Integrated Approaches to Wellness in the Workplace: Workers’ Compensation Impact

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Ergonomics & Tribology

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Our risk control service is advisory only. We assume no responsibility for management or control of customer safety activities nor implementation of recommended corrective measures. The illustrations, instructions and principles contained in the material are general in scope and, to the best of our knowledge, current at the time of publication. No attempt has been made to interpret any referenced codes, standards, or regulations. Please refer to the appropriate code-, standard-, or regulation-making authority for interpretation or clarification. Only your policy or contract can give actual terms, conditions and exclusions.
Objectives

- Describe “wellness”; what it is and what it isn’t.
- Link wellness to reduced WC costs, overall medical costs, absenteeism and presenteeism.
- Describe an evidence based continuum linking specific health protection (safety/ergonomics/RTW) strategies to overall worker health and wellness.
- Describe a Roadmap for implementing integrated approaches in the workplace.
TOTAL WORKER HEALTH™

What is Total Worker Health™?

Total Worker Health™ integrates occupational safety and health protection with workplace policies, programs and practices that promote health and prevent disease to advance worker safety, health and well-being.

Today, emerging evidence recognizes that both work-related factors and health factors beyond the workplace jointly contribute to many safety and health problems that confront today’s workers and their families. Traditionally, workplace safety and health programs have been compartmentalized. Health protection programs have focused squarely on safety, reducing worker exposures to risk factors arising in the work environment itself. And most workplace health promotion programs have focused exclusively on lifestyle factors off-the-job that place workers at risk. A growing body of science supports the effectiveness of combining these efforts through workplace interventions that integrate health protection and health promotion programs.
What is Wellness?

“*Wellness is a multidimensional state of being describing the existence of positive health in an individual as exemplified by quality of life and a sense of well-being.*”

“Toward a Uniform Definition of Wellness-A Commentary”  
*Research Digest*, Presidents Council on Physical Fitness and Sports, December 2001  
Charles B. Corbin and Robert P. Pangrazi, Arizona State University

“…*a state of complete physical, mental, and social wellbeing, and not merely the absence of disease or infirmity.*”

World Health Organization

“*Wellness isn’t about healthcare…but selfcare…*”

Unknown reference
Dimensions of Wellness

- Takes personal responsibility for one’s own health, healthcare and safety.
- Engaged, involved with others, and positive contributor to their community.
- Expands knowledge, improves skills and “does the right thing”.
- Strives to be positive and optimistic
- Lifestyle respects and minimizes harm to the environment.
- Contributes to career and makes a positive impact on the organization they work for.
Wellness and the Workplace - What Do We Know?

- Preventable illness makes up 70% of all illnesses
- Lifestyle choices lead to 50% premature deaths
- Workplace alcohol, tobacco and drug use costs over $100 billion/year
- Job stress = $200-$300 billion annually in absenteeism, tardiness and lost productivity
- Workers Compensation $ for smoker = 20x that of non-smoker
- Obesity costs US employers $13 billion a year

References:
- Six Reasons Why Healthy Promotion Makes Sense, Welcoa, 2002
As recently as 20 years ago, much of the US population remained within the recommended weight band.

Adult Obesity Rates, 1993-1995

(% of population, ages 18+)

Today, no state has obesity rates lower than 20%, and 43 have at least 25% of their population categorized as obese.

**Adult Obesity Rates, 2013**

(% of population, ages 18+)

- 0 - 9.9%
- 10 - 14.9%
- 15 - 19.9%
- 20 - 24.9%
- 25 - 29.9%
- 30 - 34.9%
- 35%+

**SOURCE:** Trust for America's Health and the Robert Wood Johnson Foundation (2013)

- Mississippi and West Virginia have the highest rates of adult obesity (35.1%)
- 20 states with adult obesity rates of at least 30 percent
- 43 states with adult obesity rates of at least 25 percent

**21.3%**

Colorado has the lowest rate of adult obesity
Obesity and Workers’ Compensation

Results From the Duke Health and Safety Surveillance System

Truls Østbye, MD, PhD; John M. Dement, PhD; Katrina M. Krause, MA

Background: Obese individuals have increased morbidity and use of health services. Less is known about the effect of obesity on workers’ compensation. The objective of this study was to determine the relationship between body mass index (BMI) (calculated as weight in kilograms divided by height in meters squared) and number and types of workers’ compensation claims, associated costs, and lost workdays.

Methods: Retrospective cohort study. Participants included 11 728 health care and university employees (34 858 full-time equivalents [FTEs]) with at least 1 health risk appraisal between January 1, 1997, and December 31, 2004. The main outcome measures were stratified rates of workers’ compensation claims, associated costs, and lost workdays, calculated by BMI, sex, age, race/ethnicity, smoking status, employment duration, and occupational group. The body part affected, nature of the injury was particularly detrimental.

Results: There was a clear linear relationship between BMI and rate of claims. Employees in obesity class III (BMI ≥40) had 11.65 claims per 100 FTEs, while recommended-weight employees had 5.80; the effect on lost workdays (183.63 vs 14.19 lost workdays per 100 FTEs), medical claims costs ($51,091 vs $7503 per 100 FTEs), and indemnity claims costs ($59,178 vs $5396 per 100 FTEs) was even stronger. The claims most strongly affected by BMI were related to the following: lower extremity, wrist or hand, and back (body part affected); pain or inflammation, sprain or strain, and contusion or bruise (nature of the illness or injury); and falls or slips, lifting, and exertion (cause of the illness or injury). The combination of obesity and high-risk occupation was particularly detrimental.

Conclusions: Maintaining healthy weight not only is important to workers but should also be a high priority for their employers given the strong effect of BMI on workers’ injuries. Complementing general interventions to make all work-
Figure 1. Mean indemnity claims costs, medical claims costs, and number of lost workdays per claim by body mass index (BMI) category. Body mass index is calculated as weight in kilograms divided by height in meters squared.

From Ostbye, et al., 2007 Archives of Internal Medicine, 167, pages 766-773
Wellness and Workers Compensation (WC)

- WC claims with a comorbidity diagnosis are more likely to be lost time (Laws and Colon, 2012).
  - e.g. hypertension, diabetes, drug abuse, chronic pulmonary diseases, obesity etc.

- Obese workers associated with 29% higher odds of sustaining workplace injuries than those of normal weight (Lin, Verma and Courtney, 2013).

- Body Mass Index (BMI) is an independent predictor for short term disability (STD) events. BMI categories of overweight and obese have odds ratios of 1.26 and 1.76 compared with normal weight (Arena et al., 2006).
Wellness and Ergonomics

“Wellness is about us…and decisions we make about our health, safety and well-being both on, and off the job. However, conflicts can arise in the occupational (health protection) and non-occupational (health promotion) sides of wellness. For example, positive steps can be made in off-site wellness, but if the design of jobs, tasks, equipment, and the organization, do not match the capability and limitations of the worker, then we have a wellness conflict”.

- Wayne Maynard, HFES International Annual Meeting, Chicago, IL - October 31, 2014
Why combine ergonomics and health promotion programs? (Punnett et al.)

HEALTH PROMOTION programs aim to influence health behavior and lifestyle to improve health outcomes.
Why combine ergonomics and health promotion programs? (Punnett et al.)

Ergonomics and work organization link directly to health behavior and health outcomes.
Workplace Health and Wellness Integrated Approaches: A Continuum (detailed view)

Disability Prevention: Return to Work Programs, Supervisor Training

Shiftwork Design and Risk Modeling: Sleep, Fatigue, Health, Injury

**Safety Climate, Safety Climate Surveys

Job Design and Training: Sedentary Work, Health and Injury

**critical variables

Health Risk Appraisals (HRAs)
Biometric screening & incentives

Fitness, healthy diet, weight management, smoking cessation & incentives

**Employee Participative Approaches

Job Design and Stress: Physical/Mental, Fatigue, Performance, Health, Injury

Wellness & Safety

The “Well” worker

The “Well” organization
The “Well Worker” - Health Promotion Summary

- Wellness initiatives in organizations seem to be well received with participation rates increasing.

- ROI is promising; cost of savings i.e. medical costs, costs of absenteeism/presenteeism and WC costs seem to outweigh costs of the program.

- Many wellness programs often fail to engage those employees at greatest risk and is one of the main challenges to implementing a proactive workforce wellness strategy.
  - Thus the importance of the “wellness” message and participative approaches emphasis (CPH-NEW, Robertson et al., 2013)
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Wellness & Safety

The “Well” worker

The “Well” organization
Participatory Approaches: Worker at the Center of Planning and Decision-Making


- IDEAS Tool (Robertson et al., 2013)
  - Intervention Design and Analysis Scorecard
  - 7 step process
  - ID root causes of safety and health concerns
  - Design Interventions
    - Workplace ergo
    - Behavior
    - Lifestyle
How Does the IDEAS Tool Work?

Graphic courtesy of Michelle Robertson, PhD, CPE

Intervention, Design, and Analysis Scorecard
Impacts to Organization

- Raised awareness
  - Employee health, wellness, and safety
  - Perhaps expand voluntary participation in wellness programs to “at risk” workers?

- Improved communication
  - Between workers and supervisors

- New ideas for interventions
  - Made change happen, solution-driven

- Visit CPH-NEW site for IDEAS toolkit and resources
  http://www.uml.edu/Research/centers/CPH-NEW/
Workplace Health and Wellness
Integrated Approaches: A Continuum

**Safety Climate, Safety Climate Surveys**

**Employee Participative Approaches**

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Wellness & Safety

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**Definition – Safety Climate**

**Zohar (1980)** first introduced the concept of “Safety Climate”:

- Employees’ perceptions of the safety policies, procedures, and practices
- Overall importance and true priority of safety at work
- A measure of the organizational and psychosocial precursors to safety performance

“The evidence is irrefutable; Safety Climate is a solid predictor of safety outcomes” (Zohar, 2014)
Zohar’s Safety Climate Scale (32 questions, 1-5 point likert scale*)

Based on scientific peer-reviewed research (Zohar and Luria, 2005)

- Study involved 3,952 production workers in 401 work groups, 36 small- to medium-sized companies.

- Reliability and validity confirmed
  - Safety observations used to validate work group level safety climate perceptions (16 questions).
  - Independent safety audits used to validate organizational level safety climate perceptions (16 questions).

*1= Strongly Disagree; 3= Neutral; 5= Strongly Agree
## Example **Organization-level** Safety Climate (% agree)

<table>
<thead>
<tr>
<th>(% agree) Top management of this company……</th>
<th>Company X (n = 119)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 reacts quickly to solve the problem when told about safety hazards.</td>
<td>71.43</td>
</tr>
<tr>
<td>2 insists on thorough and regular safety audits and inspections.</td>
<td>65.55</td>
</tr>
<tr>
<td>3 tries to continually improve safety levels in each department.</td>
<td>74.79</td>
</tr>
<tr>
<td>4 provides all the equipment needed to do the job safely.</td>
<td>71.43</td>
</tr>
<tr>
<td>5 is strict about working safely when work falls behind schedule.</td>
<td>73.11</td>
</tr>
<tr>
<td>6 quickly corrects any safety hazard (even if it's costly).</td>
<td>69.75</td>
</tr>
<tr>
<td>7 provides detailed safety reports to workers (e.g., injuries, near accidents).</td>
<td>68.07</td>
</tr>
<tr>
<td>8 considers a person's safety behavior when moving-promoting people.</td>
<td>57.98</td>
</tr>
<tr>
<td>9 requires each manager to help improve safety in his/her department.</td>
<td>78.99</td>
</tr>
<tr>
<td>10 invests a lot of time and money in safety training for workers.</td>
<td>75.63</td>
</tr>
<tr>
<td>11 uses any available information to improve existing safety rules.</td>
<td>71.43</td>
</tr>
<tr>
<td>12 listens carefully to workers' ideas about improving safety.</td>
<td>65.55</td>
</tr>
<tr>
<td>13 considers safety when setting production speed and schedules.</td>
<td>62.18</td>
</tr>
<tr>
<td>14 provides workers with a lot of information on safety issues.</td>
<td>63.03</td>
</tr>
<tr>
<td>15 regularly holds safety-awareness events (e.g., presentations, ceremonies).</td>
<td>70.59</td>
</tr>
<tr>
<td>16 gives safety personnel the power they need to do their job.</td>
<td>73.11</td>
</tr>
</tbody>
</table>

* Highlighted cells indicate the lowest 5 values
**Example Group-level Safety Climate (% agree)**

<table>
<thead>
<tr>
<th>( % agree ) My direct supervisor......</th>
<th>Company X</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 119)</td>
<td></td>
</tr>
<tr>
<td>1 makes sure we receive all the equipment needed to do the job safely.</td>
<td>86.55</td>
</tr>
<tr>
<td>2 frequently checks to see if we are all obeying the safety rules.</td>
<td>81.51</td>
</tr>
<tr>
<td>3 discusses how to improve safety with us.</td>
<td>77.31</td>
</tr>
<tr>
<td>4 uses explanations (not just compliance) to get us to act safely.</td>
<td>78.15</td>
</tr>
<tr>
<td>5 emphasizes safety procedures when we are working under pressure.</td>
<td>76.47</td>
</tr>
<tr>
<td>6 frequently tells us about the hazards in our work.</td>
<td><strong>71.43</strong></td>
</tr>
<tr>
<td>7 refuses to ignore safety rules when work falls behind schedule.</td>
<td>78.99</td>
</tr>
<tr>
<td>8 is strict about working safely when we are tired or stressed.</td>
<td>76.47</td>
</tr>
<tr>
<td>9 reminds workers who need reminders to work safely.</td>
<td>73.95</td>
</tr>
<tr>
<td>10 makes sure we follow all the safety rules (not just the most important ones).</td>
<td>79.83</td>
</tr>
<tr>
<td>11 insists that we obey safety rules when fixing equipment or machines.</td>
<td>74.79</td>
</tr>
<tr>
<td>12 says a &quot;good word&quot; to workers who pay special attention to safety.</td>
<td><strong>69.75</strong></td>
</tr>
<tr>
<td>13 is strict about safety at the end of the shift, when we want to go home.</td>
<td>68.07</td>
</tr>
<tr>
<td>14 spends time helping us to see problems before they arise.</td>
<td>73.11</td>
</tr>
<tr>
<td>15 frequently talks about safety issues throughout the work week.</td>
<td>64.71</td>
</tr>
<tr>
<td>16 insists we wear our protective equipment even if it is uncomfortable.</td>
<td><strong>81.51</strong></td>
</tr>
</tbody>
</table>

* Highlighted cells indicate the lowest 5 values
Safety Climate Summary

- Safety climate is a scientifically proven indicator for:
  - Normative organizational safety behavior
  - Employee motivations toward safety
  - Organizational safety performance
  - Prevalence of workplace injuries

- Valid and reliable tool for assessing safety management system effectiveness

- A strong predictor of an organization’s future susceptibility to injury outcomes.

- Management commitment to safety including and concern for employee well-being through their eyes is critical to the success of any wellness initiative.
Workplace Health and Wellness
Integrated Approaches: A Continuum

**Safety Climate, Safety Climate Surveys**

**Employee Participative Approaches**

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Shiftwork Design and Risk Modeling: Sleep, Fatigue, Health, Injury

Wellness & Safety

**critical variables**
What is Job Stress?

- The harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker. Job stress can lead to poor health and even injury (NIOSH Pub. No 99-101, *Stress at Work*)

- Low levels of control and work overload are linked to job stress and stress-mediated health outcomes such as cardiovascular disease and psychological disorders (Karasek and Theorell, 1990, Sauter et al., 1998, Schnall et al., 2000)

- “When demands are beyond the ability of the worker to cope with them.” (Christa Sedlatschek, EU-OSHA Director at the official launch of the new Campaign "Healthy Workplaces Manage Stress", 4/9/14)
NIOSH Model Of Stress

*From NIOSH 99-101 *Stress At Work*
Fatigue, Stress and Health

- Fatigue is closely related to job stress
  - People experience abnormal stress when either deprived or over stimulated; minimal stress when stimulation is moderate. In other words a U-function (Selye, 1952, 1956, 1974, 1976, 1982)
  - Similarly, a higher incidence of disease and/or risk condition is associated with higher job stress (Weiman, 1977*)

Fatigue, Stress and Performance

- Fatigue is closely related to performance
  - Several studies have shown that people perform best at an optimum level of job activity, difficulty or intensity; i.e., a person can be overloaded (exhaustion), or underloaded (boredom, monotony). This is called an inverted U function (Karasek and Theorell, 1990)
Job Design and Stress Solutions (Macroergonomics)

- NIOSH characteristics of a “Healthy Organization*”
  - Recognition of employees for good work
  - Opportunities for career development
  - Organizational culture that values the individual worker

- Workload and Workspace
  - Demands (both physical and mental) commensurate with capabilities and resources of individuals

- Content
  - Jobs should be designed to provide opportunities to use skills

- Participation/Control
  - Individuals should be given the opportunity to have input on decisions or actions that affect their jobs and the performance of their tasks

*From NIOSH 99-101 Stress At Work
**Workplace Health and Wellness**

**Integrated Approaches: A Continuum**

- **Disability Prevention:** Return to Work Programs, Supervisor Training
- ****Safety Climate, Safety Climate Surveys
- **Employee Participative Approaches**
- **Job Design and Training:** Sedentary Work, Health and Injury
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**critical variables**
The Challenge of Long Work Hours

“Long work hours, demanding work schedules and sleep/wake durations are associated with adverse outcomes on worker safety, health and well-being.”

Impact of Sleep Loss

Shorter sleep durations are associated with:

- Cardiovascular disease, hypertension, diabetes, depression, and obesity (Gotleib et al. 2006, Gangwisch et al. 2006, Patel 2006)

- Transportation “accidents”
  - 635 Massachusetts nurses; rotators had twice the odds of nodding off driving to or from work and twice the odds of reported accident or error related to sleepiness than nurses who worked only day/evening shifts (Gold et al., 1992)
  - Risk for a drowsy driving episode doubled when nurses worked ≥12.5 consecutive hours (Scott et al., 2007)

- Work-related injuries
  - 74,415 US workers studied across industries (NHIS); compared to 7-7.9 hours of sleep per day, adjusted risk (odds-ratio) of injury for sleeping <5 hours = 2.65, for 5-5.9 hours = 1.79, and for 6-6.9 hours = 1.40 (Lombardi et al., 2010)
Modeling the Impact of the Components of Long Work Hours on Injuries and “Accidents”

Simon Folkard, PhD, DSc (Lond)¹,²,³* and David A. Lombardi, PhD (Mass)³

Background  Many of the industrial disasters of the last few decades, including Three Mile island, Chernobyl, Bhopal, Exxon Valdez, and the Estonia ferry, have occurred in the early hours of the morning. Follow-up investigations concluded that they were at least partially attributable to human fatigue and/or error. The potential impact of long work hours on health and safety is a major concern that has resulted in various work hour regulations.

Methods  The risk of injuries and “accidents” (incidents) associated with features of work schedules from published epidemiological studies are pooled using an additive model to form a “Risk Index.” The estimated risks of an incident for various standard work schedules are presented using the proposed model.

Results  The estimated risk of an injury or accident associated with any given number of weekly work hours varies substantially depending on how work hours are comprised. The risk depends on the length and type of shift, as well as the frequency of rest breaks.

Conclusions  We conclude that placing a limit on the risk associated with a particular work schedule is likely more effective than setting daily, weekly or monthly work hour regulations in keeping workplace safety within acceptable limits. Am. J. Ind. Med. 49:953–963, 2006. © 2006 Wiley-Liss, Inc.

KEY WORDS: work hours; safety; health; injuries; accidents; mathematical models; risk: regulations; shiftwork
Four Scheduling Factors that Influence Accident Frequency

- Time of Day (time of day of shift - Morning, Afternoon, Night)
- Shift Length (length of work “day”)
- Number of consecutive shifts (“days” worked)
- Frequency of rest breaks
Relative Risk Across Three Types of Shifts (Folkard and Lombardi, 2006)
Relative Risk and Shift Length (Folkard and Lombardi, 2006)
Relative Risk Across Spans of Four Successive Shifts (Folkard and Lombardi, 2006)

![Relative Risk Chart]

- **Days**
- **Nights**
Effect of Breaks on Risk
Based on Tucker et al (2003, 2005)
Risk Estimation Models

RR446 - The development of a fatigue / risk index for shiftworkers

This report describes the work carried out to revise and update the HSE Fatigue Index (FI). Extensive changes have been made to the previous version, incorporating recent information relating to a variety of issues including cumulative fatigue, time of day, shift length, the effect of breaks and the recovery from a sequence of shifts. In addition, a review has been carried out of trends in risk related to shift work, and this has enabled the final version to incorporate two separate indices, one related to fatigue (the Fatigue Index) and the other to risk (the Risk Index). While the two indices are similar in many respects they diverge in others. The main differences are due to the different trends with respect to time of day in fatigue and risk. The index has been implemented in the form of a spreadsheet, the design of which has incorporated feedback from users of the previous index.

This spreadsheet has now been updated (January 2013). The new version of the FRI (v2.3) allows the spreadsheet macro to run in MS Excel 2007 or MS Excel 2010 without errors and to generate the required graphs and diagrams, but has not been otherwise amended.

- View the report
- View the user guidance document
- Calculator

Interpretation of fatigue and risk index outputs

The Fatigue and Risk Index (FRI) was designed primarily for comparing different shift schedules but can also be used to identify any particular shift, within a given schedule, which may be of concern.

- HSE (Folkard, et al.) – Includes risk and fatigue “indices” and allows for entry of exact work schedule (e.g., rotating, non-fixed schedule shifts, etc.)
Employee Involvement in Shiftwork

- Encourage participatory approaches to shift scheduling rather than mandatory scheduling (Kerin and Davis, 2004).
- Providing training or awareness programs for new shift workers and their families.
- Ensure that health care and counseling services are available to employees who work non-traditional schedules.
Shiftwork Summary

- Shiftwork can impair health, well-being, and safety
- Simple guidelines based on total work hours *alone* will be of very limited use in keeping risk within an acceptable limit
- No “good” shift system, but:
  - “Better” shift systems
    - Minimize the build up of fatigue
    - Maximize the dissipation of fatigue
    - Minimize sleep & circadian disruption
**Workplace Health and Wellness**

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Job Design and Training: Sedentary Work, Health and Injury

Wellness & Safety

**critical variables**
To Sit or To Stand

- Prolonged sitting associated with high incidence of back, neck and shoulder complaints. Alleged issues; weight gain, overall health, however...

- Prolonged standing associated with greater strain on circulatory system, legs and feet

- Prolonged sitting is bad, prolonged standing is bad

Ergonomic job design includes tasks that allow frequent changes in working posture, including standing, sitting, walking etc.
Reducing Occupational Sitting Time and Improving Worker Health: The Take-a-Stand Project, 2011

Nicolaas P. Pronk, PhD; Abigail S. Katz, PhD; Marcia Lowry, MS; Jane Rodmyre Payfer


Abstract

Background
Prolonged sitting time is a health risk. We describe a practice-based study designed to reduce prolonged sitting time and improve selected health factors among workers with sedentary jobs.

Community Context
We conducted our study during March–May 2011 in Minneapolis, Minnesota, among employees with sedentary jobs.
Extended Laboratory Intervention Study; Training and Sit/Stand

Robertson et al., 2013, Extended Laboratory Study-Training and Sit/Stand

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<thead>
<tr>
<th></th>
<th>Pre-experimental</th>
<th>DayBlock 1</th>
<th>DayBlock 2</th>
<th>DayBlock 3</th>
<th>DayBlock 4</th>
<th>DayBlock 5</th>
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</thead>
<tbody>
<tr>
<td><strong>Minimally Trained Control Group</strong></td>
<td></td>
<td>Day 1</td>
<td>Day 2</td>
<td>Day 3</td>
<td>Day 4</td>
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<tr>
<td><strong>Ergonomics Trained Experimental Group</strong></td>
<td>Pre-experimental Task Orientation 4 days</td>
<td>Free Choice</td>
<td>Free Choice</td>
<td>5 Minute Mandatory Standing</td>
<td>20 Minute Mandatory Standing</td>
<td>Free Choice</td>
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**Ergonomics Training**

“Ergo Reminders”

Randomized schedule of 3 cognitive demand levels
Trained Group received two-phase ergonomic training

- Phase I:
  - 1.5 hr. workshop
    - Slide and video presentation
    - Case studies & de-briefing
    - Hands-on practice periods
- Phase II:
  - Practice period & standing
  - Ergonomics reminders

Minimally Trained Group received:
  - Brief, standard orientation of work setting
  - Manufacturer pamphlet of chair adjustments
### Office Ergonomics Training: Instructional Systems Design (1.5 hrs)

<table>
<thead>
<tr>
<th>Training Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Recognizing work-related musculoskeletal disorders and risk factors</td>
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<tr>
<td>• Understanding the importance of varying work postures</td>
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<tr>
<td>• Knowing how to rearrange the workstation to maximize the “comfort zone”,</td>
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<tr>
<td>• Recognizing and understanding visual issues in the office environment and reducing visual discomfort</td>
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<tr>
<td>• Understanding computing habits (rest breaks) and knowing how in to change work-rest patterns</td>
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<tr>
<td>• Knowing how to use the various workspaces for individual and group work</td>
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<tr>
<td>• Being aware of the company’s existing health and ergonomic programs</td>
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<tr>
<td>• Knowing how to obtain ergonomic accessories through the company’s programs</td>
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</table>
Research Findings Summary

- Significantly *[greater]* reporting of musculoskeletal symptoms for the Minimally group compared to the Trained group.
- Display of musculoskeletal symptoms was *[minimal]* for the Trained group.
- Workload was *[equal]* across groups; no significant difference between groups for number of faxes completed.
- Performance accuracy (quality control) was significantly *[higher]* for the Trained group.
- Significant changes in behaviors for the Trained group as reflected in standing *[more often]* and *[longer]*.
- Greater *[sense of control]* over the work environment given the increase in ergonomic knowledge for the Trained group.
Sit/Stand Summary but overall message on training and furniture…

- Comprehensive ergonomics training (1.5 hrs) PLUS reminders and practice period with an intervention such as a chair, flexible workspace design, sit/stand workstation can decrease MSD and visual discomfort, increase work quality and overall wellbeing (Robertson et al., 2008, 2009, 2013)

- Ergonomic guidelines for sitting and standing work and sit/stand workstations have been known for years. Build flexibility into sit/stand use through instructions that combine ergonomics (job and task design) and rest/recovery breaks.
Workplace Health and Wellness
Integrated Approaches: A Continuum

Disability Prevention: Return to Work Programs, Supervisor Training

**Safety Climate, Safety Climate Surveys

**Employee Participative Approaches

Job Design and Training: Sedentary Work, Health and Injury

Wellness & Safety

Health Risk Appraisals (HRAs)
Biometric screening & incentives

Fitness, healthy diet, weight management, smoking cessation & incentives

Job Design and Stress: Physical/Mental, Fatigue, Performance, Health, Injury

Shiftwork Design and Risk Modeling: Sleep, Fatigue, Health, Injury

**critical variables
Chronic Disability, RTW and Wellness

- Studies associate long-term work loss with a higher risk of heart disease, depression and other disorders, diminished quality of life, and shortened lifespan (Waddell et al., 2007).

- Liberty Mutual Research Institute for Safety: yellow flags and impact on disability.

- MSDs; treatment and prevention (Gatchell, 2002)
  - Primary care: 0-10 weeks, acute disability, passive modalities, pain relief, and quick RTW.
  - Secondary care: 2-6 months, 1st level rehabilitation, work hardening, return to productivity before deconditioning and psychosocial barriers intervene.
  - Tertiary care: 4-6 months, chronic disability, significant physical and psychosocial deterioration.
Preventing Short-Term Disability From Becoming Prolonged/Recurrent

Employer Response Research & RTW

- Work and organizational factors have been shown to influence frequency and disability duration of workplace injuries (NRC, 2001)
- Workers with disabling conditions list responsiveness of their supervisors as a major determinant in their decision to return to work (Akabus & Gates, 1991)
Optimizing Supervisor Response to Work Injury

Liberty Mutual Research Institute for Safety Center for Disability Research

- William S. Shaw, Ph.D.
- Michelle M. Robertson, Ph.D.
- Glenn Pransky, MD, M.Occ.H
- Robert K. McClellan, MD, MPH

Optimizing Supervisor Response to Work Injury Training

- 4 hours duration
- Expert presenters, peer discussion
- Videotape vignettes (wrong way, right way)
  - Report of injury
  - Out of work
  - Return to modified work
- Ergonomics primer (accommodation)
- Work-related musculoskeletal disorders
- 6 step collaborative problem solving skills training
- Case simulations in small groups
Figure 2. Workers’ compensation indemnity costs for new claims before and after implementation of supervisor training workshops to optimize injury response.
1. Determine baseline organizational readiness for integrated wellness programs including senior management commitment, participatory culture, resources, ergonomics and safety knowledge.

Form Steering Committee

2. Determine WC claims frequency and costs trends by major loss areas. Assess high level impact of co-morbidities including obesity on overall WC claims frequency and costs. Conclusions and overall business case for health and wellness strategy.

3a. Assess current health promotion initiatives and participation rates.

3b. Assess current health protection initiatives including safety and ergonomics.

Overall conclusions on health promotion and health protection initiatives with recommended plan of action.

4. Analyze and evaluate priority jobs from step 2.

5. Determine health promotion and health protection solutions: a) ergonomics; job/task design, shiftwork design, workstation design b) behavioral; training, administrative controls, c) lifestyle.

6. Implement integrated solutions, monitor results, calculate ROI.
Summary

- Ergonomics and design (micro and macro) is key to an overall “well worker” and the historical scientific evidence base is solid.
- Compelling ROI evidence; “well worker” and “well organization”:
  - Studies show promising returns for each dollar spent on health promotion i.e. reduced healthcare costs, reduced WC costs and reduced employer costs; absenteeism and presenteeism.
  - But, separate ROI models exist for wellness and safety.
- Management commitment and employee involvement with positive safety climate is critical to successful outcomes
  - Can we expand health promotion participation to at risk workers?
- Best practice examples/case studies of implemented integrated approaches are sorely needed.
YOUR FEEDBACK IS IMPORTANT!

Session Evaluations can be completed:

- On the Safety 2015 App

- Using the link in the email reminder you will receive at the end of each day

- On the web version of the Safety 2015 App accessible at ASSE Cyber Centers