

Oil industry dangers lurk in the office environment

Dr Kevin Taylor, Managing Director of Wellnomics Ltd, explains the significant savings oil and gas companies can achieve by preventing computer use injuries in the workplace.

Most public attention regarding health and safety in the Oil and Gas industry focuses on the visible operations of the industry where the danger is well documented, and injury prevention is well resourced. However, all the major oil producing and refining companies employ significant numbers of computer users – on average 75% of the workforce are daily computer users - and their needs tend to be less high profile, but no less important in terms of costs to the employer. The risks present for computer users are not so readily visible.

Workstation ergonomics, stress, working style and posture all combine to cause musculoskeletal disorders (MSDs) which in turn lead to reduced productivity, lowered motivation, lost work days and an increase in workers' compensation claims. In fact MSDs represent approximately 40 – 50% of all workers' compensation claims across Canada and amount to billions of dollars in direct and indirect costs.

Because the percentage of computer users in the oil and gas industry is so high, the financial burden to employers of having workers dealing with the combined effects of MSDs and stress can be very significant.

Oil companies have historically focused on improvements to the high danger and high profile areas within the industry, and to some extent, work related injuries in those roles have been reduced to the point where it is difficult to make significant ongoing improvements. The spiraling cost of MSDs have an impact not just on hands, wrists and arms, but the entire upper body, including upper and lower back injuries, shoulder and neck issues and migraines. Eyestrain related to computer use also has significant associated costs.

According to the website of oil giant Chevron, the company was seeing the incidence of MSDs growing by 67% over a five year period, despite efforts to reduce injuries among office workers. Over 40% of all injuries in the company were due to MSDs. Chevron implemented an MSD prevention plan which initially diagnosed 30% of employees as being at high risk of MSDs. The results of the program were impressive, with the number of people at risk of MSDs dropping 30% across the company between 2000 and 2002. Injuries are also less severe, with the average number of days lost per MSD injury dropping by 50% between 2001 and 2002, and the cost per claim dropping by up to 50%.

Despite such compelling evidence many companies have, however, traditionally underinvested in reducing or preventing injury among their office workers and computer users. This remains an area where significant

improvement and savings can be made with the implementation of relatively simple strategies.

In Alberta, the Partners in Injury Prevention program includes WCB premium discounts of up to 20% for members who are able to demonstrate they are continuing to improve their performance in reducing workplace injuries. Psychosocial factors contribute to MSDs International research by independent organizations such as the Office Ergonomics Research Committee (OERC) in the US and TNO in the Netherlands has indicated that factors other than the purely physical have a major impact on the risk of an employee developing MSD.

Psychosocial factors recognized as having an impact on worker's health include:

- high work stress
- low level of control over type and quantity of work
- highly mentally demanding work
- low social support from colleagues
- lack of feedback at work
- a low sense of community
- lack of sufficient leadership and support in the work environment

“Binge computing” – a new phenomenon to work-related MSDs Research also suggests that a major area of concern is “binge computing” – the phenomenon of working under pressure, to deadline, to produce large reports, presentations or documents.

Dr. Benjamin Amick, from the University of Texas School of Public Health, recently coined the phrase to address one of the problems with computer-related injuries: working at the computer for an extended time under pressure without a break.

Results of his research on university students has shown a strong correlation between binge computing and MSD injuries, especially when the semester end nears, along with deadlines for term papers. The impact of mouse usage rather than keyboard usage is also a source of injury due to the tense static posture often associated with using the mouse as the main computer tool, for example while researching on the internet. Coincidentally, many organizations, including those in the oil and gas industry, are finding their newly minted graduates are suffering from symptoms of MSDs within months of taking on their first job. It is unlikely that the high incidence of discomfort is caused purely by the immediate demands of the new position, but rather by the 'binge computing' habits and patterns developed during university study.

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The phenomenon is not restricted to recent graduates. Changes in the workplace and the presence of newer and faster technology means that now more than ever before employees at all levels are working within a succession of project deadlines, intense work periods and shortened timeframes. Employees who are stressed by excessive workloads, boring and repetitive work, unrealistic deadlines and other factors, tend to have a higher degree of muscle tension, which magnifies the issues of posture and bad ergonomics becoming the trigger points for MSD symptoms to become apparent or worsen.

Risk management software tools

Identifying and protecting employees at risk of developing MSDs requires an accurate risk management program such as Wellnomics Risk Management developed by Wellnomics Ltd, manufacturer of the established break software WorkPace.

The technology is based on extensive scientific research and includes tools designed to identify employees at greatest risk of workplace injury from musculoskeletal and stress related factors. Through detailed online questionnaires covering posture and workstation ergonomics, symptoms and stress – the specific answers to which remain confidential to the employee – a personalized risk report is generated that provides feedback

to each computer user, with a list of recommendations and advice on how to reduce their risks. The software also has a comprehensive reporting facility that enables managers to see the risk levels for their department and reporting staff, and to immediately address the issues with those most at risk. This is particularly valuable in large organizations where staff and financial resources are stretched, as it enables managers to take a cost-effective and proactive approach to reducing workplace injuries. Furthermore, Wellnomics Risk Management effectively empowers staff to take responsibility for their own health and safety, as it teaches them how to avoid injury through correct workstation adjustment, taking enough breaks, and improving posture.

For the Oil and Gas industry the benefits of extending health and safety measures to computer users far outweigh the costs of implementing programs such as Wellnomics Risk Management. These include reduced injury rates, increased worker productivity, reduced stress levels, reduced absenteeism, reduced spend on workstation assessments, and ensured compliance with health and safety obligations.



About Dr Kevin Taylor

Dr Kevin Taylor is managing director of Wellnomics Ltd (www.wellnomics.com). At any one time Wellnomics is involved with numerous scientific studies on computer use in the office environment around the world. This extensive research allows Wellnomics to make a measurable improvement to health and safety outcomes and ensure clients receive tangible returns on investment.

Definitions of injuries relating to computer usage

Around the world, various terms are used in the scientific, medical and business communities to refer to injuries caused by incorrect or excessive computer use.

They can be referred to as:

CTD: Cumulative Trauma Disorder

OOS: Occupational Overuse Syndrome

MSD: Musculoskeletal Disorders

RMI: Repetitive Motion Injury

RSI: Repetitive Strain Injury

All of the above are umbrella terms that refer to a group of injuries.

Some of these injuries include:

Back Pain (lower back strain etc)

Neck Pain

Muscle Strain

Tendonitis

Carpal Tunnel Syndrome

Rotator Cuff Syndrome

Tennis Elbow (epicondylitis)

Shoulder Pain (shoulder myalgia)