

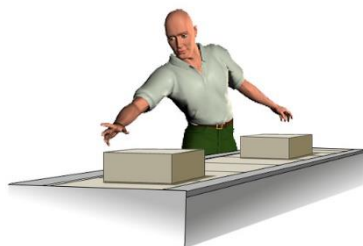


## OCCUPATIONAL ERGONOMICS

### PRIMARY ERGONOMICS INJURY RISK FACTORS

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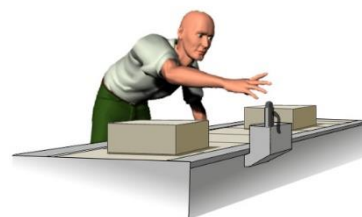
#### REPETITION



#### FORCE



#### AWKWARD POSITIONS



### SECONDARY RISK FACTORS

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Contact stress  
Noise

Cold/heat  
Physical stress

Vibration  
Emotional stress

### ERGONOMIC PRINCIPLES

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- |                              |  |
|------------------------------|--|
| 1. Work in Neutral Positions | Avoid awkward postures in any area of the body<br>Awkwardly bending any part of the body (wrist, neck, etc.)   |
| 2. Reduce Excessive Force    | Excessive force on joints can increase risk for fatigue and can lead to injuries<br>Lifting heavy objects, push/pull vacuum, squeezing a mop handle, wiping tables |
| 3. Keep Within Easy Reach    | Keep frequently used equipment and tools close to the body<br>Reaching to wipe tables, overreaching to mop or vacuum   |
| 4. Work at Proper heights    | Keep work in the 'golden zone'. Above hips and below shoulders   |
| 5. Other Principles          | Reduce excessive motions<br>Minimize fatigue and static loading<br>Minimize Pressure Points  |

### SIGNS AND SYMPTOMS OF MSD INJURY

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Fatigue	Aches and Pains	Weakness
Stiffness	Discomfort	Tenderness
Numbness	Burning	Tingling
Swelling	Body parts "falling asleep"	Loss of joint movement
Loss of joint strength	Trouble sleeping due to pain	

*Report pain and discomfort as soon as possible – [risk.colostate.edu](http://risk.colostate.edu)*

## COSTS OF ERGONOMICS

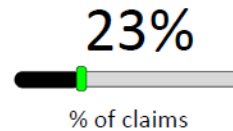


Colorado State University

# Ergonomics Injuries are #1 at CSU



253  
# of ergo injuries

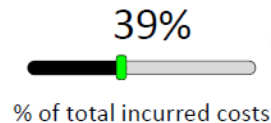


**\$1,663,319**

*Total Incurred Cost*



\$6,574  
Avg cost per ergo injury



Source: AON - Laser Casualty Diagnostic - CSU Laser Draft 3.0

9-01-2013 through 8-31-2016

## BENEFITS OF ERGONOMICS

- *Ensures safety and well-being of workers* – By making sure employees have the knowledge and appropriate ergonomic equipment and processes, departments can see improvement in their well-being as well as a decrease in discomfort and pain
- *Ergonomics reduces costs* – By reducing or eliminating exposure to ergonomic injury risk factors, departments can also reduce costs related to musculoskeletal disorders
- *Ergonomics improves productivity* – By designing work stations and practices to be ergonomically fit and efficient, workers can likely get more work done in the same or shorter period of time will be able to focus more on productivity rather than discomfort
- *Ergonomics creates a better safety culture and environment* – Becoming aware and spreading ergonomics awareness will allow a work environment that health and safety of all employees

## SERVICES

The CSU Ergonomics program offers a variety of ergonomic related services include:

- Office and industrial ergonomic evaluation and risk assessments
- Ergonomic data review and injury analysis
- Office ergonomics 'ergo lab' (office ergonomic equipment review and trial)
- Training (General, Customized, Department Specific)
- Online training (Office, Back Safety, Slips, Trips and Falls)
- Physical demands analysis



CSU Ergonomics  
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<http://rmi.prep.colostate.edu/ergonomics>