

**NDSU
Ergonomics Standard**

Safe Operating Procedures

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NDSU

Ergonomics **Safe Operating Procedures**

Ergo: Work **Nomos:** Natural Law
Work Naturally

The goal of Ergonomics: Enhancement of human performance while improving health, comfort, safety and job satisfaction

Safe operating procedure will enable you to:

- Identify risk factors that contribute to work related injuries.
- Perform a self-evaluation of your work environment.
- Change or make modification your workstation, job or work habits.

Risk Factors are elements or components of a task that increase the probability of cause or contribution to musculoskeletal disorders (MSDs).

What are MSDs?

These are injuries and illnesses that affect muscles, nerves, tendons, ligaments, joints, cartilage or spinal discs.

Affected areas: Back, upper extremities, lower extremities, and eyes.

Common injuries include tendonitis, carpal tunnel, back strain, disc bulge, eye strain.

Common symptoms include:

- Sore and painful joints. Pain in wrists, shoulders, forearms, knees and legs.
- Pain, tingling or numbness in hands or feet. Fingers or toes turning white.
- Back or neck pain, headaches, dry burning eyes and blurred vision.
- Swelling or inflammation. Stiffness. Burning sensation.
- Loss of strength or coordination in the hands and decreased movement.

Occupational and Personal Risk Factors that may lead to MSDs:

Repetition:

Long or concentrated hours of typing or using a mouse.

Head movement between copy and monitor. Eye refocusing.

Awkward Positions:

Repeated or prolonged reaching, twisting, bending, kneeling, squatting.

Working overhead with your hands or arms. Bent wrists.

Neck rotation or side bending. Slouching.

Staying in a fixed position for long period of time.

Forceful Exertions:

Lifting, carrying, pushing, pulling, poor body mechanics.

Pinching, grasping, keying, mousing, writing, stapling.

Contact Stress:

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Resting or pressing the body against a hard or sharp edge which causes too much pressure and may cause damage to nerves, tendons and blood vessels.

Vibration:

Operating vibrating tools such as sanders, grinders, chippers, routers, drills, and other saws can lead to nerve damage.

Environmental Issues:

Seating, work surface, storage, lighting, air quality, noise, privacy

Psychosocial Issues:

Interaction with co-workers, job satisfaction, time pressures, performance measures.

Smoking:

Constricts blood vessels, reduces oxygen to body, coughing (mechanical strain).

Medical Factors:

Previous injury, illness or hereditary and congenital conditions.

Hobbies and Sports:

Prevention

It is everyone's responsibility to help identify poor ergonomic practices in the workplace and to work as a team to correct existing ergonomics problems.

Avoid or minimize:

- Repetitive twisting movement in combination with poor body position.
- Exposure to cold, combined with repetitive motions.
- Excessive standing with no change to lean, sit or reposition your body.
- Holding arms with no support.
- Hand operation of vibrating machinery or impact tools.
- Repetitive physical force using shoulders, arms, legs and back.
- Repetitive motion using a bent wrist.

Identifying Hazards

- Weight of objects.
- Repetitions of movements and/or tasks.
- Appropriateness of tools and/or equipment for the task.
- Body position and mechanics
- Force of grip or exertion

Procedures to correct, control or eliminate the ergonomics hazard.

- Accepted Postures: Upright, thighs declined, back in reclined position, standing, and able to move throughout these postures during workday.
- Sitting Basics: Hips slightly higher than knees, feet supported, lumbar support below beltline, back angle upright or slightly reclined, arms relaxed or supported
- Work Surface Basics: Should be based on job tasks. Surfaces should be height adjustable, reading/writing surface 2 inches higher than elbow height.

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- Keyboard/Mouse Basics: At or slightly lower than elbow height, neutral wrist posture, relaxed shoulders, use a light touch when keying.
- Monitor Basics: 25-36 inches from eyes, at or slightly lower than eye level, direct alignment, avoid glare or contrast from bright light sources, dark characters on light background and clean monitor at least 1 time per week.
- Telephone Basics: Avoid cradling the handset between your shoulder and head; hold the handset with your non-dominant hand. Use a headset or speakerphone when appropriate.
- Documents: Use a document holder adjacent to monitor or between monitor and keyboard.
- Additional Accessories: Large grip pens/pencils to decrease stress on muscles and tendons. Wrist rest for pausing between keystrokes. Footrest to help promote postural change and essential if feet do not touch the floor.
- Work and Rest Schedules: Rotate job tasks at least 1 time per hour. Take schedule breaks. Fit stretching into your daily routine. Change positions frequently. Get out of your chair and move around. Routine exercise.
- Manual Material Handling: Use good body mechanics. Know your abilities. Push/pull rather than lift/carry. Ask for help.
- Work method design: To reduce static, extreme or awkward positions, repetitive motion and excessive force.
- Tool and Handle Design: Variety of tools to achieve task and reduce ergonomic risk. Be sure tool is appropriate for the specific task.
- Training:
 - Safety training. Incident/injury reporting.
 - Lifting techniques.
 - Safety attitude and responsibility.

Points to remember

- 🌸 Adjust your work area to fit you. A comfortable work environment benefits both you and your employers.
- 🌸 Stretch every 1 to 2 hours to relieve physical tension and body aches. Stretching can increase your productivity.
- 🌸 Change your work pattern so you are not doing the same motion over and over.
- 🌸 Try to lean or sit rather than stand for long periods of time.
- 🌸 Work with your wrists straight.
- 🌸 Lifting using your legs and arms. Bend at your knees. Keep your head, back and hips in a straight line. Never bend at waist to pick up anything – bend at your knees or use a “golfer” lift. (How the golfer picks up his golf ball).
- 🌸 Never twist while lifting.