

Ergonomics Awareness

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Note: I borrowed the diagrams from the Internet.



Objectives

By the end of this presentation, you will be able to:

- Define ergonomics and its benefits
- Identify parts of the body that get injured at work
- Identify work activities that can lead to injury
- List examples of practices that can reduce risks
- Participate in efforts to find and fix hazards
- Recognize signs and symptoms of injury
- Know how and why to report discomforts and injuries early

A tool to make work safer

- Ergonomics
 - “the science and practice of designing jobs and workplaces to match/fit the capabilities and limitations of the human body”
 - “fitting the job to the worker”
- Benefits of Ergonomics
 - Help prevent injuries
 - Improve work quality
 - Improve quality of life
 - Improve concentration
 - Reduce fatigue
 - Reduce discomfort
 - Reduce downtime

Awareness Matters

1. Be body aware of how you do what you do
2. Identify opportunities to remove or reduce hazards
3. Consider new or different methods or tools
4. Get training as needed to implement provided solutions
5. Inform your supervisor as to whether solutions actually reduce hazards

Ergonomics at Work

Risk – heavy lifting



Cart reduces risk

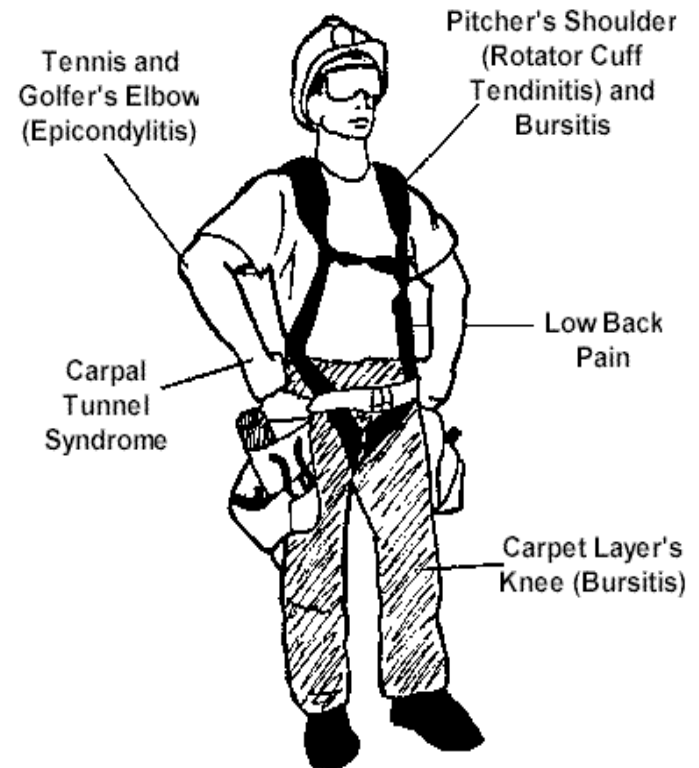


Less strain on back and shoulders
More energy left at end of day

MSDs and RMIs

Soft tissue injuries that start small and develop gradually

- Other Names: Cumulative trauma disorders, overuse injuries
- Soft tissues: muscles, tendons, ligaments, joints, blood vessels, nerves (not bones & organs)



Typical Causes *at home and at work*

- Heavy, frequent, or awkward lifting
- Pushing, pulling, or carrying loads
- Consistent awkward postures & activities
- Hand intensive work
- Vibration
- Impact



Risk Factors

- Duration of exposure (how **long**)
- Frequency of exposure (how **often often**)
- Intensity of exposure (how **MUCH**)
- Combinations of risk factors **+++**



Duration

- You usually need hours of exposure before risk factors become a concern
- Exposure can be all at one time or cumulative over the day/s



Frequency – often a concern in ...

- Assembly tasks
- Sorting tasks
- Loading or off-loading materials
- Inventorying and stocking products
- Software programming
- Extensive telephone work
- Others – depends on details of the tasks

Intensity refers to

- Weight in pounds of items lifted or carried
- Grip or pinch force of lifted/handled items
- Vibration level (meters per second squared)
- Force of keys when typing

Combination of factors

- Exposure to more than one risk factor at a time greatly increases the risk of injury
- Examples:
 - Bending and twisting while lifting
 - Repetitive, forceful use of the hands with the wrists bent

HEAVY, FREQUENT OR AWKWARD LIFTING



Alternatives to Lifting

- Use carts, hand trucks, hoists, conveyors, or other mechanical assistance
- Slide objects instead of lifting them
- Store heavy items where you will not have to bend or reach to lift them
- Use ladders to get items down from high shelves

If you must lift, plan your lifts!!!

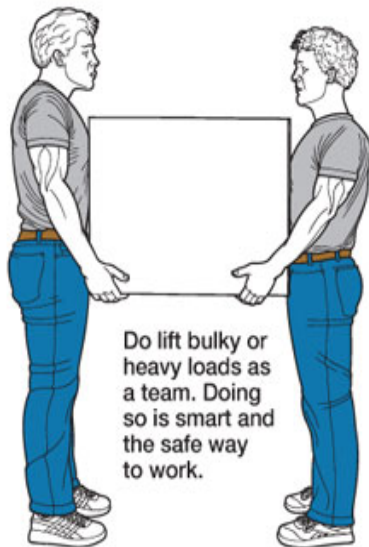


How to Lift Properly



LIFTING DO'S & DON'TS

DO LIFT AS A TEAM



Do lift bulky or heavy loads as a team. Doing so is smart and the safe way to work.

DO TURN WITH LEGS



Do move your legs and feet when turning or lowering the load. Avoid twisting at your waist.

DO USE YOUR LEGS

Do lift the load using your powerful leg and buttocks muscles. Your feet should be wide apart, head and back upright. Keep abdominal muscles tight and the load in close.



DO USE EQUIPMENT

Do use equipment like hand trucks, dolly's, or forklifts to do the heavy lifting. It's much less work and less risk of injury.

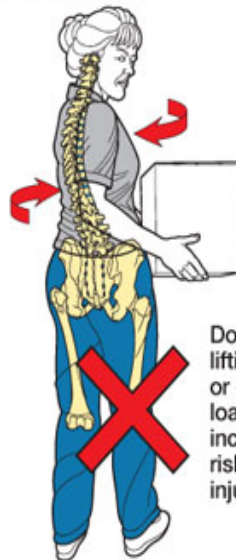


DON'T LIFT BULKY LOADS ALONE



Don't lift bulky or heavy loads alone. Doing so puts great stress on your low back muscles and spine.

DON'T TWIST WHEN LIFTING



Don't twist when lifting, lowering, or carrying any load as this increases your risk of back injury.

DON'T USE YOUR BACK

Don't lift the load with your rear end high and your head low. Use your leg muscles, not your weaker low back muscles.



DON'T LIFT HEAVY LOADS

Don't lift heavy loads when you can use equipment. It is less work and less stress on your low back.





Neutral Postures

The opposite of awkward posture



Standing neutral posture



Seated neutral posture

Please refer to the chair guidance memo on inyocounty.us/risk/ergo for guidance on selecting and using an office chair.

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MEMO – OFFICE CHAIR SELECTION GUIDANCE

Wednesday, January 22, 2020

To: Department Heads

Musculoskeletal disorders are injuries that involve the body's muscles, joints, tendons, ligaments, or nerves, and what you do on and off work can contribute to them. Prevention is important because these injuries can take months or years to develop and a long time to heal. Please share this memo with your office personnel. This document, related images, and other information on work place ergonomics are available at <https://www.inyocounty.us/risk/ergo>.

RISK FACTORS

In the office setting, the most common risk factors that can increase the risk of developing musculoskeletal disorders are excessive repetitive motions, awkward postures, static postures, excessive forces, and contact pressure.

- Excessive Repetition: Performing repeated motions in the same way with the same body part.
- Awkward Postures: Placing a joint towards its extreme end of movement in any direction away from its neutral, centered position.
- Static Posture: Holding an object or a body position in a still and fixed manner.
- Excessive Force: Performing an activity with excessive muscular exertion/force.
- Contact or Continuous Pressure: Direct pressure on soft tissues from resting or action against a hard surface.

PREVENTION

Discomfort can become an injury if not addressed early. The key to preventing musculoskeletal disorders is educating yourself about the factors that can contribute to discomfort and injuries and then applying some basic ergonomic principles to make changes that will improve your positioning and the organization of your work area. YOU need to take an active role in preventing an injury. Report any discomfort or injury to your supervisor, and call the injury hotline at 877.215.7285 immediately if you think you have a work related injury so we can make sure to get you the care you need. You can also ask your supervisor to request an individualized workstation evaluation from Risk Management.

CHAIR SELECTION

A good, supportive office chair prevents fatigue and discomfort that can come from sitting in the same chair for hours on end. Studies have shown that comfortable employees are more productive and contribute more to a positive work environment. The right chair also reduces the number of breaks required due to discomfort.

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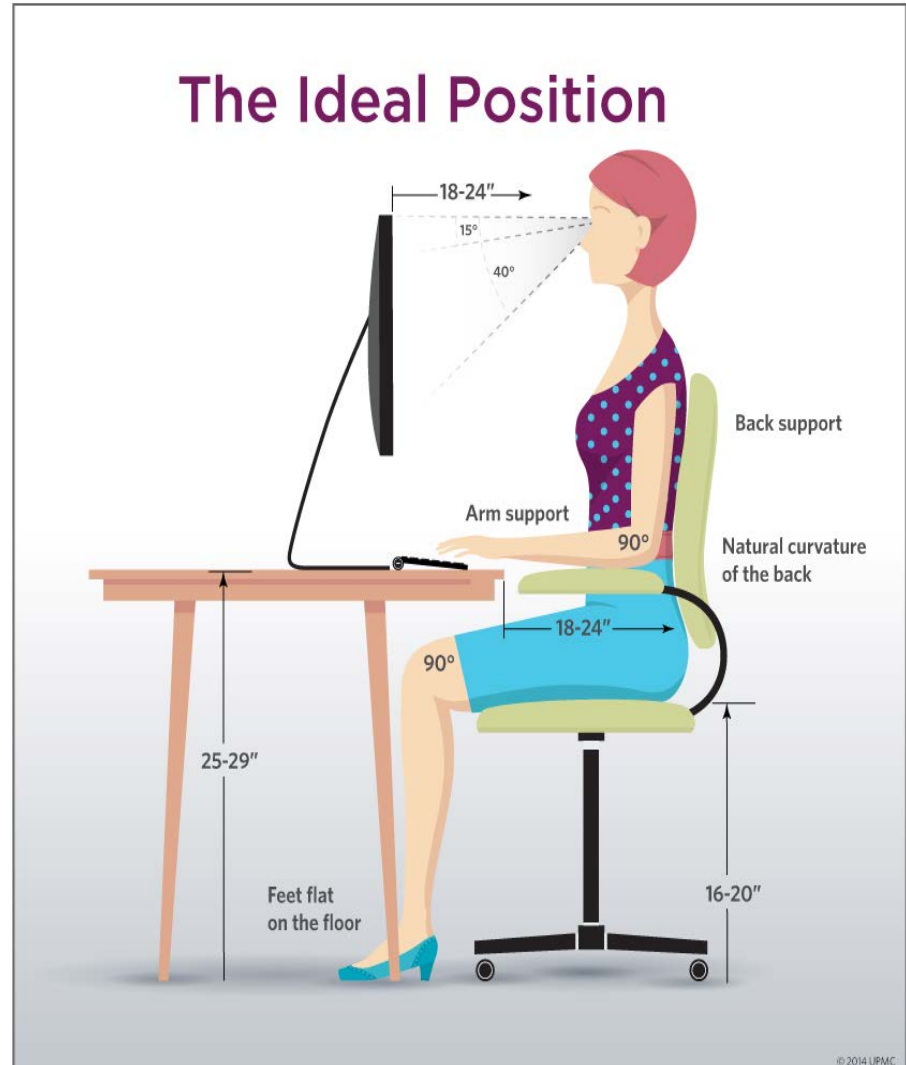
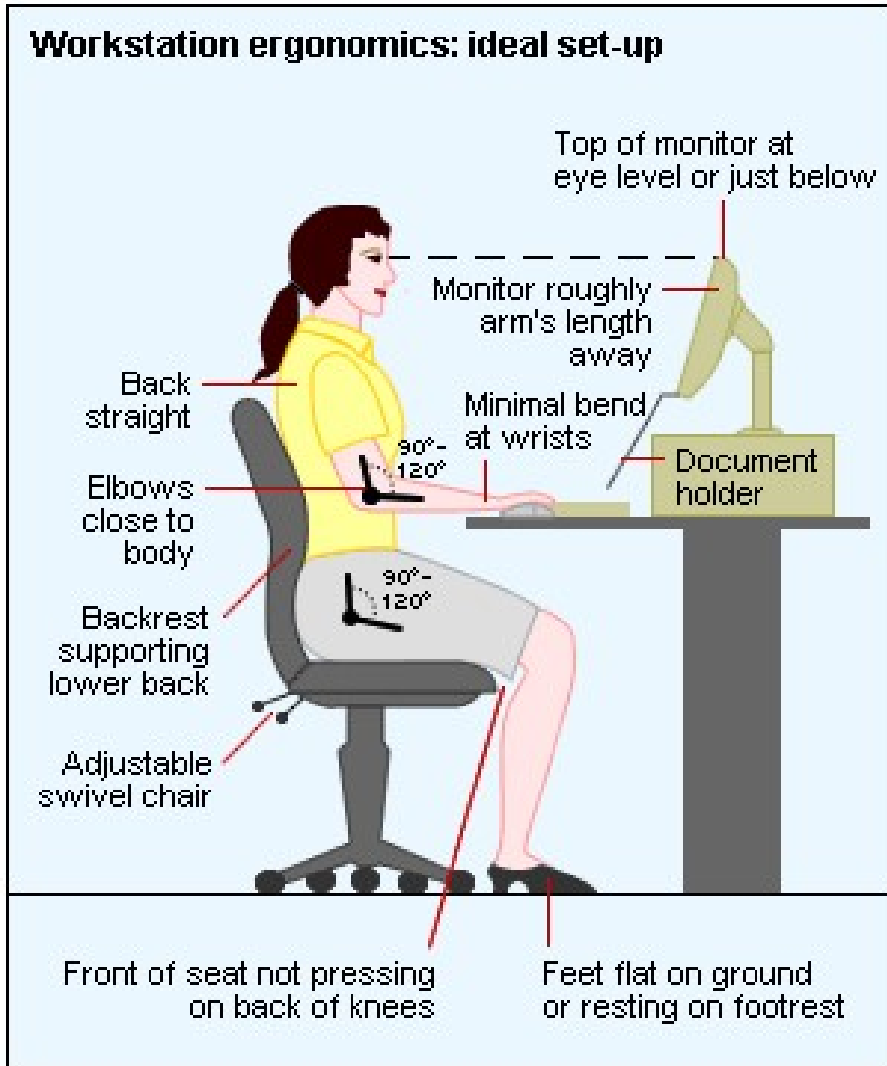
Employees who sit at a desk for work for more than four hours a day can reduce their risk of work related musculoskeletal disorders by using a chair fit to them. A chair becomes ergonomic only when it specifically suits a worker's body, the particular workstation, and the tasks performed there. Chairs are custom furniture designed to fit each worker's height, width, and torso-to-leg ratio. One chair will not work for every user, and no chair is perfect for every work activity, so please be careful with hand-me-downs.

At a minimum, office chairs should have the following:

- Adjustable seat height relative to the floor so that knees are at about 90 degrees and at or slightly below hips, thighs are parallel with the floor, feet are flat and comfortably on the floor or a footrest, and forearms while typing are parallel with the floor.
- Firm lumbar support. We may be phasing out mesh back chairs as they tend to have less lumbar support and don't last as long as fabric options.
- Adjustable seat back height to set the lumbar support to the small of the back and the top of the back of the chair at or above the shoulder blades.
- Seat pan depth adjustment (either the chair back adjusts horizontally relative to the seat, or the seat itself slides forwards or backwards) so user comfortably sits all the way to the back of the chair with the width of two to three fingers between the front of the seat and the back of the knees.
- Swivel base. Chairs should swivel freely to allow for easy access to various parts of the desk in order to avoid over reaching.
- Seat tilt is optional. If the chair comes with tilt, it must also come with a tilt lock.
- If the chair is on wheels, it must have five (not four) casters, and wheels designed for the surface (carpet, vinyl, etc.) to support stability.
- If the chair has armrests, it must have adjustment for armrest height and width. Armrests must not interfere with operations and not cause user to hunch shoulders.
- Please pay attention to sizing.
 - Chairs for petite persons (5'2" or less) should have seat width of 16"-18", short cylinders (between chair and legs) at 15"-20", and a back height classified as low to mid.
 - Chairs for average sized persons (5'2" to 5'10") should have seat width of 18"-22", average cylinders (between chair and legs) at 16"-21", and a back height classified as mid to high.
 - Chairs for tall/large persons (greater than 5'10" or larger than average) should have seat width of 22"-21", average cylinders (between chair and legs) at 17"-22" that support weights greater than 275 pounds, a high back.

A properly sized and comfortable chair keeps strain and injury from occurring and is therefore important to encouraging our employees to be happy, healthy, and productive. Thank you for your attention. Please contact Risk Management if you have any questions.

SEATED POSTURE CHARTS



When awkward postures happen



Too low

Too high



Too far away



Solutions for Awkward Low Work

Bending, kneeling, and squatting can be hard on knees and back.

Solutions ...

- Raise and/or lift the work for better access
- Lower yourself – stool, chair, slider
- Use tools with longer handles
- Alternate between bending, kneeling, sitting, and squatting



Solutions for Awkward High Work

Hands and shoulders raised can be hard on shoulders, neck, and back.

Solutions ...

- Use elevated work platform
- Use tools with longer handles
- Limit overhead storage to infrequently used items
- Bring down the work and tilt for easier access

Solutions for Awkward Reaching

Reaching frequently over time can be hard on arms, shoulders, and back. Solutions ...

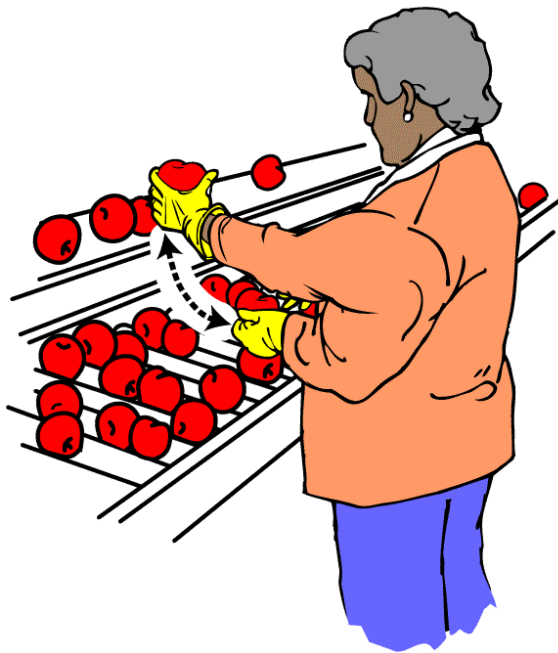
- Keep items within close reach
- Remove obstacles
- Make use of gravity



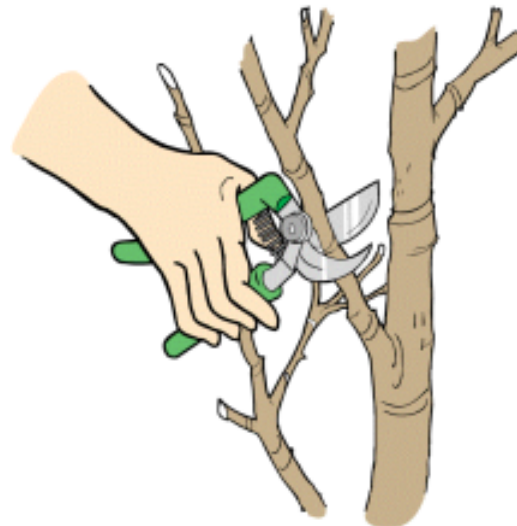


Risk Factors with Hand Intensive work

Repetitive motions



Gripping
Pinching



Bent wrists



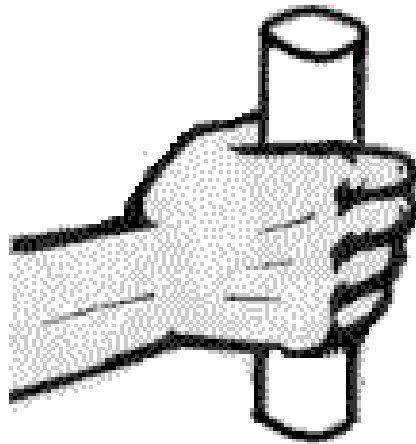


Solutions for Repetition

- Arrange work to avoid unnecessary motions
- Let power tools and machinery do the work
- Spread repetitive work out during the day
- Take stretch pauses
- Rotate task with coworkers if possible
- Change hands or motions frequently

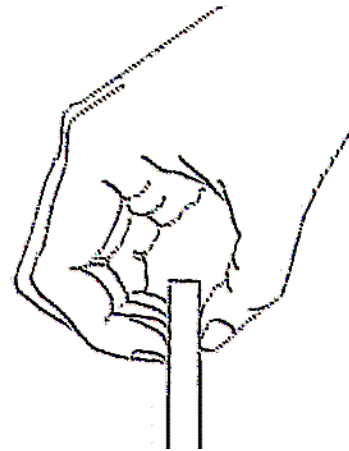
Gripping and Pinching

Power grip is 5 times stronger than a pinch grip.



10 lbs

=



2 lbs



Other Gripping Factors

Grip decreases when ...

- Bend your wrists
- Pick up slippery objects
- Wear poorly fitting gloves
- Have cold hands

Grip decreases over time

- Avoid holding items for long periods
- Put it down if you're not using it
- Get hand off the mouse

Reduce Required Grip Force

- Grip with whole hand, not fingertips
- Pick up smaller loads
- Use carts instead of carrying
- Keep tools in good working order
- Use lighter tools
- Use two hands
- Keep wrists straight
- Use lifting tools / handles

Extended Bent Wrists are Bad

- When possible, come straight onto the task.
- Think about the tool you are using and how you can get your wrist in a better position.
- Adjust height of desk and chair so your wrist is neutral and not bent up to type or use your mouse.



Extended Vibration Can be Bad

- Vibration makes the muscles tighten up, and can affect nerves and blood vessels
- Tighter grip on a vibrating tool increases the amount of vibration that gets transmitted to hands and arms





Solutions for Vibration

- Use low vibration tools, if available
- Maintain tools
- Use anti-vibration gloves or tool wraps
- Keep hands warm to help blood flow and feeling in the hands

Repeated Impacts can be Bad

Using your body or parts of your body as hammers can cause soft tissue damage to the impact zone.

- **SOLUTION:** Use tools instead of your body parts





Signs and Symptoms of Repetitive Motion Injuries

- Discomfort
- Pain
- Numbness
- Tingling
- Burning
- Swelling
- Change in Color
- Tightness
- Loss of Flexibility

Be Body Aware!

WHAT TO DO

- Recognize symptoms as early as possible
- Report discomfort early
- Report all injuries ASAP
- Be mindful of awkward postures
- Watch for and report hazards



Recognize and Report if

- Pain is persistent, severe or worsening
- Pain radiates
- Symptoms include numbness or tingling
- Symptoms keep you from sleeping at night

INJURY HOTLINE

877.215.7285

Give them: Inyo County - QS947

Why Report?

- Minor injuries can
 - easily become chronic injuries
 - Sometimes lead to disability and even surgery
- Early treatment is more successful
- Don't suffer in silence





Get involved

- Think through how you do what you do
- Look for solutions to reduce risk factors
- Use the OSHA self evaluation tool – the link is on my website
- If you have questions, request a workstation assessment from Risk Management
- Take responsibility for improving the way you do your job

Key Points to Remember

- Ergonomics can help you at work and home
- Risk factors increase potential for injury
- Reduce risk factors to help prevent injury
- Report symptoms early
- Be body aware of how you do what you do.



Topic Page **Ergonomics** has been updated.

View Edit

Services

- ▼ Administration
 - Bid Request / RFP
 - Board of Supervisors
 - Community Project Competitive Grants
 - County Administrative Officer
 - County Budget & Analysis
 - County Locations
 - County Policies & MOUS
- ▼ Risk Management
 - Workers' Compensation
 - ADA Notice and Grievance Procedure
 - Injury and Illness Prevention Plan (IIPP)
 - Blood Borne Pathogen Control
 - Claims Against the County
 - Special Events on County Property
 - Ergonomics

Ergonomics

HOME >> RISK MANAGEMENT >> ERGONOMICS

Please check out the following documents and links.

How Do I?

Type question here...

ASK

Ergonomics Documents

- [Ergonomics Awareness Presentation, 1.69 MB](#)
- [Pre-authorization Required for Nonstandard chairs or furniture, 51.25 KB](#)
- [Office Chair Selection Guidance, 96.92 KB](#)
- [Ergonomics Reminders - tips for desk postures, 87.05 KB](#)
- [QUICKIE - Ergo Awareness, 566.39 KB](#)

Ergonomics Links

- [Self Evaluation of workstation ergonomics](#)

Questions?

Thanks!