

at work

Information on workplace research from the **Institute for Work & Health**

This Issue

For Clinicians

Work-family balance: how is sleep quality affected?

Back on the job but still hurting? Seeking new and better ways to measure work disability

For Workplaces

IWH-sponsored workshop key step to revising important tool

Saliva may offer clues on stress

For Policy-Makers

Risk of injury to youth highest in first month

Lavis off to Paris for research sabbatical

For Knowledge Transfer

From research report to the shop floor

Infocus

This Issue's Supplement:

Designing intervention strategies that work

To be notified by e-mail when a new issue of *At Work* is published and available on our web site, send your e-mail address to atwork@iwh.on.ca.



**Research Excellence
Advancing Employee Health**

Putting evidence-based medicine into practice: the real challenge

Evidence-based medicine (EBM) has come a long way in the last decade, says a leading expert in the field. But the important “next step”—turning scientific knowledge into evidence-based practice (EBP)—is proving to be more of a challenge, says Dr. Jeremy Grimshaw.

Grimshaw, Director of Clinical Epidemiology at the Ottawa Health Research Institute, delivered the inaugural Alf Nachemson Lecture at the Institute’s annual general meeting, held recently in Toronto.

EBM has been described as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.” This must be done in the context of clinical experience, cost, and risks and benefits to individual patients.

Even as researchers around the world are gathering and publishing evidence on a vast range of clinical questions, key gaps exist.

“There is still a shortage of coherent, consistent scientific evidence, despite all the work being done,” says Grimshaw, who also heads the Centre for Best Practice at the University of Ottawa’s Institute for Population Health. “There’s also consistent evidence of failure to translate research findings into clinical practice.”

For example, studies show that between 30 and 40 per cent of patients do not receive treatment that meets effectiveness standards. At the same time, 20 to 25 per cent of patients are getting treatments they don’t need.



Drs. Alf Nachemson, Jeremy Grimshaw and Cameron Mustard

Obstacles to EBP include the flawed assumption that all clinicians have the “motivation, skills, energy and time” to practice EBM, Grimshaw said. There is also a misconception their work environments—hospitals, health-care systems, insurance systems—support evidence-based practice. Some resistance occurs within peer groups, and clinicians hear: “That’s not how we do things around here.”

So what can be done to encourage and increase evidence-based practice? “We need to systematically study which strategies are most effective when it comes to disseminating evidence-based knowledge to all levels of our health-care system,” Grimshaw said.

The Alf Nachemson Lectureship is given each year to a prominent scientist who has made significant contributions to work and health research. It honours the work of Dr. Nachemson, a distinguished Swedish orthopedic surgeon and researcher and a founding member of the IWH Scientific Advisory Committee. 🏔️

To view Dr. Grimshaw’s presentation, visit www.iwh.on.ca, click on *At Work*, then “Putting evidence-based medicine into practice.”

The Institute for Work & Health is an independent, not-for-profit organization whose mission is to research and promote new ways to prevent workplace disability, improve treatment, and optimize recovery and safe return to work.

CHAIR

Mark Rochon
President & CEO
Toronto Rehabilitation Institute

PRESIDENT & SCIENTIFIC DIRECTOR

Cameron Mustard
Institute for Work & Health

DIRECTORS

Lesley Bell
Chief Executive Officer
Ontario Nurses' Association

Clyde Hertzman
Professor, Department of Health Care and Epidemiology
University of British Columbia

Glen Wright
Chair
Workplace Safety & Insurance Board

Linda Jolley
Vice-President, Research
Workplace Safety & Insurance Board

Andrew King
Department Leader, National Health, Safety & Environment
United Steelworkers of America (Canada)

Lorna Marsden
President and Vice Chancellor
York University

Rosemary McCarney
Executive Director
Street Kids International

John O'Grady
Labour Market Consultant

Dorothy Pringle
Professor, Faculty of Nursing
University of Toronto



Policy-Makers

RISK OF INJURY TO YOUTH HIGHEST IN FIRST MONTH

As thousands of young people head off to summer jobs this month, what can employers do to make sure they stay safe?

"In Ontario, we've found that young people are four times more likely to be injured in that first month of employment than at any other time," says IWH Scientist Dr. Curtis Breslin, who heads up the Institute's research on youth injury.

Using the *Ontario Labour Force Survey* to calculate injury rates, Breslin found that in the first month of employment, 15- to 24-year-olds have a lost-time claim rate of 12.8 per 100 full-time equivalents. The rate then drops to 2.8 between the second and fourth month and remains stable over time. One full-time equivalent is equal to 2,000 hours of work. The rate was calculated by dividing the number of claims to the Ontario Workplace Safety & Insurance Board by the number of hours worked by young people.

Breslin says more research will help understand the reasons behind the



pattern, but the higher risk in the first month could be attributed to several things including inexperience, lack of training, or working conditions common in short-term jobs.

"It's clear that new, young workers need job and safety training early," he says. "By making sure new workers understand any risks associated with their job, how to handle equipment safely and safety procedures, employers can help reduce work injuries among youth." 🏔️

LAVIS OFF TO PARIS FOR RESEARCH SABBATICAL

Institute Scientist Dr. John Lavis will be heading to Paris this month for a one-year research sabbatical.

Lavis will be based at CREDES (Centre de Recherche d'Etude et de Documentation en Economie de la Santé), a multidisciplinary research institute. CREDES examines the behaviour of patients and health-care providers in France's health-care system and it provides the health data for France's contribution to the Organization for Economic Cooperation and Development (OECD) databank. The organization

works collaboratively with many European health research institutes.

"This is a wonderful opportunity for me to further my research program and professional development, as well as establish important research contacts in Europe," Lavis says. A number of his projects are comparative studies examining, for example, disability policy systems and work-related health determinants among countries in Europe and North America. Lavis will also be continuing his work in knowledge transfer and uptake in public policy-making environments. 🏔️



WORK-FAMILY BALANCE: HOW IS SLEEP QUALITY AFFECTED?

Many workers are also partners and parents, and balancing those roles is an ongoing challenge. There has been much study recently of how the worker role impacts home and how home-based roles impact work. The terms “multiple role strain” and “work-family balance” are used to describe the phenomena.

The Institute has several projects under way to study work-family balance, one of which examined the relationship between work-family balance and sleep quality. The study, led by IWH Scientist Dr. Renée-Louise Franche and co-ordinated by Research Associate Alysha Williams, found that 70 per cent of participating health-care workers were experiencing clinically significant levels of poor sleep quality. Even after controlling for factors known to affect

sleep quality—such as job demands and shiftwork—multiple role strain had an impact on sleep quality. More specifically, having more negative spillover from work to family and a greater number of children was found to be associated with poorer sleep. In addition, increased positive spillover from family to work—such as having someone at home who is supportive to the worker—appeared to alleviate these effects.

The study involved a sample of 186 health-care workers who worked at least 21 hours a week and were located at one of three hospital sites in small, medium and large Ontario urban centres. Perhaps not surprisingly, the sample was predominantly made up of married/partnered women with children. Health-care workers were targeted as recent hospital

restructuring and changes in health-care delivery have led to increased workload and possibly increased multiple role strain within this group.

Although most of us recognize the importance of getting adequate sleep regularly, we may not realize the extent of problems associated with poor sleep quality. These include increased risk of coronary heart disease and recurrent cardiac events, increased risk of car accidents, and decreased immune function. There is much to be learned in studying the relationship of multiple role strain and physical health that ultimately may be instrumental in prevention of disease and ill health. 🏔️

This study was supported by the Social Sciences and Humanities Research Council. Study partners: University Health Network's Women's Health Program, Thunder Bay Regional Hospital and The Ottawa Hospital.

BACK ON THE JOB BUT STILL HURTING? SEEKING NEW AND BETTER WAYS TO MEASURE WORK DISABILITY

Each and every day thousands of workers put in shorter days or slow down because of sore shoulders, aching backs or necks, stiff wrists and fingers.

“While they may mention such symptoms to co-workers or health-care providers, chances are they won't be questioned closely about their pain and how it's affecting their work,” says Dr. Dorcas Beaton, an IWH scientist who specializes in the “highly conceptual, hard-to-explain” field of disability measurement.

Here's a typical scenario: A worker returns to the job after being off for several weeks with low-back pain. But he is working at less-than-full capacity since returning—a situation described as “at-work disability.”

“How can the employer or rehabilitation therapist understand the problems

this worker is having on the job? We can certainly ask basic questions like: ‘How bad is the pain? How is it affecting your ability to do your job?’ But this isn't a very precise tool,” Beaton explains. “It doesn't allow us to define each person's at-work disability, or to track it over time.”

It's tempting to say that because a worker with job-related symptoms is now back at work, the problem has been solved. “In fact, many people who return to their jobs after a period of disability still have problems that affect their quality of life and their productivity,” Beaton says.

An IWH research team—including Beaton, Sherra Solway, Dr. Claire Bombardier, Dr. Sheilah Hogg-Johnson, Emma Irvin and Benjamin Amick—is now working on a systematic review to

identify the impact of injury or illness on work activities and to find tools that can measure difficulties in the tasks of work.

They are using and testing surveys which attempt to “tease out” such subtle measures by asking questions like: “What proportion of your time at work is affected by pain or disability? What proportion of your time is not spent working at 100 per cent full capacity?”

Being able to accurately measure work-related pain and disability is a challenge, but it's well worth the effort, Beaton says.

“If we can't measure these things, we can't properly undertake research comparing disabilities across workplaces and provide evidence-based recommendations about which interventions—if any—might be helpful,” she explains.



IWH-SPONSORED WORKSHOP KEY STEP TO REVISING IMPORTANT TOOL

Scientists around the world have been using the Job Content Questionnaire (JCQ) in research projects looking at the psychosocial work environment since its development in the 1980s. They are now recognizing a need to revise it to reflect the changing global and social economies. An important step in this process of change occurred at an international workshop held at IWH in March.

The self-administered JCQ was developed by a team of researchers led by Dr. Robert Karasek of the University of Massachusetts Lowell. It measures the “content” of a respondent’s work tasks in a general manner that can be related to all workers and occupations. It can be used for studies that examine issues such as employee health, job satisfaction, absenteeism, mental health and labour turnover. Several IWH projects have used the JCQ, in particular IWH’s examinations of risk factors for back pain and repetitive strain injury at General Motors and at the Toronto Star.

“There’s no question about the need for a research instrument like the JCQ. Our challenge is to modify the current version so that it better reflects the changing nature of work brought on by the major economic and social changes we have experienced over the past two decades,” Karasek said at the workshop. To achieve this task, the workshop participants, including scientists from Australia, Germany, Holland, Denmark, New Zealand, Sweden, Norway, Canada and the United States, aimed to move forward with a plan of action.

Revising the JCQ is a win-win situation for researchers around the world. It can be changed to remain current by addressing the changing world of work, yet retain its structured format as a standardized questionnaire with outcomes that are comparable around the world.

The scientists made several key decisions at the workshop. They prioritized areas of action including many of



Dr. Robert Karasek

those raised an earlier JCQ workshop held in Germany one year ago. They determined who would take responsibility for the new suggestions that came out of this workshop, and they agreed on a standard report-back format.

“We are moving from a review of the evidence to a discussion of changes for the future,” Karasek said. The discussions are ongoing among the scientists with another workshop planned for next year to move forward on the revisions. 🏔️

SALIVA MAY OFFER CLUES ON STRESS

Just how does stress make us ill? Finding out what work-related stress does to our bodies is a real challenge, but it’s one that IWH scientists are tackling. To find out more, they are collecting saliva from full- and part-time nurses.

The scientists are looking for elevated cortisol that is found in saliva. Cortisol is a steroid hormone that is secreted by the adrenal gland, via a complex feedback mechanism that also



involves the pituitary gland and the hypothalamus (also called the hypothalamic-pituitary-adrenal axis, or HPA axis). Cortisol acts as a key regulator for many core functions such as immune responses, sugar levels and temperature. There is some evidence that an increase in cortisol can indicate negative emotion or distress.

Previous research has found that full-time nurses have worse stress and poorer health than part-time nurses. This new research study is looking for a possible link between stress levels, health problems, and cortisol in the saliva. If the link can be made, cortisol could become a biomarker for stress.

Two groups of nurses are participating in this study: about 75 full-time and an equal number of part-time nurses

from an acute-care teaching hospital. They are completing a questionnaire that looks at work and life stressors and health outcomes. They are also taking saliva samples at one, four, nine, and 11 hours after waking and just before bedtime on two working days, and two non-working days.

“There is a fair bit of concern that when you just ask people about their stress levels, that you are not getting the most compelling evidence possible. This method is perceived as a more direct and objective way of getting to the link between work, stress, and health. It could potentially be a tool for larger-scale studies and could add quite a bit of power to studies in this field,” says Institute Scientist Dr. Michael Kerr, the study’s principal investigator. 🏔️



Knowledge Transfer

FROM RESEARCH REPORT TO THE SHOP FLOOR

Experts in knowledge transfer live by a clear motto: “Make your message specific, relevant to your audience, and always keep it simple.”

This key principle was tested recently when several IWH researchers, Union of Needletrades Industrial and Textile Employees (UNITE) staff, specialists from the Workplace Safety & Insurance Board (WSIB) and members of several Health and Safety Associations transferred their ergonomic wisdom to clothing industry workplaces in Ontario.

They were armed with a message (see box) and a tool—the *Ergonomic Handbook for the Clothing Industry*—a guide that outlines common ergonomic problems and provides potential solutions to reduce the risk of work-related musculoskeletal disorders.

“We brought together a team, including the researchers who developed the tool, and we spent time carefully

crafting the messages we wanted to deliver,” says IWH Knowledge Transfer Associate Rhoda Reardon, a co-facilitator of the project.

Three members of the transfer team—known as the “messengers”—developed specific transfer mechanisms to targeted clothing industry workplaces.

“Messengers” from the WSIB included Account Manager Robert Boyle and Ergonomist Gary Doig. They developed a hands-on workshop to train managers and workers on the shop floor.

“This was an important step because it ensured the messages were tailored to the needs of each workplace,” Boyle explains. “We also wanted the message to include some ‘friendly persuasion,’ stressing just how important it was for these workplaces to implement ergonomic solutions for their workers.”

“Messenger” Sandra Patterson, an ergonomist with the Industrial Accident Prevention Association (IAPA), took a one-on-one approach.

She created a “checklist” that addressed the physical conditions of the workplace—for example, how workstations were set-up, the type and quality of seating, and placement of equipment. This checklist can be used to plan ergonomic

The project team developed this message to transfer to clothing workplaces:

There are significant risk factors for soft-tissue injury in the clothing industry and there are proven, ‘doable’ low-cost things that can be done to reduce these risk factors and make work better for all.

improvements in other clothing industry workplaces and even in other industries. “It’s a great tool that helps workplaces identify hazards so they can work toward solutions,” she says.

“Messenger” Gloria Taylor-Boyce, a program development officer with the Workers Health and Safety Centre (WHSC), opted for a “train-the-trainer” method. Taylor-Boyce initiated an advisory group consisting of WHSC staff and members of Joint Health and Safety Committees in the clothing sector. The group developed a training module for the Centre’s volunteer trainers.

“Our approach was unique because it was workers training workers,” she says. “The results achieved from using dedicated, volunteer worker-instructors have not been matched by any other delivery method.”

The project is currently being evaluated to look for ways to improve the process at each stage. “It’s all about lessons learned,” Reardon says. “That’s the core of knowledge transfer and exchange—as we teach others, we also learn and incorporate what we learned for the next time around.”



From left to right: WSIB’s Robert Boyle, Jill Balfour, Gary Doig, IWH’s Rhoda Reardon, IAPA’s Sandra Patterson, WHSC’s Gloria Taylor-Boyce, and WSIB’s Corrine Briggs.

Continued from page 3 – “Back on the job but still hurting?”

Beaton, who also directs the Mobility Program Clinical Research Unit at St. Michael’s Hospital in Toronto, says her experience as an occupational therapist helped her realize the importance of “linking research questions to real issues in the real world.”

The results of this research, which should be completed within the next two years, could have many useful applications, she says:

- Being able to reliably measure workplace disability could help other scientists who are designing and carrying out return-to-work studies.
- Being able to measure and compare disabilities—both before and after workplace interventions—could help disability managers determine the value of making ergonomic or other changes to the work environment.

- Precise disability measures would also be of interest to physicians, physiotherapists and occupational therapists who are helping workers recover from work-related disability.

IWH researchers are interested in hearing from other scientists, disability managers and health-care providers who are using different, established instruments to measure work disability. They are invited to contact Beaton by e-mail at the Institute (dbeaton@iwh.on.ca).



Comparative international studies commended

The Institute's emerging role as a ground-breaking leader in international work and health studies was highlighted at the annual meeting of the Scientific Advisory Committee (SAC) in March. The Committee reviewed presentations from IWH scientists on a number of their international collaborations and international comparative studies.

Among the Institute scientists, the Committee heard from Dr. Emile Tompa on his work on permanent and partial disability in Canada and the United States. Dr. Cameron Mustard discussed the Institute's role in a study which explores declining compensation claims for work-related disability in six developed countries.

Research Associate Chris McLeod presented a 10-country study on the relationship between labour market experiences and self-reported health status and disability. Dr. Pierre Côté discussed his work on an international neck pain task force; and

Dr. Alina Gildiner's work on the dimensions of disability policy systems and their impact on economic outcomes and policy-making processes in advanced industrial societies was also discussed.

"We were very pleased to learn more about the scope of the Institute's international research. The Institute is uniquely poised to take leadership in this highly relevant research area," said Dr. Clyde Hertzman, SAC Chair.

Dr. Tony Culyer, a long-serving SAC member, encouraged the Institute to consider linking the progress of this research to a series of international policy forums as part of its ongoing commitment to knowledge transfer and exchange.

The Scientific Advisory Committee, formerly the Research Advisory Committee (RAC), is a standing committee of the Institute's Board of Directors. It comprises leading scientists in the fields of population health, labour market studies and occupational health and safety. It meets annually to review and provide strategic advice on the Institute's research program.

Mustard Fellow appointed

Dr. Ellen MacEachen is the recipient of the 2003 *Mustard Fellowship in Work Environment and Health*. MacEachen, who recently defended her PhD dissertation, will begin her fellowship in September, 2003.

The fellowship will provide MacEachen the opportunity to develop new knowledge on the relationship between work and health. In particular, she will study "new economy" knowledge-based workplaces to examine sociological aspects of the relationship between work organization, management practices, and occupational health systems and practices.

MacEachen received her doctorate in medical sociology from the Department of Public Health Sciences at the University of Toronto. She holds an MSc in Rehabilitation Sciences from Queen's University and a BA from Concordia University.

New IWH publications

The following Institute working papers are now available.

Age-related differences in severity and extent of disability resulting from work injuries: A descriptive study. FC Breslin, M Koehoorn. (# 187)

Force as an agent: mechanical exposure in hazard assessment and exposure assessment for musculoskeletal disorders. R Wells, D Van Eerd, G Hagg. (# 193)

Health-care utilization for work-related soft-tissue injuries: understanding the role of providers. JL Payne, JN Lavis, CA Mustard, SA Hogg-Johnson, C Bombardier, H Lee. (#203)

Padding upstream: a contextual analysis of a worksite intervention to reduce the burden of neck and upper-limb musculoskeletal disorders. MF Polanyi, DC Cole, SE Ferrier, M Facey, and the Upper Extremity Research Group. (# 192)

Rethinking the health implications of work in the new global economy. MF Polanyi, E Tompa. (# 191)

Young adult behaviour problems: family antecedents and behaviour mediators. A Khambalia, FC Breslin, CA Mustard. (# 189)

For more information on these publications, or to place an order, visit our web site (www.iwh.on.ca) or contact Administrative Assistant Melissa Cohen by e-mail at mcohen@iwh.on.ca or by phone at 416-927-2027 ext. 2173.



Published by Institute for Work & Health
481 University Ave., Suite 800, Toronto, ON Canada M5G 2E9
E-mail: atwork@iwh.on.ca Web site: www.iwh.on.ca

Manager, Communications: Kathy Knowles Chapeskie

Editor: Katherine Russo

Layout & Design: Carol Holland

Contributors: Kathy Knowles Chapeskie, Robin Kells, Dee Kramer, Evelyne Michaels, Greer Palloo, Rhoda Reardon, Katherine Russo

Issue #33 Summer 2003 ISSN # 1261-5148

© Copyright 2003

The Institute for Work & Health operates with the support of the Ontario Workplace Safety & Insurance Board.

