

RISK MANAGEMENT
SAFETY AND
LOSS CONTROL

Risky Business

SAFETY & LOSS CONTROL NEWS — FEBRUARY 2022

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**THIS
MONTH'S
SAFETY
EMPHASIS IS
ERGONOMICS**

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Ergonomics Ahead!

Ergonomics is the study of human interaction with tasks, tools, and the environment to improve quality, productivity, and maximize worker safety, health, and well-being. The goal of ergonomics is to prevent soft tissue injuries and musculoskeletal disorders (MSDs) caused by sudden or sustained exposure to risk factors such as force, vibration, repetitive motion, and awkward posture. To create an ergonomically sound work environment, tasks, work spaces, controls, and the use tools and equipment should be designed to fit a worker's physical capabilities and limitations. Risk factors for MSDs can be controlled by eliminating or reducing force, repetition, and awkward postures, and educating employees how to identify and control these risks. Through these types of controls, MSDs can be prevented before they can cause injury.

~Kayvan Vafa



A Step in the Wright Direction

by Norman Wright

While working in the Federal government in 1989 and 1990, I evaluated buildings and offices damaged by the Loma Prieta earthquake. Additionally, I evaluated temporary and new permanent locations where displaced agencies moved. One of the remarkable things I saw in the new office spaces was the new office furniture purchased. The remarkable part was not the amount of furniture, but what was purchased. Each chairs, desks, tables, and office equipment was labeled ERGONOMIC.

offices in a relatively short amount of time is difficult. Purchasing agents bought what they were told was ergonomic office furniture. They were not misled, but they purchased the same thing for everyone. Everyone got the same chair and workstation; tall, short, large, thin, lefthanded, or righthanded. No training was given to those assigned these new ergonomic devices.



Having to completely outfit new

(SEE WRIGHT PAGE 2)

Wright Direction *continued...*

I observed chairs poorly fitted or adjusted. Working surface not set to a proper height for the individual. Shared workstations adjusted to complement none of the users. Office equipment arranged incorrectly for the dominant hand or eye.

Ergonomics is a science and a process. The **science of ergonomics** is the study of the person's mind and body, the equipment used, and how it is used. As a **process**, ergonomics is slightly different. It is focused on optimizing the relationship between the above concepts to promote comfort, reduce the risk of injury, and facilitate increased productivity. Ergonomics is how your workspace is designed and how it helps you work.

Poor ergonomics may cause acute trauma, or the damaging effects may be felt insidiously over time. These effects may manifest as musculoskeletal issues and cause many undesirable complications such as headaches, pain, discomfort, fatigue, and diminished efficiency.

The ergonomic principle is to fit the machine or office equipment to the individual, not the other way around. One problem is over the last 100 years, the size and shape of humans have been changing dramatically. People have grown taller and wider, with relatively longer legs and higher waist-hip ratios. Manufacturers have not in all cases kept up with the changing population, still making equipment for employees in the year 1922.

In an effort to correct for this error and to ensure that effective general human engineering criteria for design and development of military systems, equipment, and facilities, the US Department of Defense (DOD) in 1970 started gathering anthropometric information on recruits to establish Military Standard 1472 (MIL-STD-1472), *Design Criteria Standard for Human Engineering*. The purpose of the standard is to present human engineering design criteria, principles, and practices to:

- Achieve required performance by operator, control, and maintenance personnel.
- Achieve required manpower readiness for system performance.
- Achieve required reliability of personnel-equipment combinations.
- Foster design standardization within and among systems.



It is not enough to have the right equipment; you have to be trained to use it properly.

(SEE WRIGHT' DIRECTION PAGE 4)

County Ergonomic Tailgate Resources

Ergonomic
Handout

Ergonomic Office
Chair

Ergonomic Breaks

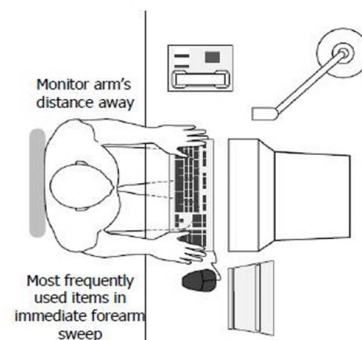
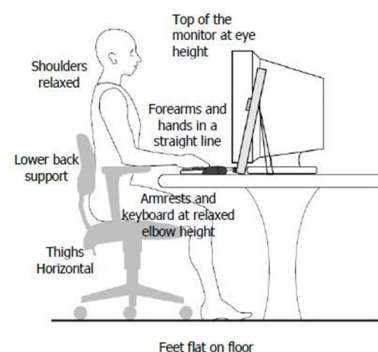
Ergonomic Monitor
Tips

[Safety Tailgates](#) | [Contra Costa County Intranet, CA \(insidecontracosta.org\)](#)

Setup for Success!

An effective method to prevent work-related musculoskeletal disorders is to setup your workstation to allow for a neutral posture while sitting. The County provides ergonomic evaluations for employees when there is a need to assess a work area or task.

Employees can also request an evaluation if they are concerned about their workspace setup or if they are experiencing ergonomic injury symptoms. Employees should contact their supervisor or safety coordinator for an evaluation request. Once an ergonomic evaluation is performed, the County's Ergonomics Lab will provide the employee with a summary report, including equipment recommendations, which must be approved by your manager and the employee. The general guidelines shown to the right can help you properly setup your workstation.



Wright Direction *continued...*

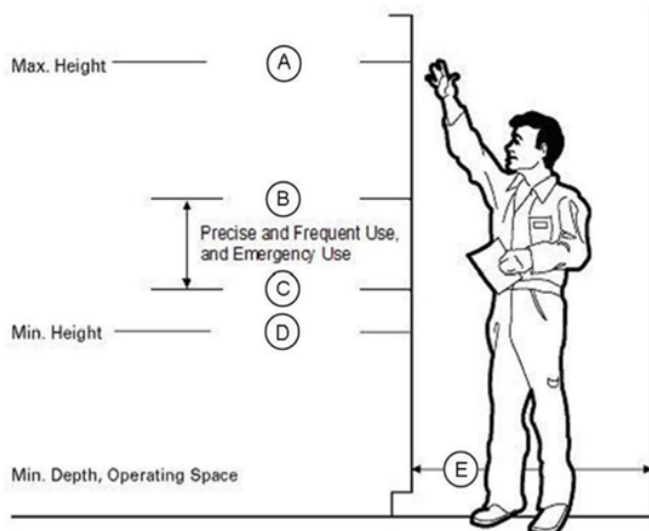
In short, the DOD wanted to ensure that systems, equipment, and facilities were designed to accommodate the ever-changing soldier, sailor, and airman. MIL-STD-1472 has been updated seven times since 1970. The latest update, MIL-STD-1472H, was made in September 2020.

Manufacturers use MIL-STD-1472 in many industries to keep up with the ever-changing population. Using this information to design machinery, equipment, and facilities fills the need for ergonomics science, but not the process. To ensure that the process is carried out, it is necessary in the County to have an ergonomic evaluation to select the proper equipment for the employee.

After the equipment is delivered, it is necessary to have a follow-up evaluation to provide instruction to the employee on how to use the equipment properly to provide maximum benefit. It is up to the employee and their supervisor to keep using the equipment properly for comfort.



The equipment purchased by Federal agencies in 1989 met all the requirements of the science of ergonomics, but not the process. Well-designed ergonomics equipment was hurting employees who had not been given instructions on how to use it properly. The science without the process may do more harm than good.



Dimension	Value
Maximum height (A)	188 cm (74 in)
Preferred max. height ^{1/} (B)	139.7 cm (55 in)
Preferred min. height ^{1/} (C)	86.4 cm (34 in)
Minimum height (D)	76.2 cm (30 in)
Preferred min. depth ^{2/} (E)	106.77 cm (42 in)
Minimum depth (E)	94 cm (37 in)

NOTES:

^{1/} Preferred dimensions are for those controls that require precise, frequent, or emergency use.

^{2/} The dimensions listed accommodate the central 90 percent of the anticipated user population.

MIL-STD-1472H FIGURE 60. Control mounting height.

Important Safety Training Dates for February 2022

NEW! The County's custom class "CCC COVID-19 Safety in the Workplace" is now available on Vector Solutions. This is required for all County staff. The new "COVID-19 Field Safety Training" is also available for staff that conduct field work.

Additional Required COVID-19 Training in Vector Solutions:

- TAILGATES - CCC - COVID-19 Safety Training
- TAILGATES - CCC - Emergency Evacuation Procedures during COVID-19

Required for Departmental Personnel Contracts in Vector Solutions

- COVID-19 - Reporting Positive Results to Public Health

General Coronavirus Training in Vector Solutions:

- Courses - Coronavirus 101 - What You Need to Know (Newest Version)
- Courses - Coronavirus 102 - Preparing Your Household
- Courses - Coronavirus 103 - Managing Stress and Anxiety
- Courses - Coronavirus 104 - Transitioning to a Remote Workforce
- Courses - Coronavirus 105 - Cleaning and Disinfecting Your Workplace

General Safety Training:

- CCC Injury and Illness Prevention Program (IIPP) Training
- CCC Wildfire Smoke Safety for Employees (Annual requirement)
- CCC Driver Safety Training
- CCC Office Ergonomics Awareness Training
- CCC Emergency Evacuation Procedures - All County
- CCC HSD 2021 Workplace Violence Prevention
- TAILGATE - Workplace violence
- TAILGATE - Shelter in Place Procedures - Violence

**Hybrid CPR Classes
Available Now!**

**Check Vector Solutions for
Dates and Instructions**



Check the Vector Solutions page periodically for new 2022 Safety Training Dates. New classes, workshops, and dates are being posted!

Log into the Vector Solutions website at www.targetsolutions.com/ccc for the full list of ONLINE, ZOOM, and HYBRID classes!

Ergonomic Breaks

Ergonomic injury risk factors include forceful movements, repetitive motions, awkward postures, and lack of breaks and rest. Working for extended periods at a single task, using repetitive motions, or staying in one static posture can lead to fatigue and increase the chances of ergonomic injuries. No matter how well a workstation is designed, problems may arise if attention is not paid to the way the work is done. Taking the necessary precautions, such as breaks and performing stretches, is equally important. Taking rest periods can help the body and mind recover. Ergonomic exercise and stretches strengthen the body by engaging different muscle groups and increasing blood flow. Never underestimate the power of ergonomic breaks and stretches!



The Importance of Ergonomic Breaks

When extremely busy at work and there is a large number of tasks to complete, it may seem that the only way to accomplish all your tasks is to skip breaks. While skipping breaks, even small ones, may provide a few extra minutes in the day, the negative impacts quickly begin to outweigh this additional time. Pay attention to signs of discomfort and fatigue on the job; these are warning signs from your body that it is time to rest. As muscles tire during a work task, taking shortcuts and slouching can lead to poor posture, fatigue, and potential injuries. Not taking breaks, also called recovery periods, can cause various negative impacts on employees, including:



Decreased
Productivity and
Creativity

Eye and
Neck Strain

Headaches

Negative Impacts on
Time Management

Elevates Stress
Levels

Increased Anxiety
and Irritability

Fatigue

Ergonomic Breaks *continued...*

Work breaks are an essential way to help reduce the chances of ergonomic injuries. They should be taken throughout the day, in addition to regularly scheduled breaks and meals. To have a significant and positive effect on worker discomfort and fatigue, rest breaks must differ substantially from the main task being completed. Many employees may not be aware there are different types of breaks available and may already be using them without formally being introduced to them. A break doesn't necessarily mean you have to stop working. For example, you can take a phone call outside to stand up and get fresh air. Other types of breaks include:

- Very short pauses (sometimes called a change of posture)
- Standing up to break static posture
- Micropauses, where workers can relax their arms and hands briefly off the keyboard
- Short breaks initiated by work such as when the telephone rings
- Formal breaks (e.g. coffee breaks and lunch)

Comfort Stretches and Exercises

Stretches help you warm-up before work, relax during breaks, and increase flexibility and boost blood flow and oxygen to muscles. Perform stretches slowly and gently, and avoid extreme postures and stop stretching if you feel pain or discomfort. These exercises may include the following:



Additional Break Tips

- Take micro-breaks lasting 20 seconds every twenty minutes
- Take mini-breaks lasting 3-5 minutes every 30 to 60 minutes
- For every 20 minutes of computer work, look at something 20 feet away for 20 seconds (20-20-20 rule)

Breath Deep
 Inhale through your nose, exhale through your mouth; let your stomach expand and contract

Neck
 Slowly slide your head back, as far as it will go, keeping your head and ears level, then slide your head forward

Hands & Wrists
 Hold your right arm out, fingers up. Take your left hand & gently bend your right hand back toward the forearm. Hold 5 seconds. Repeat on other side

Fingers
 Hold your hands out in front of you, palms down. Spread your fingers apart as far as you can. Hold for 5 seconds, then make a tight fist. Relax your fingers

WarmUp
 Relaxes, loosens tense muscles and increases blood circulation. Deep breathing draws fresh air deep into your lungs, while reaching high stretches stiff muscles

Reach High
 Raise your arms over your head, stretching as high as you can. Then bring your arms back down. Rest a moment

Upper Back
 To relieve tension, raise your hands to your shoulders. With your arms, push your shoulders back, keeping elbows down and hold for 15 seconds

Lower Back
 Lower your head & slowly roll your body as far as you can toward the knees. Hold for 10 seconds. Push yourself up with your leg muscles

Shoulders
 Raise your arms to the sides, elbows straight. Slowly rotate your arms in small circles forward, then backward. Lower your arms

Think with your Brain and then Lift with your Legs



Stop & Think



Position the feet



Adopt a good posture



Get a firm grip



Move the feet



Put down then adjust



Musculoskeletal Disorders - Causes and Symptoms

Musculoskeletal disorders (MSDs) are painful and often disabling injuries which generally develop gradually over weeks, months, and years. Risks for MSDs can vary for each employee, almost anyone can sustain injuries from these disorders. MSDs usually result from exposure to multiple risk factors that can cause or worsen symptoms, not from a single event such as a fall. Extended periods of typing, lifting, pushing, or pulling are examples of causes of these types of risk factors. MSDs can cause a number of conditions, including pain, numbness, tingling, stiff joints, and difficulty moving. Examples of how MSDs can affect different parts of the body are shown to the right.

Body Parts Affected	Symptoms	Possible Causes
Thumbs	Pain at the base of the thumbs	Twisting and gripping
Fingers	Difficulty moving finger; snapping and jerking movement	Repeatedly using the index fingers
Shoulders	Pain, stiffness	Working with the hands above the head
Hands, Wrists	Pain, swelling	Repetitive or forceful hand and wrist posture motions
Fingers, Hands	Numbness, tingling; ashen skin; loss of feeling and control	Exposure to vibration
Fingers, Wrists	Tingling, numbness, severe pain; loss of strength, sensation in the thumbs, index, or middle or half of the ring fingers	Repetitive and forceful manual tasks without time to recover
Back	Low back pain, shooting pain or numbness in the upper legs	Whole body vibration

Safe Lifting Techniques

Improper lifting techniques are a large cause of back injuries. Workers attempting to lift more than they can safely and repeated lifting and carrying activities can lead to these injuries. To help prevent these injuries, employees must be trained on proper lifting techniques and apply them to their applicable tasks. Before performing a lift, take a moment to think about the task, the object, and where the item will be carried. The following are basic safe lifting techniques when performing these types of tasks:

1) Make a Clear Pathway and Use Neutral Posture

- Plan your lift and clear a pathway to your destination
- Keep your head and eyes looking forward
- Get a good grip on the load and make sure it is stable
- Keep your torso a rigid unit and keep your back straight and vertical
- Use your leg and buttock muscles to lift your body upright, breathe as you lift

2) Keep a Wide and Stable Foot Stance

- Keep feet shoulder width apart to give side-to-side stability
- Feet should be staggered to give you forward and backward stability

3) Reduce the Weight

- Test the load before lifting. If the load is uneven, redistribute the load
- Reduce loads by cutting load in half and make more trips
- Don't carry more than you can safely lift
- Use mechanical assistance

4) Keep Objects Close to the Body When Lifting

- The further an object is from your body, the greater the stress to your back when you are lifting
- Keep the object as close as possible to you when you lift
- Bring object close to you before lifting

5) Reduce the Lifting Distance

- It is easiest to lift and lower items around waist height
- Minimize the lifting distance
- Do not over-reach to carry items from overhead
- Use a ladder or stool to reach high items

6) Use a Controlled Lifting Speed

- Always lift or lower objects with a controlled comfortable speed
- If you have to jerk the object to lift it, it is probably too heavy

Avoid Twisting: Pivot Technique

When lifting an object, it is critical to avoid twisting your body, which can increase chances of back injuries. One method to avoid twisting when lifting or carrying objects is the pivot technique, also known as 'point your toe and go,' which is summarized below:

1. Lift the load using a proper technique
2. Hold the load very close to your body and at waist level
3. Turn the leading foot 90 degrees toward the direction you want to turn
4. Bring the lagging foot next to the leading foot (if additional pivoting is required, pivot feet another 90 degrees)
5. Keep your back and body straight while turning
6. Do not twist your body anytime during the lift or while carrying the load

Seasonal Safety - Spring

Spring is quickly approaching, and while this signals brighter and longer days, blooming flowers and warmer temperatures, it also brings with it new and unique hazards. Spring is a great time to review and prepare for hazards that may be present when working outdoors, such as heat stress and slips, trips and falls. It's also a good time to prepare for the fatigue that can be caused by daylight savings time. By identifying and addressing these hazards, employees can be better protected from injuries that they can cause. Select springtime hazards are discussed further, below.



RISK MANAGEMENT
SAFETY AND
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Dedicated to
preventing
injuries and
illnesses.
**CONTACT
US!**

2530 Arnold Drive, Suite 140, Martinez
925-335-1400

Safety Newsletter E-mail:
Shanon.Winston@RiskM.CCCounty.us

Safety and Loss Control Intranet Site:
<https://www.insidecontracosta.org/469/Safety-and-Loss-Control>

Heat Stress

As spring approaches and the temperature begins to increase, it is important to understand the risks associated with heat stress. Heat stress can cause heat-related illnesses, which can occur quickly and with little warning. To reduce the likelihood of heat-related illnesses:

- **Acclimate:** Acclimatization is the temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours/day in the heat
- **Water:** Provide suitably cool, fresh, potable drinking water at 1 quart/employee/hour for the entire work shift. Encourage employees to drink water, even when they are not thirsty
- **Shade:** Provide shade as close to the work area(s) as possible (a running car with the air-conditioning on can also serve as shade)
- **Rest:** Encourage employees to take cool-down breaks as needed



April Showers Bring May Flowers, and Slips, Trips and Falls

While slips, trips, and falls are often seen as a winter issue, they also happen in spring because of unpredictable weather patterns and continuing rain in some regions. These accidents are common and dangerous, but most are preventable. To minimize these risks in spring, follow the tips below:

- Check weather forecasts before work outdoors and avoid work in inclement weather when possible
- Wear slip-resistant footwear
- Avoid slippery surfaces or areas with wet debris (e.g., accumulated leaves)
- Use handrails on stairs and walkways, when present

Daylight Savings Time and Fatigue

Daylight Savings Time begins every year on the second Sunday in March. We "lose" an hour when the clocks are set forward, and for many, that means a tired couple of days or weeks as our bodies adjust. The consequences of fatigue can be serious and include reduced mental and physical functioning, impaired judgement and concentration, slow reaction times, increased risk-taking behavior, and decreased motivation. To make the transition easier, go to bed 15 minutes earlier starting several days before the change, take a short nap in the afternoon (not close to bedtime,) and wake up at the same time each day.