E-BOOK

Why Ergonomics?

Communicating the Value to Business Stakeholders

VelocityEHS® | humantech®

INDUSTRY SPOTLIGHT SERIES

About VelocityEHS | Humantech

VelocityEHS's Humantech was founded with the single focus of improving the lives of the working population. For 40 years, our approach has changed how organizations use the science of ergonomics improving the lives of the global working population.

We have the largest consulting team of board-certified professional ergonomists in North America. Humantech consultants combine expertise in ergonomics with practical industry experience and the skills of professional services delivery. We listen well, work hard, and evaluate ourselves based upon your success.

Our software solutions help you take control of your ergonomics process. Our proprietary assessment and solution tools, e-learning, and central online system give you a faster, more effective and efficient way to manage ergonomics corporate-wide.

A team of highly-qualified professionals with skills in e-learning and software development, industrial and graphic design, sustainability, usability, and information technology supports our ergonomists.

ABOUT THE AUTHOR

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Blake McGowan, Director of Research for the Humantech brand of VelocityEHS, ensures that only accurate and meaningful technical and scientific data is incorporated into our process, software solutions, assessment methods, and guidelines.

Blake leads the Research Insights team, which seeks and aggregates information from academia and industry experts. He translates that information into knowledge our customers can use and into our software solutions and implementation services. That transforms into value for our customers.

Blake received a Bachelor of Science degree in Kinesiology and a Master of Science degree in Biomechanics from the University of Waterloo in Waterloo, Ontario. Blake has achieved recognition as a Certified Professional Ergonomist (CPE), and is a member of the American Conference of Governmental Industrial Hygienists (ACGIH), the American Industrial Hygiene Association (AIHA), and Human Factors and Ergonomics Society (HFES). He is a past officer of the AIHA Ergonomics Committee.

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ABOUT THIS E-BOOK

Communicating the value of ergonomics to business stakeholders is a critical part of an ergonomics initiative. As environmental, health, safety, and sustainability professionals, our goal is to improve the lives of the global working population. To maximize the positive impact on the working population, we must satisfy business stakeholders; to gain their support, we need to learn how to speak their language and to communicate the return on investment of good safety management.

I'm driven to promote the discussion of this topic because I've seen many professionals fail to get ergonomics initiatives started and improvements implemented in their organizations. Their proposals often end up at the very bottom of everyone's to-do list. It's been a common occurrence during my 20-plus years as an ergonomics consultant. Environmental, health, and safety professionals want to know: how can they get management to listen? This e-book explains how.

THE VALUE OF ERGONOMICS

In business terms, value is commonly defined as the importance or worth to the operation. Effectively communicating the value of ergonomics to all stakeholders starts with providing a clear and concise definition of ergonomics. In simple terms, ergonomics is defined as designing the workplace to match people's capabilities. The goal of ergonomics is to optimize human performance. **When ergonomics is done right, and human performance is optimized, there are two primary positive outcomes: improved employee well-being and enhanced business performance.**

Traditionally, dependent stakeholders such as those in safety and human resources departments appreciate the value of ergonomics. They understand that it improves employee well-being. This includes reductions in causal absenteeism, first aid cases, modified duty cases, recordable injuries, lost-time cases, worker's compensation claim costs, and others. However, dominant stakeholders, including plant leadership (quality, operations, and manufacturing heads), boards of directors, and investors, tend to have limited awareness or understanding of the value of ergonomics. They often overlook and under- appreciate that ergonomics can improve business performance by enhancing product quality, increasing manufacturing performance, and improving employee engagement. It can even result in better stock performance and corporate social responsibility!

At the 2018 Institution of Occupational Safety and Health's Conference in the United Kingdom, the outgoing president of the largest and leading workplace health and safety body in the world, Craig Foyle, told delegates that the key challenge for the safety and health professional was "to really demonstrate the significant return on investment of good safety, health and wellbeing management." He urged them to learn to speak the language of business stakeholders.

To be able to do this, we need to better understand financial statements (income statement, balance sheet, and cash flow) and how ergonomics positively impacts them. Business stakeholders often see ergonomics as an expense on the income statement—a cost of doing business. However, businesses are starting to recognize that investing in good health and safety management—including ergonomics—is material to business performance.

THE BURDEN OF POOR ERGONOMICS

When ergonomics is not practiced at all or not done well, there are many social and financial consequences. The most recognizable social consequence is workplace musculoskeletal disorders (MSDs), or soft tissue injuries experienced by the worker. These are painful disorders of the muscles, nerves, tendons, ligaments, joints, cartilage, or spinal discs. MSDs affect all body areas, but the most common areas are the upper extremities (shoulders, elbows, and hands) and lower back. MSDs are the result of exposure to biomechanical risk factors such as forceful exertions, awkward postures, sustained exertions, high frequencies, vibration, and others.

Data suggests that MSDs are undoubtedly a large societal problem. **MSDs are the second greatest cause of disability globally, having increased 45% since 1999**, according to the 2010 Global Burden of Disease Study. Globally, low back pain is the leading cause of "years lived with disability" (YLD) from 1990 through 2015. YLD is a metric of prevalence of disease. Low back pain represents the sixth greatest global burden of disease, based on "disability-adjusted life-years" (DALYs) just behind HIV/AIDS (5th) and just ahead of Malaria (7th). DALYs is a metric of population health. These metrics are similar in the United States.

In the U.S., upper-extremity MSDs and low back pain are the most prominent occupational injuries and illnesses. They account for 31% of all occupational injuries and illnesses and incur a median of 9 days absence from work. In Canada and Europe, they account for 50% and 39% of all occupational injuries and illnesses, respectively. Undeniably, MSDs contribute a

MSDs as a percentage of all occupational injuries and illness by country

POOR ERGONOMICS (CONT.)

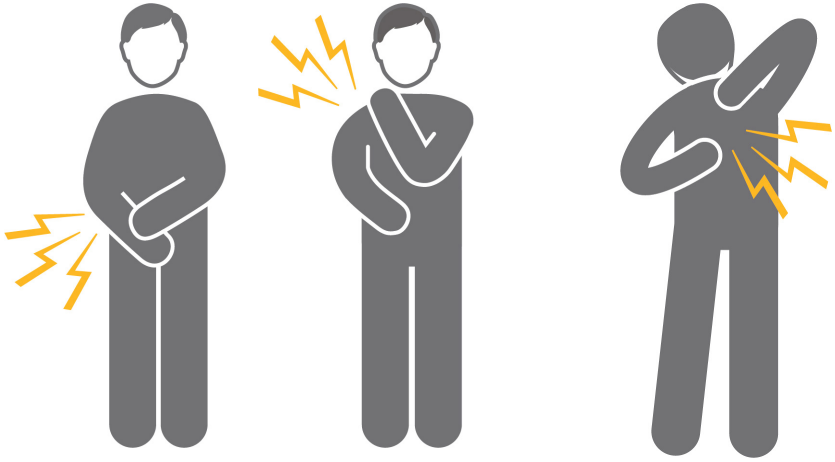
large proportion of all compensable work-related diseases globally.

The financial burden of MSDs is staggering. In 2004, the estimated direct cost of treatment for MSDs in the U.S. was estimated at $510 billion, equivalent to 4.6% of the gross domestic product (GDP). Indirect costs were estimated to add $339 billion more, for a total cost of $849 billion, or 7.7% of the GDP.

Evidence suggests that the leading cause of occupational injuries in the U.S. is forceful exertions or overexertions. These include manual lifting, lowering, pushing, pulling, carrying, and throwing. They account for about 23% of all occupational injuries and cost $13.8 billion annually. Forceful exertions leading to MSDs are also considered a growing global problem.

The social and financial consequences of poor ergonomics are significant. Unfortunately, the societal costs are not enough to influence business stakeholders to act. However, businesses are starting to understand the impact of good ergonomics on employee well-being and business performance.

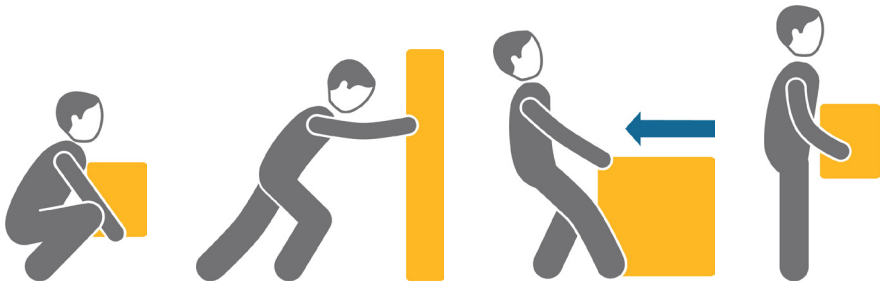
Cost of leading types of MSDS



$29,000 - $33,000

$22,500 - $76,000

Cost of overexertions = $13.8 billion annually!



IMPROVED EMPLOYEE WELL-BEING

"Ergonomics done right" leads to measurable improvements in employee well-being.

Reduced (MSDs) risk. Formalized and systematic ergonomics initiatives that focus on quantifying (MSDs) risk in the workplace and implementing ergonomics interventions to reduce (MSDs) risk have been shown to reduce the risk, as well as the number of (MSDs) and acute injuries. Ergonomics interventions are associated with a 7% reduction in injury risk, which equates to a reduction of 5 injuries or (MSDs) per 100 person-years.

Fewer (MSDs) and lower associated costs. Proper ergonomics design and intervention reduce the number of (MSDs) by 51-63%, the incidence rate by 45-69%, and workers' compensation costs by 60-74%.

Reduced severity of (MSDs). Proper ergonomics design and intervention reduce lost workdays by 65-79%, restricted days by 31-61%, and costs per claim by 3-61%.

Fewer first aid cases and modified duty cases. Proper ergonomics design and intervention reduce first aid cases by 35% and modified duty cases by half.

Efficient return on investment. Ergonomics interventions are associated with a cost-to-benefit ratio of 1:2.8 to 1:5.5 and an average payback period of 2.25 months.

Reduced employee turnover. Proper ergonomics design and intervention reduce employee turnover by 23-49%. According to the Employee Benefit News, unplanned turnover costs business 33% of a worker's annual salary to hire a replacement. According to the Bureau of Labor Statistics in 2017, the average annual salary for the U.S. worker is $44,564.

Reduced employee absenteeism. Proper ergonomics design and intervention reduce employee absenteeism by 42-116%. Unscheduled absenteeism costs are about $3,600 annually for an hourly worker.

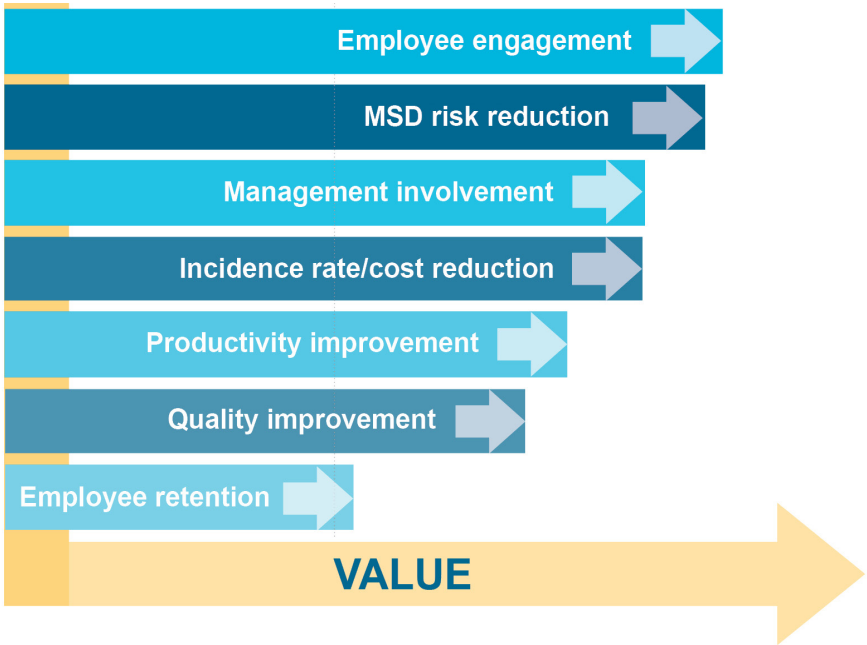
ENHANCED BUSINESS PERFORMANCE

"Ergonomics done right" leads to quantifiable enhancements in business performance, from both an operational and financial perspective. Research shows that the sum of enhanced operational and financial performance benefits from good ergonomics is greater than the sum of employee well-being benefits. Some researchers have even suggested that the benefits are 10 times greater.

Higher product quality. Proper ergonomics design and intervention result in reduced rates of product defects, less time spent correcting defects, and lower costs to correct them by 59-85%. For example, jobs/tasks with higher MSD risks have 3 times the quality errors and 6.5 times the quality failures, and it costs 7.9 times as much to correct these quality errors compared to those associated with lower MSD risk jobs/tasks.

Better manufacturing performance. Proper ergonomics design and intervention reduce manufacturing task times and improve facility productivity by 20-30%.

Improved employee engagement. The ergonomics conditions of the workplace reflect the dominant stakeholders' respect for employees. To engage employees, business leaders must connect one-on-one with them and establish a foundation of trust and respect. A workplace that is designed to meet people's needs demonstrates the employer's commitment and encourages employees to be fully engaged. It is generally accepted that engaged employees are 20% more productive compared to their colleagues. A recent Humantech study showed that large, global corporations perceive employee engagement as the biggest value of a formalized ergonomics initiative.



Source: Humantech 2017 Benchmarking Study - Value and Benefits of Using The Humantech System®

Better human capital management. Human capital includes the skills, knowledge, and abilities employees bring to their work (viewed in terms of their value or cost to the company).

BUSINESS PERFORMANCE (CONT.)

It is important to note that management of Occupational Health and Safety (OHS), including ergonomics, is part of human capital. Senior management teams and financial investors understand that investing in human capital improves financial performance. The four key investments include providing ergonomics training to all employees, deploying a management system for ergonomics, measuring the system's effectiveness, and publishing lost-time injuries.

Better stock performance and corporate social responsibility. It is proven that companies that invest and build a culture of safety by focusing on employee well-being and workplace improvement—including ergonomics—yield greater value for their investors. On average, these companies outperform the general stock market by 5% annually.

Better corporate credit rating. Data from the S&P Global Market Intelligence Group shows that proper human capital management and safety management—ergonomics being an important part of both—can have a positive impact on corporate credit ratings. A change in corporate credit rating has a significant impact on business performance and can alter stock price positively or negatively by 10 to 20%.

CONCLUSION

Ergonomics is often overlooked, under-appreciated, and underexploited by business stakeholders, as they have a perception that it is only an employee well-being initiative. Who can blame them when federal agencies such as the Center for Disease Control and the National Institute for Occupational Safety and Health (NIOSH) explicitly diminish the value of ergonomics through their official definitions?

> *"The goal of ergonomics (i.e., the scientific study of people at work) is to prevent soft tissue injuries and musculoskeletal disorders (MSDs) caused by sudden or sustained exposure to force, vibration, repetitive motion, and awkward posture."*

Furthermore, the Canadian Centre for Occupational Safety and Health states:

> *"An ergonomics program is a systematic approach and a management system that is designed to reduce risk from ergonomic hazards in the workplace."*

It is obvious to see through these definitions/statements why business stakeholders have a limited awareness or understanding of the value of ergonomics.

In contrast, professional organizations such as the International Association of Ergonomics and the Human Factors & Ergonomics Society provide a more compelling definition for stakeholders:

> *"Ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance."*

This latter definition better communicates the value of ergonomics in terms and measures understood by business stakeholders. It includes all benefits of ergonomics.

"Ergonomics done right" leads to many groups reaping the benefits, including employees, supervisors, managers, safety/ergonomics team members, human resource professionals, operations, engineers, management, leadership, board of directors, and investors. **As safety professionals, we need to expand our vocabulary to include the language of business.** We have compelling information to share, we just need to communicate it.

ADDITIONAL RESOURCES

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About VelocityEHS | Humantech

For 40 years, global companies have relied on VelocityEHS' Humantech software and services for workplace ergonomics improvements. By combining experienced, board-certified ergonomists with our proprietary assessment tools and comprehensive software, we deliver integrated solutions that impact safety, quality, and productivity. To learn more about how our Humantech software can help you do ergonomics right®, visit www.Humantech.com.

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