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NASA Ergonomics Working From Home

Ames Safety Accountability Program Training
To be Provided by Your Supervisor
March, A, 2021

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Agenda – Working from Home Ergonomics

■ Topics

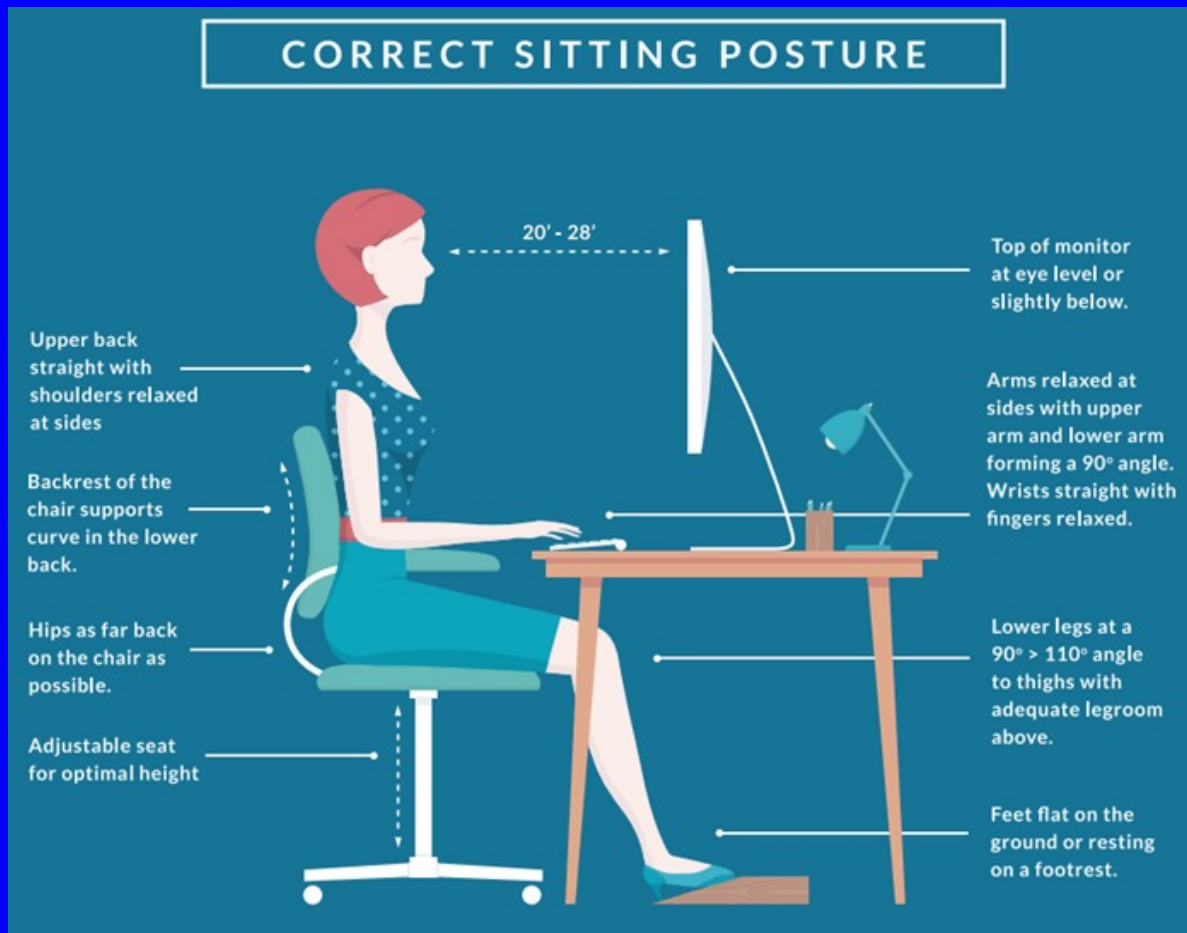
- Differences in working from home
 - Location
 - Computer Equipment
 - Furniture
- Posture
- Breaks
- Stretching
- Resources





This is typically what we think of when we envision an ergonomically ideal workstation.

But the reality at home is often very different.

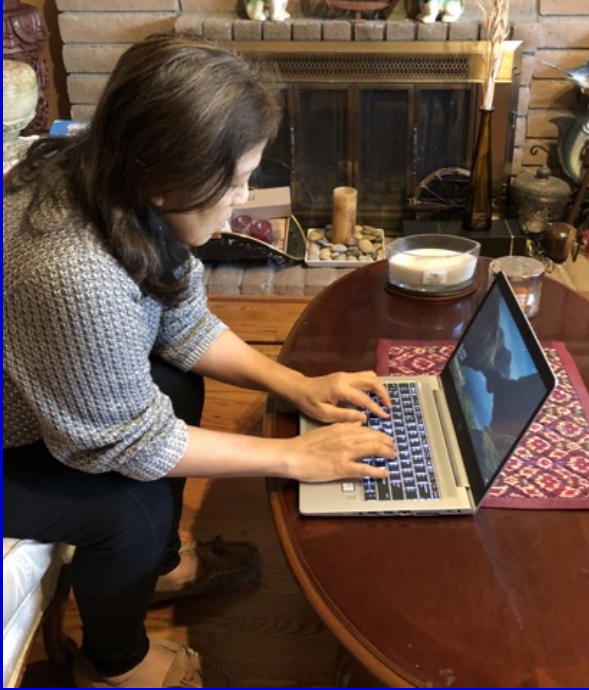




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Challenges with @ Home computer work.



Work on coffee table
putting your body
(neck and back) in an
awkward posture

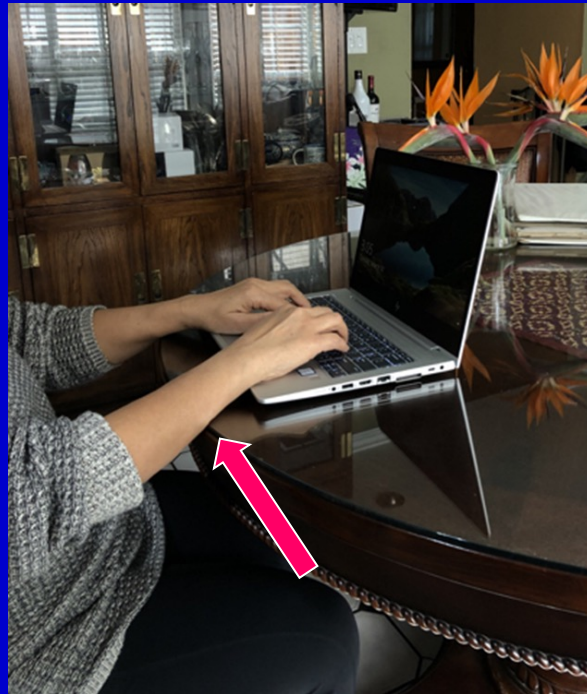
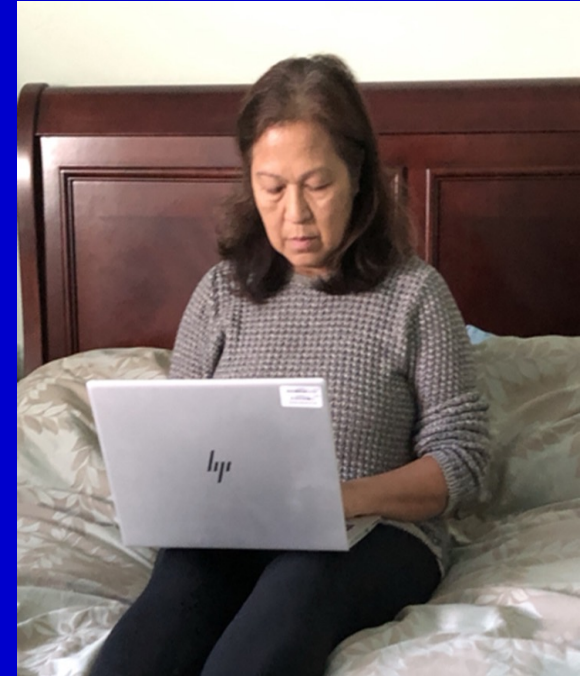


Table too high pinching
forearm and contact stress
on the wrist



Looking down the screen
too low can cause neck
injury

Telework Ergonomic Additions for Laptops

Consider using:

External keyboard

Wireless mouse instead of a track pad

Laptop stand and/or an External monitor





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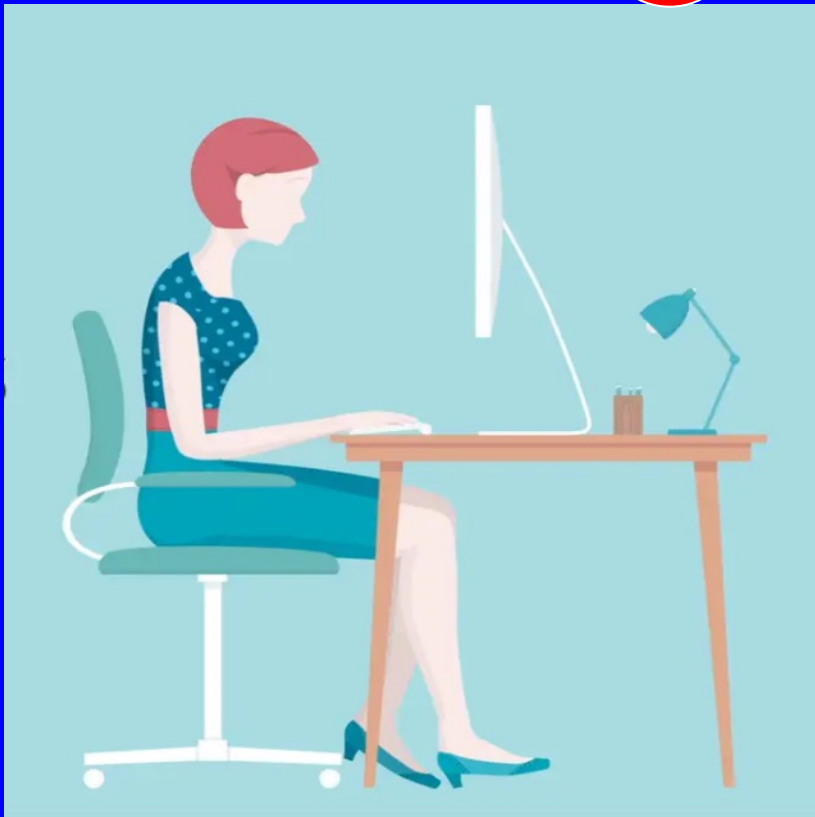


Are you sitting up straight? No slouching.

Slouching – Head over lap



Back against back rest, head sitting over shoulders = S shape curved spine



CORRECT SITTING POSTURE

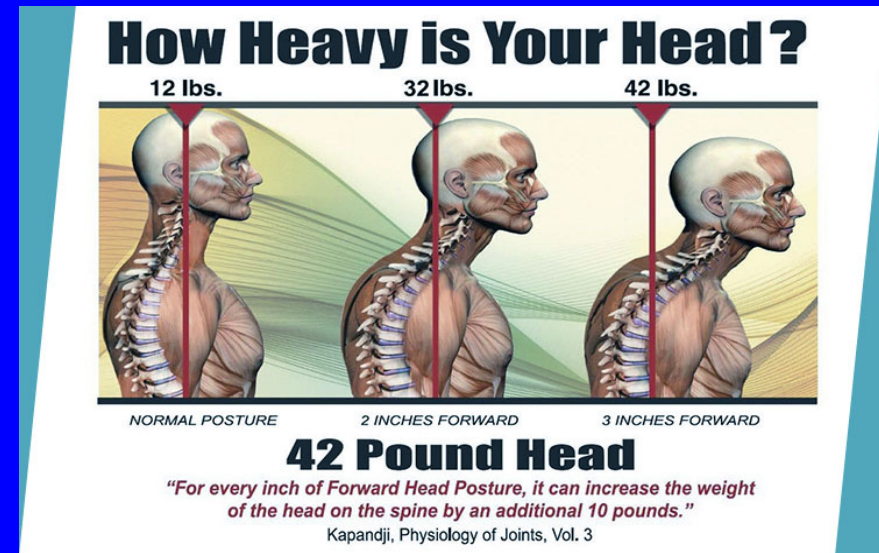
- Upper back straight with shoulders relaxed at sides
- Backrest of the chair supports curve in the lower back.
- Hips as far back on the chair as possible.
- Adjustable seat for optimal height
- 20" - 28"
- Top of monitor at eye level or slightly below.
- Arms relaxed at sides with upper arm and lower arm forming a 90° angle. Wrists straight with fingers relaxed.
- Lower legs at a 90° > 110° angle to thighs with adequate legroom above.
- Feet flat on the ground or resting on a footrest.



Help me, my neck hurts!

Protect Your Neck - How heavy is your head?

- When you are sitting or standing straight/upright the average head weighs around **10 to 12lbs**
 - Leaning 15 degrees forward produces head weight around **27lbs**
 - Leaning 30 degrees forward the head weighs **40lbs**
- This adds extra pressure on the discs in the neck and spine, which can cause increased compression and can lead to chronic neck and shoulder pain and severe headaches.
- Sit **UPRIGHT** and **avoid SLOUCHING** (this avoids the head leaning forward over your lap)





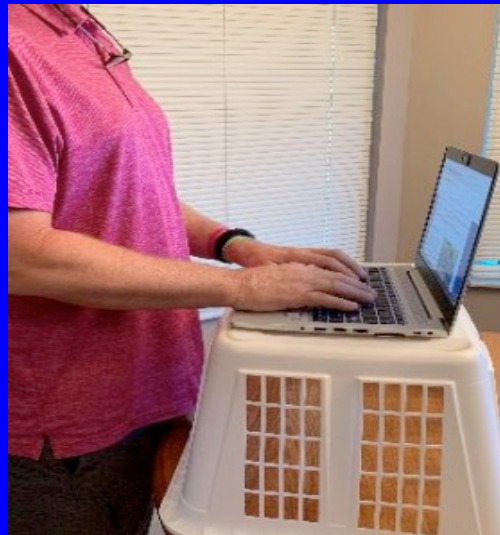
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Help me, I want to stand-up!



Use countertop for
standing workstation



Laundry basket can
raise a laptop to allow
for standing



Ironing board can be
used for standing -
this allows for some
height adjustability

Tip: Wear supportive shoes when standing



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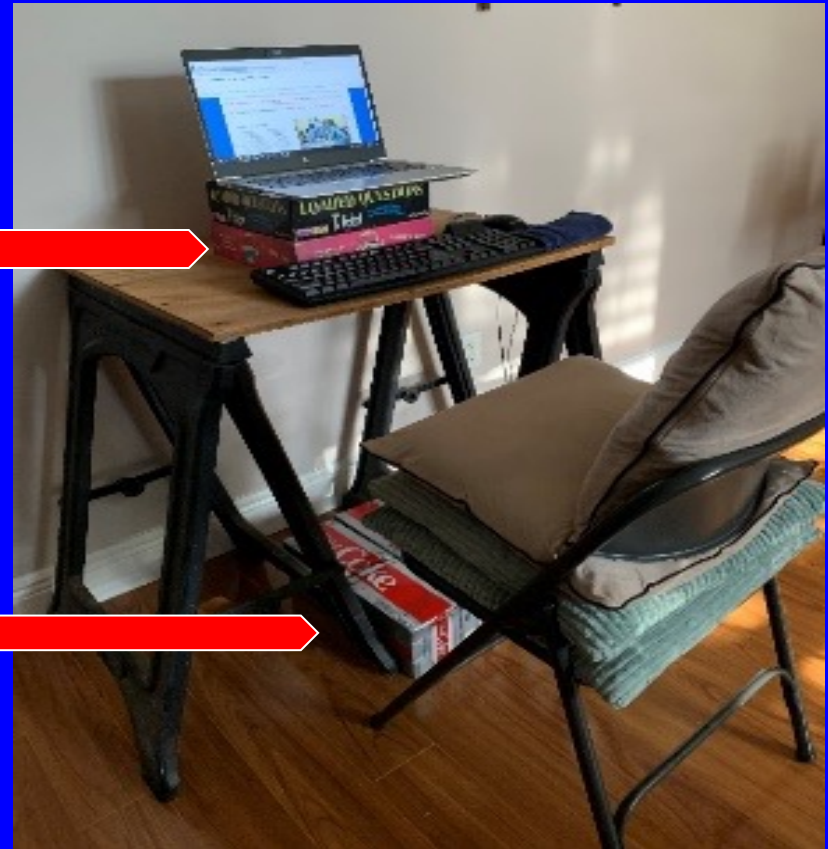


Help me, my home office is not adjustable!

Boxes and books used to
elevate the laptop display
to eye level



Use soda carton for footrest





Help me, I don't have an adjustable chair!

- Find best chair in the house
- Cushions, pillow to provide additional back support and raise you to proper seating height
- Rolled up towel to provide additional lumbar support
- Keep your feet flat on the floor





Help me, I only have laptop!

- Find a hard, flat surface
- Angle your laptop slightly with a binder
- Tilt your screen backward
- Use computer glasses when your vision needs correction



Use 3" binder

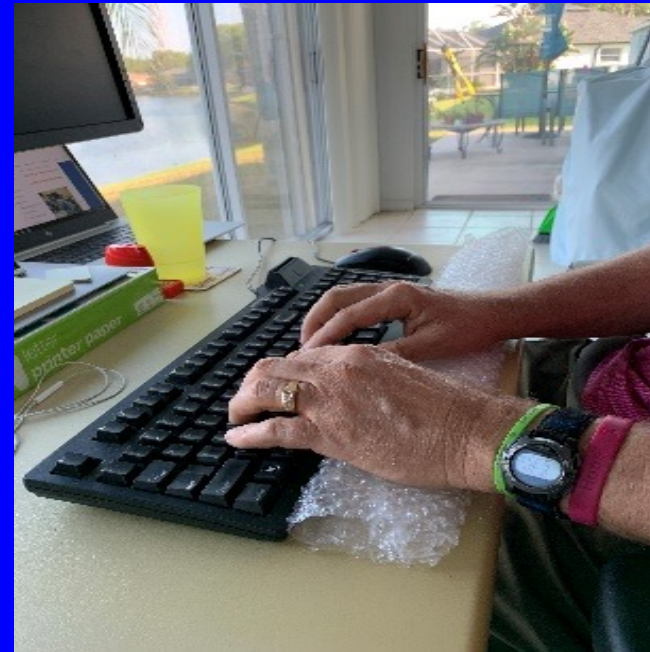


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Help me, I need a wrist rest!

Wrist rests can be made from a rolled up towel or bubble wrap.





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Monitor Ideas

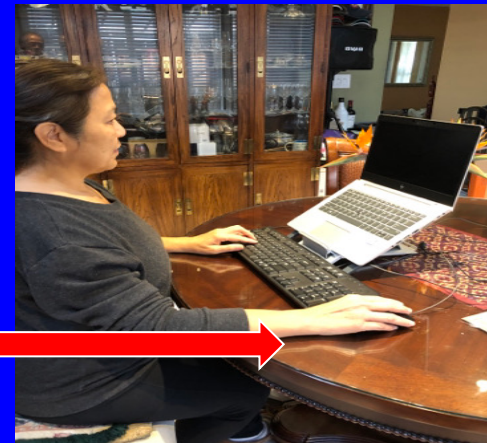
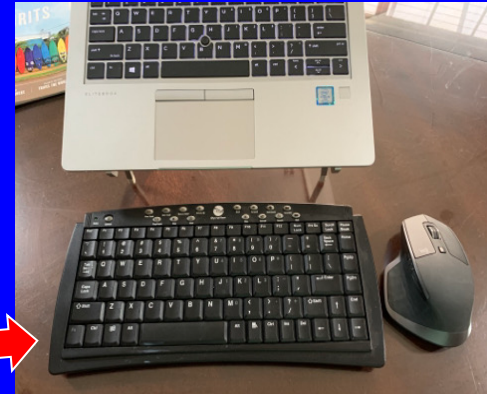
- Top of monitor at eye level
- Use books, laptop stand
- Center monitor in front of you
- Keep head and neck upright
- Position your monitor about arm's length away
- Position your computer away from direct light





Keyboard Ideas

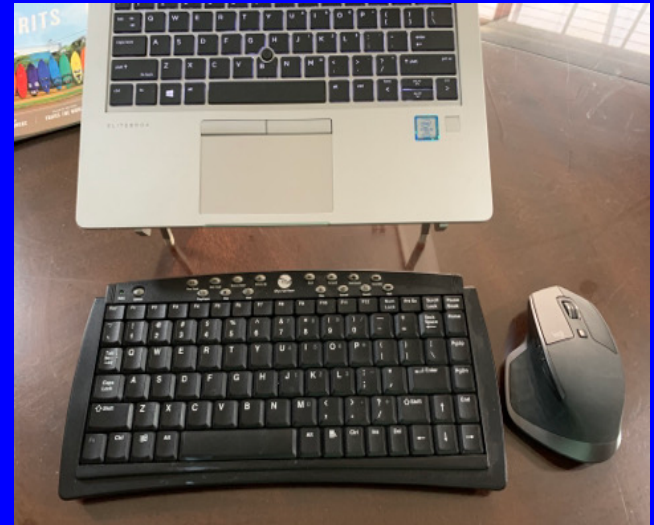
- Use an external keyboard if possible
- Adjust keyboard height so upper arm and forearms are at right angles
- Use shorter keyboard to avoid reaching for mouse (use keyboards **without** the 10-key feature)
- Position keyboard in front of you and close enough to allow shoulders to relax and elbows hanging close to body
- Wrists should be kept straight and not twisted/deviated at an angle
- Keep your keyboard in a flat/level position to minimize wrist extension





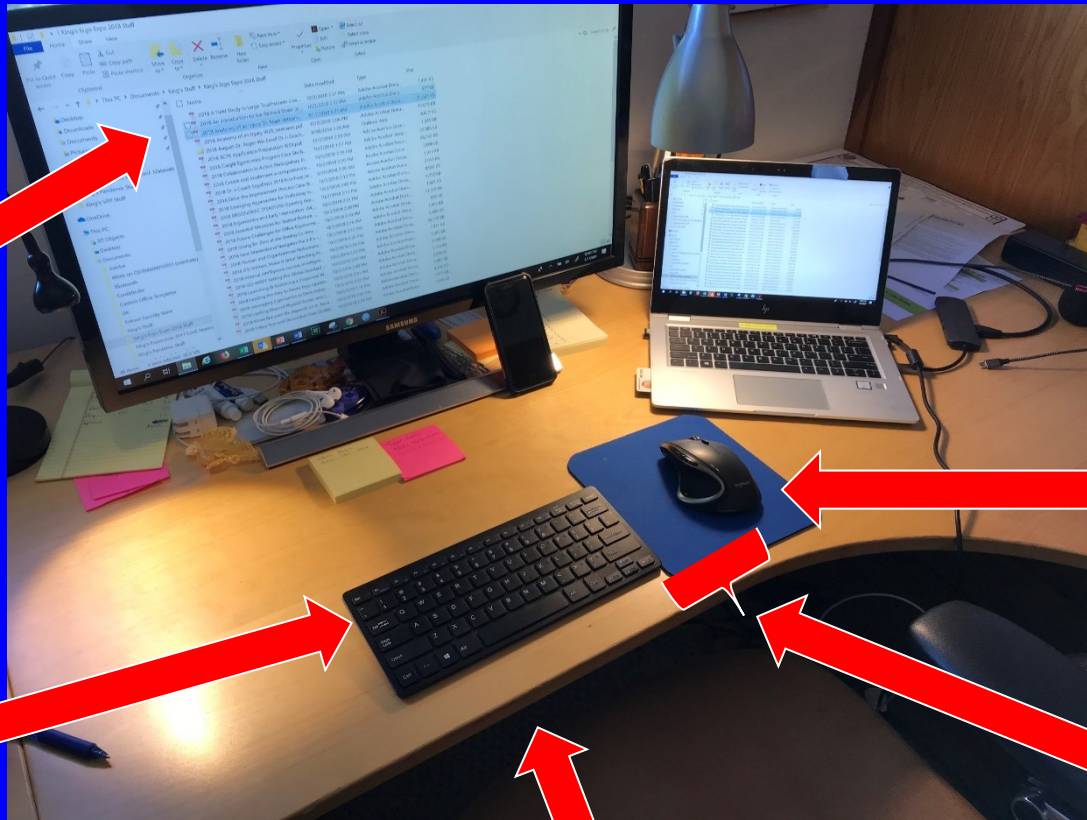
Mouse Ideas

- Use an external mouse if possible
- Mouse should be positioned as close to keyboard as possible
- Mouse should be large enough to avoid a “gripping” hand position – hand should be relaxed and almost flat.
- Use a wrist rest to support your wrist where contact occurs
- Input devices are at elbows height





Summary of Desk Setup Ideas



External monitor

Keyboard without the 10-Key

Large mouse keeps the hand relaxed

Mouse is kept close to keyboard

Desk height is 27 in. = low enough to keep forearms parallel with the floor



Ergo Equipment that is typically recommend



Kensington



Kensington



Logitech K360



Logitech MX



Microsoft Sculpt



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Ergo Equipment that is typically recommend



**Bekant sit-stand
available at Ikea**



**CLATINA 247 Series High
Back Ergonomic Chairs**



Leap Chair by SteelCase



Micro Breaks

- Micro breaks should be taken every 20 to 30 minutes throughout the workday for at least 1 to 3 minutes.
- During a micro break, it is ideal to stand up and walk .
- Even a 15-second break can be good for you.
- Frequent shorter breaks are more beneficial than one long break.

[Here is a link](#)

https://www.youtube.com/watch?v=Zd1f7oAmGlk&feature=emb_title



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Benefits of Stretching and Moving

- **Increases blood supply to tissues and joints**
- **Warms up body temperature**
- **Increases elasticity of the tissues**
- **Promotes nutrient pathways**
- **Removes metabolic waste**
- **Promotes mobility**
- **Increases mental acuity**

Move Well



Move Often





Stretching Tips

- Perform stretches as directed in the accompanying instructions.
- Hold for five to ten seconds and repeat three to five times.
- To improve try holding each exercise a little longer or doing more repetitions.
- When stretching, you will feel a slight pull on the muscle. If this becomes mildly uncomfortable (especially if you feel radiating pain), ease off or stop the stretch.



SIDE TO SIDE

Tilt your head slightly to one side and look down. Hold for 15 seconds. Repeat three times on each side.



SHRUG IT OFF

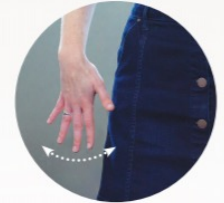
Slowly bring your shoulders up to your ears and hold. Rotate shoulders back and down and repeat 10 times.



LEAN BACK

While sitting, lock your hands behind your head and bring your elbows back as far as possible. Inhale deeply while leaning back and stretching. Hold for 20 seconds, then exhale and relax.

Don't Just Sit There. Get Moving!



SHAKE IT OUT

Hold your arms at your sides and shake them out gently for 10 seconds.



ROTATE, REPEAT

While sitting, slowly rotate each foot from the ankle, three times in one direction and then three times in the other.



BEND AT THE WRIST

Hold your arm out in front of you. Pull your hand backward with your other hand, then push downward. Hold for 15 seconds. Repeat three times on each hand.



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For NASA Telework Ergonomic Resources

nsc.nasa.gov/topics/telework-safety

The screenshot shows the NASA Safety Center website page for Teleworking Safety and Health. The page features a dark header with the NASA logo and navigation links. The main content area has a background image of hands typing on a laptop keyboard. The title 'Teleworking Safety and Health' is prominently displayed. Below the title is a paragraph of text and a 'Health Resources' button. At the bottom, there are two circular portraits of Grant Watson and Angel Plaza with their respective titles.

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TELEWORK SAFETY Checklist Ergonomics

Teleworking Safety and Health

The safety and health of the NASA workforce is always our top priority. During these unprecedented times, we aim to provide help and resources to prevent you from suffering from injuries that could last a lifetime. Please review the information contained on this page to ensure you've set up a safe and health workspace at home. These office ergonomics resources can also be customized to fit your at-home needs.

Health Resources

Grant Watson, *Institutional Safety, Office of Safety and Mission Assurance, Headquarters*

Angel Plaza, *Senior Environmental Health Officer, Headquarters*



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For General NASA Ergonomic Resources

nsc.nasa.gov/ergo

The screenshot shows the top portion of the NASA Safety Center website. At the top left is the NSC logo with the text 'About | Contact'. To the right is a navigation menu with links for 'News and Events', 'Resources', 'Professional Development', ' Mishap Reporting and Trending', 'Audits', and 'Quick Links'. Below the navigation is a large image of a hand typing on a keyboard. The word 'Ergonomics' is displayed in white text over the image. Below the title is a paragraph of text: 'It's easy to overlook how much bending, twisting and contorting is required during a normal workday. Reaching over to grab a document, stretching to reach a keyboard, slouching in a chair. All of these seemingly subtle movements can equate to bad ergonomics and lead to potential injuries, while also aggravating pre-existing conditions. Whether lifting heavy materials, operating machinery or even just sitting at a computer, developing good ergonomics practices will help to prevent against future health issues.'



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Ames - Ergonomic Assessments or Telephone Help

Virtual Assessments are available for remote workers

If you need ergonomic assistance, want specific tips on your workstation or what products might be recommended you can call Jennifer Chan at 650-269-8456.

If you would like a remote/virtual ergonomic assessment, please let her know – we can do this with a few pics of your home setup.

Email: Jennifer.s.chan@nasa.gov



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THE END