

# Toolbox Talks

## The Importance of Ergonomics

### Personal Ergonomics

**What is Ergonomics?** Ergonomics is the science of matching tools & tasks to the work environment. In other words, ergonomics tries to make your job fit *you*, rather than making *you* fit your *job*. The purpose of ergonomics is to reduce or eliminate injuries & illnesses that can result from stress on muscles, nerves, & joints. These types of injuries have been common to workplaces for a long time, but safety standards concerning them are new. If OSHA finds that poor ergonomics is a threat to employee well being, it can cite a company for violating its duty to provide a safe & healthy workplace. A variety of ergonomically-related injuries take place, & a variety of terms exist to describe them. The most common terms used are musculoskeletal disorders or cumulative trauma disorders (CTDs). They are also known as repetitive motion or stress disorders. Whatever they're called, they account for approximately one-half of all reported workplace illnesses each year. These are technically called "illnesses" because the problems generally build up over time, rather than being the result of a single event, as in the case of an accident.

**Physical problems from cumulative trauma:** These usually involve pain & damage to muscles, tendons, & nerves in the back, neck, shoulders, wrists, hands, & elbows. Discomfort can be mild & periodic, or long lasting. Typical ailments include: Tendonitis, "Tennis Elbow," Trigger Finger, lower back pain, Carpal Tunnel Syndrome which causes hands and wrists to tingle or become numb, & Reynauds Syndrome which causes fingers to become white.

Disorders can be caused by making the same motion over & over, staying in one position too long, or working in awkward positions. They also result from working with tools that don't fit the body, using a great deal of physical force, & exposure to long periods of heavy vibration.

**How To Avoid Discomfort:** Ergonomically related disorders occur to all types of workers, from laborers to office personnel. You can often help yourself by learning & practicing basic ergonomic principals.

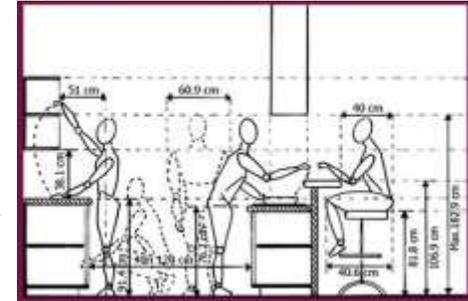
**There are many ways to reduce or eliminate the disorder; here are a few:**

- Use two hands instead of one for a task --to reduce excess demand on a single muscle group.
- Use tools that are right for the job & proportioned for your body.
- Use power tools instead of manual tools when possible.
- Take frequent breaks from repetitive motion tasks.
- Avoid repeating awkward movements or holding yourself in awkward positions.
- Wear protective gloves that reduce pressure or tool vibration on your fingers.
- For computer use--keep the screen 12 to 18 inches from your face & just below eye level.
- Position the keyboard so that your wrists are straight & your elbows are close to your body.
- Change positions, stretch often to improve blood circulation, & take breaks regularly.

**Report Early Symptoms:** Repetitive motion injuries are a growing concern in the workplace. Anyone who experiences numbness, tingling, or pain in their hands, arms, or neck should seek the advice of a supervisor. Changes in work stations & equipment can often alleviate these problems before they become chronic, & medical attention should be sought if the problem persists. Following this simple advice can help eliminate physical stress & keep employees feeling good all day.

### The Benefits of Applying Ergonomics Written By Professor Abdul Shukor

To help companies appreciate the potential business impact of ergonomics programs, the Washington State Department of Labor & Industries compiled reports of ergonomic investments & successes. The following brief summaries show the potential for significant economic benefits as a result of implementing ergonomic interventions.



### Success Stories

1. A military repair service invested \$35,212 in equipment, including a vacuum life, anti-vibration gloves, keyboard trays, & anti-fatigue mats. Injuries due to strains decreased 23% in one year, saving the business \$87,400. The benefit-to-cost ratio? 2.5-to-1.
2. A gravity feed roller system set at waist height reduced lifting & twisting at a packaging plant. The company experienced a five-fold decrease in days lost due to musculoskeletal injuries, sickness, & workers' compensation costs. A 25% increase in productivity accompanied a 100% reduction in lost workdays.
3. Waist-high carts for carrying goods to wrapping machines in the packaging section of a manufacturing plant reduced walking & bending. As a result, productivity jumped 400%.
4. Adjustable assembly tables made it easier for workers at a window treatment fabricator to reach parts & raise & lower their worktables. The incidence of compensable claims went from twenty claims to two claims over five years.
5. A manufacturer paid \$300,000 for an automatic palletizer to replace hand palletizing. The company experienced a return on investment of 23.6% per year over 10 years.
6. An automotive parts manufacturer purchased 20 tilt stands for parts baskets & 100 anti-fatigue mats. An investment of \$22,986 yielded an 88% reduction in musculo-skeletal disorders in seven months.
7. A screen manufacturer spent \$40,000 on semi-automated tables, which reduced awkward postures & high forces. As a result, quality improved, production increased, operator fatigue went down, & employee morale shot up. In 18 months, the incidence rate for musculoskeletal disorders went from 69 per 200,000 work hours to 0. The lost days rate went from 2,342 per 200,000 work hours to 0.
8. A large electronics manufacturer spent \$355,000 on an ergonomics program that included workstation redesign, training, & elimination of high-risk tasks. Productivity went up 37%. The return on investment was 1,675%. The company saved \$100,000 per year in reduced labor costs & \$2.1 million per year overall.
9. A large communications equipment manufacturer purchased scissor lifts, installed sit/stand adjustable workstations, & instituted job enlargement. In two years the number of ergonomics-related lost workdays went from 298 to 0. The company saved \$1.48 million in workers' compensation costs in five years.
10. An electronics assembly plant installed adjustable sit/stand workstations for \$57,000 & realized savings of \$490,000. Lost workdays decreased 57% over 12 years.

All information found at [toolboxtopics.com](http://toolboxtopics.com) & [profshukor.blogspot.com](http://profshukor.blogspot.com)