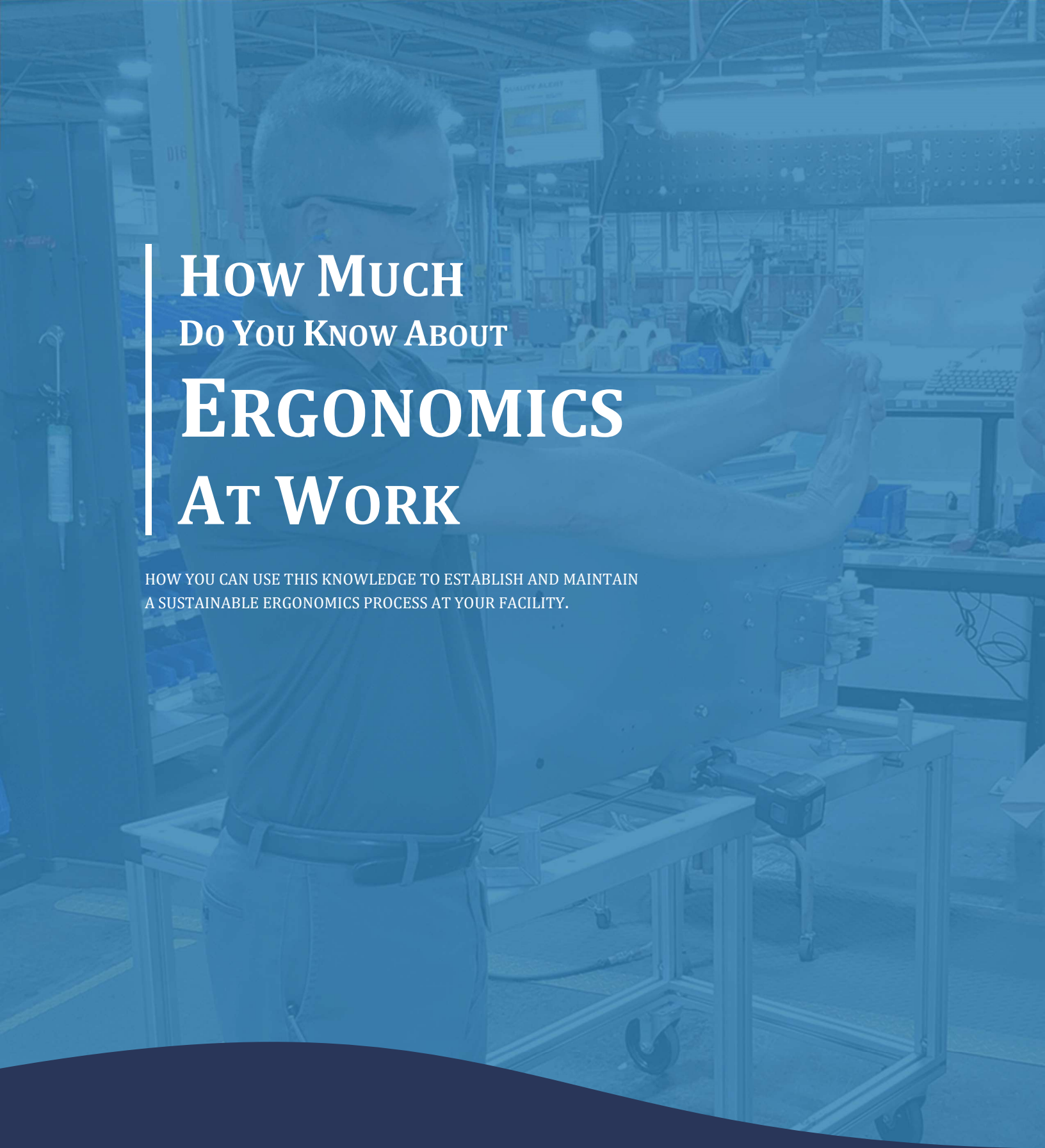

How Much Do You Know About Ergonomics At Work

HOW YOU CAN USE THIS KNOWLEDGE TO ESTABLISH AND MAINTAIN A SUSTAINABLE ERGONOMICS PROCESS AT YOUR FACILITY.

LI ZHI | RTC | 2018-11-01

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1. Benefits of ergonomics

Ergonomics Reduces Costs

By systematically reducing ergonomic risk factors, you can prevent costly MSDs. With approximately $1 out of every $3 in workers compensation costs attributed to MSDs, this represents an opportunity for significant cost savings. Also, don't forget that indirect costs can be up to twenty times the direct cost of an injury.

Ergonomics Improves Productivity

The best ergonomic solutions will often improve productivity. By designing a job to allow for good posture, less exertion, fewer motions and better heights and reaches, the workstation becomes more efficient.

Ergonomics Improves Product Quality

Poor ergonomics leads to frustrated and fatigued workers that don't do their best work. When the job task is too physically taxing on the worker, they may not perform their job like they were trained. For example, an employee might not fasten a screw tight enough due to a high force requirement which could create a product quality issue.

Ergonomics Improves Employee Engagement

Employees notice when the company is putting forth their best efforts to ensure their health and safety. If an employee does not experience fatigue and discomfort during their workday, it can reduce turnover, decrease absenteeism, improve morale and increase employee involvement.

Ergonomics creates a better company safety culture

Ergonomics shows your company's commitment to safety and health as a core value. The cumulative effect of the previous four benefits of ergonomics is a stronger safety culture for your company. Healthy employees are your most valuable asset; creating and fostering the safety & health culture at your company will lead to better human performance for your organization.

2. Most cost-effective time to consider ergonomics

The most cost-effective time to consider ergonomics is during the design and planning of new work processes.
A proactive approach to ergonomics emphasizes primary prevention of MSD through recognizing, anticipating and eliminating risk factors in the design and planning stages of new work processes.

3. Elements of an ergonomics improvement process

The reactive part of the ergonomics improvement process we use for clients involves six steps:

1. Prioritize Jobs for Ergonomic Analysis
2. Conduct Ergonomic Analysis
3. Develop an Ergonomic Opportunity List
4. Determine Best Solution with Team Approach
5. Obtain Final Approval and Implement Solution
6. Evaluate the Ergonomic Improvement

4. How does it fit into the bigger picture and help companies meet its goals

Basic Idea

Ergonomics is not only the right thing to do, but it can also help your company reach its business goals. More and more companies today are recognizing the value of workplace ergonomics and are achieving great business results with their process.

Ergonomics Success

The Washington State Department of Labor and Industries reviewed 250 ergonomics case studies to reveal the impact of ergonomics on business goals like cost savings, productivity and product quality. They found that an ergonomics process was able to significantly improve these metrics. The table below is a summary of the results:

Metric	No. of examples	Average	Median	95% CI	Range
WMSDs	90	59%↓	56%↓	5%	8%-100%
Incidence rate	53	65%↓	67%↓	8%	9%-100%
Lost workdays	78	75%↓	80%↓	5%	3%-100%
Restricted days	30	53%↓	58%↓	11%	5%-100%
Workers' comp costs	52	68%↓	70%↓	6%	15%-100%
Cost per claim	7	39%↓	50%↓	28%	-20%-81%
Productivity	61	25%↑	20%↑	5%	-0.2%-80%
Labor costs	6	43%↓	32%↓	26%	10%-85%
Scrap/errors	8	67%↓	75%↓	18%	8%-100%
Turnover	34	48%↓	48%↓	8%	3%-100%
Absenteeism	11	58%↓	60%↓	15%	14%-98%
Payback period	36	0.7years	0.4years	0.3	0.03-4.4years
Cost: Benefit ratio	6	1:45.5	1:10	1:45	1:2.5-1:140

*Due to WMSDs

These findings clearly illustrate the benefits of a successful ergonomics process.

How to get there: Ergonomics as a Process

We know from the research and success stories presented above that ergonomics can have a positive impact on the key health and safety metrics you're measuring for your company / facility.
That is what ergonomics success will look like for you as well, but how do you get there? Where do you get started?
First, it's important to view ergonomics as a process that is aligned with continuous improvement efforts – not just a one-time program or project.
For the ergonomics process to achieve long-term success, the process must have clear goals, be well documented and be reviewed regularly.

5. Who should be involved in the ergonomics process

Basic Idea

The ergonomics process is typically managed through the Health & Safety department. OHS should have a close relationship with engineering, supervisors, HR and all employees because successful ergonomics requires a team effort. Commitment to the process from all of these parties as well as upper management is an important indicator of success.

Quality of Good managers

Good managers consider the following when making decisions:

- Will this initiative increase our revenues?
- Will this initiative decrease our costs?
- Is this initiative the right thing to do?

The good news is that a workplace ergonomics improvement process meets all three criteria. Here are four steps you can take to get more support for an ergonomics process at your facility.

1. Communicate the value of ergonomics.
2. Use ergonomics examples and case studies to tell the story.
3. Make the business case.
4. Show that you have a plan.

6. Ergonomic risk factors

Risk factors related to work activity and ergonomics can make it more difficult to maintain this balance, and increase the probability that some individuals may develop an MSD.

The major workplace ergonomic risk factors to consider are:

- High Task Repetition
- Forceful Exertions
- Repetitive/Sustained Awkward Postures

High Task Repetition

Many work tasks and cycles are repetitive in nature, and are frequently controlled by hourly or daily production targets and work processes. High task repetition, when combined with other risks factors such high force and/or awkward postures, can contribute to the formation of MSD. A job is considered highly repetitive if the cycle time is 30 seconds or less.

Control methods to consider:

- Engineering Controls
- Work Practice Controls
- Job Rotation
- Counteractive Stretch Breaks

Forceful Exertions

Many work tasks require high force loads on the human body. Muscle effort increases in response to high force requirements, increasing associated fatigue which can lead to MSD.

Control methods to consider:

- Engineering Controls
- Work Practice Controls
- Proper Body Mechanics

Repetitive/Sustained Awkward Postures

Awkward postures place excessive force on joints and overload the muscles and tendons around the effected joint. Joints of the body are most efficient when they operate closest to the mid-range motion of the joint. Risk of MSD is increased when joints are worked outside of this mid-range repetitively or for sustained periods of time without adequate recovery time.

Control methods to consider:

- Engineering Controls
- Work Practice Controls
- Job Rotation
- Counteractive Stretch Breaks

7. Ergonomic controls

Putting control measures in place reduce injury risk. Ergonomics opportunities should be systematically identified and reduced through ergonomic controls:

- **Engineering Controls**

Eliminate or reduce awkward postures with ergonomic modifications that seek to maintain joint range of motion to accomplish work tasks within the mid-range of motion positions for vulnerable joints. Proper ergonomic tools should be utilized that allow workers to maintain optimal joint positions.

- **Work Practice Controls**

Work procedures that consider and reduce awkward postures should be implemented. In addition, workers should be trained on proper work technique and encouraged to accept their responsibility to use their body properly and to avoid awkward postures whenever possible.

- **Job Rotation**

Job rotation and job task enlargement is a way to reduce repeated and sustained awkward postures that can lead to MSD.

- **Counteractive Stretch Breaks**

Implement rest or stretch breaks to provide an opportunity to counteract any repeated or sustained awkward postures and allow for adequate recovery time.

8. Recommended ergonomic assessment tools

Ergonomic assessment tools are used to quantitatively measure risk factors and determine the need for control measures to be put in place. Here are a few of our recommended ergonomic assessment tools:

- Rapid Entire Body Assessment (REBA)
- Rapid Upper Limb Assessment (RULA)
- NIOSH Lifting Equation
- NIOSH Short Form
- Snook Tables
- Washington State Ergonomic and MSD Risk Assessment Checklists

9. Ergonomic design principles

Using ergonomics design principles helps engineers and those involved in process design evaluate what is needed and should be considered for a good ergonomic workstation design.
Management commitment to MSD prevention involves both reactive and proactive ergonomics.
To this point, we have discussed an ergonomic improvement process that is reactive in nature.
Although evaluating and improving existing work task and process design is important, certainly the most cost-effective approach to workplace ergonomics is to establish a robust proactive program.

A proactive approach to ergonomics emphasizes primary prevention of MSD through recognizing, anticipating and eliminating risk factors in the design and planning stages of new work processes.

10. Where to find more tools and resources

There are many websites as the useful resources of our tools (software) and knowledgebase.

https://www.osha.gov/SLTC/etools/computerworkstations/positions.html

https://www.ccohs.ca/oshanswers/ergonomics/office

https://www.ergo-plus.com/resources