Liberty Mutual®
RESEARCH INSTITUTE FOR SAFETY

60 YEARS
HELPING TO REDUCE INJURIES AND DISABILITY

Improving employer policies and practices to prevent disability

William S. Shaw, Ph.D.

4th Nordic Conference in Work Rehabilitation

Reykjavik, Iceland: September 5, 2016

Liberty Mutual Research Institute for Safety

generating knowledge to help people live safer and more secure lives

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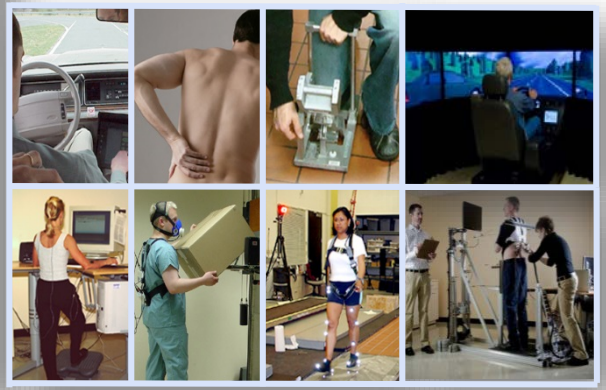
Mission:

To advance scientific knowledge in areas that can reduce injuries and prevent disability



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Special Conference on Employer Disability Practices Hopkinton, Massachusetts, USA: October 14-16, 2015

Hopkinton Conference Working Group on Workplace Disability Prevention

Benjamin C. Amick III, Johannes R. Anema, Elyssa Besen, Peter Blanck, Cécile R.L. Boot, Ute Bültmann, Chetwyn C.H. Chan, George L. Delclos, Kerstin Ekberg, Mark G. Ehrhart, Jean-Baptiste Fassier, Michael Feuerstein, David Gimeno, Vicki L. Kristman, Steven J. Linton, Chris J. Main, Fehmidah Munir, Michael K. Nicholas, Glenn Pransky, William S. Shaw, Michael J. Sullivan, Lois E. Tetrick, Torill H. Tveito, Eira Viikari-Juntura, Kelly Williams-Whitt, and Amanda E. Young.

- Workplace factors
- Workplace interventions
- Workplace outcomes
- Workplace implementation
- Special worker populations
- Changing nature of work

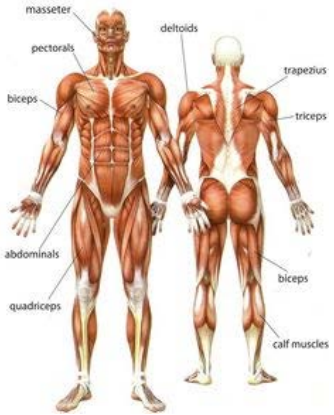
Special Issue:

December 2016

The changing research landscape in RTW/SAW

- Biomedical
- Biomechanical
- Medical restrictions
- Measurable impairments

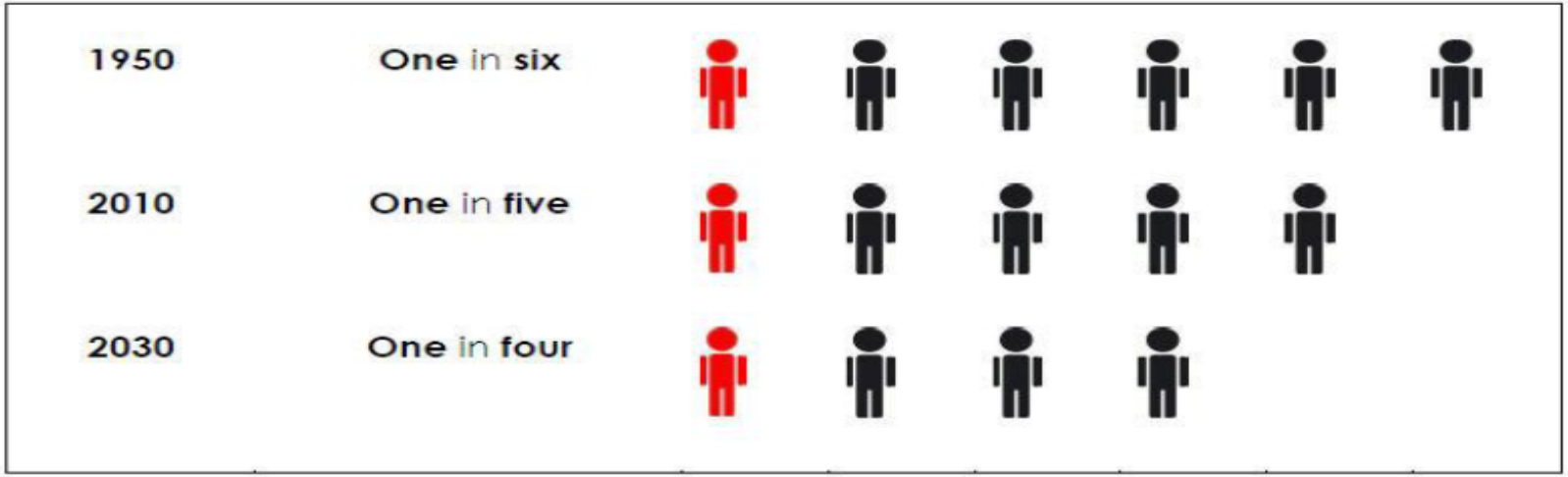
- Psychosocial
- Organizational
- Worker concerns
- Perceptions of workability



Range of outcomes in work disability prevention

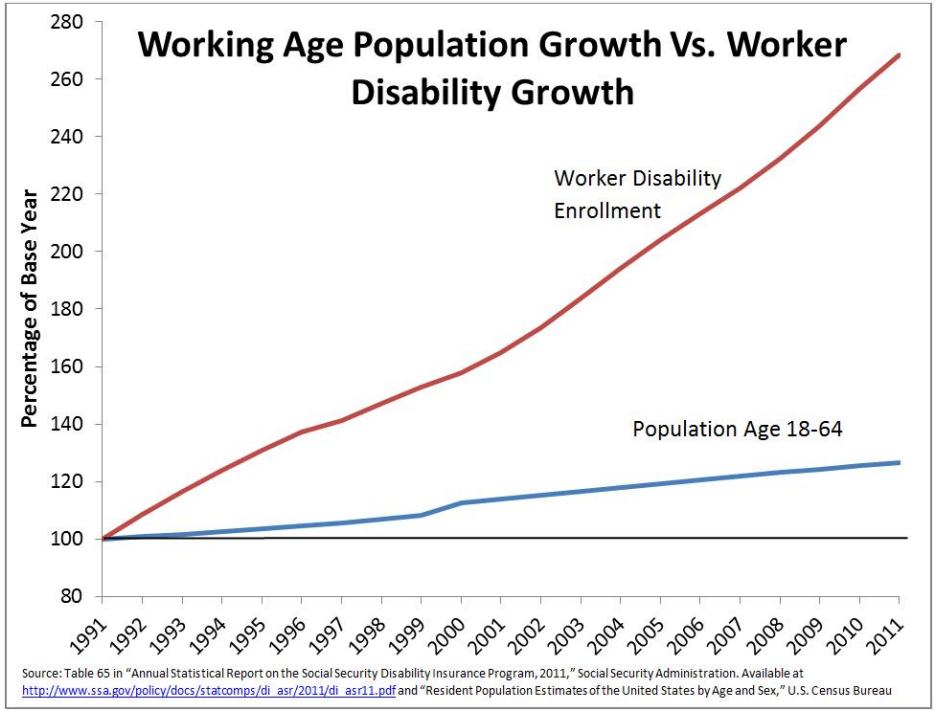
- Return to Work (RTW)
- Stay at Work (SAW)
- “Presenteeism”
- Re-employment/ vocational rehabilitation
- Hiring and accommodating disabled workers

Workers over age 55 in the Labor Force as a Proportion of all workers, projected1950 to 2030



Sources: Bureau of Labor Statistics, "Labor Force Projections to 2018: Older Workers Staying More Active," *Monthly Labor Review*, November 2009; Bureau of Labor Statistics, "New Look at Long-term Labor Force Projections to 2050," *Monthly Labor Review*, November 2006.

Permanent work disability rate is increasing (USA)



Source: Table 65 in "Annual Statistical Report on the Social Security Disability Insurance Program, 2011," Social Security Administration. Available at http://www.ssa.gov/policy/docs/statcomps/di_asr/2011/di_asr11.pdf and "Resident Population Estimates of the United States by Age and Sex," U.S. Census Bureau

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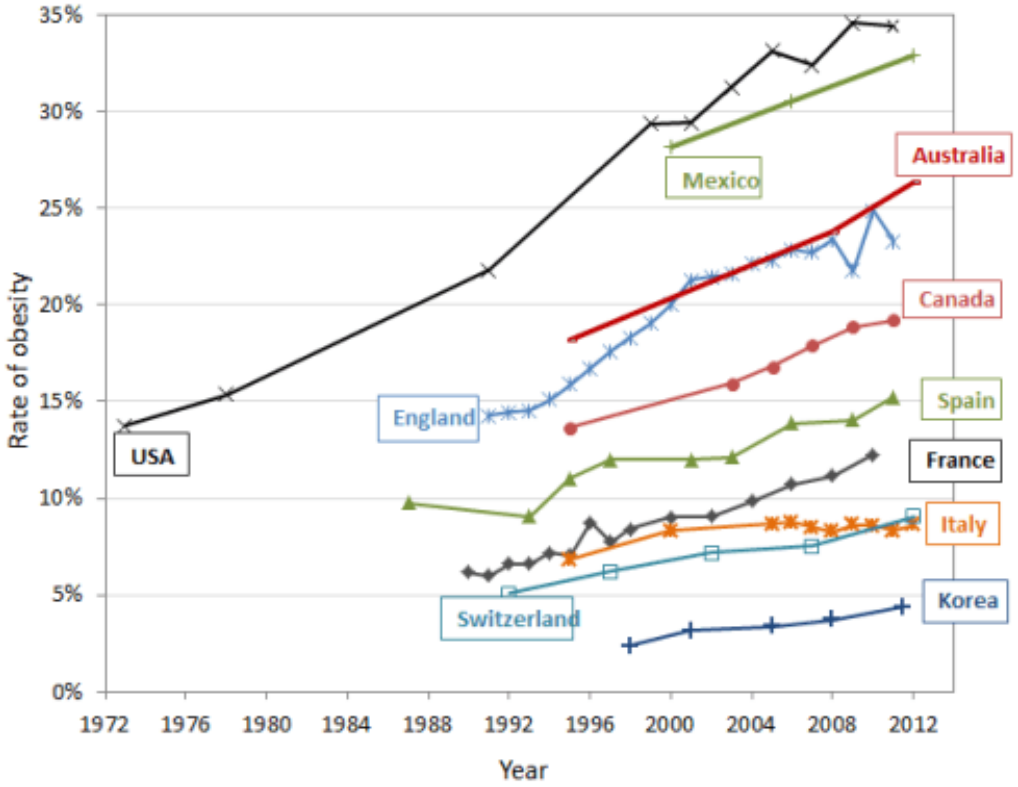
Growing prevalence of obesity (OECD)



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Growing prevalence of chronic conditions

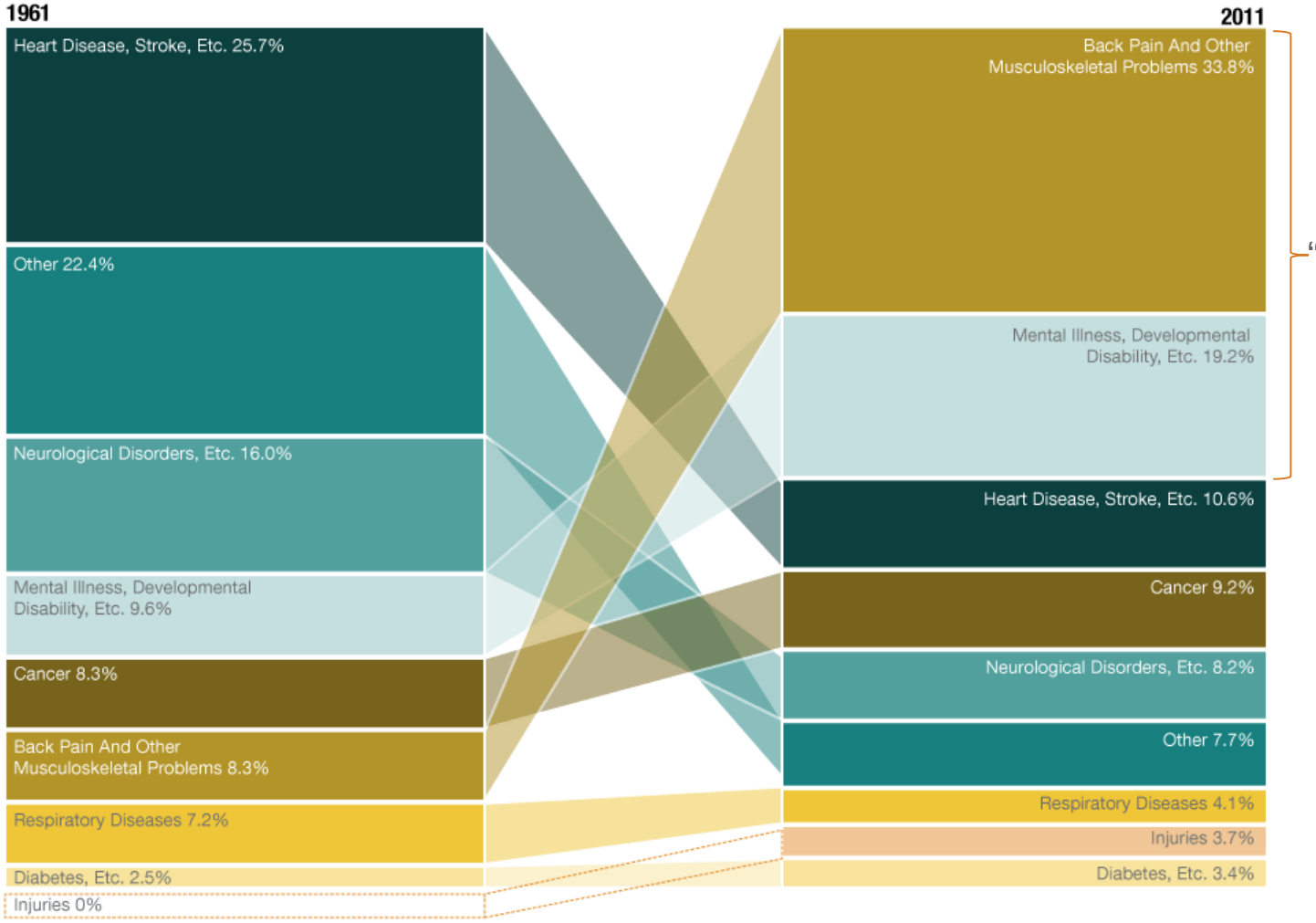
US working adults, ages 18-64:

52.9% No chronic conditions
24.6% 1 chronic condition
12.7% 2 chronic conditions
5.5% 3 chronic conditions
2.2% 4 chronic conditions
1.2% 5 chronic conditions
0.8% 6+ chronic conditions

- Burton et al., J Occup Environ Med 2004;46:S38-S45

"About 86% of full-time workers are above normal weight or have at least one chronic condition" (USA)

- Gallup-Healthways Well-Being Index 2011



"Acute" forms of disability

"Creeping" forms of disability

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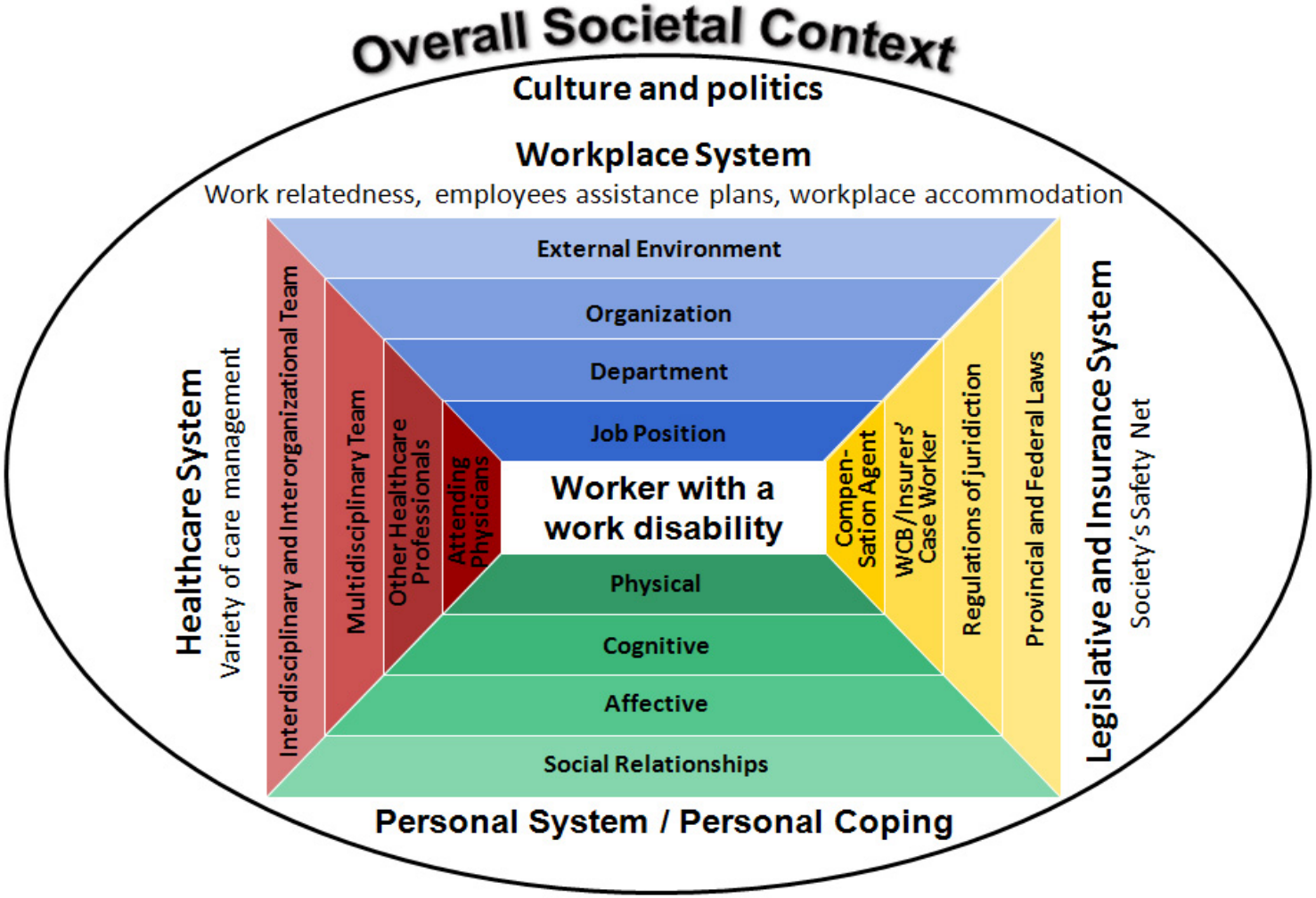

(Loisel et al, J Occup Rehabil, 2005)


When and why
should I return to work?

"Social Cognitive Theory" and RTW

Self-efficacy

- **Confidence to:**
  - Endure discomfort
  - Manage job stress
  - Avoid re-injury
  - Deal with co-workers
  - Get needed assistance
  - Manage my health
  - Get the job done

Outcome expectancy

- **RTW will lead to:**
  - Financial benefits
  - Job/career success
  - Social support
  - Needed assistance
  - Sustained employ
  - Better quality of life

RTW = health behavior

Workplace factors (individual level)

Worker perspective

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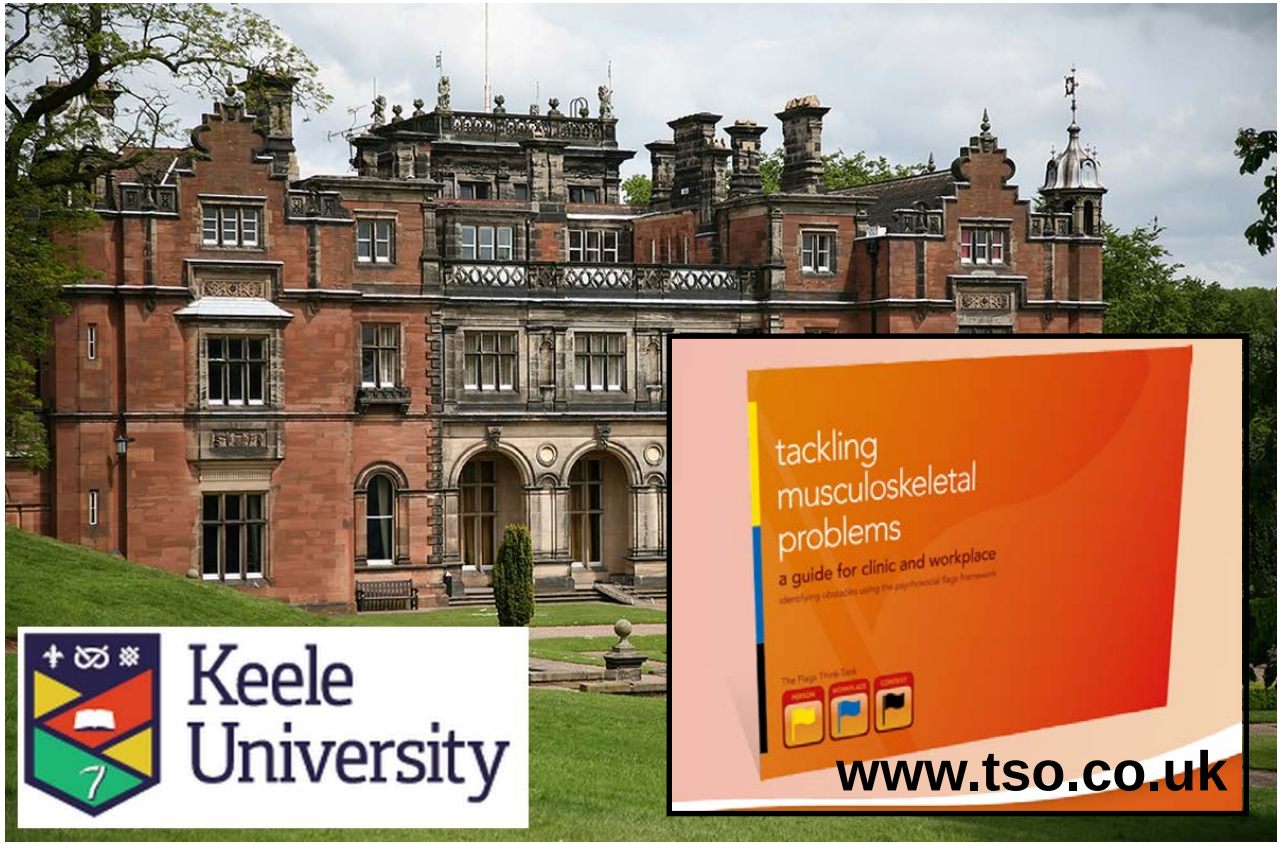
Workplace factors influencing disability outcomes: Multiple systematic reviews (individual level)

- Shaw et al., 2001: review of 22 studies
- Crook et al., 2002: review of 68 studies
- Waddell et al., 2003: review of 26 studies
- Hartvigsen et al., 2004: review of 40 studies
- Steenstra et al., 2005: review of 18 studies

General conclusion:

Occupational factors, both physical and psychological, impact return-to-work rates.

Seven workplace factors that influence RTW from the "Decade of the Flags" Working Group 2007



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Physical aspects of job demands

Heavy physical demands

Fear of re-injury

Psychosocial aspects of job demands

High job stress

Job dissatisfaction

Job organization factors

Low social support

Inability to modify work

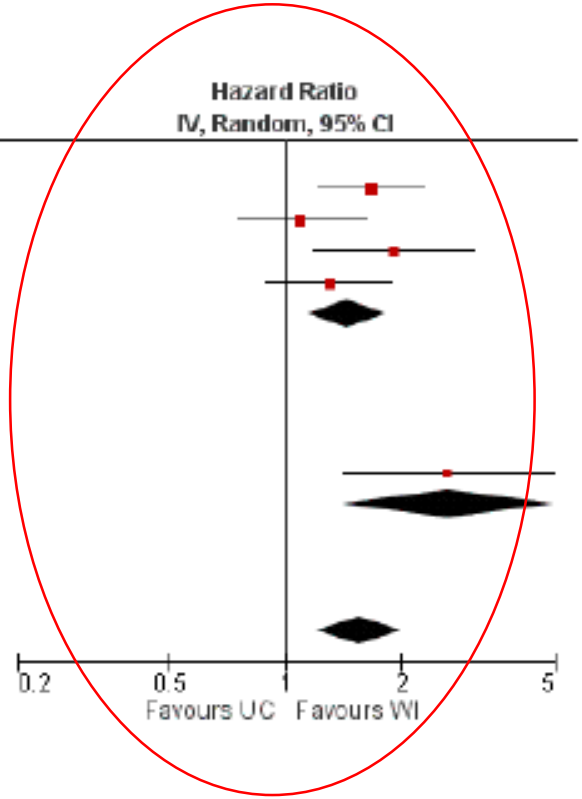
Negative outlook

Poor expectations of RTW

How can workplace factors be addressed?
Cochrane Review of workplace interventions

Figure 3. Forest plot of comparison: 1 Workplace intervention versus usual care, outcome: 1.1 Time until first RTW.

Study or Subgroup	log[Hazard Ratio]	SE	WI Total	UC Total	Weight	Hazard Ratio IV, Random, 95% CI
1.1.1 Musculoskeletal disorders						
Anema/Steenstra 2007	0.5128	0.1628	96	100	25.9%	1.67 [1.21, 2.30]
Feuerstein 2003	0.093	0.194	59	64	22.2%	1.10 [0.75, 1.61]
Loisel 1997a	0.6471	0.2464	47	57	17.1%	1.91 [1.18, 3.10]
Verbeek 2002a	0.2623	0.1906	61	59	22.6%	1.30 [0.89, 1.89]
Subtotal (95% CI)			**263**	**280**	**87.9%**	**1.44 [1.15, 1.82]**
Heterogeneity: Tau² = 0.02; Chi² = 4.39, df = 3 (P = 0.22); I² = 32%						
Test for overall effect: Z = 3.11 (P = 0.002)						
1.1.2 Mental health problems						
Blonk 2006	0.969642	0.321	35	34	12.1%	2.64 [1.41, 4.95]
Subtotal (95% CI)			**35**	**34**	**12.1%**	**2.64 [1.41, 4.95]**
Heterogeneity: Not applicable						
Test for overall effect: Z = 3.02 (P = 0.003)						
Total (95% CI)			**298**	**314**	**100.0%**	**1.55 [1.20, 2.01]**
Heterogeneity: Tau² = 0.04; Chi² = 7.63, df = 4 (P = 0.11); I² = 48%						
Test for overall effect: Z = 3.35 (P = 0.0008)						
Test for subgroup differences: Chi² = 3.11, df = 1 (P = 0.08), I² = 67.8%						



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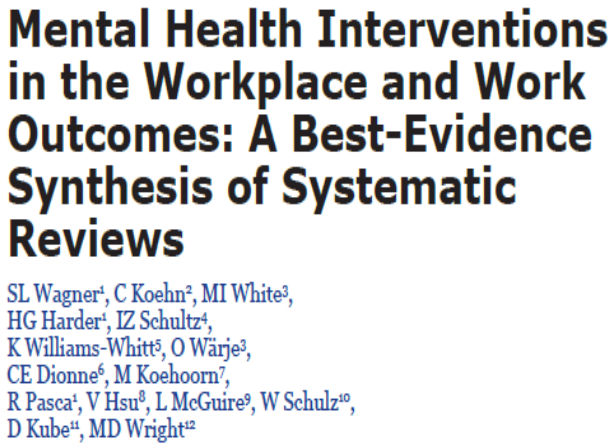
Mental health interventions in the workplace



Mental Health Interventions in the Workplace and Work Outcomes: A Best-Evidence Synthesis of Systematic Reviews

SL Wagner[1], C Koehn[2], MI White[3], HG Harder[1], IZ Schultz[4], K Williams-Whitt[5], O Wärje[3], CE Dionne[6], M Koehoorn[7], R Pasca[1], V Hsu[8], L McGuire[9], W Schulz[10], D Kube[11], MD Wright[12]

- 14 systematic reviews
- Focus on work outcomes
- Conclusion:
  - Moderate evidence of efficacy
  - Multimodal or psychosocial is best
  - *In vivo* exposure effective for anxiety

Int J Occup Environ Med 2016;7:1-14

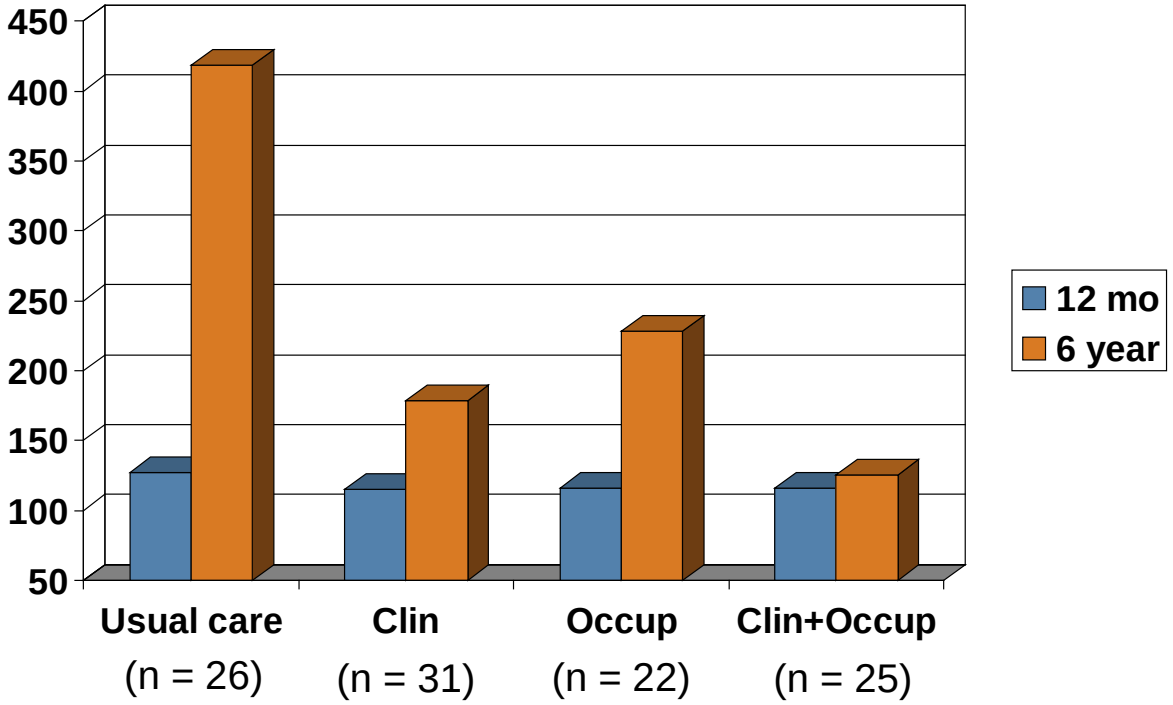
“Sherbrooke Model” for Back Pain

Usual medical care and follow-up

- Clinical Intervention
  - Back school (8 weeks)
  - Multidisciplinary rehabilitation (12 weeks)
- Workplace intervention
  - “Participatory Ergonomics” evaluation and process
  - Employee/management advisory group
  - Individual RTW planning meetings

Loisel et al., Occup Environ Med 2002;59:807-815.

Sherbrooke Model: Average days on full benefits



Loisel et al., Occup Environ Med 2002;59:807-815.

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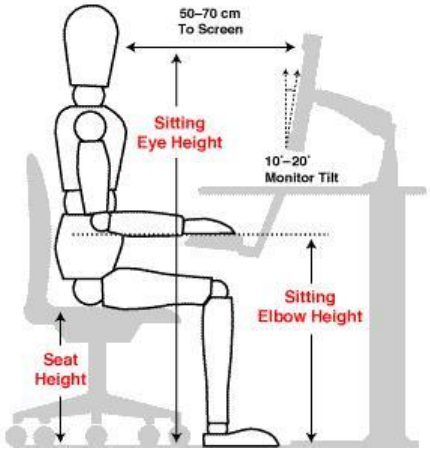
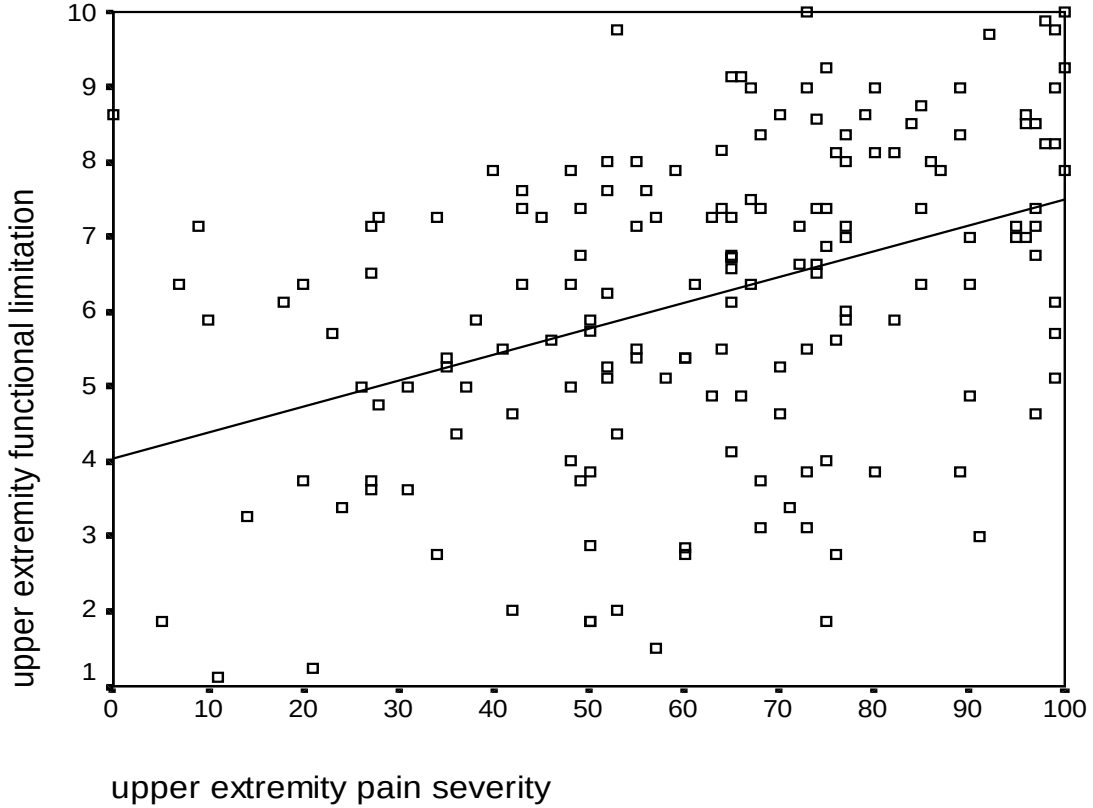
Integrated Case Management Study: RTW for work-related musculoskeletal disorders

- Randomized, controlled trial
- 165 public employees with WRUEDs
- 4-month intervention phase:
  - Home interview
  - Multidimensional assessment of RTW barriers
  - Problem solving skills training
  - Work-site walk-through
    - Ergonomic checklist
    - Meeting with supervisor
  - Accommodation plan
  - Follow-up
- Outcome evaluation
  - Surveys (pre, post, 6 mo, 12 mo)
  - Claims database



Shaw, Feuerstein et al., AAOHN Journal 2003; 51: 337-346

Integrated Case Management Study: Weak correlations between pain, function, RTW



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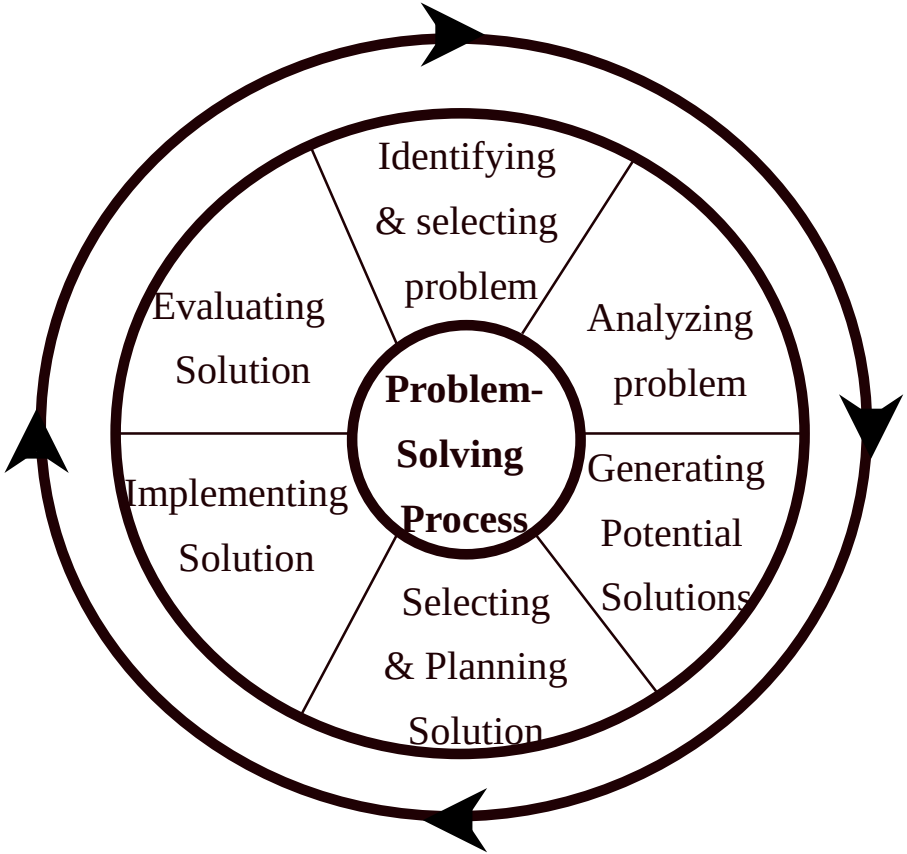
Integrated Case Management Study:
Overcoming workplace barriers with joint problem solving



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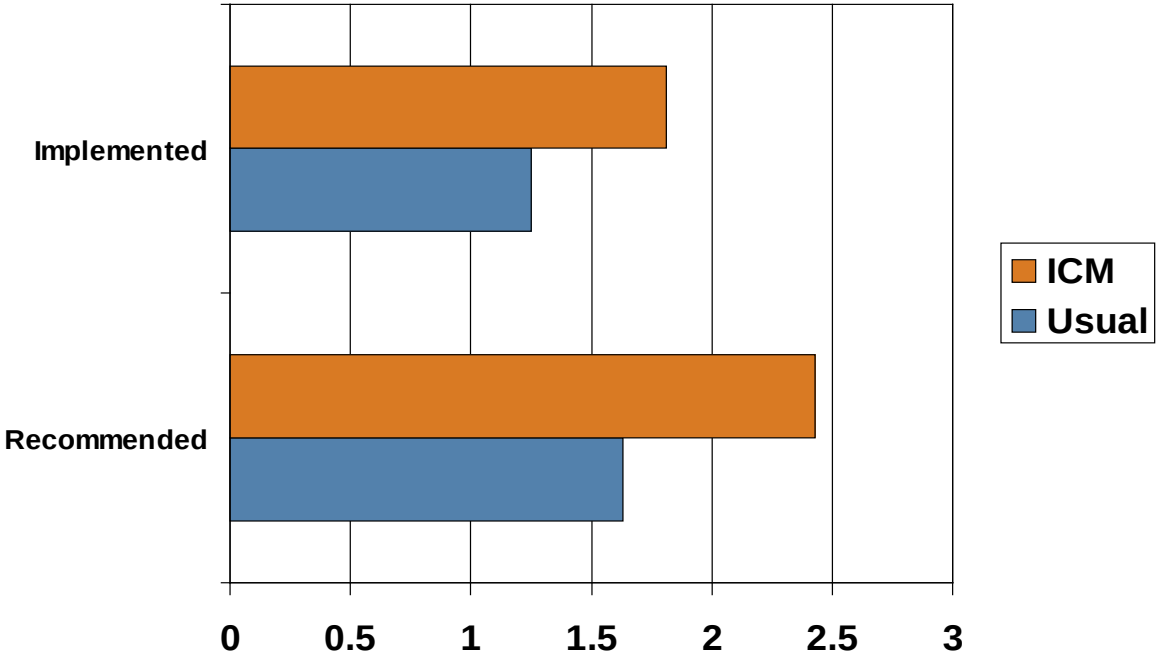
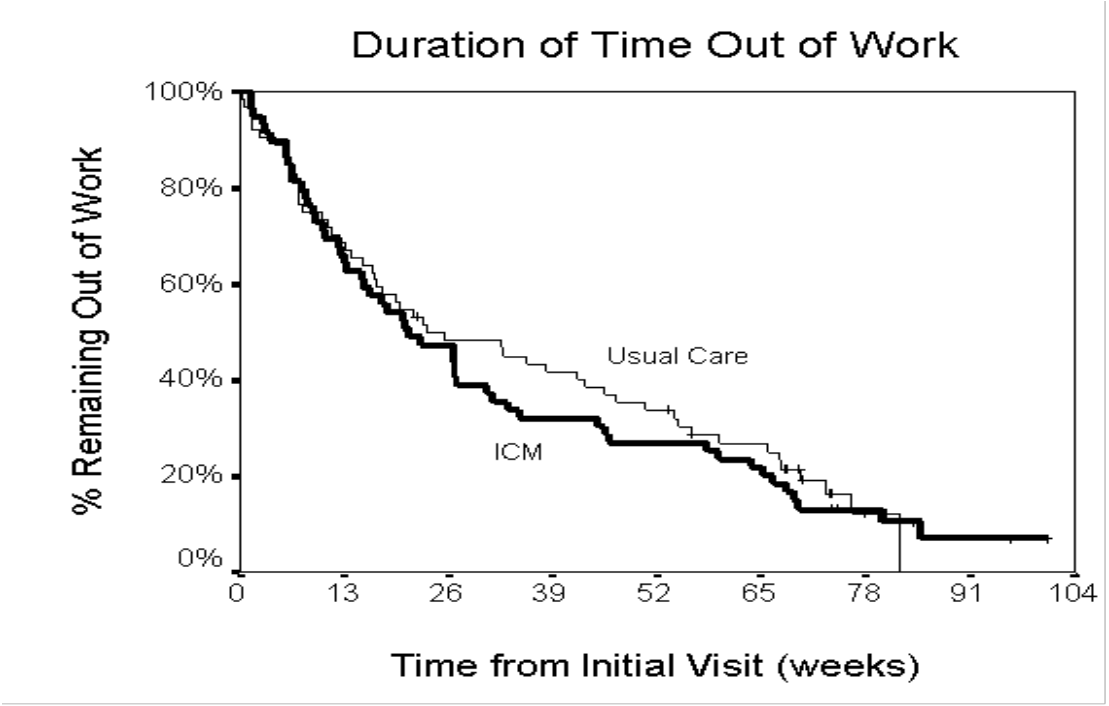
Integrated Case Management Study: Temporary job accommodations



Lincoln, Feuerstein et al., JOEM, 2002

Integrated Case Management Study: Return to work outcome



Median (ICM) = 21.0 weeks, savings of $1,000/claim

Median (Usual Care) = 23.2 weeks

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What's new in individual-level workplace interventions?

- **Very early screening** (< 14 days)
  - Shaw WS, Reme SE, Pransky G et al. The Pain Recovery Inventory of Concerns and Expectations: a psychosocial screening instrument to identify intervention needs among patients at elevated risk of back disability. *J Occup Environ Med*. 2013;55(8):885-894.
- **Very early intervention** (< 15 days)
  - Vargas-Prada S, Demou E, Lalloo D et al. Effectiveness of very early workplace interventions to reduce sickness absence: a systematic review of the literature and meta-analysis. *Scand J Work Environ Health*. 2016;42(4):261-272.
- **Mental health, cancer, and other non-MSD conditions**

Workplace Interventions: Critical Elements

- Worksite visits and meetings
- RTW coordination at lowest level possible
- Direct collaboration and engagement with worker
- Transparent communication
- Healthy amount of arm-twisting (employee AND employer)

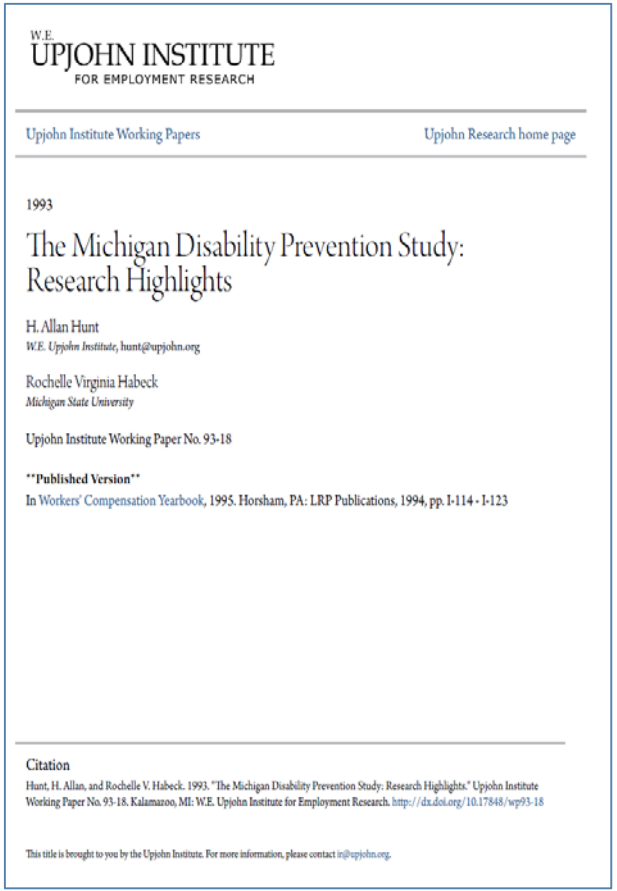
Michigan Disability Prevention Study (1993)

Still a fledgling field in 2016:

Pubmed search:

"organizational + intervention + work + disability + prevention"

32 articles



W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

Upjohn Institute Working Papers | Upjohn Research home page

1993

The Michigan Disability Prevention Study: Research Highlights

H. Allan Hunt
W.E. Upjohn Institute, hunt@upjohn.org

Rochelle Virginia Habeck
Michigan State University

Upjohn Institute Working Paper No. 93-18

"Published Version"
In Workers' Compensation Yearbook, 1995. Horsham, PA: LRP Publications, 1994, pp. I-114 - I-123

Disability performance of companies depends on:

1. People oriented culture
2. Active safety leadership
3. Safety diligence
4. Ergonomic solutions
5. Safety training
6. Disability case monitoring
7. Proactive RTW Program
8. Wellness

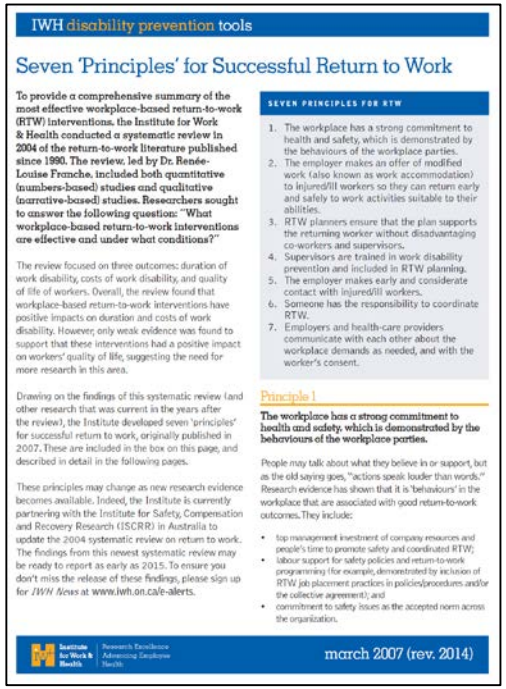
(n = 220 manufacturing firms)

Workplace-based RTW interventions: Systematic review

Return to work Intervention components	Reduces disability duration	Reduces claim costs	Improves quality of life
Early contact with injured worker	+	+	+/-
Employer offer of accommodation	++	+	+/-
Contact with HC provider	++	+	+/-
Ergonomic worksite visit to plan RTW	+	+	+/-
Presence of RTW coordinator	+	+	Insufficient evidence
Supernumerary replacement	Insufficient evidence	Insufficient evidence	Insufficient evidence

Review of 10 studies, Franche et al., J Occup Rehabil. 2005;15(4):607-631.

Seven principles for successful RTW



IWH disability prevention tools

Seven 'Principles' for Successful Return to Work

To provide a comprehensive summary of the most effective workplace-based return-to-work (RTW) interventions, the Institute for Work & Health conducted a systematic review in 2004 of the return-to-work literature published since 1990. The review, led by Dr. Renée-Louise Franche, included both quantitative (numbers-based) studies and qualitative (narrative-based) studies. Researchers sought to answer the following question: "What workplace-based return-to-work interventions are effective and under what conditions?"

The review focused on three outcomes: duration of work disability, costs of work disability, and quality of life of workers. Overall, the review found that workplace-based return-to-work interventions have positive impacts on duration and costs of work disability. However, only weak evidence was found to support that these interventions had a positive impact on workers' quality of life, suggesting the need for more research in this area.

Drawing on the findings of this systematic review (and other research that was current in the years after the review), the Institute developed seven 'principles' for successful return to work, originally published in 2007. These are included in the box on this page, and described in detail in the following pages.

These principles may change as new research evidence becomes available. Indeed, the Institute is currently partnering with the Institute for Safety, Compensation and Recovery Research (ISCRR) in Australia to update the 2004 systematic review on return to work. The findings from this newest systematic review may be ready to report as early as 2015. To ensure you don't miss the release of these findings, please sign up for *IWH News* at www.iwh.on.ca/e-alerts.

SEVEN PRINCIPLES FOR RTW

1. The workplace has a strong commitment to health and safety, which is demonstrated by the behaviours of the workplace parties.
2. The employer makes an offer of modified work (also known as work accommodation) to injured/ill workers so they can return early and safely to work activities suitable to their abilities.
3. RTW planners ensure that the plan supports the returning worker without disadvantaging co-workers and supervisors.
4. Supervisors are trained in work disability prevention and included in RTW planning.
5. The employer makes early and considerate contact with injured/ill workers.
6. Someone has the responsibility to coordinate RTW.
7. Employers and health-care providers communicate with each other about the workplace demands as needed, and with the worker's consent.

Principle 1

The workplace has a strong commitment to health and safety, which is demonstrated by the behaviours of the workplace parties.

People may talk about what they believe in or support, but as the old saying goes, "actions speak louder than words." Research evidence has shown that it is 'behaviours' in the workplace that are associated with good return-to-work outcomes. They include:

- top management investment of company resources and people's time to promote safety and coordinated RTW;
- labour support for safety policies and return-to-work programming (for example, demonstrated by inclusion of RTW job placement practices in policies/procedures and/or the collective agreement); and
- commitment to safety issues as the accepted norm across the organization.

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march 2007 (rev. 2014)

1) Demonstrated commitment to health and safety.
2) Routine offer of modified work/ job accommodation.
3) RTW without disadvantaging co-workers.
4) Supervisors trained and included in RTW planning.
5) Early and considerate contact with injured worker.
6) Designated person to coordinate RTW.
7) Communicate with providers (with worker consent).

http://www.iwh.on.ca/seven-principles-for-rtw

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Models implicit in employer RTW decision-making

- Biomedical/biomechanical models
  - RTW responsibility resides with clinical medicine
- Financial model
  - RTW affects the bottom line
- Personnel management model
  - RTW is an issue of employee fairness and regulatory compliance
- Organizational development model
  - RTW is a routine element of workforce support and participation

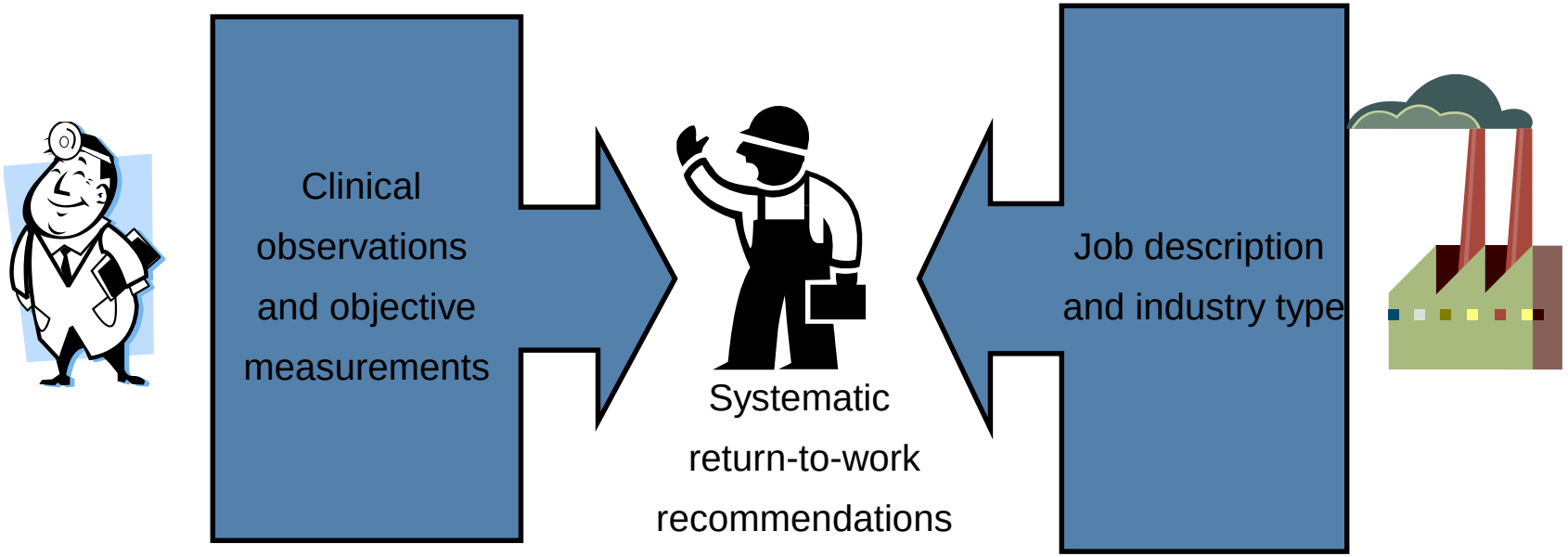
Review of the business literature (Kristman et al., J Occup Rehabil, in press)

Workplace factors – Employer perspective

- Defined roles and responsibilities
  - Senior management buy-in
  - Identifiable RTW coordinator
  - Effective use of HC providers and consultants
  - Training and engagement of frontline supervisors
- Available tools and procedures
  - Clear written policies, guidelines, and procedures
  - Development of practical tools, documents, and materials
  - General workforce education, outreach, surveillance, and health messaging
- Prompt and proactive response
  - Proactive case management and early RTW planning
  - Constant monitoring of sickness and disability outcomes
- Attention to individual needs and circumstances
  - Routine, but individualized, job modification efforts
  - Involvement, communication, and collaboration with workers
  - Taking into account workforce and job characteristics

Review of the business literature (Kristman et al., J Occup Rehabil, in press)

Why simple job matching doesn't always work



<u>Underlying assumptions</u>:

- Providers have workplace details
- Job restrictions are easily applied
- Worker input is unnecessary

Organizational interventions to prevent disability: The importance of communication

Worker

Healthcare provider

Personnel manager

Supervisor

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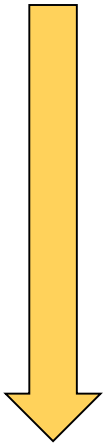
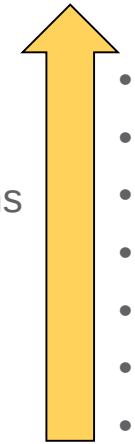
Job modification process: Top-down versus Bottom-up processes



Top-down process:

- Medical diagnosis
- Functional assessment
- Report of task limitations
- Job description
- Offer of modified duty
- Supervisor notification
- Worker acceptance



Bottom-up process:

- Monitor and revise as-needed
- MD review for medical clearance
- HR review for policy compliance
- Worker/supervisor draft RTW plan
- Supv. assesses leeway and support
- Worker identifies task limitations
- Worker/supv. list job tasks

A bottom-up RTW process may be optimal when:

- ✓ Self-limiting symptoms, no serious medical risk
- ✓ Adversarial relationships and problems exist
- ✓ Unusual job tasks and responsibilities
- ✓ Job offers substantial leeway and flexibility

Supervisor training

- Group workshop format
- 4 hours in total
- Participatory ergonomics
- Communication

- Invite early complaints
- Listen to worker concerns
  - Private and confidential
- Support and reassurance
  - "These things happen"
  - "We want you back"
- Maintaining contact
- Collaborative problem solving
- Analyzing job tasks
- Suggest modifications
- Coordinate with HR

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Sample videotape vignettes

Results of supervisor training: Workers comp lost-time costs

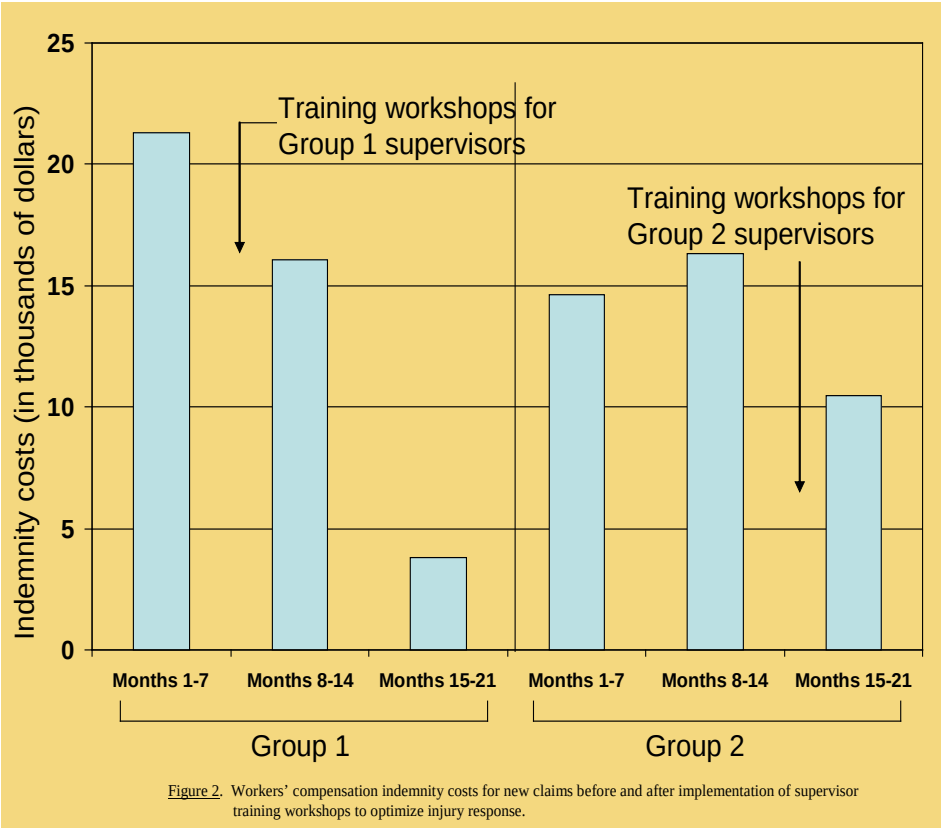

Figure 2. Workers' compensation indemnity costs for new claims before and after implementation of supervisor training workshops to optimize injury response.

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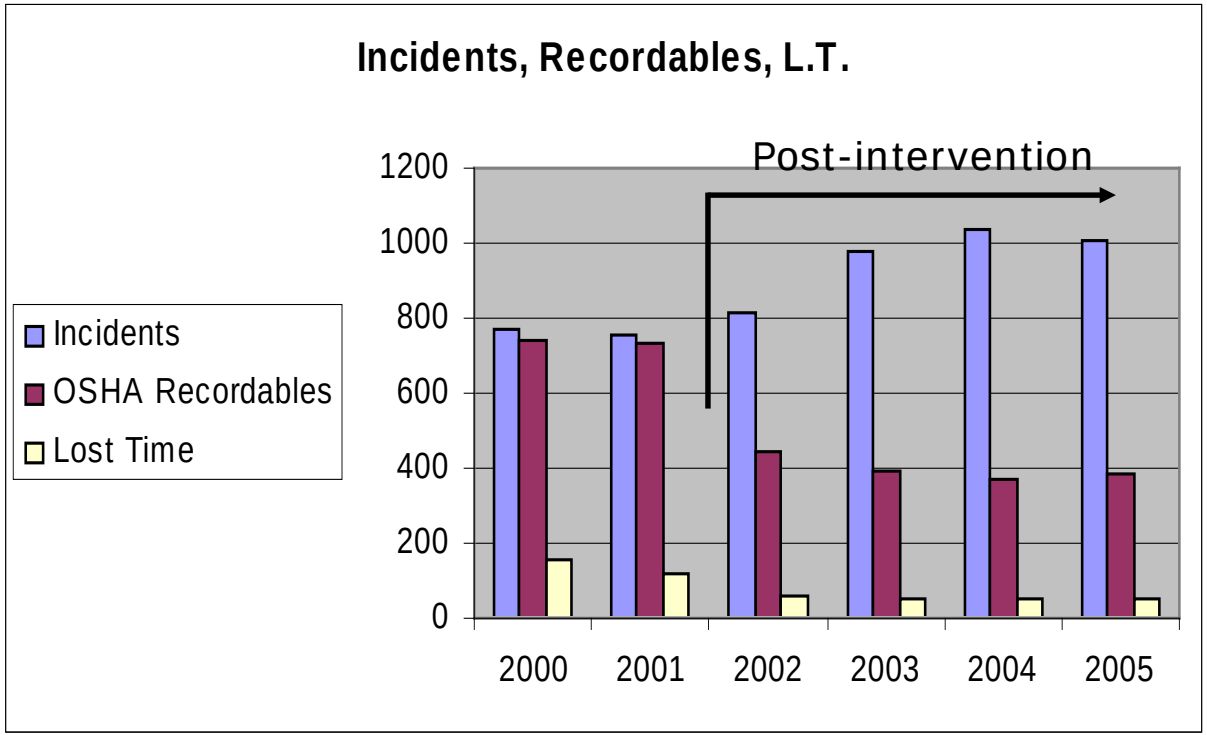
Results of supervisor training: Injured worker surveys (on-site clinic)

	Pre-training	Post-training
▪ Satisfied with supervisor	68%	83%
▪ Felt blamed	17%	0%
▪ Discouraged from filing	5%	0%
▪ Felt penalized	8%	4%
▪ Took my pain seriously	67%	87%
▪ Talked with me privately	55%	92%
▪ Helped to modify my work	45%	57%
▪ Helped to decrease discomfort	44%	80%

Results of supervisor training: Long-term gains



- More reporting
- Fewer serious injuries
- Fewer lost time claims

Total Worker Health®

"Policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being."

- US National Institute of Occupational Safety & Health (NIOSH)

Leveraging existing job flexibility and leeway

- Change the ordering of job tasks
- Vary the speed or pacing of work
- Switch or rotate among activities
- Use equipment to reduce discomfort
- Avoid uncomfortable or awkward postures
- Alter tasks to fit personal preferences
- Alternate physical and sedentary tasks
- Working from a different location
- Ask for occasional help
- Take micro-breaks to stretch
- Customize work stations
- Alter job hours
- Use available lift-assist devices
- Reduce long reaches
- Use mechanical transport devices

- Tveito et al., Disabil Rehabil. 2010;32:2035-2045.

Creating job flexibility to prevent disability

Job Demand and Control Interventions: A Stakeholder-Centered Best-Evidence Synthesis of Systematic Reviews on Workplace Disability

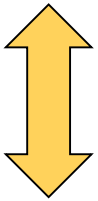
K Williams-Whitt[1], MI White[2,3], SL Wagner[4], IZ Schultz[5], C Koehn[6], CE Dionne[7], M Koehoorn[8], H Harder[4], R Pasca[9], O Warje[10], V Hsu[11], L McGuire[12], W Schulz[13], D Kube[14], A Hook[15], MD Wright[16]

- 11 systematic reviews
- **Scope**: Interventions that decrease physical or psychological job demands, increase job control or social support.
- **Conclusion**:
  - "Multimodal job demand reductions for either at-work or off-work workers will reduce disability-related absenteeism"

Int J Occup Environ Med 2015;6:61-78

Workplace illness self-management strategies

Relevant to workplace



Not as relevant to workplace

- Anger management
- Cognitive restructuring
- Attention techniques
- Effective communication
- Ergonomics/ body posture
- Gadgets, tools, devices
- Overcoming obstacles
- Planning for pain flare-ups
- Problem-solving
- Sleep hygiene
- Stress management
- Stretching and exercise
- Time-based pacing
- Relaxation methods

- Pain diary
- Sex and intimacy
- Pleasant activity scheduling
- Finding resources
- Medical education
- Nutrition
- Self-rewards
- Goal-setting

Shaw et al., Disabil Rehabil. 2012;34:694-703.

The MANAGE AT WORK study: Randomized trial of a group self-management program

- 5-session self-management program for workers
  1) *Intro to health self-management principles*
  2) *Job modification, pacing, and problem solving*
  3) *Communicating about health problems at work*
  4) *Keeping a positive outlook, adopting realistic goals*
  5) *Putting it all together: Taking care of yourself at work*

- Randomized controlled trial
- Primary outcome measures:
  - Work engagement
  - Work limitation

Shaw, Besen, et al. BMC Public Health. 2014;14:515.

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Practical recommendations for clinicians

- **Assess** workplace concerns of clients.
- Find reasons to conduct a **worksite walk-through**.
- Try to make contact with a direct **supervisor**.
- Encourage **participatory** methods for RTW plan.
- **Impose** on employers to do better.

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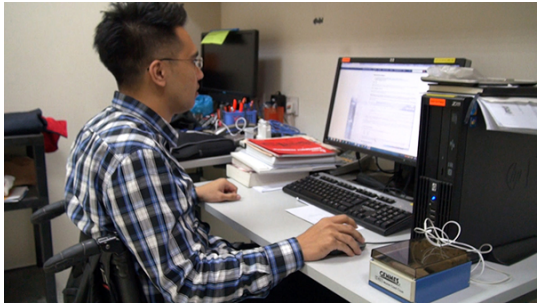
5 basic questions to start workplace discussions:

- “What are your **biggest concerns** about returning to work?”
- “What job tasks will be **most difficult** for you?”
- “How can **vary or adjust your work** to be more comfortable?”
- “How much **help will you get** from supervisors/ co-workers?”
- “How will you deal with any **future problems** at work?”



Concluding Remarks

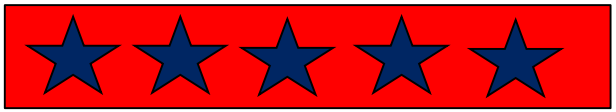
1) Current disability trends and research suggest a greater need for **employer participation** in rehabilitation efforts.

2) Biomedical information needs to be interpreted within an organizational, psychosocial, and individual **context**.

3) Collaborative and **participatory** approaches to RTW that engage employer, patient, and provider are superior.

4) Engaging employers to provide more proactive RTW practices can be **challenging**, but can have real impact.

Thank you!



Questions/Comments?