Trends for the Future: OSHA and Ergonomics
How You Will Be Affected

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Occupational safety and health concerns are not limited to the construction and general industries anymore.

Over the past 4 years, OSHA has become increasingly aggressive in its enforcement practices in every employment sector, rejecting collaborative efforts with employers, such as partnerships, to enhance workplace safety in favor of enforcement with higher citation classifications and enhanced penalties.
Top 10 OSHA Trends

- Criminal prosecutions for OSHA violations
- Comments on OSHA’s proposed silica standard update and the agency’s response
- Updating injury and illness reporting requirements
- OSHA’s proposed Injury and Illness Prevention Program requirement
- Process safety management changes
- Use of OSHA’s General Duty Clause, particularly with chemical exposures
- Willful vs. serious violations
Top 10 OSHA Trends

- Voluntary Protection Program (VPP)
- Recording ergonomic injuries
- Fines for noncompliance with Globally Harmonized System of Classification and Labeling of Chemicals
I/I Reporting

- The rule would require all businesses with 250+ employees to send their recordkeeping data to OSHA quarterly.
- Smaller companies with 20+ employees – in certain industries with high injury and illness rates – would send their data to OSHA yearly.
- This would alter OSHA’s current system of only requesting a sample of worksite 300 Logs each year.
OSHA Reporting

Increasing OSHA’s and the public’s access to injury and illness data will give everyone a clearer picture of current workplace conditions.

Because OSHA can only inspect a relatively small number of workplaces each year, having access to more data is an important step towards early and accurate identification of trends in workplace hazards.

Companies and organizations will be able to utilize this data to more quickly identify injury and illness problems for employees.
OSHA

- Criminal prosecutions for OSHA violations
- **This enforcement tactic** has gone from a trickle in previous years to a steadier drip
- In other words, it’s still pretty uncommon, but there are more cases than there used to be
- And there’s more potential for additional cases in the upcoming years because OSHA is referring all fatality cases and investigations in which there are three or more serious injuries to district attorney offices for possible criminal prosecution
Factors Shaping the Future

◆ What are the major factors that will shape the future of work in the current century?
◆ How are those factors likely to evolve over the next 10 to 15 years?
◆ What are the implications of these future trends for key aspects of the future workforce and workplace, including aging, the size, composition, and skills of the workforce; the nature of work and workplace arrangements; and worker compensation?
Factors Shaping the Future

To address these questions, we take a closer look at 3 major factors that are expected to shape the world of work in the coming decades:

– shifting demographic patterns
– the pace of technological change
– the path of economic globalization
Factors Shaping the Future

- Ergonomics and Safety must be considered at every step in the value chain and designing safety into a process is cheaper than retrofitting for safety later.
- Leadership and employee empowerment are keys to creating a proactive ergonomics culture.
- To be able to improve ergonomics, it is important to measure leading indicators in addition to traditional lagging indicators.
Exactly Who is an "Older Worker"?

- They are full time and part time, temporary and permanent, white-collar and blue-collar
- Older workers may be 45, 55, or 65 years old, in their 70s, or even older
- The Age Discrimination in Employment Act of 1967 (ADEA) applies to individuals aged 40 and over
- Using the ADEA definition, the number of older workers will significantly increase as all baby boomers have reached age 40 in 2004
Why Do Older Workers Work?

- Several studies have found that a majority of older workers indicate that they plan to work past the traditional retirement age.
- This trend can be attributed, in part, to the reduced value of retirement portfolios/income and improved health/consequent increased life expectancy, and is expected to continue (Administration on Aging, 2007).
- But older workers also work because they want to — because they are highly engaged in their work, satisfied with their jobs, and committed to their organizations (Galinsky, 2007).
Be Happy

- Pitt-Catsouches and Matz-Costa (2009) define “engagement” as “a positive, enthusiastic, and affective connection with work that motivates an employee to invest in getting the job done, not just ‘well’ but ‘with excellence’ because the work energizes the person” and find that older workers have consistently higher levels of engagement.

- Engaged employees use less health care, take fewer sick days, are more productive, have longer tenure, and create stronger customer relationships (Pitt-Catsouches and Matz-Costa, 2009).
By 2020, 25 million Baby Boomers, who make up more than 40% of the U.S. labor force, will be exiting the workforce in large numbers and leaving many jobs to be filled.

With their departure, the work characteristics that define the Baby Boomer generation — results-driven, ambitious, idealistic, competitive, optimistic, and people-oriented — may be lost unless companies creatively develop strategies to simultaneously retain older workers and transition their knowledge to younger workers (Morton, Foster, & Sedlar, 2005).
Potential Brain Drain

- These employees will also take decades of accumulated organizational knowledge with them, and this “brain drain” could result in the loss of key information about customers or practices that could be devastating to organizations (Pitt-Catsouphes & Matz-Costa, 2009).

- November 2011 issue of the AARP Bulletin, the University of Massachusetts Medical School reported losing 10% of its employees over 50 years of age every year.
More Brain Draining

To address this concern, the Medical School implemented several strategies to retain older workers and avoid the loss of institutional knowledge over the next 10 years.

The loss of expertise through retirement is further compounded by the projected job change patterns among current workers. Estimates show that Boomers (46 to 64 years old) will have four to six jobs over their working life, Gen X’s (30 to 45 years old) will have 10 to 12 jobs over their working life, and members of Gen Y (15 to 29 years old) will change jobs every 1 to 2 years.
Now We Are Talking Money

- The projected high rates of turnover are cause for serious concern among businesses that will see their profits significantly reduced by the costs associated with filling vacant positions.

- According to a recent article by Allen (2010), the cost of turnover ranges from 25% to 250% of the position’s annual salary, depending on the skill requirements of the job.
Top Benefits of Effective Workplace Safety Programs Cited by Financial Decisionmakers (percent of respondents)

- Increased productivity: 43%
- Reduced costs: 28%
- Other: 16%
- Greater retention of employees: 7%
- Better employee morale and greater job satisfaction: 6%

Source: Huang et al., 2009. Data based on responses from 231 U.S. companies with 100 or more employees.
Current

- Ergonomic issues remain a problem

- The total number of musculoskeletal disorders declined to a 6 year low of 317,440 cases while the rate of MSDs dropped to 33 cases per 10,000 full-time workers, from 35 cases in 2007

- However, the study found that the percentage of MSDs out of total injury cases has not varied greatly since 2005 and still accounted for nearly 1/3 of injuries that required days away from the job in 2008
Explanation of Following

- The average penalty per serious violation doubled in fiscal year 2011, but seems to have remained level over the last 3 fiscal years.

- However, fiscal year 2013 does not end until September 30, 2013, so the average penalty for this fiscal year could change.

- Additionally, once the fiscal year ends, it will be interesting to see whether the sequestration ultimately impacted the OSHA inspections and the total number of violations issued in 2013 as compared to 2012.
TOTAL VIOLATIONS ISSUED FY 2009- FY 2013

- FY09: 87,663
- FY10: 96,742
- FY11: 85,513
- FY12: 78,727
- FY13: 26,111
AVERAGE CURRENT PENALTY PER SERIOUS VIOLATION

- FY09: $970
- FY10: $1,053
- FY11: $2,133
- FY12: $2,153
- FY13: $2,135
FY 2013
Top 10 Most Cited Standards
(General Industry)

1. Hazard Communication
2. Electrical, Wiring Methods
3. Lockout/Tagout
4. Respiratory Protection
5. Powered Industrial Trucks
6. Machine Guarding
7. Electrical, General Requirements
8. Bloodborne Pathogens
9. Personal Protective Equipment
10. Guarding Floor/Wall Openings
FY 2013
Top 5 Standards With Most Willful Violations

1. Scaffolding Fall Protection
2. Excavation
3. General Duty Clause, 5(a)(1)
4. Machine Guarding
5. Fall Protection (Generally)
Case Study
OSHA orders MGM Resorts to reinstate whistleblower immediately and pay more than $325,000 in damages

- OSHA has ordered MGM Resorts International to reinstate a whistleblower immediately and pay damages of approximately $325,000 for violations under the whistleblower provisions of the Sarbanes-Oxley Act.

- The former employee was terminated in retaliation for disclosing that coworkers were allegedly violating Securities and Exchange Commission rules and regulations.
OSHA orders MGM Resorts to reinstate whistleblower immediately and pay more than $325,000 in damages

- For more information about this case, read the press release
- OSHA enforces the whistleblower provisions of 22 statues, including the Sarbanes-Oxley Act
- For detailed information on workers' whistleblower rights, visit www.whistleblowers.gov.
In a study published by the *Journal of Occupational and Environmental Medicine*, researchers have found that superior management of worker safety and health is linked to improved stock market value and returns.

The study compared the performances of companies who had won an award for effective injury and illness prevention with those of the 500 leading companies publicly traded in the U.S. stock market over a 15-year period.

The safety award winning businesses outperformed the other firms, proving that preventative safety and health management correlates directly with a company’s bottom line.
According to the Bureau of Labor Statistics (BLS), musculoskeletal disorders in 2008 were responsible for approximately 1/3 of all workplace injuries and illnesses requiring time away from the job.

More than 300,000 MSDs – of which approximately 29,000 were in the construction industry – required an average of 10 days away from work.

Nearly 1/2 of these injuries were sprains and strains.

Bending, reaching, twisting and slipping without falling also accounted for a significant number of MSDs and time away from work.
Current

- Strains and sprains account for most injuries
- In 2008, sprain or strain injuries accounted for 39% of total injury and illness cases requiring days away from work, decreasing 7% to 416,620 cases
- 45% of sprains or strains were the result of overexertion
- Bodily reaction (such as bending, reaching, twisting, or slipping without falling) accounted for another 22%
- In 40% of the sprain and strain cases, the back was injured
Costs

- Overexertion is #1 cause of workplace injury
- The direct cost of overexertion injuries for the U.S. economy was $12.7 billion in 2005. Liberty Mutual Insurance 2008
- The cost of workers' compensation (WC) claims rises 8% annually
- The average cost of a WC claim for cumulative trauma disorders (such as carpal tunnel syndrome) is $17,757. National Safety Council 2008
Current

- Aging workers reported more injuries
- The number of injuries and illnesses to workers 55 to 64 years old and workers 65 and older increased 3% and 13% respectively
- Hispanic and Latino workers saw increase in injuries
- The number of injury and illness cases for Hispanic or Latino workers in transportation and material moving occupations increased 10% to 27,770 cases from 2007
Overview

- When asked about what type of workplace injuries they were most concerned about, more than 37% of employee respondents said they are more concerned about falls than any other type of injury.
Bone and Joint found ¼ of US adults have MSDs

Estimated total cost of treatment and lost wages is more than $850 billion

7.7% of the gross domestic product

Aging of the US population:
- Higher rates of diagnoses and treatment
- Increasing medical costs
- Increase of higher earning losses
Factors Shaping the Future

- Businesses spend $170 billion a year on costs associated with occupational injuries and illnesses -- expenditures that come straight out of company profits.

- However, workplaces that establish ergonomics, safety and health management systems can reduce their injury and illness costs by 20% to 40%.

- In today's business environment, these costs can be the difference between operating in the black or running in the red.
Costs

- Musculoskeletal disorders comprise 1/3 of all lost work time injuries and illnesses, year after year. National Safety Council
- Ergonomic hazards are estimated to account for about 40% of the Workers’ Compensation claims paid in Michigan in 2006 and 2007. Michigan Worker’s Compensation Bureau 2008
Facts

- Injuries and illnesses increase workers' compensation and retraining costs, absenteeism, and decrease the quality of products and processes.

- Ergonomic hazards are estimated to account for about 40% of the Workers’ Compensation claims paid in Michigan in 2006 and 2007. (Michigan Worker’s Compensation Bureau 2008)

- They also decrease productivity, morale, and profits.
FACTS

- Businesses operate more efficiently when they implement effective safety and health management systems.

- For example, a plant with 50 employees decreased production of faulty product and saved more than $265,000 with a strong ergonomics, safety and health program.
Facts

- 95% of business executives in one survey reported that investment in workplace safety has a positive impact on a company’s financial performance.

- Of these executives, 61% believe that their companies receive a return on investment of $3 or more for every $1 they invest in workplace safety.
Facts

- There is a direct positive correlation between investment in safety, health, and environmental performance and its subsequent return on investment.
- Am I preaching to the choir?
- What about your clients, are they aware?
The implementation, maintenance, and improvement of SH&E programs are of significant importance to this country as the economy of the United States moves toward more of a global perspective.

Such programs positively impact all Americans and specifically those who work at all levels of the public and private sectors in technology development, manufacturing, training, financial analysis, personnel, academia as well as the final end user.

An effective SH&E Program not only benefits and protects the organizations implementing such a program, but also furthers the interests of the United States in a globally competitive environment.
Facts

- Workplace injuries cost society $128 billion in losses in 2002, which equals 1/4 of each dollar of pre-tax corporate profits.
- Indirect costs of injuries may be 20 times the direct costs.
- Indirect costs include: training and compensating replacement workers; repairing damaged property; accident investigation and implementation of corrective action; scheduling delays and lost productivity; administrative expense; low employee morale and increased absenteeism; poor customer and community relations.
Iceberg Analogy

Accident Cost

Direct Costs

- Medical Payments
- Compensation

Indirect or Hidden Costs

- Poor efficiency due to break-up of crew
- Breaking in substitute
- Supervisor time to investigate
- Overtime to make up production
- Hiring costs
- Lost time by fellow workers
- Down-time
- Overhead $ while work disrupted
- Loss of production
- Loss of good will
- Damaged tools/equipment
- Failure to meet deadline/fill orders
Facts

To cover the cost of a $500 accident, an employer would have to:
* bottle and sell 61,000 cans of soda
* bake and sell 235,000 donuts
* deliver 20 truckloads of concrete
Ergonomics, SH&E Investment as a Core Business Strategy

- In recent years, encouraging senior management commitment to safety and health program management has become a priority for federal and state agencies involved with safety regulation and enforcement

- A survey of employers indicates that the Top 10 motivations for taking actions
Top Ten Reasons for Ergonomics

- Cost of workers' compensation insurance (59%)
- "Right thing to do" (51%)
- "Increases Profitability" (33%)
- Federal/State safety rules (31%)
- "Too many accidents" (29%)
- Employee morale (26%)
- Productivity (23%)
- OSHA fines (20%)
- Recommendations of outside experts (13%)
- Employee concerns (5%)
The Future of OSHA and Ergonomics
Design Problems No Ergo
Design Problems No Ergo
Ergonomics

- Human Factors and User Experience design have developed relatively independently and from different traditions and yet they both share the all important goal of making better things for people to use whether a product or a process.

- Human Factors pre-dates computer systems and grew from industrial engineering and psychology, with a focus on large socio-technical systems, whereas user experience design has grown from interaction design with an emphasis on internet experiences and e-commerce.
These worlds are colliding, as the consumerization of IT brings mobile devices and expectations of consumer-level simplicity to industrial work environments.

Which leads to a key question – what is the relationship between human factors and user experience design?

How do they work together?

What do they each contribute to the other?

By the way, this of course applies to employees.
Healthcare in Crisis

- Older care givers
- Older MDs
- Older patients
- Who will replace them?
The Obama Labor Department announced a new regulation that mandates that home health care workers be subject to the federal minimum wage and federal time-and-a-half overtime requirements.

Reporting the story for the Reuters news wire, correspondent Amanda Becker hailed the move, noting that newly sworn-in Labor Secretary Thomas Perez was "setting an assertive tone" with the regulation.

"Today we are taking an important step toward guaranteeing that these professionals receive the wage protections they deserve while protecting the right of individuals to live at home," Becker quoted Perez as exulting.
OSHA

- Very active
- Moved with combustible dust standard
- Comments due on silica and beryllium
- Finalizing the Global Health Standard
- Speeding up the standard setting process
- Increasing enforcement
- Changing the culture of worker Health and Safety
Proposals for Final Rule

- The changes to the silica standard include lowering the permissible exposure limit from **100 micrograms per cubic meter (µg/m^3)** to **50 µg/m^3**. The extended comment period on that proposal ends Jan. 27, 2014. The rule could be finalized later in 2014.

- The next proposal to see a final rule is scheduled to be revisions to OSHA’s **Electric Power Transmission and Distribution; Electrical Protective Equipment** standard.

- According to the reg agenda, OSHA plans to issue that final rule soon.
OSHA

Other upcoming final rules include:

- **Confined spaces in construction** (February 2014)
- **Injury and illness recording and reporting requirements**: updating exempt industries and the rules for reporting fatalities and injuries within a certain time period (April 2014), and
- **Walking working surfaces** and personal fall protection systems: slips, trips and fall prevention update (June 2014)
OSHA also plans to release notices of proposed rulemaking (NPRMs) for several regulations in the next 12 months, including:

- **Cranes and derricks**: operator certification (December 2013)
- Clarification of employer’s continuing obligation to make and maintain an accurate record of each recordable injury and illness (March 2014)
- **Occupational exposure to beryllium** (April 2014), and
- **Injury and Illness Prevention Program** (September 2014)
In accordance with President Obama’s Executive Order, Improving Chemical Facility Safety and Security, OSHA intends to issue a Request for Information (RFI) regarding process safety management and prevention of major chemical accidents.

The RFI will identify issues related to modernization of the Process Safety Management standard and related standards necessary to meet the goal of preventing major chemical accidents.
Final Rule

- OSHA issues a direct final rule on states with their own occupational safety agencies in January 2014.
- The purpose of this revision is to eliminate the requirement to engage in the rulemaking process to make changes to a state plan’s jurisdiction.
- The agency also proposes to update its regulations on eye and face protection to match current national consensus standards.
What about Marijuana in the Workplace

- Let’s say your company’s drug-free workplace policy bans employees from working under the influence, whether it’s alcohol or drugs.
- How do new state marijuana laws impact that policy?
- Lawyers in Colorado, where it just became legal for state residents to purchase up to one ounce of pot for recreational use, say employers can keep their drug policies just as they are.
- Nothing needs to change because of the new law.
What to do about Pot

- That seems pretty clear
- But you can bet some employees who keep hearing that small amounts of pot are now legal in the state will be confused. *Doesn’t that mean a get-out-of-jail-free card if your workplace drug test comes back positive for weed?*
- In a word, **NO**
- The **law addresses pot and the workplace directly**
Factors Shaping the Future

- What are the major factors that will shape the future of work in the current century?
- How are those factors likely to evolve over the next 10 to 15 years?
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- However, the study found that the percentage of MSDs out of total injury cases has not varied greatly since 2005 and still accounted for nearly 1/3 of injuries that required days away from the job in 2008
Ergonomics for the Future

• There are some profound changes that will affect the applied science of ergonomics

• These will impact us based on external sources:
  • The continuing loss of manufacturing jobs
  • Downsizing of major corporations
  • Mergers
  • Aging of the population of employees
  • Replacing retiring employees
  • Product/Process designs
The Business Case for Ergonomics

- In the past two decades, we have seen ergonomics
  - Rise to the top of legislative initiatives
  - Develop into an exciting career path for hundreds of professionals
  - Help corporations improve business practices and processes - along with their bottom line
The Business Case for Ergonomics

- Ergonomics has had its ups and downs
- It has evolved into more than just a design and function science
- Ergonomics initiatives encompass
  - Workers' compensation
  - Productivity goals
  - Health insurance
  - Safety
  - Profits
Changes Have to be Made

• Ergonomics is associated with occupational health and safety and related legislation, and not with business performance

• Companies perceive ergonomics as a “must” and not as a “want”

• In order to strengthen the position of ergonomics and ergonomists, opportunities to link ergonomics specifically to company strategies and business goals is necessary
Who is Safer US or UK?

- A recent study from the Rand Center for Safety and Health in the Workplace concludes that construction work in Britain is much safer than in America.
- In the U.S., now, about 8 construction workers out of every 100,000 die on the job each year.
- In Britain, the rate is about 2 per 100,000.
- This gap has grown larger since the 1990s when the British rate was half of the U.S. rate.
- Other European Union countries (Finland, France, Sweden, Germany) also have much lower workplace fatality rates than the U.S.
Who is Safer US or UK?

- In their analysis, the researchers screened the data by excluding homicides in the workplace (which are exceedingly rare in the U.K. because of strict gun laws) and traffic related deaths (since those are not counted in the U.K. statistics).

- Putting aside these kinds of fatalities, if the death rate in construction in the U.S. were as low as Britain’s, over 300 lives would be saved each year.

- The UK has occupational exposure standards but they are not OSHA standards because OSHA is a US government agency.

- In the UK, occupational safety and health is regulated by the Health and Safety Executive.
Ergonomics

- Ergonomics has both a social goal (well being) and an economic goal (total system performance)
- Ergonomics considers both physical and psychological human aspects
- Ergonomics is looking for design solutions in both the technical and the organizational environments
Is Ergonomics Here to Stay?

- Ergonomics has a clear potential to contribute to business strategies and goals.
- In order to utilize this potential, considerable changes must take place within the ergonomics community by moving from a health ergonomics paradigm to a business ergonomics paradigm.
What’s the Story?

- The large number of 'baby boomers' born after World War II are now aging.
- This fact means that a large part of the workforce is middle age or past middle age.
- The 'baby boom' population has an impact on both the age distribution in the workforce and the size of the retired population in the next 30 years.
- This group raised the average working age to 41 in 2008, up from 35 in 1980.
8 professions are among the highest in terms of injuries and illnesses, listed in descending order based on the number of incidents reported to BLS

- **Construction Worker** (125,120)
  Falls and problems from heights, tools and using hands from repeated hammering, and MMH are the biggest problems

- **Office/ Administrative Staff** (83,320)
  The biggest risk is repetitive strain injuries from typing, as well as illnesses from inhaling toxic printing inks and other substances

- **Sales Staff** (76,210)
  These jobs may seem innocent, but Brown says salespeople fall from ladders while gathering merchandise, strain themselves carrying it to customers, get repetitive strain from typing reports, and even suffer injuries from malfunctioning displays Checkout workstations
8 professions are among the highest in terms of injuries and illnesses, listed in descending order based on the number of incidents reported to BLS

- **Nursing Aides, Orderlies, and Attendants** (49,480)
  These workers can be exposed to everything from toxic chemicals in hospitals and nursing homes to strains from lifting heavy patients

- **Janitors and Housekeepers** (46,540)
  The heavy carts many housekeepers push can injure their backs and potent cleaning supplies can cause illnesses (chemical exposures)

- **Registered Nurses** (20,500)
  Lifting, transferring patients, getting hit by gurneys, or attacked by family members can cause injuries
8 Occupations

- **Waiters** (9,520)
  "Those heavy trays don't carry themselves," says Dr. Davis Liu, author of "Stay Healthy, Live Longer, Spend Wisely: Making Intelligent Choices in America's Healthcare System."

- He continues, "Everything is supersized, and waiters are carrying 5 to 10 pound trays repeatedly, sometimes up on a shoulder with one hand"

- **Computer Specialists** (2,720)
  The ergonomic problem here is not only typing, but also workplace design, seated for long periods (static postures)

- Sometimes they squeeze tall people into small spaces
Ergo Best Practices

- Manufacturing/Assembly
- Tools
- MMH
- Office
- Or any working environment

The trend should be to identify and control the tasks which are problematic.

The trend should be to make the changes that result in cost savings.
<table>
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<th>Indicated Usage</th>
<th>Indicated Usage and Tool Handle Specs</th>
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| In-Line Tool         | 1. For jobs where the fastener is oriented vertically and positioned more than 35” above the floor.  
2. For jobs where the fastener is oriented horizontally and positioned 30” to 35” above the floor.                                                                                      |
| Pistol Grip Tool     | 1. For jobs where the fastener is oriented horizontally and between 35” and 45” above the floor.  
2. For jobs extremely high (overhead) or extremely low (below 30”) where the fastener is positioned higher than the tool.                                                                 |
| Right-Angled Tool    | 1. For jobs where the fastener is oriented vertically and positioned between 30” and 35” above the floor.  
2. For jobs with torque requirements large enough to require 2-handed use.                                                                                                         |
Grip Force on Tools with Age

- **Right Hand**
  - age 30- 99 lb.
  - age 50- 92 lb.
  - age 60- 86 lb.

- **Left Hand**
  - age 30- 64 lb.
  - age 50- 58 lb.
  - age 60- 48 lb.
MMH

- Lifting
- Lowering
- Pushing
- Pulling
- Carrying
- Holding
Back Pain

- It is the most costly musculoskeletal problem in the United States and second only to the common cold as the reason for physician visits.
- Back pain is the third most common reason for surgery, and remains a major cause of work disability, with enormous associated costs to employers, insurers and families.
- Back pain can be sudden and intense, but more commonly it surfaces and subsides, with factors such as too little or too much exercise, prolonged sitting, cumulative trauma, mental stress, muscle tension, and micro tissue tears collectively creating back ache.
Back Pain

- Over-the-counter anti-inflammatory medications, ice and later heat (every 15 min)
- This repetitive process yields cumulative results
- Each repetition delivers deep muscle relaxation, enhanced blood flow and oxygen to the injured tissues, joined with a conscious sense of relief
- All of this is accomplished without delay or prescription drugs
- And remember to keep moving
Power Zone
Office Ergo

- If you type 40 words per minute: you press 12,000 keys per 8 hour day.
- Approximately 8 ounces of force is necessary to depress 1 key.
- Almost 16 tons of force will be exercised by your fingers.
- Fingers of typists whose speed is 60 words per minute exert up to 25 tons of pressure each day.
Musculoskeletal disorders, including carpal tunnel syndrome, are among the most prevalent medical conditions in the U.S., affecting 7% of the population.

They account for 14% of physician visits and 19% of hospital stays.

62% of the persons with musculoskeletal disorders report some degree of limitation on activity, compared with 14% of the population at large, according to the NIOSH.
Do the Right Thing

- This is the right thing to do
- No fear of OSHA if Ergonomics, Safety and Health Policies are in place and implemented
- Assist your clients’ destiny don’t wait for them to be told
- Do the right thing
Ergo and Safety = Profits

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Thank You

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