



It offers a balanced approach to MSD prevention and workplace improvement

BY IVAN SZLAPETIS

A great many articles, research papers and books have been written on the costs of musculoskeletal disorders (MSD) and the benefits of ergonomics. Still, some people see ergonomic practices as a luxury, not a necessity.

These days, with so many issues demanding our attention, it's tempting to push others onto the back burner. Here's a just a short list of possible worries. Check the one(s) that apply:

- increasing innovation, flexibility, and productivity
- cutting costs to stay in business
- improving morale of employees that are still with your company
- the economy in general

There is no magic bullet that will make all of these problems go away. But one thing is certain: to succeed we need to be working together towards common goals. This is the essence of "participatory ergonomics," and why the benefits can have some impact on all of the worries listed above (see "*The Hidden Benefits of Being Proactive*").

What participatory ergonomics means

Ergonomics matches the work and work environment to the abilities, needs and limitations of the users. The full scope of ergonomics includes the physical environment, as well as psychological and sociological factors affecting the job.

Participatory ergonomics is a process for workplace

improvement that involves workers as well as other stakeholders in problem solving.

Well-meaning managers and engineers sometimes get frustrated when workers continue to report discomfort or worse, file MSD claims, despite the purchase of new "ergonomically designed" equipment. Such managers may set themselves up for failure if they diagnose the problem and select a solution without meaningful consultation with the people using the equipment. That's not participatory ergonomics.

Implementing a PE process

Based on research findings, the Institute for Work & Health suggests the following six keys to success in implementing a participatory ergonomics (PE) process. Additional detail is provided based on the experiences of IAPA ergonomic specialists.

1. Create PE teams with appropriate members. Some firms use an Ergonomics Change Team (ECT) or steering committee to drive ergonomic improvements. Teams can represent a cross-section of the organization, or workers and supervisors from one department, an approach taken by Cogent Power Inc. The firm started with its furnace department, went on to the slitting and then forming departments (for more, see "*Going Lean*" in the Nov/Dec 2008 issue of *Accident Prevention*).

2. Involve the right people in the PE process. Often, the team will include:

- workers — the job experts who are affected by changes

Profiting from participatory ergonomics

- maintenance and/or engineering — inevitably, something will need to be fabricated or adjusted to make an ergonomic improvement
- supervisors — to lead behavioural changes that may be necessary; this could include planning job rotations and coaching people on proper lifting and handling techniques
- health and safety coordinator and/or joint health and safety committee members — representation on the ECT avoids creating silos
- labour representation — if there is a union, make sure it's on board
- management — a project sponsor will clear the path to implementing solutions

3. Provide ergonomic training for ECTs.

IAPA has developed a training program for ergonomics teams, called Building an MSD Prevention Program. Teams learn about ergonomics principles, and practice the skills necessary to recognize and assess MSD hazards. An ergonomics specialist facilitates brainstorming activities to identify a range of possible solutions, which allows a comprehensive and practical plan of action to evolve. The intention is to build self-sufficiency and develop the skills and attitudes necessary for a firm to replicate on its own the successes facilitated by IAPA.

4. Involve a PE champion. A PE team will be more effective if it has a champion who helps coordinate meetings and motivate people to complete their action items. To help manage change, a champion must be an effective communicator and have credibility across the organization.

5. Define participants' responsibilities. Team members work best with well-defined roles, responsibilities and a code of conduct for meetings. By involving team members in this way, you can leverage individuals' unique abilities to maximum benefit. Nothing is more frustrating than calling a meeting and watching people show up late without having done what they were assigned to do.

6. Make decisions through group consultation. While making decisions in a group sounds great, it isn't always easy. They can take longer than "executive decisions," but the quality of the solutions and likelihood of compliance with decisions is often greater when more people are involved. A team needs to decide how it will handle conflicting opinions. Some

firms are already team-oriented, but this is not the culture in all workplaces. Having a facilitator, such as an ergonomist, can help establish the norms necessary for team building.

Increasing innovation, quality, and productivity

Necessity may give birth to new ideas, but they need to be nurtured within a safe environment, encouraged by a strong organizational culture, and supported by healthy, motivated people. This is the basic premise of the Healthy Workplace model. Initially developed by Health Canada, it is the foundation of the prestigious Healthy Workplace Award, under the National Quality Institute (NQI)'s Canada Awards of Excellence. NQI recognizes that you can't have a quality organization that does not value its people.

Too often, great ideas wither and die because they cannot take root in an unhealthy workplace. Creating a healthier workplace requires skills that can bring ideas to life. Firms require processes that can effectively manage change and allocate resources to ideas that create the greatest business advantage. However, the biggest obstacle may be a belief that health and productivity are two opposing goals. Both can be improved and leveraged through a series of small ergonomic innovations that align with business objectives, build on existing processes and standards, and create a stronger organizational culture.

The first time I conducted ergonomics team training was 13 years ago, for

an auto parts manufacturer that had a Ministry of Labour work order to establish an ergonomics program.

A production line that was the source of many MSD claims had four punch presses connected by a conveyor. Workers on the fourth press reported the highest level of pain on a symptoms survey. This last press was a bottleneck in the production line, and more customer quality complaints were associated with this press than all the others.

In advance of the training, I toured the facility looking for examples that we could use for problem-solving exercises. I found that operators of the last press had to reach far across a wide conveyor to get the part, punch it in three stations of the press, before tossing the part to the packager with barely enough time to catch the next part before it passed by.

The solution that I envisioned was simple: move the press 15 cm closer to the conveyor, and install a part deflector on the conveyor that would bring the parts closer to the operator. This would reduce movement time, and allow the operator to assume a more comfortable neutral posture to get the part. So simple, I thought, and almost cost free.

When I brought the idea up during a brainstorming session, the operators said it wouldn't work because they had already suggested it a long time ago. So maybe I'm not a genius, but I had facilitated a brainstorming session in which workers, supervisors and engineers finally listened to each other. A year later, the firm had reduced the number of lost-time injury claims by 58 percent.

Since then, I've had similar experiences in a wide range of industries. The people actually doing the job have insights and ideas that can greatly improve the productivity and reduce injuries, but a lack of internal communication and cooperation can hold them back. It is too much to assume that simply putting people together in a training room will enable them to emerge smiling and successful.

Human Resources and Social Development Canada has identified "working with others" and "thinking skills" (problem-solving) as essential skills for Canadian workers, just like literacy and numeracy. A participatory ergonomics approach can help build these skills, thereby bringing innovation to life.

Learn More During a Free Webinar — June 24, 2009

IAPA is hosting a free webinar event on the business case for ergonomics. Hear about the experiences of two organizations that successfully implemented ergonomic changes, then measured and documented their impact. For more information and to register, visit www.iapa.ca.

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Better still, email a link to a colleague from www.iapa.ca/AP

The Hidden Benefits of Being Proactive

If you analyze the benefits of ergonomics only in hard dollars paid for equipment modifications and consulting fees, you would likely find a modest difference between reactive and participative approaches. However, when considering less tangible but equally valuable benefits of both approaches, a strong link emerges between participatory ergonomics and long-term profitability.

Imagine that you work for a company that uses only a reactive approach to dealing with MSDs, where health and safety improvements are considered only when someone is injured and/or the Ministry of Labour issues an order. Contrast this with a more proactive participatory approach.

The table below suggests how different groups or individuals might respond to an injury or complaint that has been raised. I've linked these intangible effects to potential measurable results.

INTANGIBLE IMPACT OF TWO ERGONOMIC APPROACHES			
Group or Individual affected	Response to a Reactive Approach	Response to a Participatory Ergonomics Approach	Potential Outcomes
Human Resources	Scrambling to find reliable replacement for injured worker	Fulfills training and development mandate/goals	Reduced recruiting time/costs, Investment in training
Supervisors	Confused by an informal return-to-work program and a need to find "light duties" • frustrated • divided	More comfortable communicating with injured workers and in their role within the RTW program	Less time administering RTW • more time managing and improving processes
Injured worker	Victimized • a burden • defensive • threatened	Involved in improving the job for everyone	Shorter duration of lost-time injuries
Workers with unreported symptoms	Jealous of "special" treatment received by injured co-workers, or afraid to speak up for fear of losing their job • unappreciated • used	Empowered to affect their health and safety • confident that things will get better	An end to the seemingly infectious spread of MSDs • reduced lost-time injury frequency
Uninjured & uninvolved workers	Suspicious of change • a cog in the wheel • unsafe • detached	Recognized for their experience and knowledge by being asked to participate	Reduced turnover • fewer grievances • more improvement ideas
Health & Safety Coordinator	Squeezed between workers and management • overworked • under-valued	A leader and facilitator • competent • contributing to the firm's success	Reduced Ministry of Labour and WSIB regulatory interaction
Engineering	Distracted from priority projects to improve productivity and quality	Aligned with the needs of workers and management, working towards a win-win result	Increased innovation in products or services brought to market
Finance	Frustrated by sudden variances in budget (i.e., Injury costs, lost production, temps, WSIB surcharges) • overworked and sore	Stable and secure • in control • prepared to deal with external crises because internal processes are more predictable	Steady cash-flow • improved forecasting
Sales and customer service	Disheartened by production delays and quality issues that seem to accompany injuries	Enthusiastic and confident that production can deliver on time and in full, as promised to the client	Fewer customer complaints due to quality and late delivery • more repeat customers • more sales
Management / owner	Angry and helpless to prevent disruptive injuries and "government intrusion" • anxious • overworked	Leading a positive culture change • focused on an optimistic vision • successful	More time with family • better mood • better health • better golf score

Cutting costs to stay in business

Researchers at the Institute for Work & Health (IWH) recently conducted an extensive systematic review of MSD prevention research. They found “strong evidence supporting the economic benefit of ergonomic programs and other interventions to prevent musculoskeletal disorders (MSD) in the manufacturing and warehousing sector.”

Musculoskeletal disorders account for half the cost of compensation claims made to Ontario’s Workplace Safety and Insurance Board. Apart from increasing premiums, a high rate of MSD claims also attracts the attention of the Ministry of Labour. As firms downsize and workers do more with less, the physical and psychological stresses increase. This can lead to more injuries, fewer workers capable of meeting growing job demands, and more regulatory intervention.

The ministry has increased enforcement activities related to MSD prevention with information campaigns and inspection blitzes. Federally regulated businesses will soon have guidelines for implementing MSD prevention programs, in support of recent changes to the *Canada Labour Code*.

To cut costs, employers from various industries have tried to apply lean manufacturing techniques. At IAPA’s Health & Safety Canada 2009 national conference, Greg MacDougall (Cogent Power Inc.) and I presented a workshop that demonstrated how “real lean” principles and healthy workplace principles overlap.

According to Greg, some firms take a “slash and burn approach” during hard times. Unfortunately, they damage their capacity to improve and alienate the workers. Research into lean practices has found that firms applying lean techniques without applying lean principles, such as employee involvement and empowerment, experience only short-term improvements that soon regress to

baseline values. Firms that change their culture while applying lean techniques experience accelerated and sustained process improvements.

Given a reluctance among many employers to make large investments in time and capital, we must find smaller opportunities that can be leveraged to create healthier and more productive workplaces. Fortunately, there are plenty of case studies and resources available on the Internet. A good source of industry and job-specific ergonomics information in Ontario can be found at a Workplace Safety and Insurance Board site, www.preventionpractices.com/msd. The National Institute for Occupational Safety and Health in the US has also produced a number of industry-specific documents that focus on simple solutions to MSD risks, called *Easy Ergonomics*: www.cdc.gov/niosh/topics/ergonomics. The State of California also has a number of booklets and posters on ergonomics, including *Easy Ergonomics*, on their website: www.dir.ca.gov/dosh/dosh_publications/EasErg2.pdf

Improving your firm’s culture can improve the economy

In a report entitled *The Innovation Imperative in Manufacturing* (The Boston Consulting Group, 2008), 47 percent of small and midsize companies identified “establishing conducive company culture” as a primary driver of excellence in generating high-quality ideas.

Culture is just as vital to the health of Canadian workers as it is to the Canadian economy. Some say that it takes five years to create and sustain a positive culture change. We just can’t wait that long. While you can’t turn a super-tanker in 10 minutes, but you can bet that the ship’s crew measure wind, current, engine power, etc. constantly so that they know exactly where they will be 10 minutes or two days now, all the while making

adjustments to stay on course.

According to the Organisation for Economic Co-operation and Development, innovation policy plays a role in addressing the economic crisis (OECD, 2009). “The past experience of countries such as Finland and Korea shows that reforms aimed at strengthening innovation in the context of broader reforms to address the crisis can help countries emerge stronger from the crisis and help put them on a more sustainable growth path.”

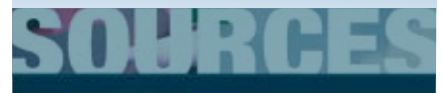
While Canadian manufacturing production and export has been high in recent years, the Canadian Manufacturers and Exporters (CME, 2008) reports that we are less competitive in terms of productivity, profitability and investment. Specifically, there is a significant gap in innovation, including private sector investment in training, research and development.

Ergonomics is not a quick fix for all of the world’s problems, but applying a participatory approach can help set an example for further organizational improvements. Working together towards a common goal, against great adversity, bridges differences between people. Working, learning and experiencing measured successes will energize teams, companies, and communities. By working together, we can protect the health and safety of our workforce and achieve greater competitive advantage in a global economy.

Ivan Szlapetis, a Canadian Certified Professional Ergonomist, is a healthy workplace consultant with IAPA; iszlapetis@iapa.ca.

TAKING THE NEXT STEP

For a list of IAPA ergonomics resources in “Sources,” page 42.



Calculate the Real Costs of Injuries

There is a direct link between the health and safety of Canadian workers and the financial, regulatory and entrepreneurial advantage of running a business in Canada.

Interested in calculating the costs of injuries and estimating the benefits of prevention activities? Visit www.iapa.ca. Click on Resources → Small Business Centre, and select the Small Business Safety Calculator link.

This tool will allow you to select different industry examples. For instance, the cost of a chronic back strain to a small clothing and textile business is estimated to be \$20,123.50, when taking into account loss of production and replacement costs. A small firm would have to sell \$223,594.44 in product to make up for this unexpected loss.

