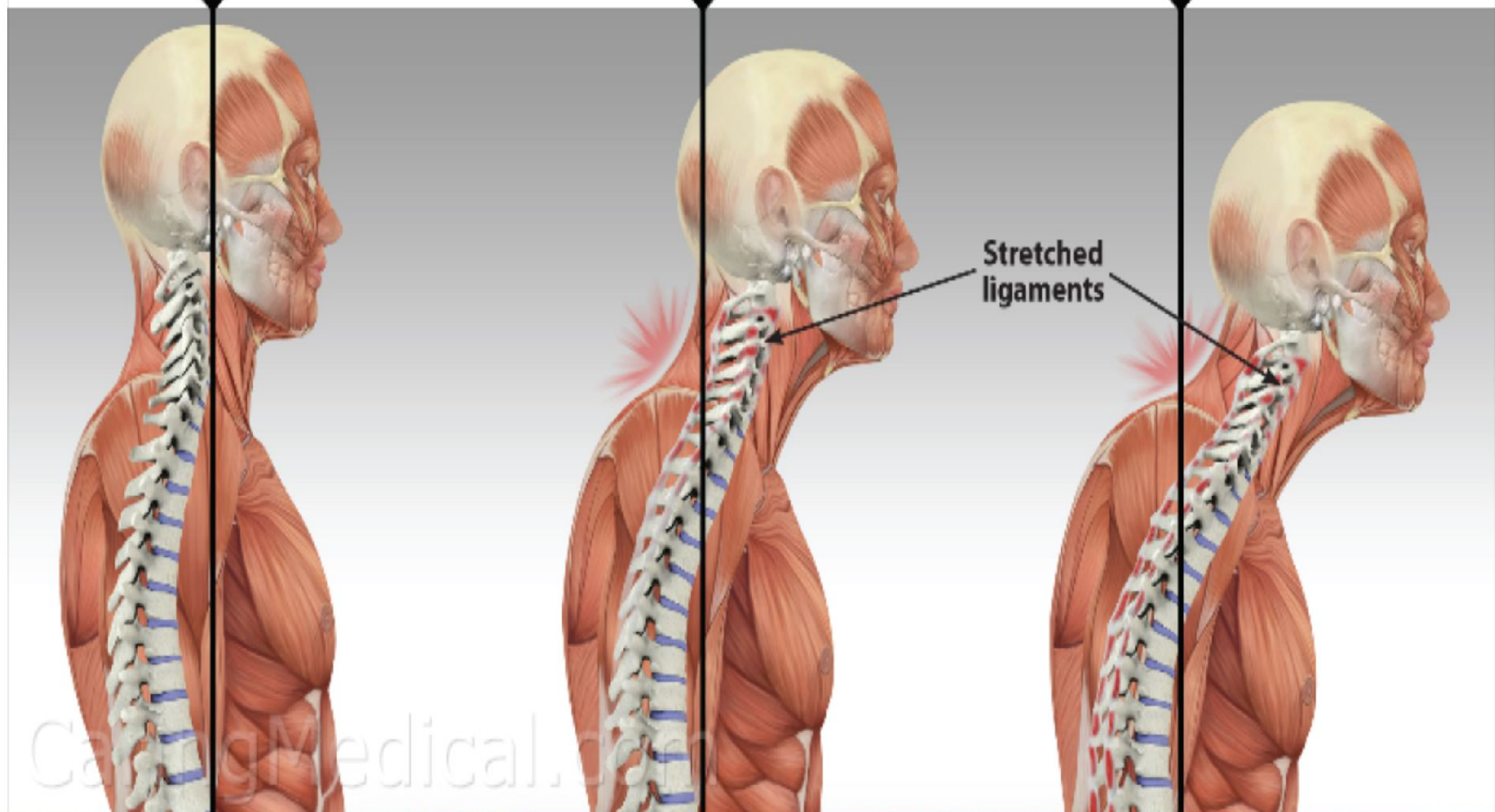
How heavy is your head? For every inch of forward head posture, the force on the spine increases by an additional 10-12 pounds. A forward head posture causes a slow stretching of the posterior neck ligaments which is a phenomenon known as ligament creep.

Adapted from Al Kapandji. The Physiology of the Joints: The Spinal Column, Pelvic girdle & Head. Vol 3. 6th Edition. 2009 Elsevier, India.

Normal Posture
12 lbs.

2 Inches Forward
32 lbs.

3 Inches Forward
42 lbs.



Ergonomics – how to protect the spine and more

Forward head posture from hours of computer work and texting, resulting in cervical ligament laxity. “Creep,” which is a term signifying the slow stretching of ligaments, most commonly occurs by a forward head posture from computer work or looking at a smartphone.



Protect yourself from “Creep”

Ergonomic workstation setup

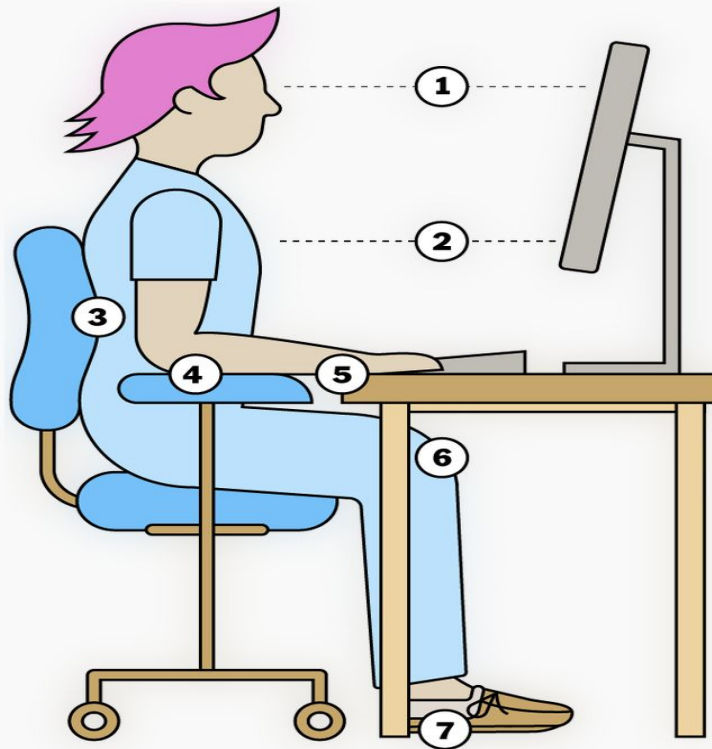
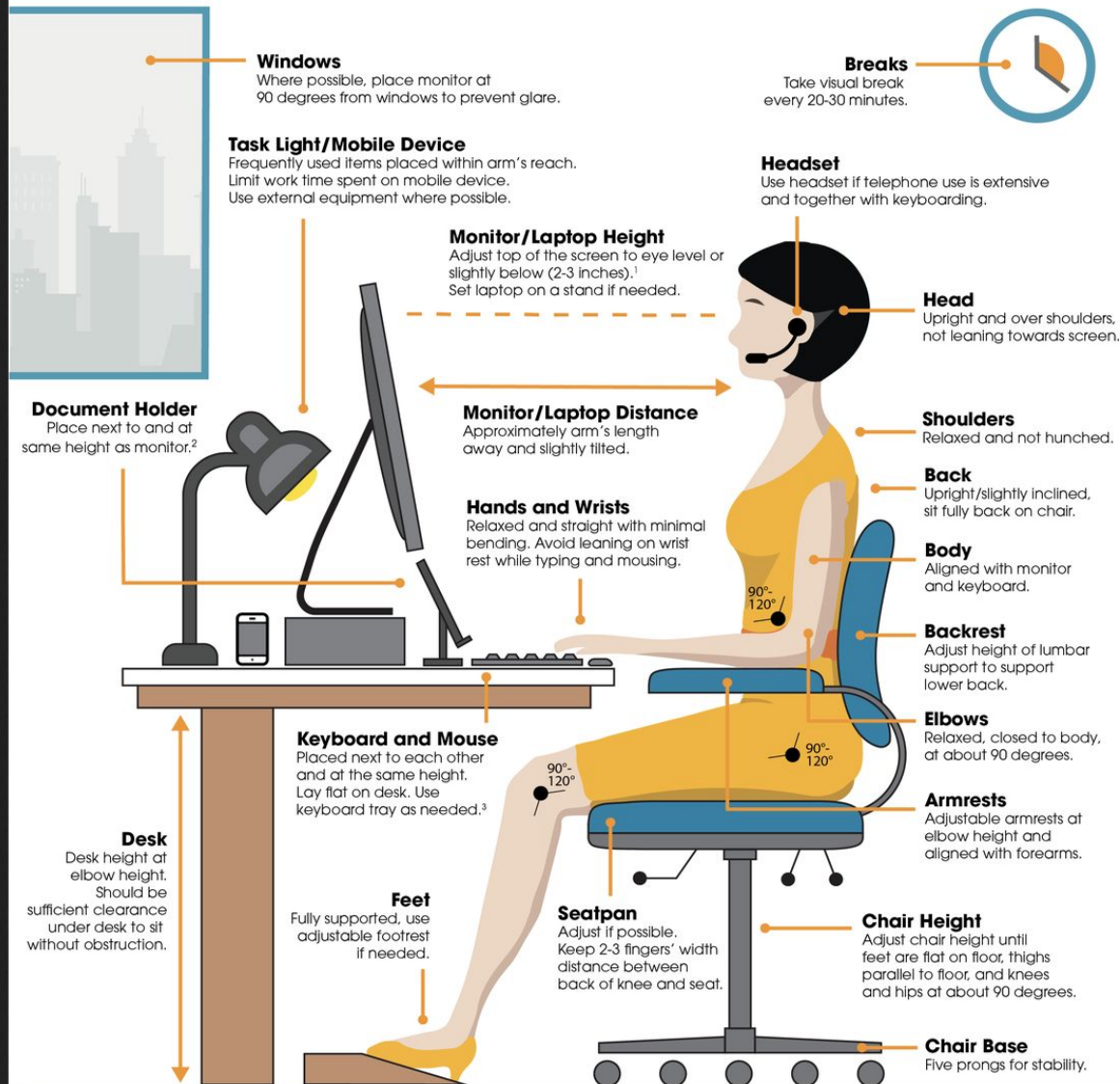


Illustration: Dana Davis

- 1** eye level at the top of the screen or 1 to 2 inches below
- 2** monitor roughly an arm's length away
- 3** chair with lumbar support, reclined at 100 to 110 degrees
- 4** elbows bent at 90 degrees or more
- 5** wrists flat at the keyboard
- 6** knees level with hips or slightly below
- 7** feet flat on ground or footrest

How To Set Up Your Office Workstation

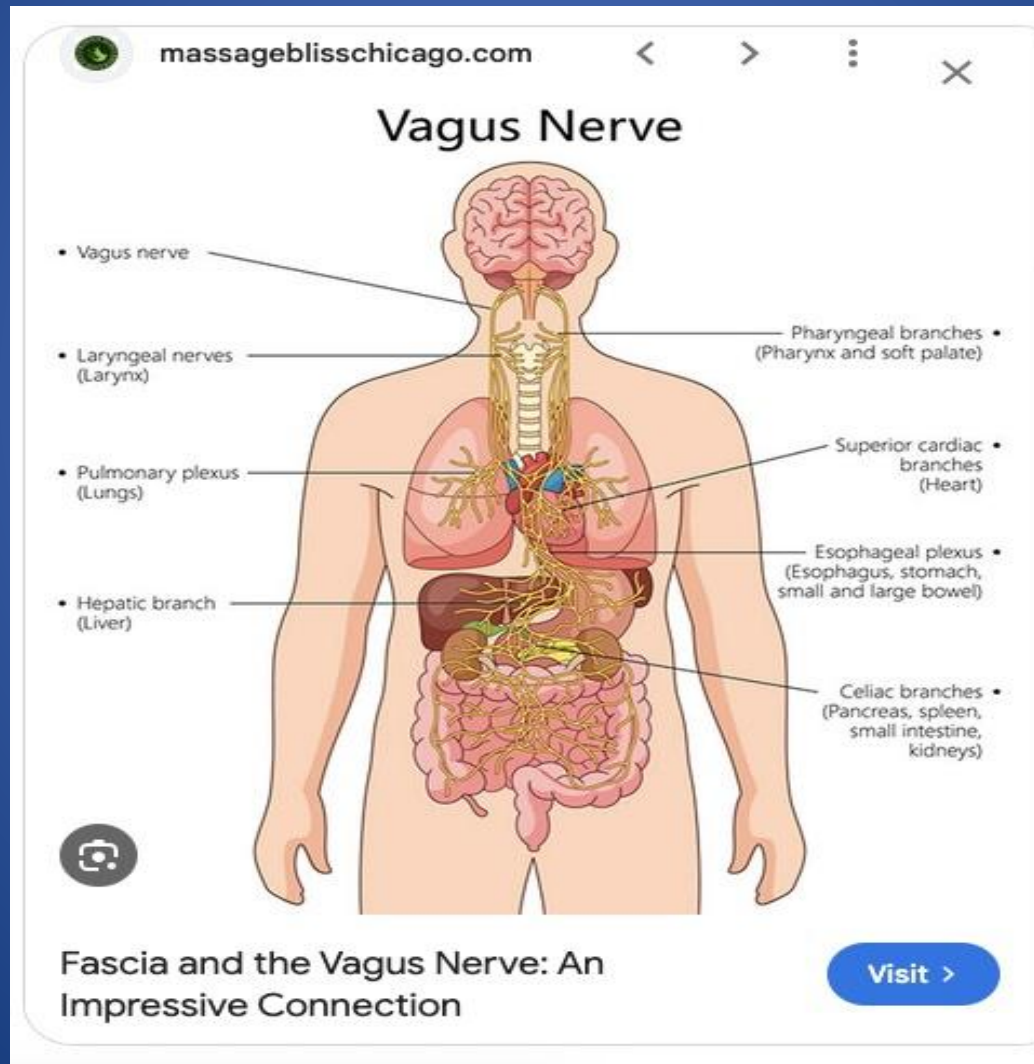


¹ Bifocal wearers may need to have screen set slightly lower.

² If using an inline document holder, place it directly below monitor and tilted towards you.

³ If using a keyboard tray, it should be flat or tilted slightly away from you.

Organs affected by vagus nerve function



Position of the head affects how the body functions

- Forward Head Posture (FHP), affects the breathing movements of the chest and respiratory functions.
- Changes in muscle activity caused by a chronic abnormal head position negatively affect proprioception and the stability of the body.
- Changes in muscle activity caused by a chronic abnormal head position result in an increased occurrence of neck pain and problems with nerves, veins and arteries, including the vagus nerve, glossopharyngeal nerve, spinal accessory nerve, internal jugular vein, and carotid artery.

Vagus Nerve Reset

Dr. Jon Saunders

<https://www.youtube.com/watch?v=tC8oF9zGLnY>

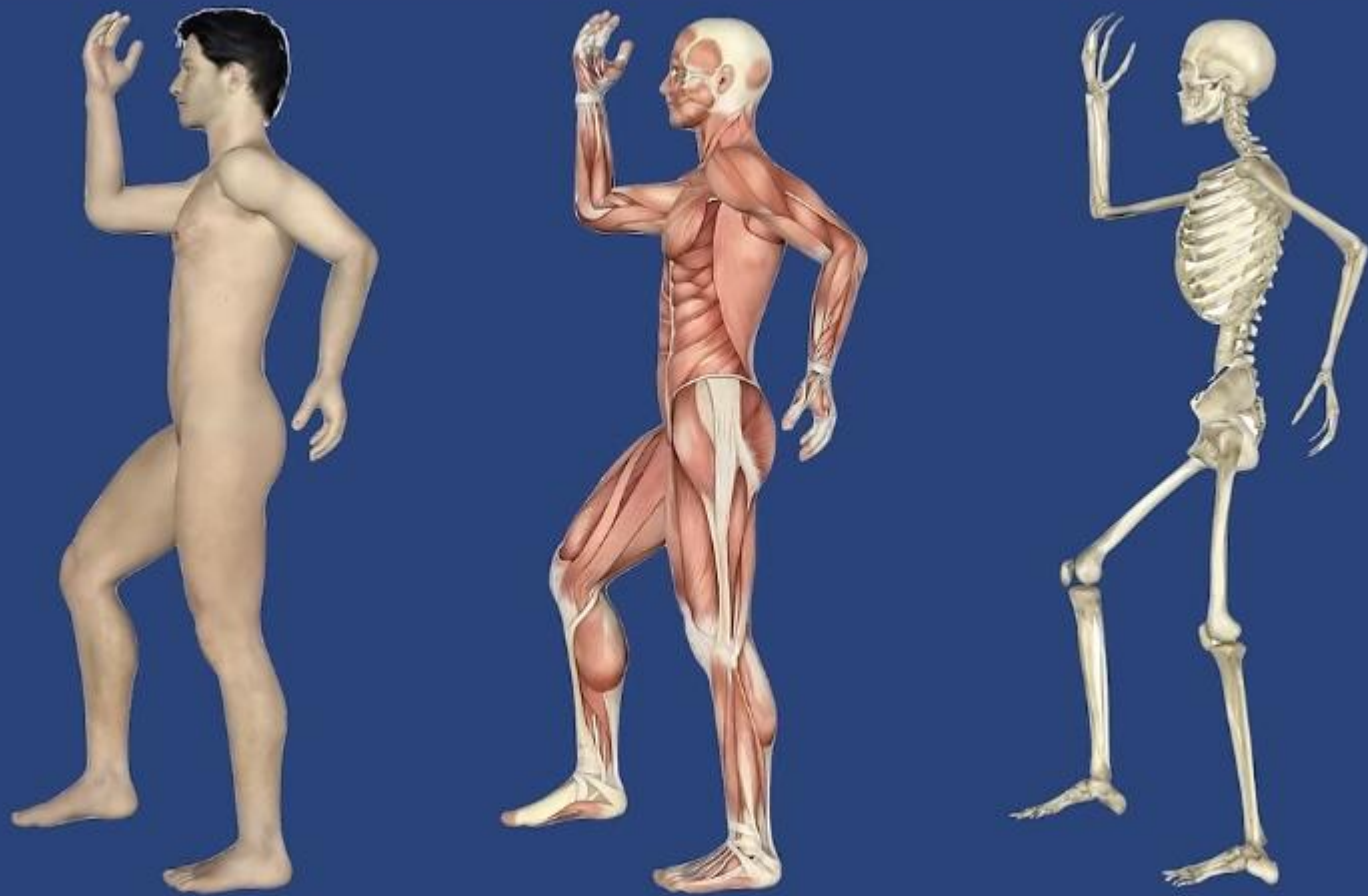
The vagus nerve is one of the main switches to our parasympathetic nervous, which takes us out of fight or flight and into rest and digest mode. Allows us to calm down.

Often we get stuck in flight or fight mode. This reset creates a way to take the foot off the gas.

WARNING SIGNS:

- MUSCLE FATIGUE AND DISCOMFORT**
- TINGLING IN THE HANDS & FINGERS**
- SWELLING OR INFLAMMATION OF THE JOINTS**
- MUSCLE STIFFNESS OR WEAKNESS**
- RANGE OF MOTION LOSS**
- DISCOMFORT WHEN MAKING CERTAIN MOVEMENTS**





Core based movement

from video Best Core Engagement Methods for Back Pain Relief by Core Balance Training

Lift from Squat Position

DON'T BEND, HINGE!



Keep your nose between your toes



Move your feet to reduce trunk rotation. Keep your “nose between your toes”

1. Stand close with your feet shoulder width apart and face the object
2. Bend your knees, keep your back straight and look forward
3. Lift with your legs
4. Keep items close to your body and at waist height

from Stanford Environmental Health & Safety

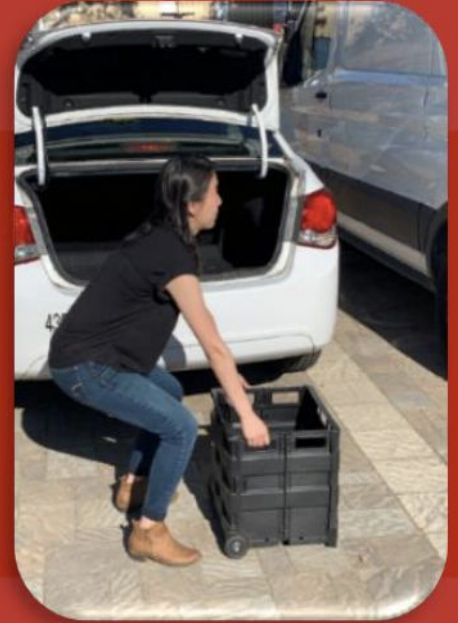
Follow Safe Lifting Mechanics



2



3



Bend your
knees, back
straight

Get a good
grip and keep
wrists straight

Bring your
eyes up prior
to lifting

Lift from Lunge position

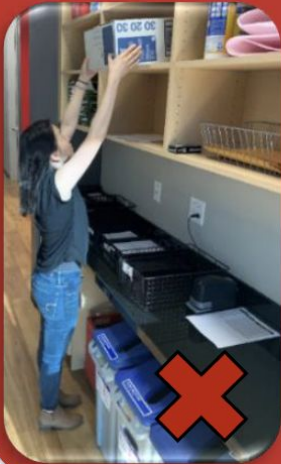


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Best Practices



Avoid overhead reaching



Use a cart or dolly



Avoid twisting.
Move your feet

Lifting - Best Practices

- Protect the spine by using proper posture and core muscles and legs.
- Your health situation determines how you lift, i.e. squat and lift or lunge and lift.
- When lifting heavy objects, keep your back straight. Lifting heavy objects with a rounded back damages the vertebra.
- Keep the object close to you.
- Hip hinge with engaged glutes and stomach muscles.
- Note: Rounding the back is natural for picking up light objects, e.g., paper or pen on the floor, or tying shoes.

Lifting - Best Practices (continued)

- Stand with feet slightly wider than shoulders, creating a base. Think pyramid not pillar.
- Stand close to the object. Hinge don't bend.
- Push your butt out to keep the back straight and be sure your knees aren't over your toes.
- Squeeze your gluteal muscles. Engage the stomach muscles by drawing the belly button to spine.
- Lift with your legs and your core.



Wall Angels

Wall Angels take some practice but well worth it for the ROI

- Stand with your back against a wall and your feet about six inches away from the wall. Knees are slightly bent.
- Press your lower back, shoulders, and head firmly against the wall.
- Raise your arms to form a "W" shape against the wall. Hold for 15-30 seconds and build up to 1 minutes. When you can hold this W pose, change it up and slowly slide your arms up into a "Y" position overhead.
- Bring your arms back down to the starting position and repeat for 10-15 repetitions. Be sure to keep the head, shoulders and back against the wall. It takes some practice.

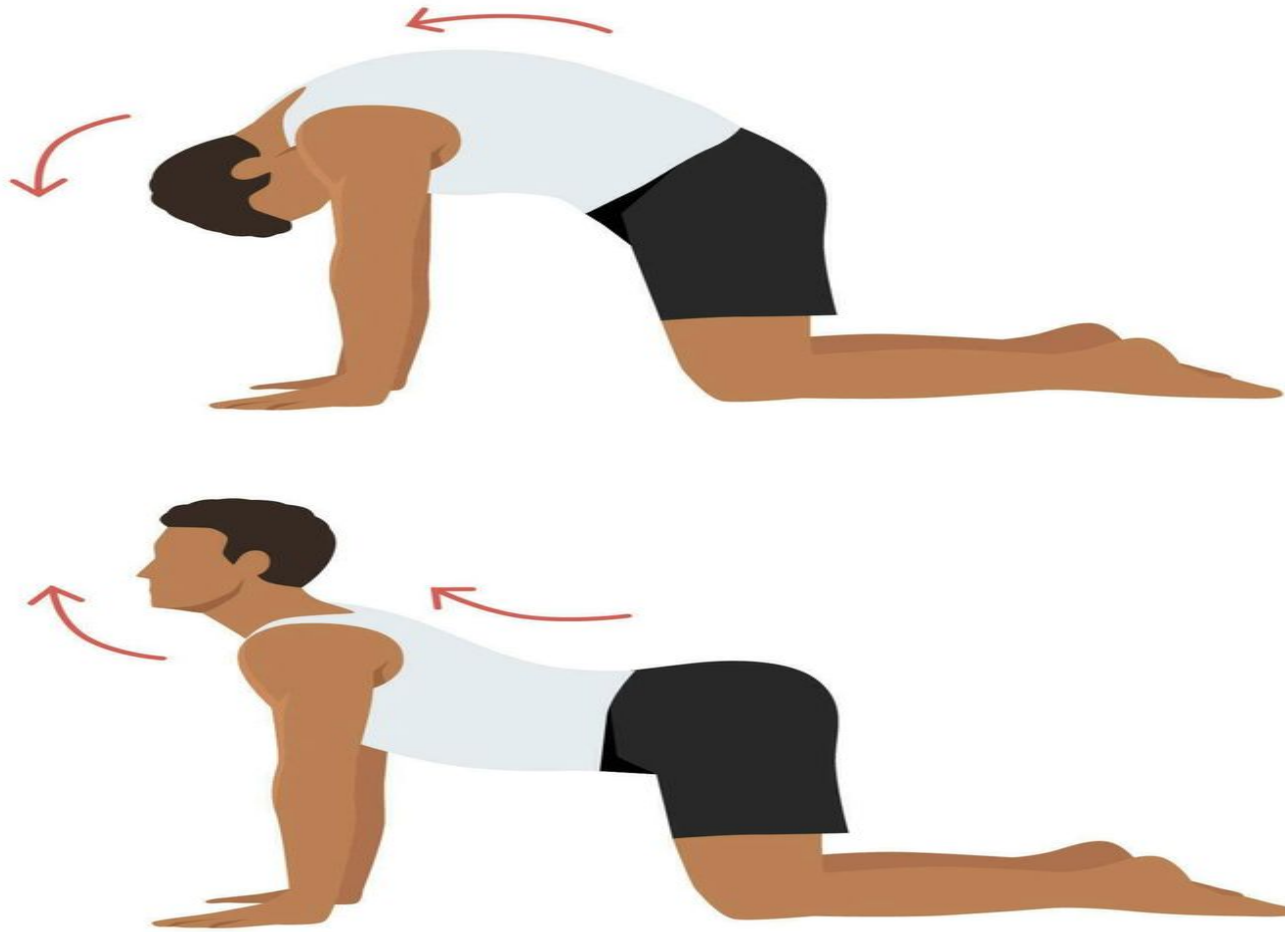
Why It Helps: Wall angels activate the muscles of the upper back and shoulder blades, helping to correct posture and relieve tension in the shoulders.

Child's Pose



image by the Yuri Arcurs Collection

Cat Cow



Helpful Tools

- Back Bonger to bring in fresh blood and help the muscle release
- Backnobber II to release muscle knots (trigger points)
- 2 tennis ball tied tight in a sock for back and buttock muscle knots
- Pillows (back, sitting, sleeping)
- Stretch bands for strengthening
- Golf ball for foot massage

Relax your tired eyes



<https://youtu.be/I7ct8oUaIE4?si=DVquuj9jQocaU4w5>

Benefits of Palming

- Best to wash your hands first.
- Rub your palms together briskly for 10 – 20 seconds until they feel warm.
- Place your palms over your closed eyes. Do not touch your eyes with your palms. Your fingers should slightly overlap on your forehead.
- For 1-2 minutes sit quietly and breath deeply into your belly.
- Rest elbows on knees or table for longer palming sessions.

Relaxes the eye muscles and relieves eye fatigue. Relaxes the nervous system.

Reduces dry eyes. The dark, warm space stimulates circulation of aqueous humor within the eyes.

Creates blood flow around the eyes.

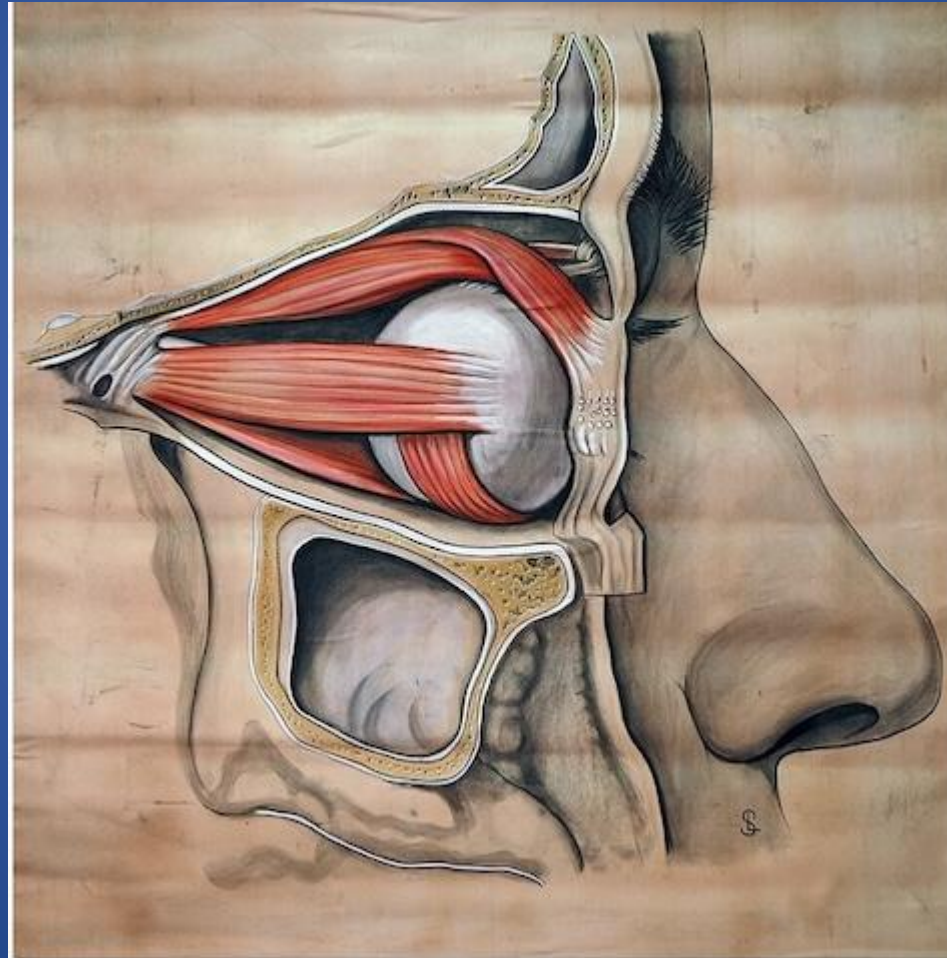
The Eye and Facial Squeeze



- Close your eyes and scrunch your eyes and face up tight.
- Hold for 5 seconds
- Release quickly
- Repeat 3x

Brings burst of blood circulation to the eyes.

Increasing Flexibility and Circulation of the Eye Muscles



Increasing Flexibility and Circulation of the Eye Muscles

What if the six tiny muscles that move our eyes sagged if we didn't exercise them? Fortunately, weak eye muscles are rare. In fact, our eye muscles are 150 to 200 times stronger than they need to be. For most people the problem is not the strength of the eye muscles but lack of flexibility and coordination.

The following exercises stretch the eye muscles, which increases flexibility and blood circulation as well as reduces pressure around the eyes. They also help you consciously control your eye movements to create greater fluidity in movement.

Increasing Flexibility and Circulation of the Eye Muscles

Infinity Pattern or Follow the Racetrack

- Move your eyes in the infinity pattern from left to right 9 - 36x.
- Reverse it and move from right to left 9 - 36x.

Figure 8 Pattern

- Move your eyes in the figure 8 pattern starting at the top and moving down 9 - 36x.
- Reverse it and start at the bottom and move up 9 - 36x.

Variation: close your eyes and move in the infinity pattern and the figure 8

Increasing Flexibility and Circulation of the Eye Muscles

Marching Eyes or the Metronome

(a great way to stretch your eyes in the morning)

- Move your eyes all the way to the left and then all the way to the right 9 - 36x.
- Move your eyes all the way up to the ceiling and then all the way down to the floor 9 - 36x.
- Do not move your head only your eyes.

Variation: do this exercise with your eyes closed.

Increasing Flexibility and Circulation of the Eye Muscles

Near and Far Focus (20-20)

- Hold your thumb 6 - 10 inches in front of your nose and focus on that for 20 seconds. Inhale deeply into your belly and exhale slowly.
- Now focus on an object 20 feet away for 20 seconds.
- Again inhale deeply and exhale slowly.
- Repeat 4 - 36x.

Cool Resources

Books & Article

Body Electric: The Hidden Health Costs of the Digital Age and the New Science to Reclaim Your Well-Being
by Manoush Zomorodi and Keith Diaz
PhD

Trigger Point Therapy for Myofascial Pain: The Practice of Informed Touch
by Donna Finando L.Ac. L.M.T. and
Steven Finando Ph.D. L.Ac.

The impact of the position of the head on the functioning of the human body: a systematic review. Szczygieł E, Fudacz N, Golec J, Golec E. Int J Occup Med Environ Health. 2020 Sep 17;33(5):559-568

Podcasts

Body Electric: What 20,000 People Taught Us About Tech and the Body
<https://www.youtube.com/watch?v=dWJFQcSEqwc>

<https://www.npr.org/2023/11/07/1200611641/changing-our-sedentary-screen-filled-habits>

Ergonomics

<https://www.aiha.org/education/white-papers/te-facts-about-ergonomics-dispelling-myths>