



# Ergonomics Training for General Industry

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# Training Objectives

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1. To understand ergonomics and symptoms of the Musculoskeletal Disorders
2. To understand ergonomic risk factors
3. To understand and discuss possible ergonomic solutions
4. To understand and discuss the “action” step for the workers



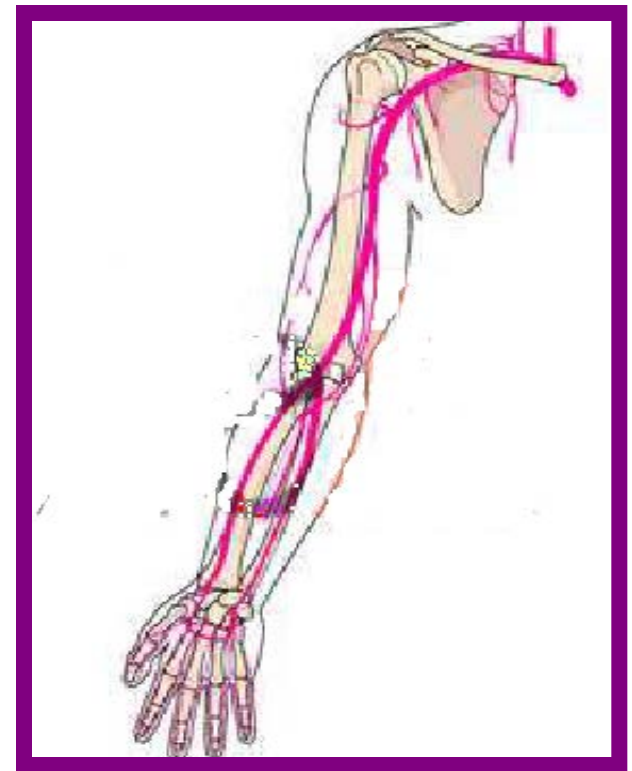
# What is Ergonomics?

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- A science of fitting jobs to the workers.
- It focuses on designing workstations, tools and work tasks for safety, efficiency and comfort.
- Ergonomics seeks to decrease fatigue and injuries, along with increasing comfort, productivity, job satisfaction, and SAFETY.

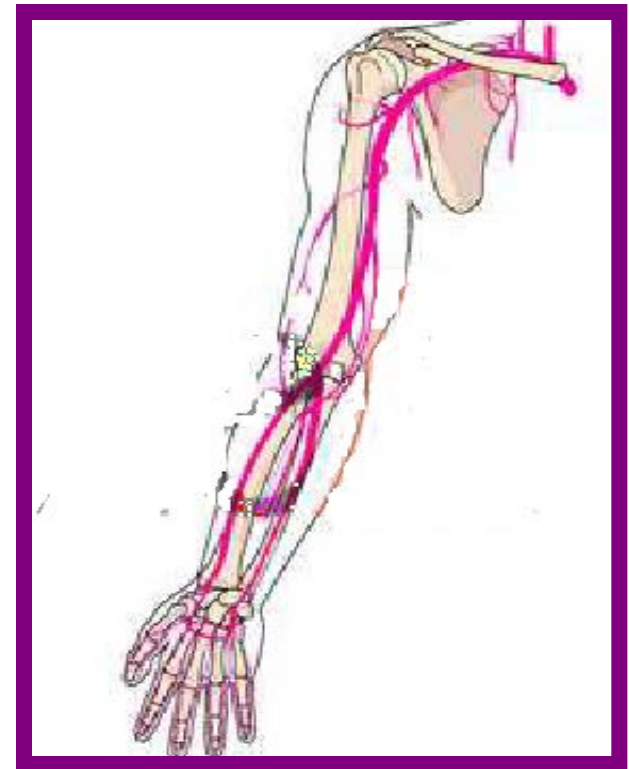
# What are Musculoskeletal Disorders?

- **Injuries** to the muscles, tendons, ligaments, joints, nerves and discs that are caused or aggravated by our actions and/or environment that does not follow ergonomic principles.



# What are common injuries that ergonomics can help?

- Disorders to the muscles, tendons, ligaments, joints, nerves and discs that are caused or aggravated by our actions and/or environment that does not follow ergonomic principles.
- Also known as “MusculoSkeletal Disorders”.





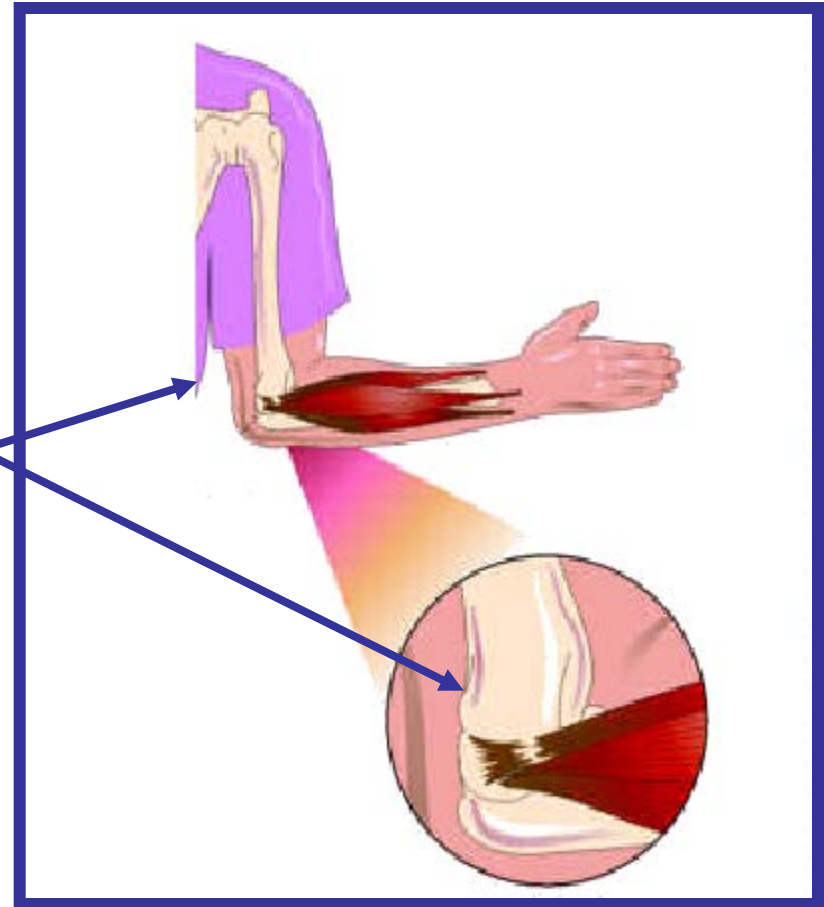
# Anatomy Review

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- Muscles – Provide the power for you to move your body parts
- Ligaments – Connects bone to bone, stabilizing the joints
- Tendons – “Pulleys” that attach muscle to bone, helping to move body parts
- Joints – Connection between bones.
- Nerves – Carry messages between the brain and other parts of the body.

# What happens when you use your muscles too much?

When you use your muscles too much, they get little tears...

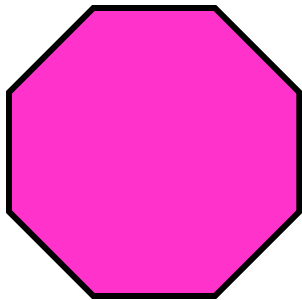


**This makes your muscle swell  
and feel ...**





# These are the warning signs of MusculoSkeletal Disorders:



- ◇ pain
- ◇ numbness
- ◇ tingling
- ◇ weakness
- ◇ swelling
- ◇ hot feeling

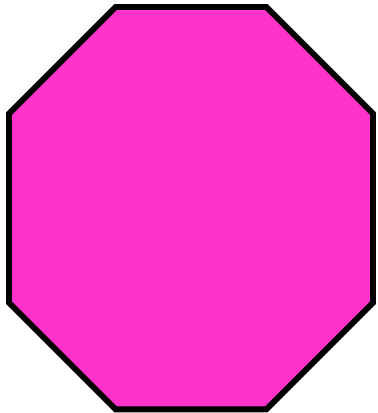


**If you feel any of these symptoms, it's time to take action!**



# Seek early medical treatment

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The longer you have symptoms without treatment, the harder it will get to treat them successfully later!



# To Prevent MSD at work

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- Identity ergonomic risk factors
  - Ergonomic risk factors are workplace situations that cause wear and tear on the body and can cause injury
- Work on finding ways to reduce or eliminate them

# Risk Factors & Solutions

These can lead to Musculoskeletal Disorders...

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- **Risk Factor:** Repetition
- **Definition:** Making the same motion over and over
- **Possible Solutions:** Redesign task to reduce repetitions; increase rest time between repetitions; rotate among tasks with different motions



# Risk Factors & Solutions

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- **Risk Factor:** Awkward Posture
- **Definition:** Prolonged bending, reaching, kneeling, squatting, or twisting any part of your body
- **Possible Solutions:** Redesign tasks and equipment to keep the body in more “neutral” positions



# Risk Factors & Solutions

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- **Risk Factor:** Forceful Motion
- **Definition:** Excessive effort needed to do tasks such as pulling, pounding, pushing, lifting
- **Possible Solutions:** Redesign task to reduce the exertion needed; assign more staff; use mechanical assists



# Risk Factors & Solutions

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- **Risk Factor:** Stationary Position
- **Definition:** Staying in one position too long, causing fatigue in muscles and joints
- **Possible Solutions:** Redesign task to avoid stationary positions; provide opportunities to change position



# Risk Factors & Solutions

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- **Risk Factor:** Direct Pressure
- **Definition:** Prolonged contact of the body with a hard surface or edge
- **Possible Solutions:** Improve tool and equipment design or layout to eliminate pressure; provide cushioning material





# Risk Factors & Solutions

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- **Risk Factor:** Vibration
- **Definition:** Using vibrating tools or equipment
- **Possible Solutions:** Insulate the hand or body from vibration; keep tools or equipment in good condition to reduce excessive vibration



# Risk Factors & Solutions

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- **Risk Factor:** Extreme Temperature
- **Definition:** Working where it is too hot or too cold. Cold reduces feeling, blood flow, and strength. Heat increases fatigue.
- **Possible Solutions:** Control temperature where possible; insulate the body against cold by wearing gloves and warm clothing; provide breaks and fresh water in hot environments.



# Risk Factors & Solutions

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- **Risk Factor:** Work Stress
- **Definition:** Includes machine-paced work, inadequate breaks, monotonous tasks, multiple breaks, poor work organization, or poor supervision
- **Possible Solutions:** Establish reasonable workload, sufficient breaks, task variety, individual autonomy



# Risk Factors & Solutions

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- The more risk factors you face, the greater your chance of injury.
- The longer you are exposed to a risk factor, the greater your chance of injury.
- By reducing or eliminating risk factors, the chance of injury can be decreased.



# Taking Actions!!

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- Talk to your co-workers
- Talk to your employer: employer is responsible for work environment.
- Organize a safety committee to discuss and prevent workplace injuries.



# Employer is responsible

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- More than one employee have been diagnosed with an ergonomic injury
- From the exact same tasks
- Have been diagnosed by a doctor as work related



## Cal/OSHA

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- Employers must follow workplace safety regulations made by a government agency called Cal/OSHA. These regulations protect workers from hazards, illnesses, and injuries in the workplace.



## Cal/OSHA

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- If an employer violates such regulations, a health and safety complaint can be reported to Cal/OSHA.
- Complaints are confidential. Cal/OSHA can investigate to see if the workplace is following these safety regulations.





# In Conclusion: Remember to...

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- Reduce and eliminate ergonomic risk factors
- Get early treatment if symptoms arise
- Take Action!!
  - Safety Committee
  - Talk to your employer who is responsible for your safe work environment
  - Cal/OSHA

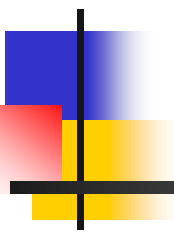


# Questions

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# Thank You!!



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This training material was adapted from WOSH Specialist Training Supplemental Module, California Department of Public Health, California Department of Industrial Relations, UC Berkeley Center for Occupational & Environmental Health