Guide to Creating an Ergonomics Program

Provided By INSURICA

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Introduction

In simple terms, **ergonomics** is the study of making work comfortable for your employees in an effort to avoid on-the-job injuries, poor productivity and long-term health issues. Ergonomics is often described as the process of fitting jobs to people—a process that recognizes the physical abilities, limitations and characteristics of different employees.

The Impact of Poor Ergonomics on Your Workplace

Ergonomics is a catchall term that often comes up in discussions about workplace health, safety and design—and for good reason. Employers who fail to implement ergonomic solutions at their place of business put their employees at risk of serious injuries.

When your employees perform tasks under the stress of an awkward posture, extreme temperature or repeated movement, their entire musculoskeletal system can be affected. This can lead to adverse symptoms like fatigue, discomfort and pain, which are the first signs of a **musculoskeletal disorder** (MSD).

MSDs are conditions that affect muscles, joints, tendons, ligaments and nerves. These conditions can develop over time or occur immediately when workers overload themselves. Direct costs of MSDs can be as high as \$20 billion a year, with indirect costs (e.g., lost productivity and absenteeism) costing employers five times more.

Estimated Total Cost						
Injury Type	Instances	Direct Costs	Indirect Cost	Total Cost	Additional Sale (Indirect)	Additional Sale (Total)
Sprain	1	\$30,798	\$33,877	\$64,675	\$1,129,260	\$2,155,833
Strain	1	\$32,959	\$36,254	\$69,213	\$1,208,496	\$2,307,100
Carpal Tunnel Syndrome	1	\$30,882	\$33,970	\$64,852	\$1,132,340	\$2,161,733

These costs are estimated using OSHA's Safety Pays <u>calculator</u> and are based on a 3% profit margin.

Ensuring workstations and tasks are designed with ergonomics in mind does more than promote productivity. When employers invest in ergonomic workplaces, it:

- Saves organizations money by reducing absenteeism, injuries and workers' compensation claims
- Creates happier employees, as workers feel valued when employers take steps to create a safe workplace
- Contributes to employees' long-term health and quality of life

Introduction

While ergonomics can mean different things depending on the industry you operate in, the goal is the same: identify the ergonomics-related risks in your workplace and take steps to protect employees. This can be accomplished by establishing an ergonomics program.

An **ergonomics program** is systematic process for identifying, analyzing and controlling workplace risk factors, often created with the goal of reducing MSDs. This guide provides general information on aspects of these programs and steps you can take to implement one of your own.

It should be noted that the advice found in this guide is of a general in nature and should not replace the counsel of legal, compliance and insurance experts.

Workers who suffer from MSDs may have difficulties meeting the demands of their jobs. In fact, when experiencing the symptoms of MSDs, employees miss an average of 12 days of work when recuperating from an ergonomics-related injury. What's more, MSDs are often exacerbated when employees are required to do any of the following as part of their job:

- Lift, push, pull or carry many or irregularly shaped objects
- Maintain awkward or unnatural postures
- Withstand cold temperatures
- Withstand vibrations from machinery and tools
- Increase the intensity, frequency and duration of activities

Accordingly, it's critical that employers implement an ergonomics program to address workplace hazards and keep their workers safe and healthy.



MSDs are the leading cause of pain, suffering and disability in American workplaces and account for almost **400,000 injuries every year.**

Ergonomics programs give employers the tools they need to detect MSD problems as early as possible and develop solutions tailored to their workplace as well as the types of tasks their employees perform.

In order to address ergonomics-related concerns effectively, your organization should:

- 1. Identify risk factors.
- 2. Involve and train management and workers.
- 3. <u>Collect health and medical evidence.</u>
- 4. Implement your ergonomics program.
- 5. Evaluate your ergonomics program.
- 6. Maintain management commitment and employee involvement.

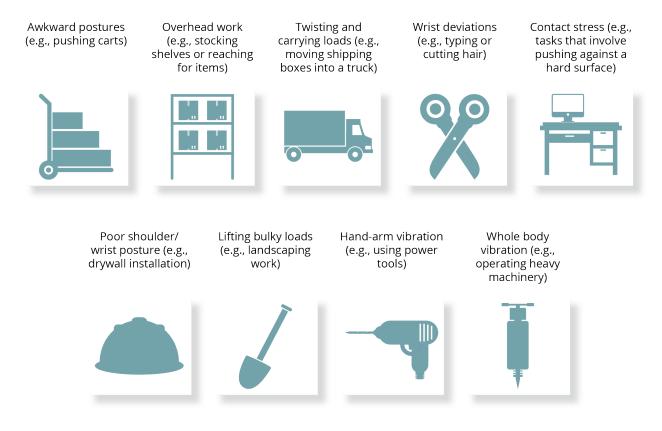
This guide will examine these steps, outlining ways employers can identify and correct ergonomicsrelated deficiencies in a variety of workplace settings, while securing employee buy-in.

Identify Risk Factors

In order to address ergonomics-related concerns, your program needs to identify the most common risk factors present in your workplace. This is often easier said than done, as ergonomics issues and MSDs can be isolated to a particular task or affect multiple departments simultaneously. Thankfully, there are a number of ways to reveal the scope of an MSD problem in your workplace.

Assess Tasks That Contribute to MSDs

Certain tasks contribute more to MSDs than others, and it's important for employers to identify these workplace factors as part of their ergonomics program. The following are work characteristics and activities that can contribute to MSDs:



It should be noted that a single task can include one or more of the above worker characteristics and activities. The level of MSD risks in your workplace will depend on the intensity, frequency and duration of adverse factors. As such, employers should examine every job role on an individual basis to ensure health and safety concerns are addressed appropriately.

There are a number of ways to accomplish this, but many organizations use checklists to examine potential pain points. Checklists can shed light on MSD issues in your workplace. You can even use the findings from your checklists to brainstorm solutions to reduce your exposures.

When using these checklists, employers should perform a walkthrough of the worksite, surveying multiple employees performing the same types of tasks. Be sure to interview workers and supervisors, only gathering data from those who are familiar with the job, task or process you are investigating.

Identify Risk Factors

Remember, no one checklist takes into account all MSD concerns, and employers must tailor their approach to account for the wide variety of job tasks and types of work that take place in their organization. Be sure to follow up on checklist observations using additional data collection methods (this will be covered in more detail <u>later</u> in this guide):

- Measure job task and job cycle time-motion patterns
- Measure workstation layouts
- Measure tool handle sizes, weights and vibration levels
- Measure workers' exposure to whole-body vibrations
- Measure workers' exposure to hot and cold conditions
- Measure workers' physiological and biomechanical responses to work

Sample Checklists

To get started, navigate to the appendix to view sample checklists:

- Ergonomics Hazard Identification Checklist
- Workstation Checklist
- Task Analysis Checklist
- Hand Tool Analysis Checklists

Educate Yourself on Specific MSDs and the Tasks That Cause Them

While MSDs vary in severity and can affect individuals differently, there are common tasks that contribute to adverse health conditions. MSDs often impact five regions of the body, including the neck, shoulder, hands, wrists, elbows and lower back. The table below outlines a common MSD and the risk factors that contribute to them:

Type of MSD	Risk Factor(s)
Neck MSD	Repetitive work (repetition with awkward neck posture)
	 Forceful work (arm and hand movements that generate stress on the neck)
	 Static awkward posture (tension-neck syndrome)
Shoulder MSD (shoulder	Repetitive work (repetition with awkward shoulder posture)
tendinitis)	Static shoulder load (contact stress)
	Overhead work
Elbow MSD	Forceful work (wrist movements that generate stress on the elbow)
(Epicondylitis)	Combined risk factors (force and repetition, or force and posture)
Carpal Tunnel Syndrome	Combined risk factors:
(CTS)	 Force and repetition
	° Force and posture
	° Force, repetition and posture

Hand/Wrist Tendinitis	Combined risk factors
	° High repetition and forceful hand/wrist exertion
Hand-arm Vibration Syndrome	 Intensity and duration of exposure to vibrational tools (vibrational level between 5-36 meters per second squared)
Low-back MSDs	Heavy physical work
	Lifting and forceful movements
	 Bending and twisting (awkward posture)
	Whole-body vibration
	Static work posture

Examine Existing Data

Worker complaints, records and company medical records can be used to incidence rates (new cases) and prevalence rates (new and old cases) of ergonomics-related issues. This data is readily available for most employers, and the table below outlines where you can find it:

Data Source	What to Look for
Company OSHA Form 300 (Logs Workers' Compensation Claims)	Specific cases, such as carpal tunnel syndrome or tendinitis. Nonspecific cases, such as hand/wrist pain or back pain
Records of Worker Complaints	Complaints of undue stress, localized muscle fatigue, discomfort or pain that does not go away after rest
Records of Workers Visiting the Clinic	Mentions of physical aches and pains related to certain types of work assignments
Job Task Evaluations, Job Safety Analyses and Job Hazard Analyses	Job tasks involving repetitive and forceful exertions, frequent/heavy/overhead lifts, awkward working positions or use of vibrating equipment
Company Policies and Directives	Evidence that job/task modifications (like increasing line speed) were proposed specifically to increase worker output and overall productivity
Trade Publications	Evidence of MSDs in the field

Employers can also search the Center for Disease Control and Prevention <u>database</u> for examples of National Institute for Occupational Safety and Health (NIOSH) Health Hazard Evaluations (HHEs)—a program that helps employees, union officials and employers learn whether health hazards are present at their workplace. This database allows employers to search by keyword (e.g., ergonomics, sprains and MSDs), region and industry, giving employers insight into MSD issues prevalent in their line of work.

Ergonomics training is one of the most effective ways to reduce MSDs in your workplace. Ergonomics training helps managers, supervisors and employees identify risk factors, understand the signs and symptoms of MSDs and develop strategies to work more safely.

Any employee who is exposed to conditions that contribute to MSDs should be properly trained and given the opportunity to identify health and safety concerns related to their daily responsibilities. Employers should choose at least on type of ergonomics training. Examples of ergonomics training can be found in the table below.

Type of Training	Objectives		
Ergonomics Awareness Training	• Learn how to recognize the risk factors for MSDs.		
	• Learn how to recognize symptoms of MSDs.		
	 Understand general methods for reducing risk factors for MSDs. 		
	 Become aware of your company's health care procedures. 		
	 Learn your employer's role in addressing and controlling risk factors for MSDs. 		
	• Learn how workers can address risk factors for MSDs.		
	• Learn how to report your concerns of MSDs.		
	Learn how to conduct a job analysis.		
Training in Job Analysis and Control Measures	 Learn how to implement and evaluate control measures. 		
Training in Problem Solving	 Develop skills in team building, consensus development, brainstorming and problem-solving. 		
	 Learn how to synthesize ideas from employees, management and other affected parties. 		

Ergonomics training should be customized for specific audiences, taking into account things like education levels, literacy levels, language and job interests. If using an outside instructor, educate them on company operations, relevant policies and similar practices before the training begins.

Training Resources

The following are additional training resources employers can use to implement an effective ergonomics program:

- NIOSH Publications on Ergonomic Awareness Training
- Practical Demonstration of Ergonomic Principles Video
- NIOSH Educational Resource Centers (ERCs)
- Occupational Safety Health Administration (OSHA)

Collect Health and Medical Evidence

In the event that you discover workplace risk factors that could lead to MSDs, the next crucial component of your ergonomics program involves collecting health and medical evidence. Doing so helps you determine the scope of the issue and gather vital information that can be used in correcting ergonomic-related concerns.

Employers must follow-up with workers who are experiencing physical fatigue, stress or discomfort as part of their job responsibilities. There are a variety of ways to accomplish this, including computing incident rates, conducting interviews, providing medical exams, analyzing specific jobs and leveraging assessment tools.

Computing Incident Rates and Prevalence Rates of MSDs

Data is critical when it comes to understanding MSD issues at your organization. Two calculations recommended by the NIOSH that help organizations assess the occurrence of diseases in their workplace include the incidence rate and the prevalence rate:

• Incidence rate—The incidence rate measures the frequency with which a disease or other incident occurs over a specified period of time. This rate is typically expressed as the number of new cases of a disease divided by the number of individuals at risk in a given period. Calculating incidence rates is important, as it provides a snapshot of changes in a disease's progression over time.

IR = Number of **new** cases during a time period x 200,000 hrs Total hours worked by all workers for the time period

• **Prevalence rate**—The prevalence rate measures the number of total cases of a condition or illness in a population at a certain point in time. Unlike the incidence rate, the prevalence rate takes into account both new and old cases, helping organizations determine whether or not a specified disease is widespread.

PR =Number of ALL cases during a time period x 200,000 hrsTotal hours worked by all workers for the time period

It's best to think of incidence rates as a measure of a disease risk and prevalence rates as a measure of a disease's burden on your organization. Incidence rates can help you understand how fast MSDs are developing in your organization whereas prevalence rates provide insight into how many MSDs there are in your workplace overall.

When performing these calculations, experts recommend the date of your last equipment or process change as a starting point. For even more insight into the occurrence of MSDs in your workplace, you can compare your rates to those of other departments, industries and occupations using the <u>Incidence Rate</u> <u>Calculator and Comparison Tool</u> from the U.S. Bureau of Labor Statistics.

Collect Health and Medical Evidence

Conducting Interviews and Symptom Surveys

Interviews and surveys can be valuable tools when it comes to staying ahead of MSDs in the workplace. These strategies can help you determine the nature of these diseases by examining the following:

• The background of the impacted worker, including their:



It's a good idea to use a body <u>map</u> to help workers better illustrate their MSD symptoms. Surveys should be anonymous, voluntary and completed during work hours. Once you've gathered the above information, you should analyze the frequency and severity of MSD complaints and compare data to other departments and jobs.

Providing Periodic Medical Exams

Evidence from medical exams not only allow employers to understand the types of MSDs occurring in their workplace, but they can also provide insight into the severity of the disease and whether or not the MSD can be attributed to a specific job function.

Medical exams must be designed and administered by a health care provider. During examinations, employees will be asked about their medical history and will be given a physical exam. What's more, employees may be asked to complete range of motion, tenderness and similar tests to help identify pain areas.

To ensure unbiased data, physicians should have no prior knowledge of a worker's existing diseases or job title when giving exams. Exams, when used alongside surveys and incidence/prevalence rates, can help you get a better sense of the MSD problem in your workplace.

Conducting Job Analyses

A job analysis is the study of a task and all of its components. This can include an examination of things like tools, equipment, materials, workstation layouts, environments, job demands and work climates. Job analyses are typically completed by a professional and can provide a deep understanding of MSD hazards on a task-to-task basis.

When completing you analyses, you will want to:

- Create a complete description of the job, including the time needed to complete individual tasks and responsibilities.
- Examine how the job has evolved, asking current employees to specify any job changes that have occurred over time.
- Divide the analysis into job tasks and actions to give you a sense of both the physical and administrative demands of each role.
- Count and categorize risk factors in each task and action. Consider work postures, workstation layouts, surface heights and reach distances when examining a job.
- Determine the underlying cause for MSD risks in each task and action. Don't forget to consider whole body vibrations and other demands of the physical working environment.
- Record the severity, frequency and duration of each risk factor.

Assessment Tools

Determining the level of worker risk can be a challenge, and there are a number of assessment tools NIOSH recommends to help employers better understand MSD exposures.

Whole Body and Screening Assessments		
Source/Assessment Tool	What It Is and Why It's Used	
Bureau of Workers' Compensation CTD Risk Factor Identification Form	 What it is: A checklist that focuses on the upper extremity, back, legs and environmental job settings (e.g., lighting). Why we use it: To determine concerning elements of a job task. 	
Bureau of Workers' Compensation CTD Risk Factor Measurement Form	 What it is: A table that focuses on the upper extremity, back, legs and environmental job settings. Why we use it: To determine task areas with high risk levels. 	
Quick Exposure Check (QEC)	 What it is: Tables and multiple steps that focus on the back, shoulder, arm, wrist, hand and neck. Why we use it: To determine low, moderate, high or very high exposure levels. 	

Collect Health and Medical Evidence

Rapid Entire Body Assessment (REBA)	What it is:Tables and multiple steps that focus on the neck, trunk, legs, and arm and wrist positions.Why we use it:To determine negligible, low, medium, high or very high risk levels.What it is:A table that focuses on the neck, shoulders, back, arms, elbows, wrists, hands, fingers, legs, knees, ankles, feet and toes (assessment of task effort, duration and frequency).
Rodgers Muscle Fatigue Assessment	Why we use it: To determine if the range of muscle fatigue puts workers at risk for MSDs. If an individual meets a light, moderate, heavy or very heavy risk level, you should modify the task accordingly.
Whole Body Vibration	What it is: A table based on the ISO 2631 standard that focuses on the upper and lower extremities.
	Why we use it: To determine the level and risk created by a task.
Washington State WISHA Screening Tool	What it is: A checklist that focuses on lower backs, hands, wrists, necks, shoulders and knees.
	Why we use it: To determine the range of risk created by a task.
	Back
Source/Assessment Tool	What It Is and Why It's Used
ACGIH TLV for Lifting	What it is: A checklist that focuses on the concern for and risks to the back. It looks at the position of an object as well as the frequency and duration of a lift.
	Why we use it: The results are compared to a given standard to determine the action level.
Liberty Mutual Manual Material Handling Tables	What it is: Tables that focus on pushing, pulling, carrying, lifting and lowering.
	Why we use it: To determine the percentile of men and women that a task would be acceptable for.
Revised NIOSH Lifting Equation	What it is: An equation designed to assess manual lifting that focuses on the back. It looks at the object's weight, horizontal and vertical position, twisting angle, duration, frequency and coupling.

Collect Health and Medical Evidence

	Why we use it: To determine an acceptable weight for a task.
Utah Back Compressive Force	What it is: A table and equations that focus on back posture, load moment and direct compression.
	Why we use it: The results are compared to a given standard to determine if more detailed analyses or changes are needed for a task.
WISHA Lifting Analysis	What it is: A combined checklist and multiple steps for manual lifting that focus on the back. It factors in an object's weight as well as the frequency and posture of a task.
	Why we use it: The results are compared to a given standard to determine if the task is an MSD hazard.
	Upper Body
Source/Assessment Tool	What It Is and Why It's Used
ACGIH TLV for Hand Activity Level	What it is: A table that focuses on each hand's activity level and estimated normalized peak force.
	Why we use it: The results are compared to an action limit and threshold limit value to evaluate the risk level.
ACGIH TLV Hand Arm (Segmental) Vibration	What it is: A table based on the ANSI/ASA S2.70-2006 standard that focuses on hand-arm vibration.
Acom rev hand Ann (Segmental) vibration	Why we use it: To determine the level and risk of exposure to vibration.
Maara Gara Strain Inday	What it is: A table that focuses on each hand.
Moore-Garg Strain Index	Why we use it: To determine the range of risk created by a task.
Rapid Upper Limb Assessment (RULA)	What it is: Tables and multiple steps that focus on the neck, arm and wrist positions.
	Why we use it: To determine the range of risk created by a task.
WISHA Hand-arm Vibration Analysis	What it is: A combined checklist and graph that focus on hand-arm vibration hazards.
	Why we use it: To determine the range of risk created by a task.

Additional Assessment Tools

The following are additional assessment tools you can use to collect health and medical information and determine the scope of ergonomic issues in your workplace:

- Ergonomics Hazard Identification Checklist
- <u>Symptoms Survey</u>

After identifying risk factors and collecting evidence to determine the scope of ergonomics-related issues in your workplace, you can implement your program. Specifically, this step involves selecting a control solution suitable for the MSD hazards present at your organization.

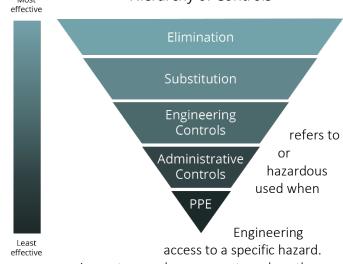
Hierarchy of Controls

Solutions to reduce MSD risks will vary depending on your workplace but can include modifying existing equipment, making changes in work practices, and purchasing new tools or other devices to assist in the production process. Control methods will typically fall under one of five approaches. These are known as the hierarchy of controls and are the primary methods employers can use to manage MSD risks:

Elimination—Elimination refers to physically removing an MSD hazard from your

workplace altogether. This is one of most effective ways to most effective ways to effective
 manage MSD risks and involves altering the materials, parts, products or tools you use to ensure workers can perform their duties ergonomically.
 Substitution—Substitution

- replacing materials, process equipment with a less equivalent. This is typically elimination is not possible.
- Engineering controls controls refer to denying



This can include redesigning equipment or work processes to reduce the frequency of performing dangerous tasks or isolating a hazard altogether by installing screens or barriers.

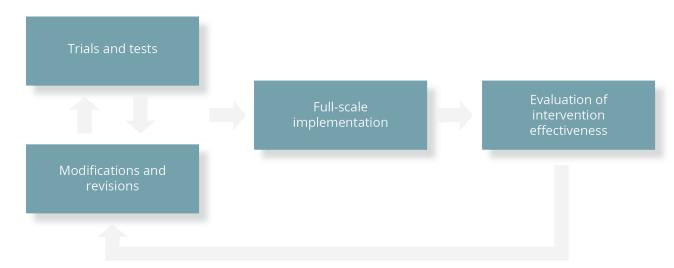
- Administrative controls—Administrative controls refer to changing the way your employees work to limit MSD hazards. These are used when engineering controls can't be used and relate to establishing new processes and procedures for safe work.
- **Personal protective equipment (PPE)**—PPE, such as knee pads, anti-vibration gloves and grip-gloves, can help protect workers from immediate MSD hazards. PPE is inexpensive and used frequently where hazards aren't under administrative or engineering control.

Examples		
Control Method	Workplace Corrections/Strategies	
Elimination	 Remove workers from situations that expose them to harmful vibrations. 	
	 Avoid situations when employees must use a pinch grip to handle material. 	

the

	Reposition a workstation to eliminate the
	need for workers to reach for tools.
Substitution	 Automate processes to reduce worker exposure to repetitious movements.
	 Reduce the weight of a load to limit force exertion.
	Modify workstation lighting.
Engineering controls	 Install mechanical lifting devices that limit workers' physical stresses on the body.
	 Redesign workstations and tools to best accommodate all workers.
Administrative controls	 Require a two-person lift when materials exceed a certain weight.
	 Establish a system that involves rotating workers away from tasks to minimize repetitive motions.
PPE	 Require employees to use padding to reduce contact stress with hard, sharp or vibrating surfaces.
	 Provide properly fitting thermal gloves to help with cold conditions.
	 Require properly fitting, slip-resistant footwear.

Work with trade associations, workers' compensation insurance companies, consultants and vendors to determine the right ergonomic control for your MSD problem. Once you've implemented these controls, it's important to test them. In general, the success of a control method depends on workers' acceptance of an idea, so it's important to test your solution using a small sample size and modify it as needed. You can then implement your control companywide if and when your pilot program is successful.



Once you've implemented a control method, follow-up is key to ensure you have reduced or eliminated MSD risks. In some instances, implementing workplace controls can introduce new hazards you may not have accounted for, so it's important to regularly evaluate your control method.

You can use a variety of techniques to measure the effectiveness and benefits of your ergonomics program, including, but not limited to the following:

- Job analyses
- Checklists
- Symptom surveys
- OSHA form 300 logs
- Employee absentee rates
- Turnover rates
- Workers' compensation costs
- Productivity indicators

In addition, there are cost analysis calculations you can run to help you better understand the value of your ergonomics program. An overview of these equations and what they calculate can be found below:

• **Benefits-cost ratio**—This ratio measures the worth of a project's benefit cost related to the initial cost. Essentially, if the ratio is greater than the investment, the benefits of your program outweigh its costs.



• **Cost-benefit analysis (payback period)**—This calculation determines the amount of time it takes for the benefits to pay back the cost of your investment. It includes factors outside of investment such as savings from injuries prevented.

Cost - benefit_{time} =
$$\frac{\text{Cost}}{\text{Total Savings (benefit)}}$$

Evaluate Your Ergonomics Program

• Return on investment (ROI)—This calculation measures the time it takes to recover the cost of the initial investment of your ergonomics program. This is an important measurement, as you may not see the benefits of your ergonomics program immediately. A sample calculator can be found <u>here</u>.

$$\mathbf{ROI}_{time} = \frac{\text{Initial Cost}}{\text{Savings (time interval)}}$$

Whatever method you use to evaluate the effectiveness of your ergonomics program, it's important to have an open dialogue with your workers. As you implement ergonomic control systems, you'll want to check with workers periodically to see how they are adjusting to new policies, processes and work styles. Be sure to take feedback to heart and adjust your program as needed.

Maintain Management Commitment and Employee Involvement

Work-related injuries have many negative effects, including reduced quality of life, job loss, reduced lifetime income and even premature death. Ensuring a healthy workplace and a successful ergonomics program takes commitment from health care providers, management and employees alike, and everyone has their own set of unique responsibilities:

Group	Responsibilities
Employers	 Develop a return-to-work program in which modified jobs, restricted duties or temporary job transfers are provided to accommodate employees with MSDs.
	• Educate and train employees to recognize and report signs and symptoms of MSDs.
	 Encourage employees who report symptoms of MSDs to speak to a qualified health care provider.
	• Familiarize health care providers with the jobs and tasks in your workplace.
	• Modify jobs, restrict duties or put in a temporary job transfer to accommodate employees with MSDs.
	 Select a health care provider qualified in treating MSDs. Maintain privacy and confidentiality of employees' medical records.
Health Care Providers	 Meet with employers to learn the physical demands of jobs and job tasks.
	 Become familiar with the physical capabilities and limitations of employees.
	 Review job analysis reports, detailed job descriptions, photographs and video recordings.
	 Conduct periodic walk-throughs to record changing work conditions.
	 Evaluate employees' descriptions of work activities and whether it causes, contributes to or exacerbates MSD-related pain.
	• Evaluate employees' medical histories. If an employee presents symptoms of MSDs, conduct a physical exam and plan to do a follow-up examination.
	 Prescribe and monitor splints, braces and other supports to relieve employees of MSD symptoms.
	• Determine the work restrictions for employees affected by MSDs.
	 Ensure privacy and confidentiality of employees' medical records.
Employees	Engage in safe work practices.
	• Follow workplace safety and health rules.
	• Report signs and symptoms of MSDs.

Get Others Involved

Effective ergonomics programs require input from workers, management, safety personnel and other specialists. Together, these groups conduct job analyses, identify hazards, review injury records and symptoms surveys, develop control measures and install new equipment specifically for ergonomics programs. With the proper feedback loop in place, individuals can perform these responsibilities more effectively and ensure constant program improvement.

What's more, opening your ergonomics program up to input—particularly from workers—establishes a positive workplace environment based on health and safety. When workers are involved in an ergonomics program, they will likely be more motivated, have higher job satisfaction and be less resistant to future workplace changes.

The following are types of input to consider at your organization:

- **Direct input**—Individuals communicate their ergonomics-related concerns to the appropriate parties (e.g., supervisors).
- **Departmental input**—This type of input involves forming an ergonomics team on a perdepartment basis. Using this type of input, seven to 15 supervisors, maintenance workers, engineering staff and similar team members meet to discuss specific department operations and ergonomics concerns. You can scale this type of feedback to meet your needs and the different types of work that may be performed by different teams.
- Companywide input—Essentially, companywide input involves forming a large-scale ergonomics committee. Under this type of feedback, union leaders, worker representatives, department heads and key figures from various areas of the organization discuss ways to resolve safety and health issues, make recommendations for working groups and approve resources for specific actions.

No matter which type of feedback loop you use at your organization, it's important to be tactful and take suggestions when soliciting employee input. Supervisors may need training on how to avoid dominating discussions or intimidating workers when collecting direct, departmental or companywide input.

Going One Step Further

When we're working comfortably, it increases our efficiency, productivity, quality and accuracy of work. From a business standpoint, less MSD issues in your workplace will reduce injuries as well as workers' compensation claims, thus improving your bottom line.

There are many ways to address MSDs in your workplace, and a thorough ergonomics program can help you focus your efforts and ensure your organization is accounting for all the relevant risk factors. You can even pair your program with other safety initiatives to protect your employees and establish a healthy working environment.

For even more workplace health and safety tips, guides and other resources, contact an insurance expert at INSURICA today.

Appendix

CHECKLIST | ERGONOMICS HAZARD IDENTIFICATION

Presented by INSURICA

Date:

Review conducted by:

Please indicate how frequently workers are exposed to the following job conditions:

WORKERS:	SOMETIMES (< 3 TIMES PER DAY)	OFTEN (> 3 TIMES PER DAY)	IF OFTEN, LIST JOBS THAT APPLY:
Perform tasks where they do not have direct control over the work rate.			
Exert force with their hands (e.g., gripping, pulling and pinching).			
Use hand tools or handle parts/objects.			
Stand continuously for periods of more than 30 minutes.			
Sit for periods of more than 30 minutes without the opportunity to stand or move around freely.			
Use electronic input devices (e.g., keyboards, mice, joysticks or track balls) for continuous periods of more than 30 minutes.			
Kneel (one or both knees).			
Perform activities with hands raised above shoulder height.			
Perform activities while bending or twisting at the waist.			
Are exposed to vibration.			
Lift or lower objects between floor and waist height or above shoulder height.			
Lift or lower objects more than once per minute for continuous period of more than 15 minutes.			
Lift, lower or carry objects weighing more than 50 lbs (23 kg).			

CHECKLIST | ERGONOMICS WORKSTATION

Presented by INSURICA

Date:

Review conducted by:

This checklist is designed to help you evaluate your computer workstation and your video display terminal (VDT) to prevent common stresses and injuries associated with use.

CHAIR	YES	NO	N/A
Chair height (up/down) and backrest tension/angle are easily adjustable.			
Chair is equipped with a padded seat and back cushion.			
Front edge of seat pan is rounded and seamless.			
Seat is at least 18 inches wide x 15 inches long.			
Chair has non-slip upholstery with porous "breathable" fabric.			
Backrest has height-adjustable lower back support.			
Backrest is at least 18 inches tall x 14 inches wide.			
Seat tilts back only slightly as the backrest tilts back.			
Chair swivels easily on casters.			
Chair is supported with five legs for stability.			
Base of chair is at least 24 inches around.			
Height- and width-adjustable armrests provided if needed.			

FOOT/LEG POSITIONS	YES	NO	N/A
Feet are flat on the floor or on a footrest.			
You have 3 to 6 inches of legroom between your legs and your workstation.			
Thighs are parallel to the floor.			
Knees are at a 90- to 110-degree angle.			

CHECKLIST | ERGONOMICS WORKSTATION

KEYBOARD	YES	NO	N/A
Keyboard is detachable and slightly sloped at about 10 to 15 degrees.			
Keyboard is prevented from slipping.			
Wrists are relaxed and straight (neutral).			
Wrist rest or parallel support armrests are used, if needed.			
Arms are close to body with elbows at 90-degree angle.			
Wrist/forearms are parallel to the floor.			
Mouse is at same level as the keyboard and within easy reach.			

WORKSTATION	YES	NO	N/A
Display screen is 18 to 30 inches away from your eyes.			
Table/desk height is adjustable if needed.			
Table/desk surface is 25 to 27 inches above the floor and 30 inches deep.			
There is adequate space to adjust height/location of your monitor.			
The front edge of your table is rounded.			
Materials used most often are arranged within easy reach.			
Document holder is at the same height and distance as the display screen.			
Telephone headset or speakerphone is used if needed.			
Storage drawers located under desk/table do not restrict knee clearance.			

DISPLAY SCREEN/MONITOR	YES	NO	N/A
Brightness and contrast controls are adjusted for viewing comfort.			
Display screen is 18 to 30 inches away from your eyes.			
Top line of display (print) is slightly below eye level.			

Display is tilted slightly to reduce reflections and glare.		
Display screen is clean and free of flickering.		

LIGHTING/GLARE REDUCTION	YES	NO	N/A
Indirect or shielded lighting is used to reduce reflections and glare.			
Window blinds or drapes are adjusted or closed when needed.			
Lighting levels are adjusted (where possible) throughout the day.			
Face of display screen is at a right 90-degree angle to windows.			
Ceiling lights are located to the side of the screen (not directly overhead).			
An anti-glare screen/filter is used if necessary.			
Task lighting or desk lamp is adjusted to avoid glare and reflections.			

CHECKLIST | ERGONOMICS TASK ANALYSIS

Presented by INSURICA

Date:

Review conducted by:

"No" responses indicate potential problem areas and should receive further investigation.

	YES	NO
Does the design of the primary task reduce or eliminate the following:		
Bending or twisting of the back or trunk		
• Crouching		
Bending or twisting of the wrist		
Extending the arms		
Raised elbows		
Static muscle loading		
Clothes wring motions		
Finger pinch grip		
Are mechanical devices used when necessary?		
Can tasks be performed with either hand?		
Are pushing and pulling forces kept at a minimum?		
Are work materials and components:		
Able to be held without slipping		
Easy to grab		
Free from sharp edges and corners		
Are containers equipped with good handholds?		
Are jigs and fixtures used where needed?		
Do workers avoid sharp edges and corners when performing tasks?		
Are repetitive motions avoided by rotating jobs or requiring breaks?		
Are workers trained on proper work practices, the signs and symptoms of ergonomic- related issues and when to make work adjustments to alleviate discomfort?		

CHECKLIST | ERGONOMIC HAND TOOL USE

Presented by INSURICA

Date:

Review conducted by:

A tool is considered ergonomic when it suits the task that you are performing and also fits your hand without causing awkward postures, harmful contact pressures or other safety and health risks. If you use a tool that does not meet these criteria or use it in ways that are not intended, you may develop an injury, such as carpal tunnel syndrome, tendonitis or muscle strain. These injuries result from multiple movements that are performed over a long period of time, resulting in damage to muscles, tendons, nerves, ligaments, joints, cartilage, spinal discs or blood vessels.

HE BEST TOOLS SATISFY THE FOLLOWING REQUIREMENTS:	
Fit the job you are performing	
Fit the work space available	
Reduce the force you need to apply	
Fit your hand	
Can be used in a comfortable work position	

IF YOU NOTICE ANY OF THE FOLLOWING SYMPTOMS, YOU MAY HAVE A PROBLEM WITH ONE OF THE TOOLS THAT YOU ARE USING:

These symptoms may not appear immediately because they develop over weeks, months or even years. By then, the damage may be too serious to reverse. Therefore, it's imperative that you take action BEFORE you notice any symptoms.

Tingling sensation	
Swelling in the joints	
Decreased ability to move	
Decreased grip strength	
Pain from movement, pressure or exposure to cold or vibration	
Continual muscle fatigue	
Sore muscles	

Numbness	
Change in the skin color of your hands or fingers	

HAND TOOL SELECTION CHECKLIST Use this checklist to determine if you are using your hand tools ergonomically on the job:	SINGLE- HANDLED TOOL #1	SINGLE- HANDLED TOOL #2	DOUBLE- HANDLED TOOL #1	DOUBLE- HANDLED TOOL #2
Does the tool feel comfortable and have a handle diameter between 1¼ inches and 2 inches (for single-handled tools used in power tasks only)?				
Is the handle diameter between ¼ inch and ½ inch (for single- handled tools used in precision tasks only)?				
Is the grip span at least 2 inches when closed and no more than 3½ inches when open (for double-handled tools used in power tasks only)?				
Is the grip span no more than 1 inch when closed and no more than 3 inches when open (for double-handled tools used in precision tasks only)?				
Is the handle spring-loaded (for double-handled tools only)?				
Is the tool handle free of sharp edges or finger grooves?				
Is the tool handle coated with soft material?				
Can the tool be used while keeping your wrist straight?				
For high force tasks, is the handle longer than the widest part of your hand (usually 4 to 6 inches)?				
Does the tool handle have a nonslip surface?				

FORM

Ergonomics Health Concerns - Employee Survey

This form can be used to describe health concerns related to ergonomics. Please complete this form to the best of your ability and return it to your supervisor.

Employee Name:

Job Title:

Start Date:

Other Jobs You've Held/Performed in the Last Year (If Applicable)							
Company	Department	Job Title					

Symptom Questionnaire							
 Have you experienced any pain or discomfort in the last year? 	 If you answered yes to question 1, please shade in the areas of discomfort on the diagram below: 						
☐ Yes ☐ No							

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This sample form is of general interest and is not intended to apply to specific circumstances. It does not purport to be a comprehensive analysis of all matters relevant to its subject matter. The content should not, therefore, be regarded as constituting legal advice and not be relied upon as such. In relation to any particular problem which they may have, readers are advised to seek specific advice. Further, the law may have changed since first publication and the reader is cautioned accordingly. © 2019 Zywave, Inc. All rights reserved.

Symptom Questionnaire (Continued)											
3.) Detail a	areas of	discon	nfort b	elow:							
□ Neck	🗆 Up	per Ba	ck	□ Sho	oulder	□ Lower Back		ck	Elbow/Forearm		□ Thigh/Knee
□ Hand	🗆 Wri	st		🗆 Leg	S	□ Fingers			□ Ankle		Foot
4.) Check	4.) Check the words that best describe your discomfort:										
□ Aching	🗆 Bui	rning		Crar	mping		□ Loss of color		□ Numbness		□ Pain
□ Stiffness	s 🗆 Sw	elling		□ Ting	ling	□ We	eakness 🛛 Other:				
5.) When did you first notice the problem? (MM/DD/YY)						6.) Does the pain or discomfort come in waves? If so, how long do these episodes last (e.g., minutes, hours, days or weeks)?					
	7.) How many separate episodes have you had in the last year?8.) What do you think caused the discomfort?										
9.) Rate th	ne sever	ity of yo	our pa	in/disco	mfort (ci	rcle one	e):				
Currently:											
	1	2	3	4	5	6	7	8	9	10	
(N	No Pain))					(Unbearable Pain)				
When the I	pain is a 1	at its w 2	orst: 3	4	5	6	7	8	9	10	
(N	י No Pain)	-	J	4	5	0	1	0	-	nbearable	Pain)
10.) Have you sought medical treatment for this						11.) l	f you a	•		estion 10, explain why:	
issue?	_										
	L] Yes	l	∃ No							
12.) If you answered "Yes" to question 10, where did you receive treatment?					13.) If you answered "Yes" to question 10, did the treatment help?						
14.) How many workdays have you missed due to this issue?					15.) How many days were you limited in your work due to this issue?						
16.) Additional comments/concerns:											

POLICY

Ergonomics Policy

Location:

Effective Date:

Revision Number: 1

Purpose

This policy establishes how will enhance employee comfort and well-being by identifying and correcting ergonomics risk factors on the job.

Scope

This policy applies to all employees who are exposed to ergonomics risk factors.

Reference

This procedure was developed in accordance with OSHA recommendations regarding ergonomics and the OSHA General Duty Clause.

Responsibilities

The following responsibilities apply to various levels within the company.

Senior management will:

- Require the full application and integration of this policy into daily operations, as applicable, in all areas of
 responsibility and with all direct reports
- Assess managers and supervisors on their ability to apply this policy to their areas of responsibility

The Safety Administrator will administer all aspects of this policy, including:

- Maintaining and updating the written program as required
- Coordinating training for affected employees
- Providing necessary technical assistance to managers and supervisors
- Periodically assessing the effectiveness of this program and its implementation in all affected areas of the company

Managers and supervisors will:

- Know how this policy applies to those areas under their direct control
- Integrate and enforce the provisions of this policy in their areas of responsibility
- Periodically audit the effectiveness of this policy in their areas of responsibility
- Coordinate training for affected employees
- Provide appropriate coaching and corrective action when necessary to ensure this policy is fully integrated

All affected employees will:

- Integrate the provisions of this policy into their daily activities as applicable
- Follow all training, instructions and directives relative to this policy

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- Seek clarification whenever there are questions concerning the application of this policy into daily operations

Policy Evaluations and Updates

It is our goal to maintain a safety program that is understandable, effective and that promotes a safe work environment. Any employee can make recommendations for improvement to this program or any other aspect of our safety system. These suggestions should be directed to any supervisor, any member of management, any safety committee member or to the safety administrator.

As a matter of policy, this program will be reviewed annually by the safety administrator to determine if all aspects still meet the needs of this organization. If there are significant events that take place during the year that indicate the program is less than effective, an immediate evaluation will be conducted and appropriate steps taken to increase the reliability of this plan.

Date of Review	Name of Reviewer	Changes Required Yes or No	Current Revision Number
Published date		Original issue	#1

Definitions

The following definitions help to clarify words or phrases found in this policy:

- Ergonomics: The science of fitting the job to the worker
- Ergonomics Assessment: The process of documenting the job/task MSD risk factors including force, repetition, posture and others created by the workstation design
- Musculoskeletal Disorder (MSD): A disorder of the muscles, tendons, ligaments, joints, cartilage, nerves or blood vessels; usually a result of repetitive or forceful motions that place strain on the body

Injury/Medical Management

Employees are responsible for recognizing and reporting early symptoms of musculoskeletal injuries and illnesses. The employee should direct reports to an immediate supervisor or to Human Resources.

After any report of an employee job-related MSD, injury or illness, the Ergonomics Team will be responsible for determining if additional practices or procedures could be implemented to prevent similar injuries.

Identifying Problem Jobs

There are several methods used to the identify jobs that are most likely to result in ergonomics disorders.

- Reactive: annually reviews its injury and illness records to identify any patterns of ergonomic-related injuries and illnesses.
- Proactive: reviews jobs with significant ergonomics risk factors. They may include, but are not limited to the following:
 - Repetition: Performance of the same motion or motion patterns every few seconds for more than two hours at a time
 - Awkward Postures: Fixed or awkward postures including overhead reaching, maintaining a twisted or bent back, maintaining bent wrists, stooping and squatting
 - Vibration: Use of vibrating tools

- Heavy Material Handling: Lifting, lowering or carrying anything weighing more than 25 pounds more than once an hour
- Force: Pushing, pulling or tight gripping of objects for more than two hours at a time

Ergonomics Assessments

The Ergonomics Team will conduct an ergonomics assessment when triggered by a reactive or proactive request.

Solutions

When problems are identified for correction, supervisors and employees in the affected areas are notified. The Ergonomics Team, in conjunction with the affected employee(s), will develop possible solutions, choose the most appropriate solution, implement the changes and follow up to determine the effectiveness.

For each problem job that has been altered, a file of the improvements and changes that are completed will be maintained. The file contains documentation of ergonomic-related illnesses or injuries, actual changes made and any similar incidents which occurred after the changes were implemented. These files are kept in the [ENTER LOCATION].

In addition, employees will take steps to prevent MSDs by taking brief breaks and stretching periodically throughout the day. Stretching is an effective way to reduce the effect of risk factors on the body.

Employee Training

Training will be conducted on sound ergonomics principles and practices and will include the following:

- How to recognize workplace risk factors associated with work-related MSDs and the ways to reduce exposure to those risk factors
- The signs and symptoms of work-related MSDs, the importance of early reporting and proper medical management procedures
- Reporting procedures and the person to whom the employee is to report workplace risk factors and work-related MSDs
- The opportunity to practice and demonstrate proper use of implemented control measures and safe work methods that apply to the job

Source: Occupational Safety & Health Administration

Ergonomics Policy

Employee Acknowledgement

Employees should not experience pain or discomfort while performing their daily duties. is committed to ensuring that all employees are productive without hurting their bodies in any way. Consult your supervisor immediately if you experience pain, need assistance performing job duties or are unsure how to perform your job duties safely and effectively.

I have read and understand 's Ergonomics Policy and the requirements and expectations of me as an employee.

Employee Signature: _____

Date: _____