



Ergo-Power®
“Power and Safety in Motion”

Maximize Your Efforts To Reduce Strain and Sprain Injuries

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Common Examples:

- 30% to 50% of injuries strains and sprains
 - Employee felt pop in knee descending stairwell
 - Employee felt sharp pain in shoulder turning valve
 - Employee pulled back swinging sledge hammer
 - Employee felt tear in heel when exiting loader
 - Employee felt tingling in wrist using impact wrench



Frustrating Investigations:

- Routine Tasks
- Physically demanding or not
- Often questioned if “work related”
- No apparent “root cause”
- Struggled to determine corrective actions
- Wasted time, effort, and money



Despite our efforts:

- Ergonomics program and training
- Job task analysis
- Implemented engineering controls
- Safety observations and inspections
- Wellness programs
- Early reporting and case management



High Organizational Risk:

- Aging of Workforce
- Declining Health of Workforce
- Exposure to risk factors 24/7
- Physically Demanding Job
- Pain and Discomfort
- Loss of Range of Motion (ROM)



Moving Forward:

- Practical understanding and application:
 - Cumulative Trauma
 - Body Mechanics
 - Employee Belief Systems
 - Physiology of Physical Habits



Beliefs

Systems

Ergonomics

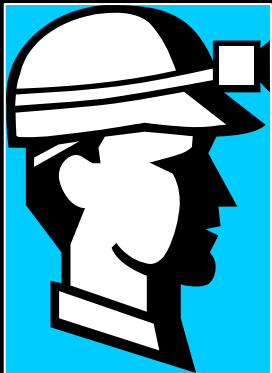
Body Mechanics

Fitness for Duty

MSDs

Participation

Motivation





Cumulative Trauma:

- A slow, sneaky wear and tear process that causes aches, pains, stiffness, numbness, etc. that affects our muscles and joints
 - Notice focus on symptoms rather than injury?



Cumulative Trauma:

- Initially we cannot see or feel it as it happens
 - e.g., Bending at the waist 30+ years before experiencing any pain, discomfort
 - No Pain, No Gain fallacy
- We can do something about it!
 - e.g., Muscles heal at any age



Body Mechanics:

- A driver in the cumulative trauma process
- How we use our bodies to get things done
- Determines strength and efficiency



Impact of Body Mechanics:

- Small differences (8 to 10 inches) in how we work can increase the stress on the body from 15 to 45 lbs. With repetition this is significant:
 - 100 x 15 lbs. = 1,500 lbs.
 - 100 x 45 lbs. = 4,500 lbs.
 - 3,000 lbs. of excess stress every day
 - 750,000 lbs. of excess stress every year
 - 22.5 M lbs. of excess stress over 30 yr. career



Just 8 to 10 inches can triple the stress on the body!



We see this happening everyday as we perform routine tasks!



Body Mechanics:

- Focus on power and efficiency
- Focus on stress NOT right and wrong
- Apply to specific job tasks work practices
- We have a choice:
 - How we use our bodies to get our jobs done
 - How much stress we put on our bodies



Important Relationship:

- Our body mechanics are based on what we believe to be safe and practical
- With time & repetition we develop deeply ingrained physical habits
- With cumulative trauma these habits can be stressful, even damaging



Employee Belief Systems:

- To change the way we work (tools, body mechanics) you must address employee belief systems:
 - Why employees work the way they do
 - What employees believe cause their aches, pain, injuries



Employee Belief Systems:

- Our beliefs are developed from:
 - 20, 30, 40+ years of work experience
 - Lifetime of trial and error
 - Watching other people (parents, co-workers)
 - Instinct and intuition
 - Signals from our body – comfort, pain, fatigue
 - Media (television, Internet, print, etc.)



Employee Belief Systems:

- Why we work the way we do:
 - Feels comfortable, natural
 - Feels faster, easier
 - My _____ hurts so...
 - My co-workers showed me
 - This is the only way to do it



Employee Belief Systems:

- Sources of aches, pains, stiffness, injuries:
 - Aging
 - Tools and equipment
 - Work environment, conditions
 - Production pressures – get it done!
 - Doing more with less
 - Personal health



Beliefs can be Obstacles:

- “I’ve been doing it this way for 20 years.”
- “I’m too old...”
- “You can’t work like that, it takes too long.”
- “It is too late for me....”
- “When you fix _____ then...”
- “I am forced to _____ in my job... this stuff doesn’t work in my job.”
- “I tried to _____ but it felt very uncomfortable.”
- “Why bother... this job is going to wear me out any way.”



Changing Physical Habits:

- We are oblivious to how we use our bodies
 - The first step is simply awareness!
- Generally, human beings resist change
- Most fail or give up... for valid reasons
- People tend to change for two reasons:
 - Pain or personal motivation



Preparing for Change:

- Understanding the Physiology of a Habit
 - Brain, Nerves and Muscles
- Understanding the Process of Change
 - Time and Repetition
 - Practice, Practice, Practice
- Prepare your employees or they'll get blindsided



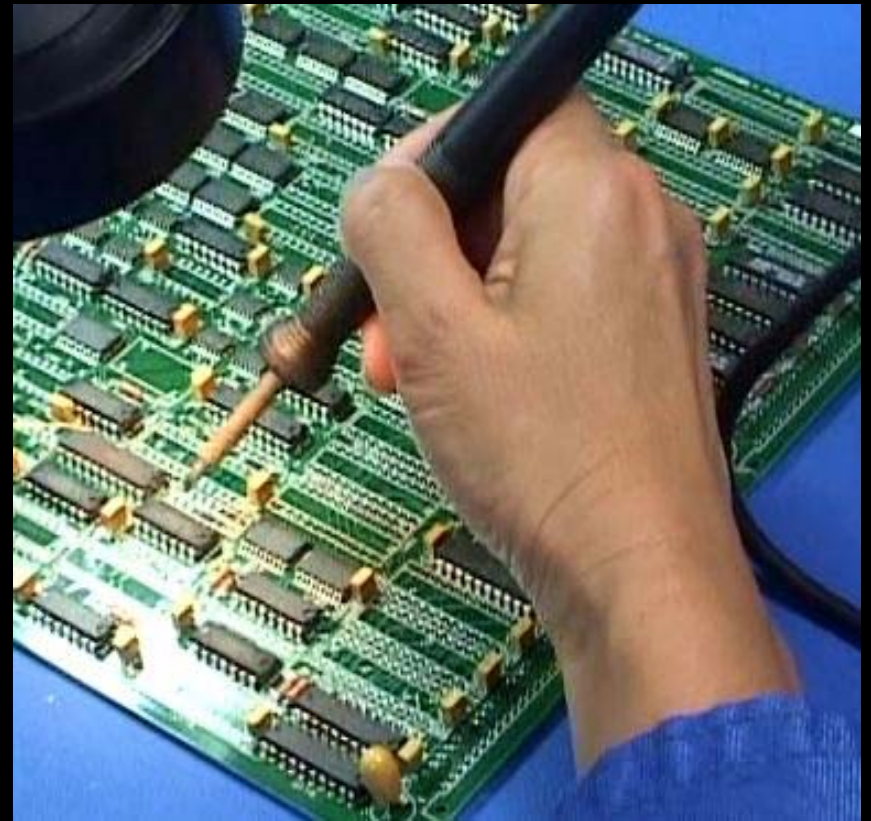
The Results:

- Motivated, empowered employees anxious to take action
 - Embrace engineering controls
 - Increased near miss reporting, involvement in committees, wellness programs
 - Improved perceptions of job observation programs
 - Identify ergonomic hazards and find solutions, often simple and low cost

















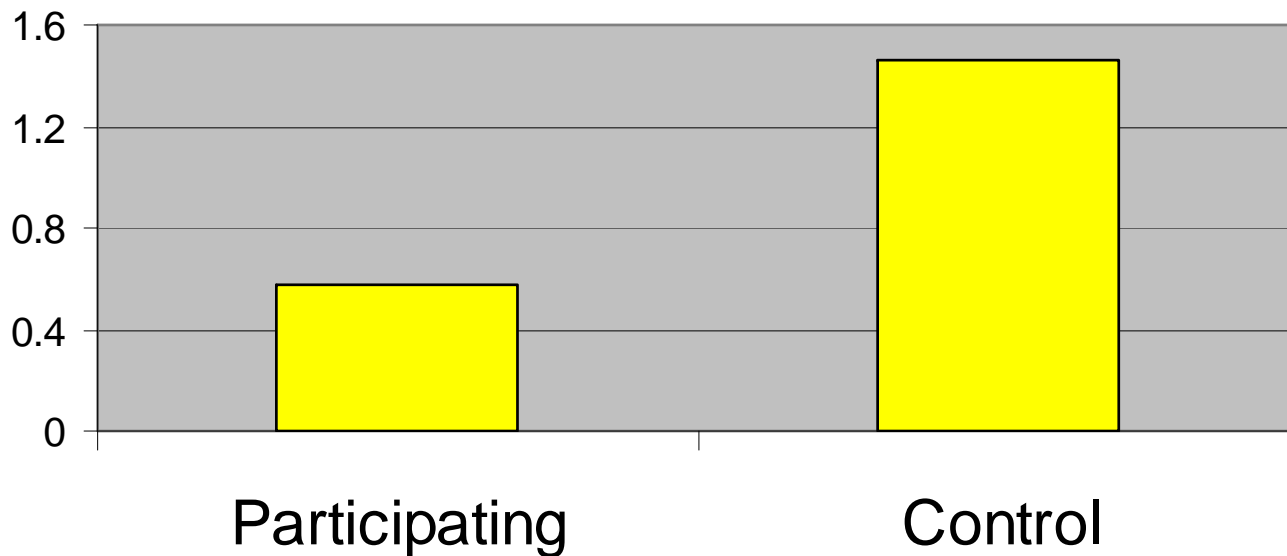
Additional Results:

- **Action Items**
 - From not tracking to 92%
 - From 50% to 79%
- **Body Mechanics**
 - From 65% to 35% “at risk”
- **Stretching**
 - Limited to no participation to 95%
 - Limited to no participation to 70%
- **Range of Motion**
 - 73% improvement



Injury Rate Comparison

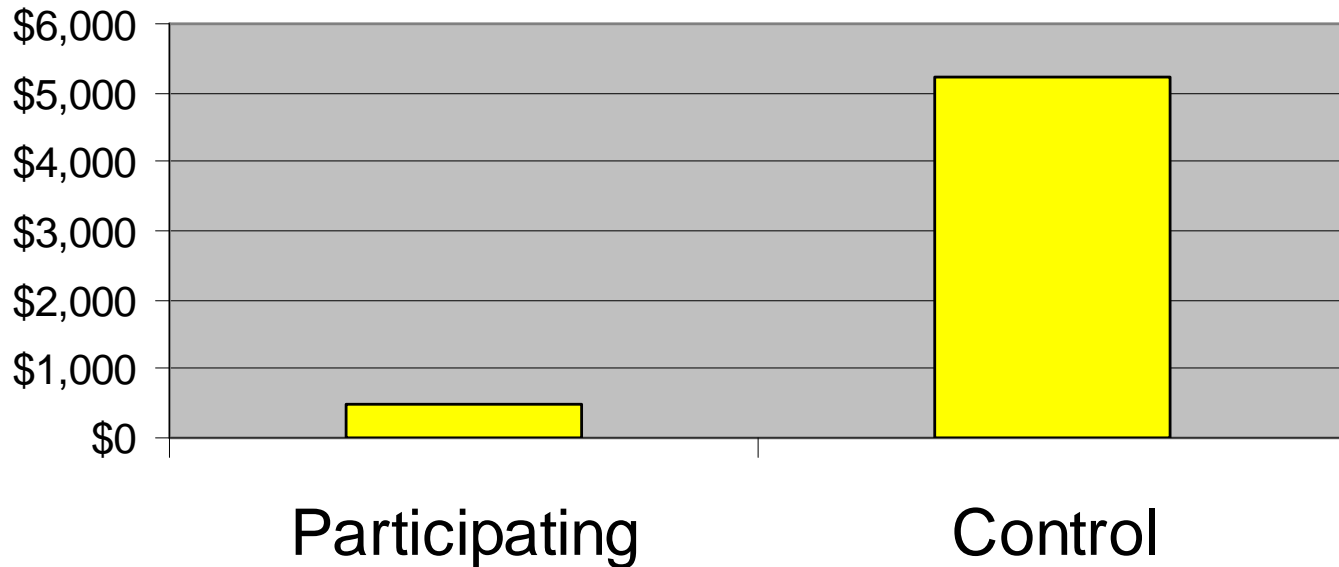
(Strain and Sprain Injuries Ony)





Severity Rate Comparison

(Strain and Sprain Injuries Only)





Bottom Line:

Strain and sprain related injuries will decrease:

1. Reduce ergonomic hazards in workplace
2. Work in ways that put less stress on our bodies
3. Prepare our bodies to handle the stress of the job



Questions?

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