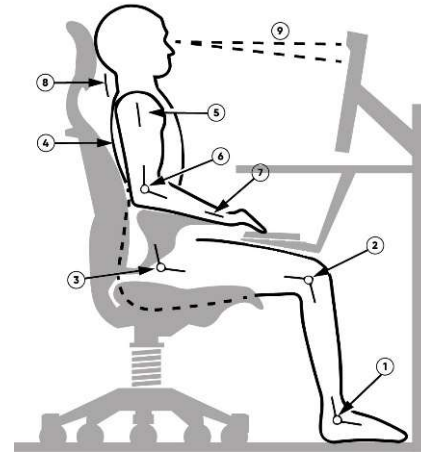


# Ergonomics: Working from the Office & Home

*Proper Workstation Set Up*



**Presented by:**

**Paige Saakyan**

*Health & Safety Specialist, Public Employees Federation*

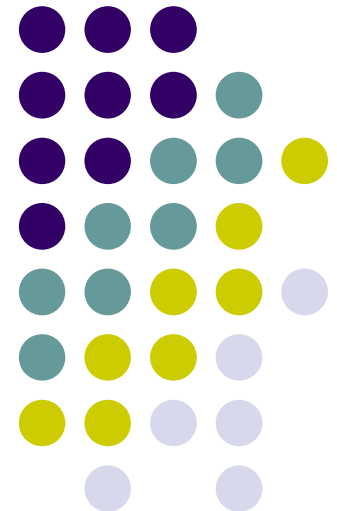
**Jonathan Dropkin**

*Ergonomist, Mount Sinai Selikoff Centers for Occupational Health*

**Blanca Gonzalez-Parker**

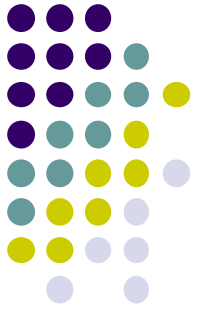
*Program Associate for Safety and Health, NYS & CSEA*

*Partnership for Education and Training*

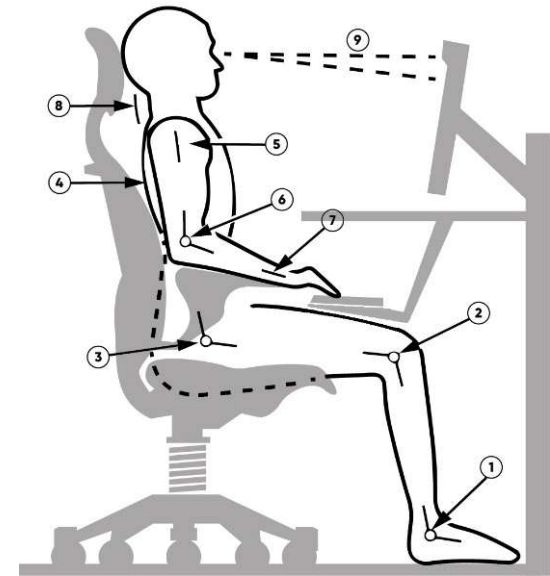


*Funded in part by the NYS Department of Labor Hazard Abatement Board  
Occupational Safety & Health Training & Education grant*

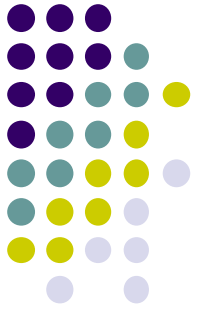
# What Will You Learn?



- Introduction to ergonomics
- Proper positioning
- Postures to maximize comfort
- Setting up your office and home/remote workstation
- Using a desktop and laptop
- What's wrong here? & How can we fix it?



# What Is Ergonomics?

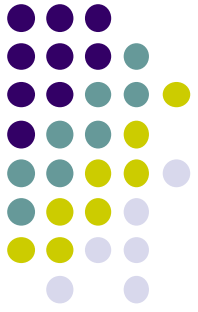


**Ergonomics** means the “science of work”-  
fitting a job to a person

## Goals:

- Maintain health
- Improves safety & comfort
- Improves work performance & quality
- Decrease risk of injury





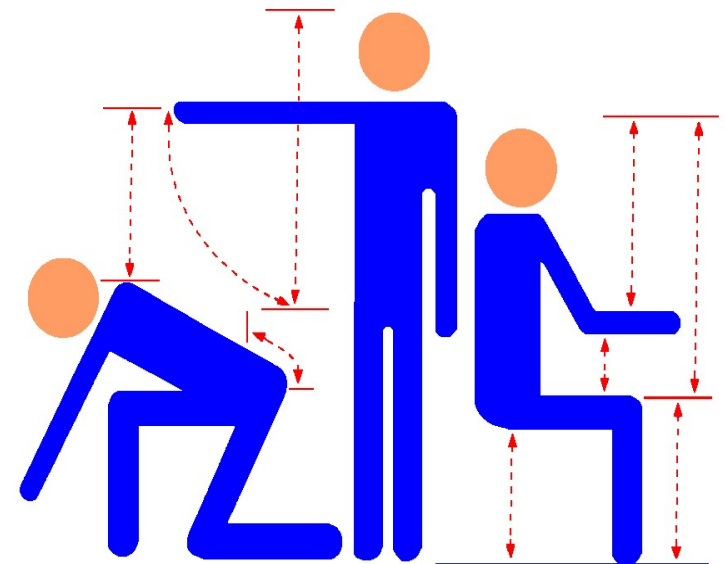
# Understanding Ergonomics

Takes into account worker variations

- Size, Shape, Strength, Capabilities

By looking at:

- How jobs are designed
- How the body works
- How we think, perceive, process information, make decisions and respond to stress/ strain





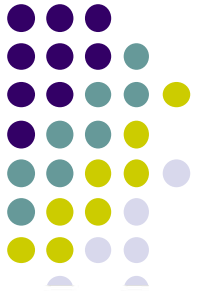
# What Are We At Risk For?

## Ergonomic Injuries

- Work Related Musculoskeletal Disorders (MSDs), mostly of the upper extremities
  - Sites – wrist, neck, shoulder, etc.
  - Preceded by pain, numbness, discomfort, etc.
- Vision Problems



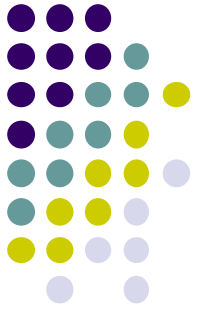
# What Are MSDs?



- Work Related MSDs have many names (cumulative trauma disorders, repetitive stress disorders, overexertion illnesses)
- Onset can be acute but most often occurs slowly, over time
- Affects muscles, tendons, nerves, blood vessels, spinal discs
- Symptoms can include pain, burning, tingling, numbness and weakness
- MSDs can be associated or exacerbated by work



# Common Discomforts



Back Aches

Wrist pain

Eye strain

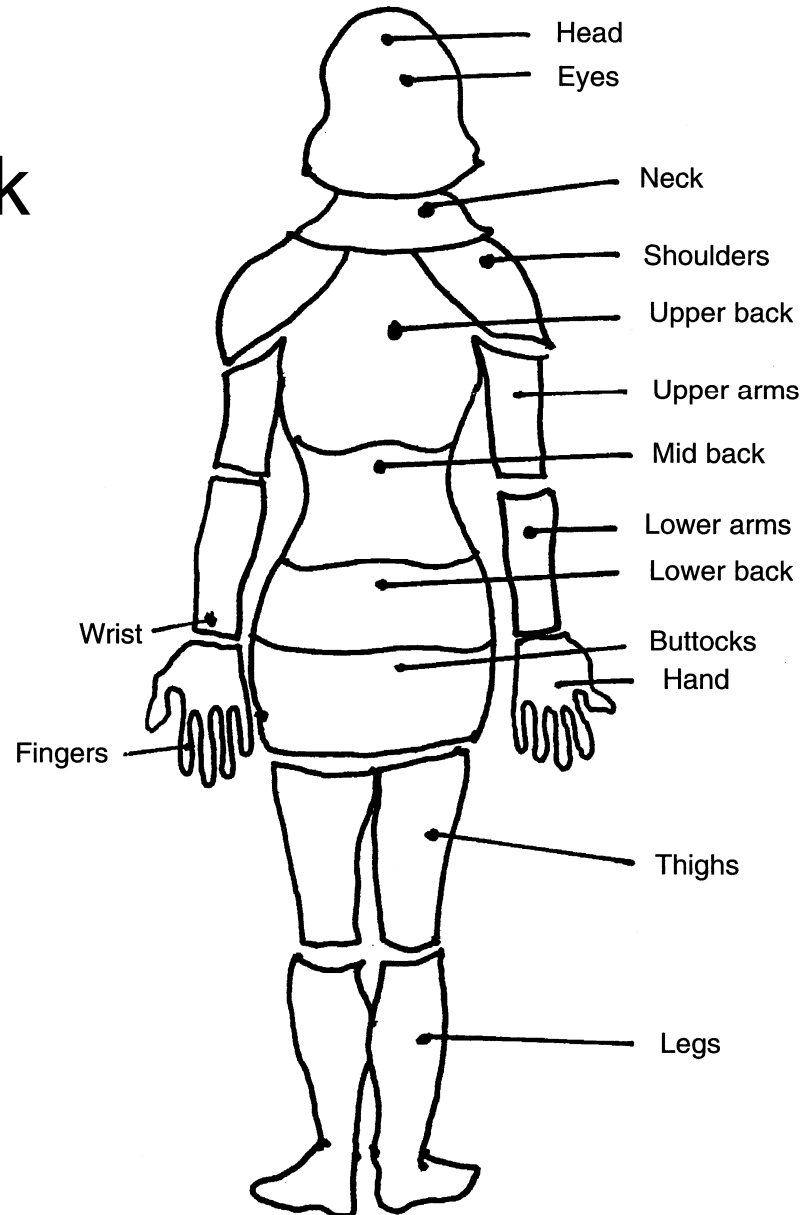
Neck and shoulder discomfort

Leg cramps



# Which Body Parts Are Affected?

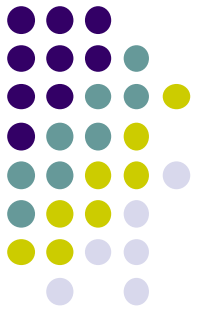
- Upper back
- Low back
- Shoulders
- Hips
- Knees

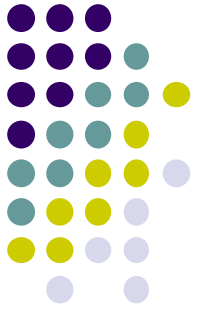


- Wrists
- Hands
- Elbows
- Forearms
- Neck

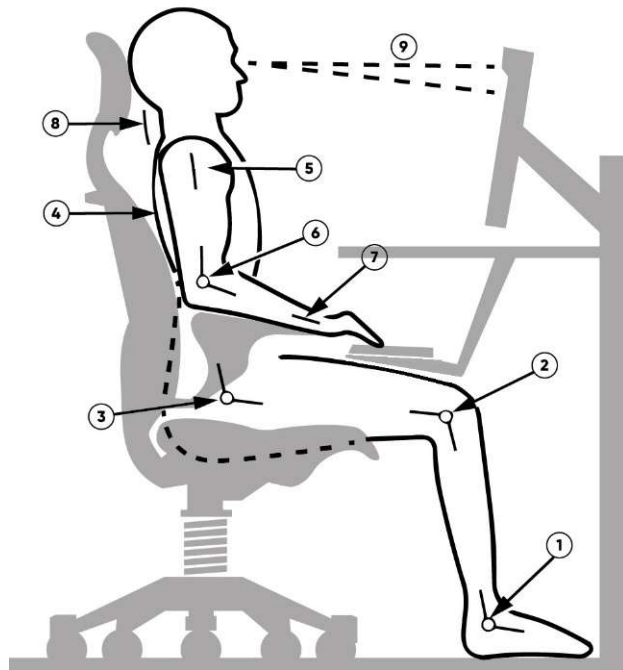
# Work Related MSDs Are Associated With:

- Highly repetitive work & rapid hand movements
- Contact Stress - compression of soft tissues, nerves, blood flow
- Sustained stressful, non- neutral & static postures
- Unsupported positions
- Applying Force
- Heavy Lifting
- Individual factors (e.g., preexisting MSD or systemic disease, such as diabetes)
- Poor work organization/ psychosocial factors
- Environmental conditions (e.g., poor lighting, temperature extremes, noise)

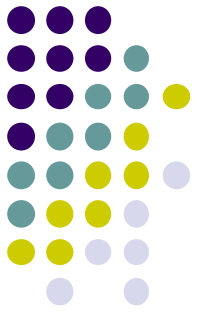




# Proper Workstation Set Up



# *In the Office: Where Do We Start? Get Comfortable & Supported*



**\*\* Line up: Chair → Keyboard → Monitor**

Face the keyboard and monitor

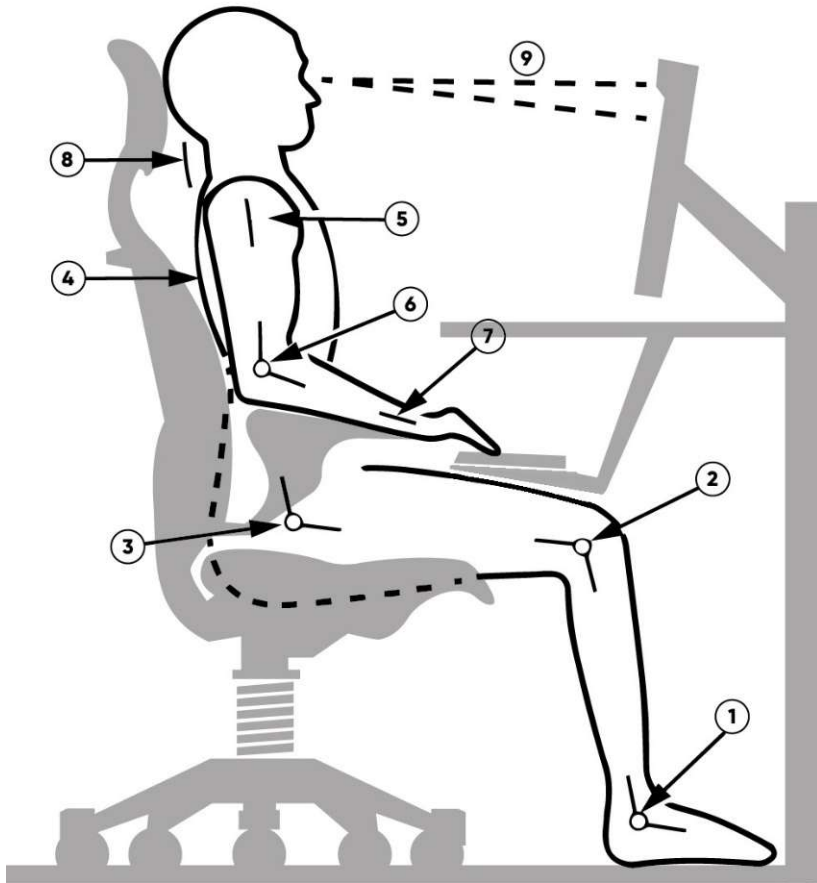
Neck, upper back and shoulders supported and relaxed

Mid and low back supported

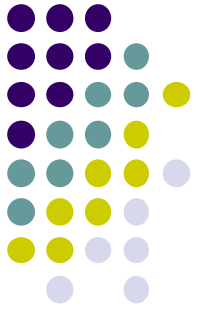
Arms near sides and open to more than 90°

Forearms can be supported

Feet supported as if flat on the ground



# What Equipment Is Important For Working in the Field or at Home?



- Ergonomic equipment if available,  
If not- **GET CREATIVE!**
- A stable and supportive chair
- A table about the same height of a desk
- A space with good lighting
- Cushions and Lumbar Supports
- Laptop Risers
- External mouse and keyboard



# Remote Work: Where Do We Start? Get Comfortable & Supported



## \*\* Line up: Chair and Laptop

Face the keyboard and laptop

Mid and low back supported  
against the back of the chair

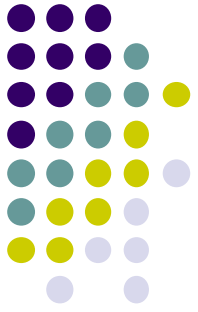
Feet supported as if flat on the  
floor

If you have an external  
keyboard- it should be  
centered with the laptop

If you have an external mouse-  
it should be positioned next to  
the keyboard



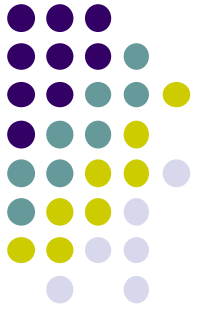
# Laptop/ Monitor



- Between light fixtures
- Laptop/monitor centered in front of you
- If using an external mouse and keyboard- raise your laptop
- If not- recline the screen so you are comfortably looking at the screen
- Viewing area (top line of monitor screen) in line with eyes or slightly below
- Viewing Distance 22" -38" \*depend upon vision and/or corrective lenses
- Corrective Lenses: anti-glare or anti-reflective coating



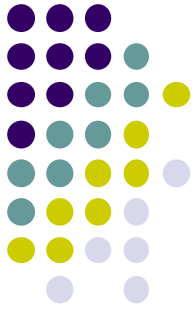
# Dual Monitor



- What work tasks are you doing?
- Two monitors centered vs. One monitor centered
- Laptop used as second monitor



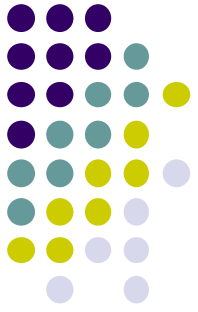
# Sit to Stand Desks



- Help to vary your work position
- Static Sitting vs Static Standing
  - Take Microbreaks for 5 minutes or less

## Tips and Tricks for Sit to Stand Desks & Workstations:

- Don't hit the point of fatigue
- Determine what tasks are best for sitting vs. standing
- Check for proper positioning when you are sitting and standing
- Wear proper shoes for standing
- Use a timer to remind yourself to move



# Workstation Design

---

## Follow your chin! Keep it in a neutral position

- If your chin is raised, your monitor/ laptop is too high
- If your chin is tucked and dropped, your monitor/ laptop is too low
- If your chin is way out in front, your monitor/ laptop is too far away





# Keying Surface

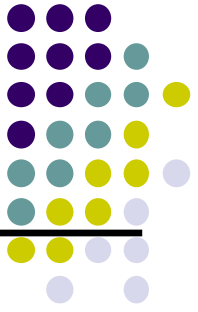
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- Rounded edges (if table surface)
- Full size keyboard and mouse
- Fully articulating /adjustable keyboard tray
- Room for Mouse next to keyboard
- Elbows  $>90^\circ$
- Distance
  - Arms comfortably at sides – don't reach out
  - A little farther OK if forearms supported



# Additional Equipment



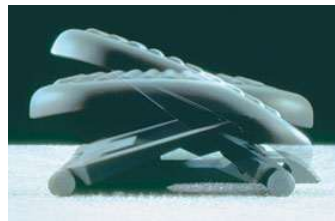
## Mouse

- Fits your hand
- Level with keyboard
- Don't reach to side or forward for it
- Alternative pointing devices



## Others

- Document holders
- Slant stands
- Foot rests

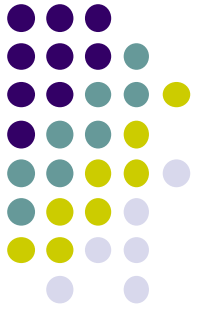


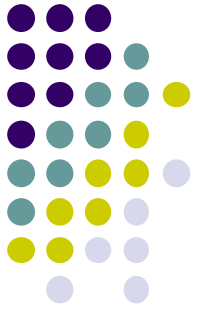
## Add-on accessories for laptops

- Laptop stand
- Wireless full-sized keyboard and mouse



# Ergo Equipment

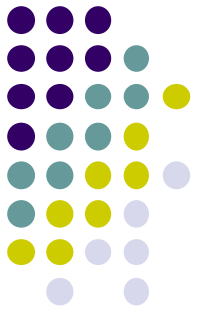


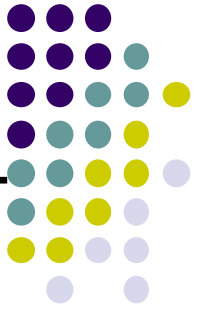


# Ergo Equipment (cont'd)



# Working Remotely or at Home Quick Tips!





# *Ergonomic Chairs*

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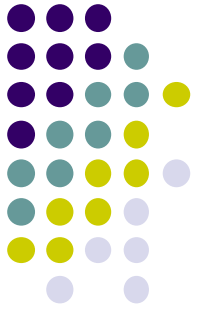
## Size

- Petite (5'3" and under), Average and Large

Easily Adjustable - Operator able to adjust while sitting:

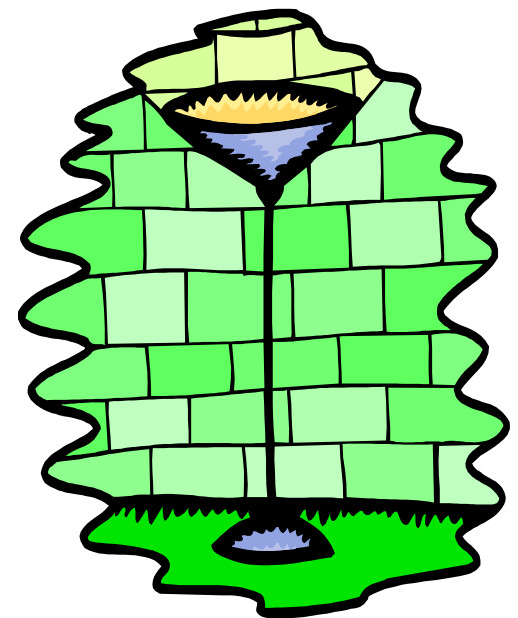
- Height
- Backrest (up & down, tilt, upright locking mechanism)
- Lumbar support
- Seat Pan - tilt (tilting slightly forward may benefit those with low back pain)
- Padded Arms (height & width)



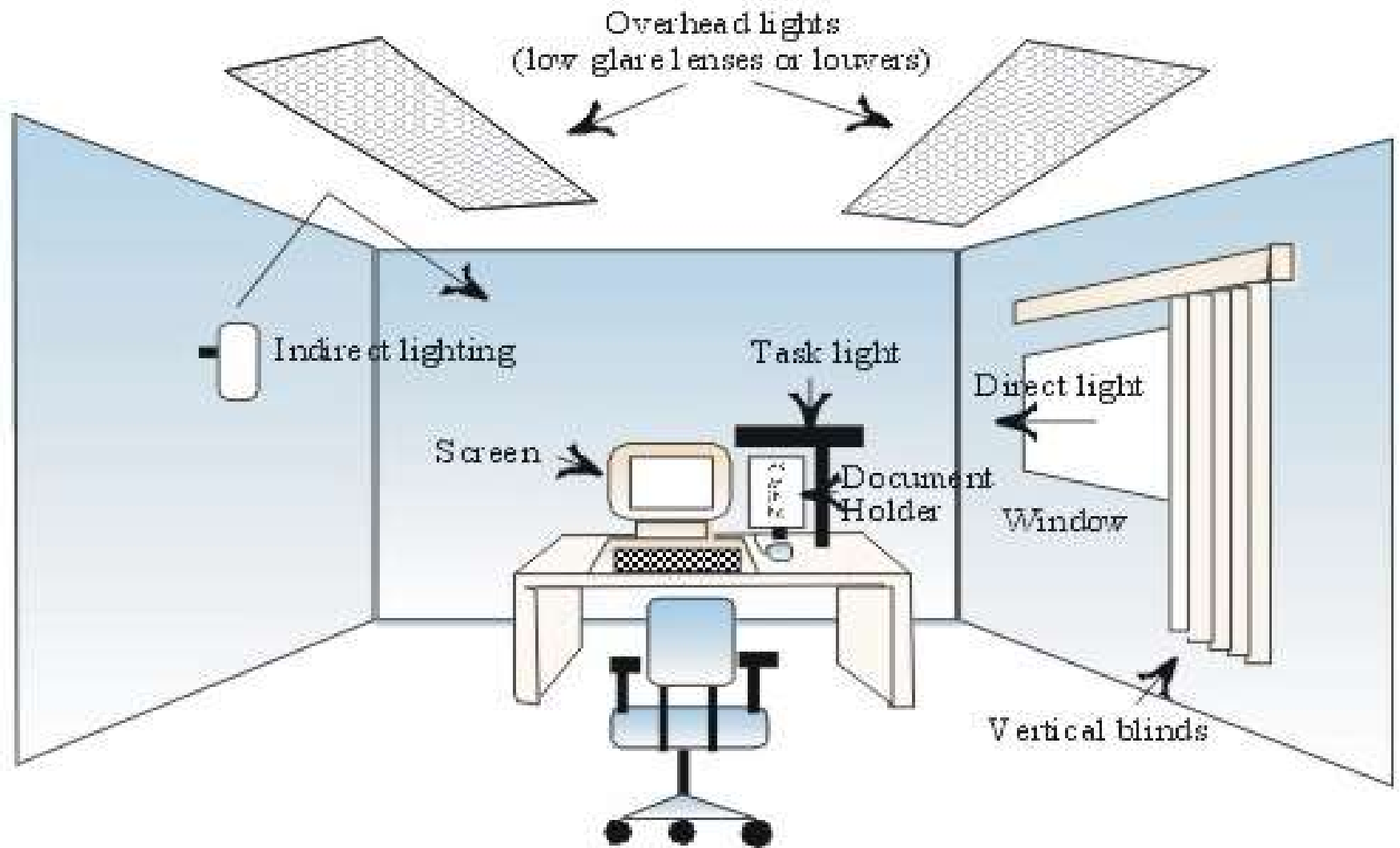
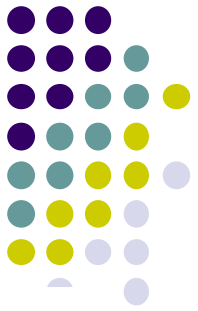


# Vision Controls

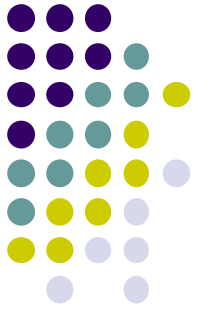
- Use blinds, drapes or shades to block direct sun
- Do not sit directly under a light fixture
- When sitting near windows- the windows should be on your sides rather than in front or behind you
- Use small table lamps if possible
- Screen:
  - Adjust brightness/contrast
  - Clean the screen!



# Room Set Up – Looking Good



# Work Practice & Administrative Controls



## Rest and recovery!

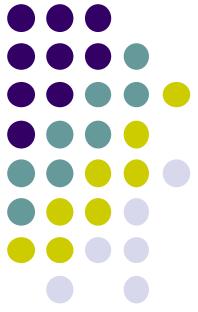
- Frequent micro breaks- (5 minutes or less according to CDC)
  - Get up from your chair
    - Drop your hands in your lap
    - Get some water, stretch, etc.



## Static vs Dynamic Work:

- Get your blood flowing – with gentle stretches and exercises

# Work Practice & Administrative Controls (cont'd)



## Adjust work area to fit you

- Adjust heights and angles

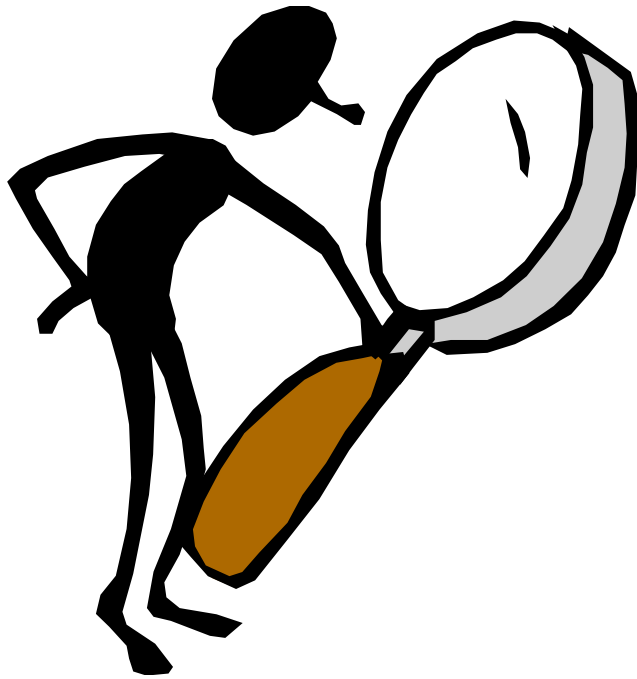
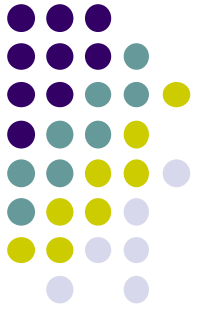
## Work in neutral postures

- Optimal seated posture
- Don't press palms on hard surfaces
- Good back and foot support

## Pace yourself

- Low-strain movements to reduce repetitive motions
- Spread out workload
- Recognize early strain symptoms
- Take recovery periods

# Proper Workstation Set Up

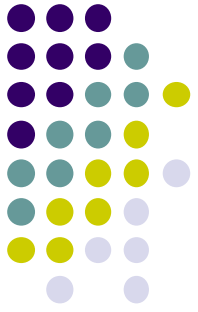


*Let's compare....*

What's wrong with these pictures?

How can we fix them?

# What's wrong here?



Reaching for keyboard

Cradling phone

Heel of hands on desk

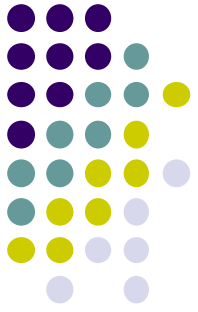
Mouse too far

Task light next to monitor

Crowded desk



# What's wrong here?



Glare on Computer screen

Perched on Chair

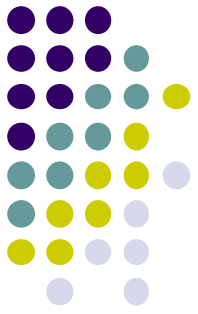
Feet propped on chair legs

Chair too high

Wrists flexed back



# How is our positioning now?



Chair, keyboard monitor in line

Sitting closer to keyboard

Lumbar pillow provides good back support

Telephone headset

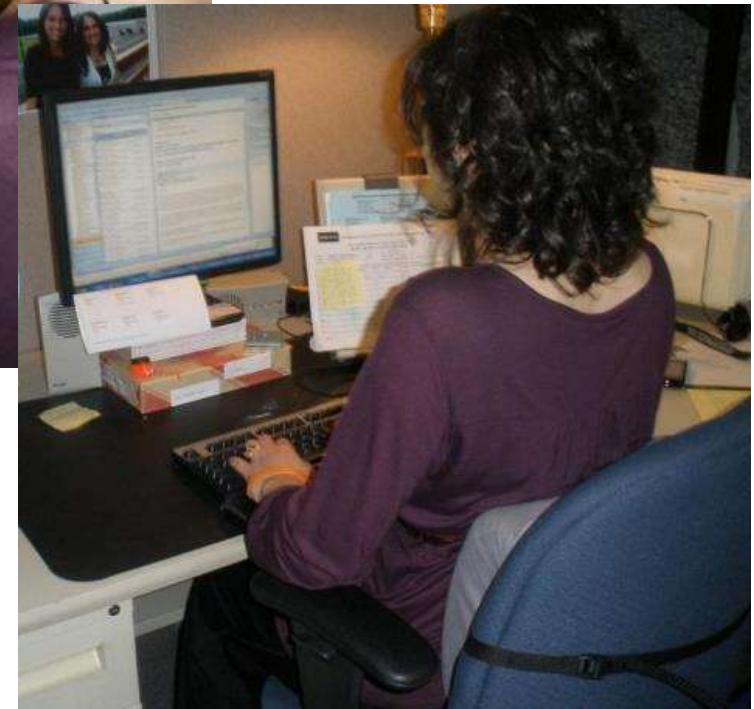
Neutral wrist position

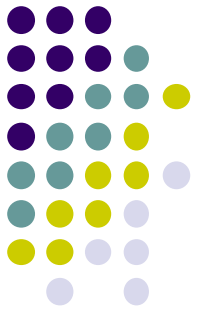
Mouse is in reach

Task light raised to provide light on document holder and reduce reflected glare on monitor

Document holder now in use

Arms and shoulders relaxed





# What's wrong here?



Cradling phone  
on shoulder

Heel of hands on  
table edge

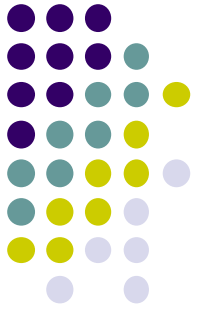
Mouse in front of  
keyboard

No document  
holder

No back support

Monitor at angle

# What's wrong here?



Crowding under desk

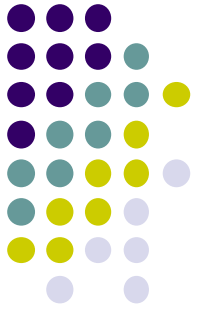
No leg room

Feet propped on toes

Contact stress on thighs

Keyboard tray not used





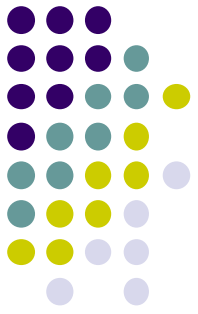
# Let's Fix It!

Chair lowered so feet flat on floor

Lumbar pillow provides good back support

Chair arms?





# How is our positioning now?

- Keyboard moved onto adjustable tray
- Are shoulders in neutral?
- Chair, keyboard and monitor are in a line
- Are wrist rests useful?  $P = \frac{F}{A}$



# What's good, what's bad?



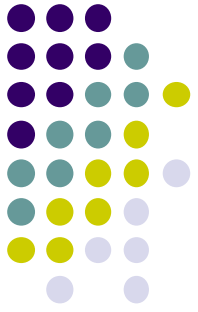
Document holder  
now in use

Mouse next to  
keyboard

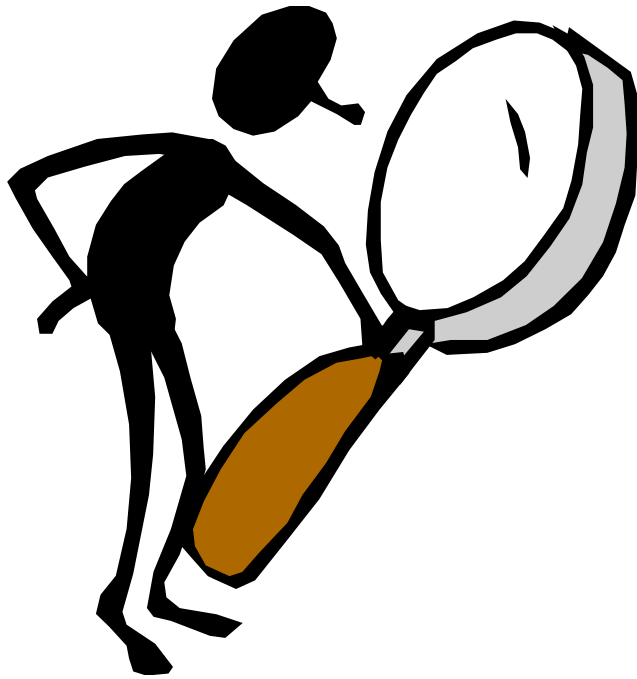
Chair arms  
lowered

Arms and  
shoulders relaxed





# Proper Workstation Set Up

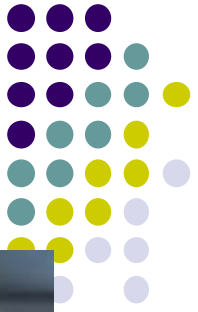


*Let's compare....*

What's wrong with these pictures?

How can we fix them?

# What's Wrong Here?



Elbow on table

Trying to type with one hand

No back support

Toes are touching the ground- but feet are not flat on floor

Looking down at monitor



# Let's Fix It!



- Using headphones
- Typing with 2 hands
- Laptop is raised to eye level
- Added keyboard and mouse
- Added wrist rest and mouse pad
- Raised up using pillow
- Used a pillow for lumbar support
- Used box for foot rest
- Necessary items in reach



# What's Wrong Here?



Bent over

Laptop too low

Resting arms on table

Standing on hard surface



# Let's Fix It!

Laptop is raised to eye level

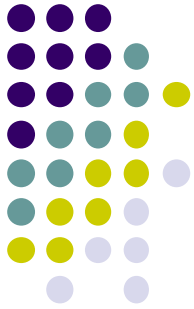
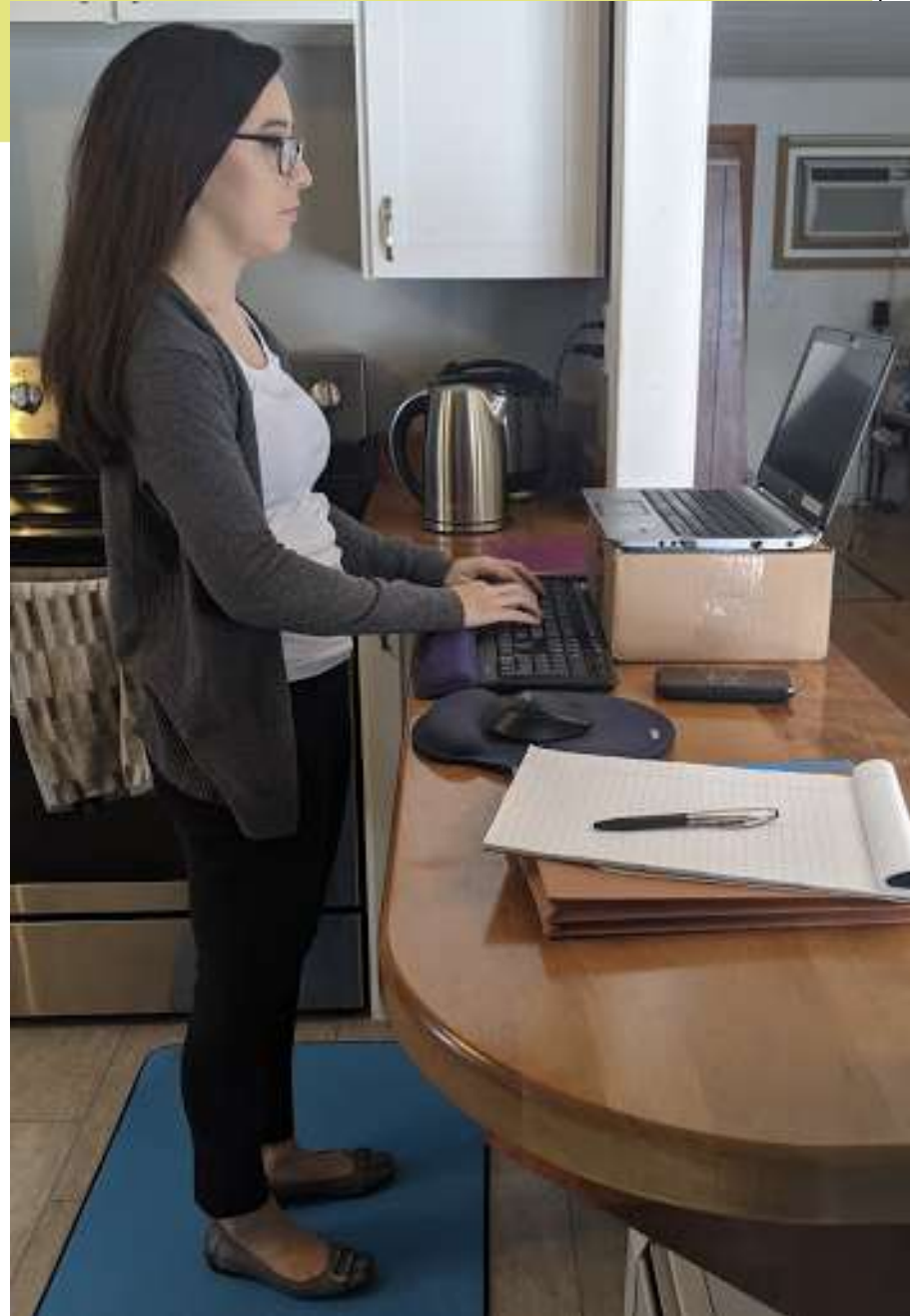
Added keyboard and mouse

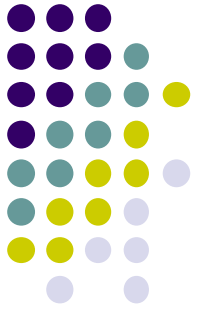
Added wrist rest and mouse pad

Arms are in neutral position

Used a yoga mat to pad the floor

Necessary items in reach

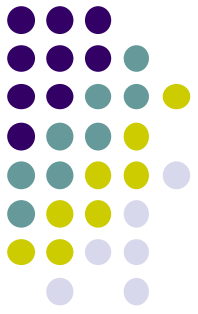




# Summary

- Poor seated postures are generally considered to contribute to discomfort.
- Good posture is a key feature in the prevention of back pain and some MSD.
- Adopting a range of comfortable postures, and frequent changes of posture, may help to delay the onset of discomfort in driving.
- Any seating position should account for the need to vary posture.

# What Other Ergonomics Courses Does PEF Offer?



## **Office Ergonomics Direct Training- (3 hours)**

- Basics on office ergonomics
- Teaches participants to set up their own workstations

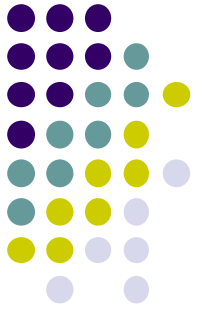
## **Driving and Vehicle Ergonomics for Field Staff (2 hours)**

- Teaches proper ergonomic vehicle set up
- Use of devices while in field status

## **Ergonomic Assessor Training- (Full day ~7 hours)**

- Teaches participants on the principles of ergonomics
- Educates participants on performing ergonomic assessments

***Contact PEF H&S at 800-342-4306 ext 254 to set up training***



# Resources

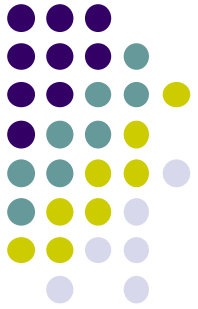
**PEF Health and Safety:** <https://www.pef.org/departments/health-safety/>

**PEF Ergonomics Factsheet:** [https://www.pef.org/pef\\_files/docs/healthandsafety/ERGO-ErgoFactsheet.pdf](https://www.pef.org/pef_files/docs/healthandsafety/ERGO-ErgoFactsheet.pdf)

**PEF Working from Home Factsheet:** [https://www.pef.org/pef\\_files/files/pdf/Working-from-Home-Ergonomic-Factsheet.pdf](https://www.pef.org/pef_files/files/pdf/Working-from-Home-Ergonomic-Factsheet.pdf)

**Mt. Sinai Ergonomics:** <https://www.mountsinai.org/care/occupational-health/services-programs/employer-services/ergonomics-injury-prevention>

**NYS & CSEA Partnership:** <https://nyscseapartnership.org/safety-and-health>



Thank  
you!

***Please contact PEF Health & Safety for more information***

***or with any questions at:***

***1-800-342-4306, ext. 254***

***E-mail: [healthandsafety@pef.org](mailto:healthandsafety@pef.org)***