from Research to Reality

Winter/Spring 2007

Liberty Mutual Research Institute for Safety

Supervisor Training

Reducing Disability Claims and Costs

Ingredients to Effective Disability Management

Communication, Accommodation, and Commitment

Vol. 10 No. 1

Supervisor Disability Management Training

A Key to Reducing Disability Claims and Costs

When it comes to improving work-related disability outcomes, trained supervisors can make all the difference. That's according to a recently published study by Liberty Mutual's Center for Disability Research.

The study investigated the effectiveness of a supervisor disability-management training program in helping to prevent and control work disability. The findings show that companies can produce significant and sustainable reductions in injury claims and disability costs when they improve the way supervisors respond to employees' symptoms or concerns about work-related injuries.

Why is this important? According to government statistics, at least three million U.S. workers are absent from work each year due to a work-related injury or illness. While most of these absences last only a few days, a small percentage last a year or longer. These long-term disability cases produce significant financial and emotional strain on the affected workers, their families, and their employers. "Scientific studies have suggested that many of these long-term work absences can be prevented through better informed approaches," states Glenn Pransky, M.D., M.Occ.H., director of the Center for Disability Research. "Our research looked at supervisor training as one possible approach to effective disability management and prevention."

The supervisor training program, piloted by the Research Institute, provided education to supervisors on how to respond more effectively to worker reports of musculoskeletal discomfort. The program, which required the full support and endorsement of senior management, focused on communication, problem-solving skills, and ergonomics. The goal of the program was to resolve health and safety problems as early as possible and to help injured workers return to work safely.

The results were dramatic. In areas where supervisors were trained to properly respond, communicate, and problem-solve with employees, between 19 and 28 percent of the overall reduction in new disability claims could be attributed to the training. “In this study, we saw a substantial reduction in injury claim frequency and disability. Supervisors clearly learned new skills and expressed confidence that they could better deal with these issues,” says Research Scientist William S. Shaw, Ph.D., P.E., lead researcher on the investigation. “Even employers in industries with high physical work demands and high-risk workplaces can use this program to improve communication between supervisors and workers on work-related injury issues. It’s an effective disability prevention strategy.”

Earlier Research Institute studies revealed that how a supervisor responds to reports of work injuries (specifically, musculoskeletal complaints) influenced whether an injured worker had a rapid return to work or prolonged disability. In some cases, the impact of the supervisor’s response on the disability outcome was more important than the severity of the injury or the quality of medical care.

The Research

To assess the effectiveness of the supervisor-training program, researchers recruited 23 supervisors from a food processing plant’s production department. Randomly divided in half, with 11 supervisors in an intervention group and 12 supervisors in a delayed intervention control group, each group was responsible for approximately 400 employees. One group of supervisors participated in a four-hour training workshop that emphasized communication skills and ergonomic accommodation for workers reporting symptoms of musculoskeletal disorders and injuries. The second group of supervisors (the control group) participated in the workshop seven months after the intervention group.

The outcome measures (compiled from workers compensation claims) included the number of new and existing claims, injury types, and total indemnity costs. The intervention group showed a 47 percent reduction in the number of new workers compensation claims filed after the supervisor training workshops, while the control group showed only a 19 percent reduction in new claims during the same time. When the control group of supervisors finally took the workshop, there was a further 19 percent reduction in new claims compared to their prior year’s experience.

In both groups, the number of active existing claims remained fairly constant. Of the claims, more than half were work-related soft-tissue disorders, including sprains, strains, inflammations, carpal tunnel syndrome, and other cumulative trauma. The study revealed no significant differences in injury type between the groups after the training workshops. Indemnity costs for new claims, but not older claims, decreased more in the intervention group than in the control group.

The Reality

“As the research shows, supervisors’ responses may be one of the most important factors affecting disability outcomes,” notes Wayne Maynard, C.S.P., C.P.E., ergonomics and tribology product director at the Liberty Mutual Research Institute for Safety. “On a practical level, this makes perfect sense.”

To illustrate, Maynard points to the following scenarios: Two supervisors at an industrial plant are confronted with an employee complaining of persistent back pain. In each case, the individual is a highly skilled, long-term employee who reluctantly brings this concern to the supervisor’s attention.

• Supervisor A responds by asking the employee what he did to cause the injury. The supervisor complains that an accident report will have to be filed and that production goals will not be met if the employee can’t perform his normal job responsibilities. He refers the worker to the on site health clinic with no specific plan for follow-up.

In some cases, the impact of the supervisor’s response on the disability outcome was more important than the severity of the injury or the quality of medical care.

• Supervisor B responds by offering to meet privately with the employee. He asks him to describe the pain and identify the tasks and activities that seem to cause discomfort, both at home as well as at work. After brainstorming potential ways to modify his work, the supervisor expresses concern for his health. He phones the on-site nurse, who recommends that the employee report to the health clinic. The supervisor and employee agree to meet again, right after the clinic visit to make additional plans.

While each of these interactions resulted in the same short-term outcome (referral to the on-site health clinic), Supervisor A communicated the message that complaints that interfere with production are neither tolerated nor accommodated. He probably convinced the employee that requests for temporary job modifications would be unwelcome.

On the other hand, Supervisor B expressed genuine concern, engaged the employee in finding a temporary job modification, collaborated in solving the problems that caused the condition (at home and at work), and made plans for follow-up. This is likely to result in a shorter duration of work absence, or the employee remaining at work without any work absence if medical assessment deems appropriate.

Goals and Managerial Objectives of a Training Program to Optimize Supervisors' Responses to Injury

Reduce injury rates through early detection and problem-solving	*Respond effectively to injured workers to reduce or prevent work disability*	*Improve accomodation efforts*
• *Encourage early reporting* • *Take all complaints seriously* • *Provide private and confidential exchange* • *Encourage medical evaluation and treatment* • *Engage worker in problem-solving to reduce discomfort*	• *Minimize blame and stigma* • *Provide supportive message ("We want you back.")* • *Maintain (at least weekly) communication with injured worker during recovery* • *Discuss potential options for temporary workplace accomodation* • *Understand worker's concerns about recurring pain or reinjury* • *Develop an initial plan for return to work*	• *Develop a list of usual job tasks with the injured worker* • *Identify potential ergonomic factors* • *Brainstorm options for modified or alternative work* • *Communicate suggestions to medical case manager* • *Monitor effectiveness of job accomodations after return to work*

According to the study's follow-up survey of employees whose supervisors participated in the training, even a single, two-hour workshop for supervisors can result in employees reporting discomfort more promptly, feeling less blamed, and having more positive discussions with supervisors after injuries. In addition, supervisors who participated reported that the additional skills helped them deal with the complexities of job modification and workplace reintegration.

While the results focus on supervisor training as an effective way to manage disability, Maynard emphasizes the importance of top management commitment to safety and health in the workplace. "Before launching a supervisor training program, the organization needs to evaluate its current practices for managing disabling injuries," notes Maynard, "Some questions an organization may ask include: Are the injury/incidence rates unacceptable? Is length of disability prolonged? Is there an increase in disability costs? Is there high absenteeism or turnover in selected jobs and departments?"

"When the organization accepts change, it can move forward to implement the program," Maynard continues. "Training should begin with a very important introduction by senior management that expresses support of the initiative and a commitment to improve supervisor responses. Without strong management support and sustained commitment, the training will not produce the desired outcomes."

The complete study, "A Controlled Case Study of Supervisor Training to Optimize Response to Injury in the Food Processing Industry," was published in the February 2006 issue of *WORK: A Journal of Prevention, Assessment, and Rehabilitation* (Vol. 26, pp. 107-114).

What is Disability

dis·abil·i·ty \dis-ə-'bil-ət-ē n. 1 a: the condition of being disabled b: inability to pursue an occupation because of physical or mental impairment

The Merriam-Webster Dictionary defines disability as the condition of being disabled or the inability to pursue an occupation because of a physical or mental impairment. However, this definition has changed over time as the view of disabled persons in society has evolved. In the 1970s, for example, the concept of a disability primarily referred to an underlying physical or mental condition, whereas today disability is seen as a complex interaction between a person and his or her environment (Institute of Medicine).

The definition of disability can also vary depending on how it is being used and by whom. The Americans with Disabilities Act defines an individual with a disability as a person who: (1) has a physical or mental impairment that substantially limits one or more major life activities; or (2) has a record of such an impairment; or (3) is regarded as having such an impairment. The World Health Organization, on the other hand, defines disability as any restriction or lack of ability (resulting from an impairment) to perform an activity in the manner or within the range considered normal for a human being (World Health Organization International Classification of Impairments, Disabilities and Handicaps, Geneva, 1980).

In research studies conducted by the Center for Disability Research, disability is generally defined as the inability to fully participate in active employment.

Ingredients
to Effective Disability Management

Communication, Accommodation, and Commitment

Anxious, overwhelmed, uncertain – all good descriptions of how an employee may feel when returning to work after a work-related disability. In studies of return-to-work outcomes, Liberty Mutual research scientists found that workers confront a number of challenges when getting back on the job.

The most worrisome of these include coping with residual pain; obtaining help from supervisors and co-workers; performing physical tasks comfortably; avoiding a significant injury recurrence; and meeting job expectations relative to speed, quantity, and quality of work. Further, returning to work too early may cause an employee to fear re-injury, to feel embarrassed, to become discouraged, or to have concerns over jeopardizing financial benefits.

So, how do employers avert these concerns and implement successful return-to-work strategies? First and foremost, they can offer reassurance and support. In addition, they can strive to improve communication about these challenges and accommodate the employee through job re-design. "Employers that respond to injured workers with compassion send a positive message throughout the entire organization," states Glenn S. Pransky, M.D., M.Occ.H., director of the Center for Disability Research.

Scientific findings consistently point to positive, consistent communication and appropriate accommodation as key factors for improving return-to-work outcomes. For example, a study led by Renee-Louise Franche of the Institute for Work and Health (Toronto, Canada), identified a number of common characteristics of successful workplace-based, return-to-work interventions. These included early contact with injured workers, job accommodations, ongoing communication with health care providers, ergonomic work-site visits, physical workplace and equipment

Center for Disability Research

The mission of the Liberty Mutual Center for Disability Research (CDR) is to conduct scientific research on the return-to-work process in order to reduce disability and promote safe and sustained return to work. CDR researchers examine factors associated with work absence, re-injury, and job retention, as well as the impact of case management, clinical treatments, employer responses and accommodations, and other post-injury interventions on work disability. The CDR investigates prognosis soon after disability begins, systems designed to prevent disability, and return to work in persons who have suffered severe injuries. The CDR, along with the other Liberty Mutual Centers, seeks to improve the quality of life for all workers.

Since its inception in 1999, the CDR has published more than 60 scientific articles and has contributed to international scientific forums in the field. In 2005, the CDR hosted and organized the international Hopkinton Conference on Improving Return-to-Work Research. The conference brought together leading experts in work disability research to examine priorities for future investigations and resulted in a special issue of the *Journal of Occupational Rehabilitation*. CDR research findings provide a scientific basis for improvements to the return-to-work processes used by industry, health care providers, and others to help injured workers resume health and productivity.

changes, and an assigned return-to-work coordinator. The study suggested that successful employer efforts to reintegrate injured workers should take into account the unique job circumstances and individual concerns of workers. Often, the frontline supervisor plays an integral role.

How does an organization maximize the supervisor's potential for improving return-to-work outcomes? The level of autonomy and support that organizations provide to frontline supervisors to actively improve this process is critical. This support must be rooted in a deep management commitment to worker safety and health and needs to recognize the benefits of shorter disability periods to both the company and the workers. "Many studies indicate that workers who return to work sooner report improved quality of life and less emotional distress than those who remain on disability for prolonged periods," notes William Shaw, Ph.D. P.E., Liberty Mutual research scientist. According to Shaw, organizations that promote safety and wellness, take safety complaints seriously, and are committed to safe and sustained return to work can effectively demonstrate that an early return to work is better for injured workers.

Studies that compare employer policies and practices find fewer disabling workers compensation claims among companies that provide temporary, alternative, or modified work and create an environment where employees participate in return-to-work problem-solving and decision-making. "Employers should collaborate with the injured worker to determine appropriate modified work," says Shaw. "Collaborative problem-solving demonstrates the employer's genuine interest in preventing re-injury and recognizes that workers are often the best source of information on how they can safely return to work and reduce subsequent risk."

In many instances, quality medical care is necessary for successful return to work. There is also growing evidence that employer responses and actions are critically important to achieve successful return-to-work outcomes. But these actions must be part of a larger company commitment to workplace safety and health. Whatever disability management strategy the company employs, positive communication, appropriate accommodation, and sustained commitment are key ingredients.

Related Reading

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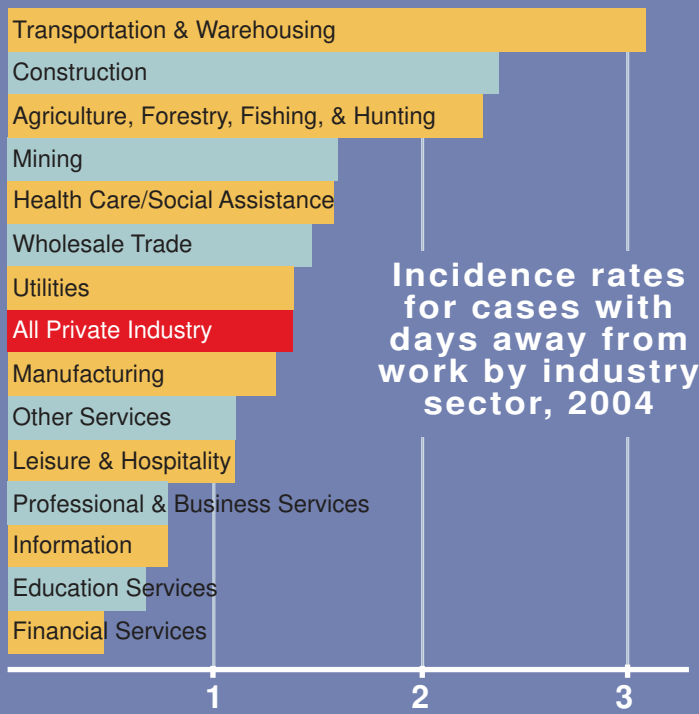
Where are Disabling Injury Rates Highest?

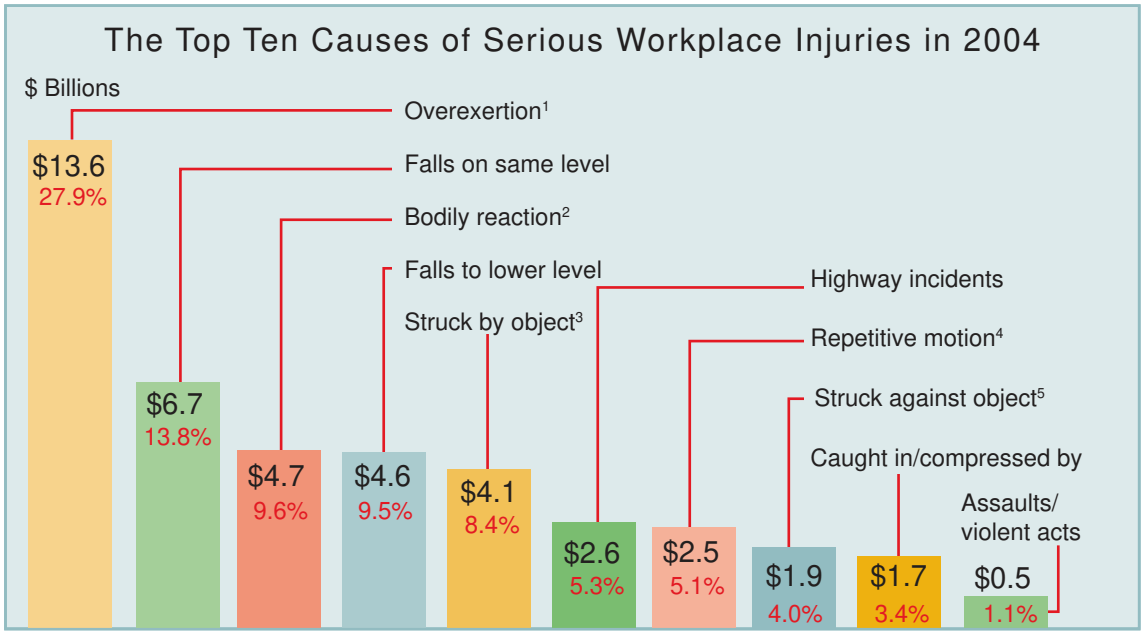


Source: Bureau of Labor Statistics

Liberty Mutual Releases 7th Annual Workplace Safety Index

The 2006 Liberty Mutual Workplace Safety Index (WSI) found that the estimated U.S. direct workers compensation cost of the most disabling workplace injuries and illnesses in 2004 was $48.6 billion. Of these costs, the top ten causes of serious injuries remained essentially the same as in past years. These results, along with other WSI findings, can help employers to better focus on the real causes of the workers compensation burden.

The annual WSI, produced by the Research Institute, combines information from Liberty Mutual, the Federal Bureau of Labor Statistics (BLS) and the National Academy of Social Insurance to find the top causes of serious workplace injury. Using the more than 50 injury causes defined by the BLS, researchers ranked those that caused an employee to miss six or more days from work by workers compensation costs. Highlights include:



1 Overexertion – Injuries caused from excessive lifting, pushing, pulling, holding, or throwing
2 Bodily reaction – Injuries caused from slipping or tripping without falling
3 Struck by object – Such as a tool falling on a worker from above
4 Repetitive motion – Injuries due to repeated stress or strain
5 Struck against object – Such as a worker walking into a door

Injury cause	Growth in real cost between 1998 and 2004
Overexertion	11.3%
Falls same level	31.5%
Bodily reaction	12.6%

The cost of serious workplace injuries is growing overall, but at a lower rate than last year. The real cost of these injuries rose 7.9% between 1998 and 2004, even after an 18% decline in frequency in the same years. In particular, the cost of injuries from the top five causes grew significantly between 1998 and 2004.

The top three categories, overexertion, falls on same level, and bodily reaction, have experienced the greatest cost increases, 11.3%, 31.5%, and 12.6% respectively, over the six-year period. These categories make up 51.3% of the total cost of all injuries, as compared to 47.6% in 1998. Two categories switched rank this year; repetitive motion dropped to rank seventh and highway incidents moved up to rank sixth. For more information about the WSI, visit our web site at www.libertymutualresearch.com.

New Year Brings Organizational Change

The Research Institute is undergoing a reorganization that will not only refine research development and management, but will set the groundwork to enhance research capability and impact. When complete, the organization will comprise four Centers – the Center for Physical Ergonomics, the Center for Behavioral Sciences, the Center for Disability Research, and the Center for Injury Epidemiology. "Our new organization will better reflect our principal areas of research," says Research Institute Director, Y. Ian Noy, Ph.D. "The Centers will work synergistically, building on existing strengths to promote workplace and transportation safety and safe and sustained return to work."

The current organization, comprising the Center for Safety Research, the Center for Disability Research, and the Quantitative Analysis Unit, has evolved in response to changing needs and has helped to establish the Institute's reputation as a leading occupational safety research organization. The Center for Safety Research and the Center for Disability Research were first introduced in 1999, setting the framework to operate separate, but highly coordinated Centers under one roof. In 2001, the Quantitative Analysis Unit joined the two Centers to conduct original studies in occupational injury epidemiology.

Under the new organization, the Center for Physical Ergonomics will investigate the causes and mechanisms of occupational injuries, focusing on work-related musculoskeletal disorders, injuries from slips, trips, and falls, and the relationship between worker physical capabilities and limitations and work demands. The Center for Behavioral Sciences will investigate the impact of behavioral, cognitive, and organizational factors on workplace incidents and highway collisions. "We have to look more closely at the interaction of individuals' behavior and their environments to better understand how people are injured," says Noy. The Center for Disability Research will continue its cutting-edge investigations into occupational disability and return-to-work processes for injured workers. The existing Quantitative Analysis Unit will be renamed to the Center for Injury Epidemiology to better reflect the nature and scope of its research. This Center will primarily focus on identifying exposures related to occupational injury and will investigate the burden of injury. "This research will have a vital role in shaping our research agenda and ensuring that priority is placed on business-relevant research needs," explains Noy.

Currently, the Institute is recruiting directors for the Center for Behavioral Sciences, the Center for Physical Ergonomics, and the Center for Injury Epidemiology, and is accepting applications until the positions are filled. For more information or to apply, visit www.libertymutual.com/researchinstitute or send an email to researchinstitute@libertymutual.com.

Scientific Papers Recognized

The Research Institute recently recognized three of its research scientists for authoring the best internal research paper. Mary F. Lesch, Ph.D., received the top award for authoring "A Cross-Cultural Comparison of Perceived Hazard in Response to Warning Components and Labels: China Versus U.S." Santosh K. Verma, M.P.H., M.B.B.S., and William S. Shaw, Ph.D., P.E., were also recognized. The internal award program is designed to promote excellence in health and safety research. Research Institute directors evaluate papers for experimental design and scope and overall quality.

Lesch's winning paper examines cross-cultural hazard perceptions in response to isolated warning components (colors, signal words, symbols) and configurations. The investigation aims to understand the applicability of existing standards across different cultures. *Applied Ergonomics* has accepted the paper for publication.

Verma was recognized for the paper "Same-Level Falls Resulting in Fracture in Female Workers: An Analysis of Workers Compensation Claims." The paper is in the February Issue of *Injury Prevention* (Vol. 13, No.1, 2007). Shaw was recognized for "Patient Clusters in Acute, Work-Related Back Pain Based on Patterns of Disability Risk Factors." The paper, which builds on the Institute's research of factors influencing return to work after diagnosis of work-related musculoskeletal conditions, has been accepted for publication by the *Journal of Occupational and Environmental Medicine*.

NEWS

Liberty SafeWork Center to Open in Hanoi

The Research Institute and the Vietnam National Institute of Occupational and Environmental Health (NIOEH) signed a memorandum of understanding to open a joint research institute in Hanoi, Vietnam. The organizations signed the official agreement in September 2006; however, the official opening will take place in April 2007. The Liberty Safework Center will host ongoing safety research projects conducted by researchers from NIOEH and the Research Institute.

Since 2004, the Research Institute and the NIOEH have collaborated on a surveillance study to examine the societal burden of workplace injury in Vietnam. The goal is to provide Vietnam with a model for reporting workplace injuries. This work is part of the Vietnamese Prime Minister's initiative to dramatically reduce work-site injury in that country over the next ten years.

Upcoming Events and Meetings

International Conference on Slips, Trips, & Falls 2007: From Research to Practice

The Liberty Mutual Research Institute for Safety along with the International Ergonomics Association and the Ergonomics Society is sponsoring the International Conference on Slips, Trips, and Falls 2007: From Research to Practice. The conference will be held on August 23 and 24, 2007 at the Research Institute in Hopkinton, MA. For more information, please visit www.slipstripsfalls.org or contact Dr. Wen Chang at wen.chang@libertymutual.com.

International Ergonomics Association (IEA) Council Meeting

The Research Institute will host the Annual IEA Council Meeting on August 25 and 26, 2007. The Council, comprised of world-wide representatives from 42 IEA Federated Societies, is the governing body of the IEA.

PREMUS 2007: 6th International Scientific Conference on Prevention of Work-Related Musculoskeletal Disorders

PREMUS 2007, the largest international scientific conference on prevention of work-related musculoskeletal disorders, will take place August 27 to 30 in Boston, MA. Dr. Glenn Pransky, director of the Center for Disability Research, is one of the co-organizers of the event. As part of the conference social events, the Research Institute will offer tours of its facility. For more information, visit the PREMUS website at www.premus2007.org.

Faculty from the Liberty Mutual Safework Program at Tsinghua University's Department of Industrial Engineering convened at the Research Institute (RI) to discuss current collaborative projects and to strategize future efforts in the area of road safety in China. Pictured left to right are Research Institute Director Y. Ian Noy, Dr. Kai-Way Li, Director of Research Operations Theodore Courtney, Drs. Chien-Chi Chang (RI), Ruifeng Yu (Tsinghua), Mary Lesch (RI), Wei Zhang (Tsinghua), Yueng-Hsiang Huang (RI), Pei-Luen Patrick Rau, Zhizhong Li (Tsinghua), and William Horrey (RI).

Conferences

Annual Meeting of the Transportation Research Board: Jan. 21 to 25, Washington, DC
- In-Vehicle Glance Durations: Distributions, Tails and a Model of Crash Risk - *W.J. Horrey, Ph.D.*

National Workers Compensation Summit: Feb. 20 to 23, Sydney, Australia
- Insurers Leading the Way in Injury and Disability Prevention - *A.E. Young, Ph.D.*

Society of Behavioral Medicine Annual Meeting & Scientific Sessions: Mar. 21 to 24, Washington, DC
- Does Patient-Provider Discordance in Health Care Orientation Affect Disability Outcomes for Acute Low Back Pain? • Transition from Sub-Acute to Chronic Low Back Pain in Workers Compensation: Screening of Workplace and Psychosocial Factors - *W.S. Shaw, Ph.D., P.E.*

Society for Industrial & Organizational Psychology Annual Conference: Apr. 26 to 29, New York, NY
- Let's Focus on Focus Groups: Best Practices and Case Studies • The Effects of Self-Monitoring on Safe Postural Performance • Safety Climate and Shift-Work Injury: A Multi-Level Analysis - *Y.H. Huang, Ph.D.*

XIIIth European Congress of Work & Organizational Psychology: May 9 to 12, Stockholm, Sweden
- Financial Executives' Perceptions of Workplace Safety: Mid- vs. Large-Size Companies • Financial Executives' Perceptions of Safety Performance, Programs and Personnel • The Impact of Workstation Design and Computer Usage on Perceived Physical Discomfort: The Effects of Psychosocial Factors - *Y.H. Huang, Ph.D.*

Annual Disability Management Employer Coalition International Absence & Disability Conference: July 15 to 18, Boston, MA
- Ahead of the Curve: Early Risk Predictions for Back Pain - *Y.I. Noy, Ph.D.*

Publications

Chang, W.R., Li, K.W., Huang, Y.H., Filiaggi, A., and Courtney, T.K., "Objective and Subjective Measurements of Slipperiness in Fast-Food Restaurants in the USA and Their Comparison with the Previous Results Obtained in Taiwan," *Safety Science*, Vol. 44, No. 10, pp. 891-903, 2006

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A Message from the Director…

Y. Ian Noy, Ph.D.
Vice President
and Director

Dear Readers,

I take great pleasure in introducing the premiere issue of *From Research to Reality*, the redesigned newsletter of the Liberty Mutual Research Institute for Safety. Mindful of the millions of workers who lose time each year due to work-related injuries, we have devoted this first issue to "Occupational Disability." Historically underresearched, this vitally important topic has far-reaching implications for employers and injured workers.

In this issue, you'll learn about some of the fascinating findings from our studies of disability management training for supervisors. By sharing our research findings, we hope to encourage employers to adopt programs that promote early, safe, and sustained return to work. Ultimately, the goal is to help control the vast personal and business losses associated with occupational disability.

This issue also features highlights of the 7th Annual Liberty Mutual Workplace Safety Index. Presenting data gathered by Research Institute epidemiologists, the Index lists the top ten disabling workplace injuries and illnesses each year, along with associated costs. The Index is a valuable tool for helping employers, researchers, and practitioners better focus their safety efforts.

From Research to Reality will publish three times a year, with each issue focusing on a specific occupational safety theme that corresponds to current research initiatives at the Institute. News and events and lists of the latest publications from our researchers will round out the content. We hope you find the new format both interesting and informative, and we welcome your feedback on this and future issues.

from Research to Reality

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