WORKSTATION DESIGN GUIDE

Building an Ergonomic Program | Workplace Injury Prevention

OSHA General Duty Clause – Section 5(a)(1) & OSHA Ergonomic Guidelines

PURPOSE OF THIS GUIDE

This guide provides practical, evidence-based recommendations for designing and adjusting workstations to reduce musculoskeletal disorder (MSD) risk. Proper workstation design is a cornerstone of any effective ergonomic program and can significantly reduce workers' compensation claims, lost workdays, and employee discomfort.

1 DESK & WORK SURFACE

The work surface is the foundation of any ergonomic workstation. An improperly sized desk forces the body into awkward postures that accumulate stress on the neck, shoulders, wrists, and lower back over the course of a shift.

Seated Desk Setup

- Desk height should position the forearms parallel to the floor with elbows at approximately 90–100° when typing.
- Standard fixed desks are typically 28–30 inches high. For most users, an adjustable keyboard tray is needed to achieve neutral posture.
- Ensure at least 24 inches of clearance depth under the desk for leg and knee room.
- Keep the primary work zone (monitor, keyboard, phone) within a 16-inch semicircle of the seated position.

Standing Desk Setup

- Standing surface height should allow elbows at 90° with wrists in a neutral, flat position.
- Provide an anti-fatigue mat (minimum ¾-inch thick, beveled edges) for any standing duration over 30 minutes.
- A sit-stand desk should transition smoothly between positions. Encourage users to alternate every 30–60 minutes.

PARAMETER	RECOMMENDED RANGE
Seated desk height	**28–30 in (adjust with keyboard tray)**
Standing desk height	**38–46 in (elbow height dependent)**
Leg clearance (depth)	≥ **24 in**
Leg clearance (height)	≥ **27 in**
Primary work zone radius	≤ **16 in from torso**
Work surface depth	≥ **24 in for monitor setback**

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✓ **BEST PRACTICE**

Label sit-stand desks with the employee's personal height settings so they can quickly return to their optimal position after any adjustment. Post a small sticker on the desk frame with seated and standing heights.

2 SEATING & CHAIR ADJUSTMENT

The chair is the single most important piece of ergonomic equipment for seated workers. A properly adjusted chair supports the natural curvature of the spine, distributes body weight evenly, and reduces contact stress on the thighs and lower back.

Key Chair Adjustments

- **Height –** Feet should be flat on the floor (or on a footrest). Thighs parallel to the floor with knees at approximately 90–95°.
- **Depth & Tilt –** Seat pan should leave 2–3 fingers of space between the front edge and the back of the knees. Tilt the seat pan slightly forward (0–5°) to encourage neutral pelvis position.
- **Lumbar Support –** Position the lumbar support at the curve of the lower back (L3–L5 vertebrae). The backrest should recline 95–110°.
- **Armrests –** Armrests should support the forearms with shoulders relaxed. Set height so elbows rest at 90° without shrugging. Width should allow the chair to slide under the desk.

PARAMETER	RECOMMENDED RANGE
Seat height	**15–22 in (feet flat on floor)**
Seat pan depth	**15–18 in (2–3 fingers behind knee)**
Backrest recline	**95–110°**
Armrest height	**Elbows at ~90°, shoulders relaxed**
Footrest height (if needed)	**Adjust until thighs are parallel**

3 MONITOR & DISPLAY POSITIONING

Improper monitor placement is one of the most common causes of neck pain, eye strain, and headaches in office environments. The goal is to position the display so the eyes, neck, and head remain in a neutral, relaxed posture.

Single Monitor

- The top of the screen should be at or slightly below eye level. Bifocal/progressive lens wearers may need the monitor 2–4 inches lower.
- Position the monitor approximately one arm's length away (20–26 inches from the eyes).
- Center the monitor directly in front of the user – avoid placing it off to one side, which causes sustained neck rotation.
- Tilt the screen back 10–15° to reduce glare and align with the natural downward gaze angle (15–20°).

Dual Monitors

- **Equal use –** If both monitors are used equally, position them symmetrically with the inner edges touching, centered on the user.
- **Primary/secondary –** If one monitor is primary, center it directly ahead and angle the secondary monitor 15–30° to the dominant-hand side.

- Match height, resolution, and brightness between monitors to prevent eye strain from constant readjustment.

PARAMETER	RECOMMENDED RANGE
Top of screen height	**At or slightly below eye level**
Viewing distance	**20–26 in (arm's length)**
Screen tilt	**10–15° backward**
Downward gaze angle	**15–20° below horizontal**
Dual monitor angle (equal use)	**Symmetric, inner edges touching**

■ COMMON MISTAKE

Laptop screens are almost always too low for sustained use. When using a laptop as a primary workstation for more than one hour, pair it with an external monitor or use a laptop riser plus an external keyboard and mouse.

4 KEYBOARD, MOUSE & INPUT DEVICES

The keyboard and mouse are the most frequently touched pieces of equipment in an office. Even small deviations from neutral wrist posture can accumulate into significant strain over thousands of daily keystrokes.

Keyboard Placement

- Position the keyboard so wrists remain straight and level – no bending up, down, or sideways.
- The keyboard should be at or slightly below elbow height. Use a negative-tilt tray (tilted away from the user) for optimal wrist angle.
- Keep the keyboard centered with the body, aligned to the B key, not the center of the keyboard frame. This accounts for the number pad offset.

Mouse Placement

- Place the mouse immediately adjacent to the keyboard at the same height.
- Use the mouse with a relaxed grip – avoid gripping tightly or resting the wrist on a hard edge.
- Consider a compact or tenkeyless keyboard to bring the mouse closer to the body's centerline, reducing shoulder reach.

Wrist Rests

- Wrist rests should be used for resting during pauses only – not while actively typing.
- The rest should support the palm/heel of the hand, not the wrist itself. Soft, rounded rests are preferred.

✓ ERGONOMIC UPGRADE

A split or tented keyboard can dramatically reduce ulnar deviation (sideways wrist bending). Consider this upgrade for employees who report wrist or forearm discomfort, or as a preventive measure for high-volume typists.

5 LIGHTING & GLARE CONTROL

Lighting that is too bright, too dim, or poorly positioned causes eye strain, headaches, and compensating postures (leaning forward to read, tilting the head to avoid glare). The goal is uniform, task-appropriate illumination without harsh contrast.

- **Ambient Lighting –** General office ambient lighting should be 300–500 lux. Computer-intensive work may benefit from the lower end of this range to reduce screen glare.
- **Task Lighting –** A desk lamp with adjustable brightness provides supplemental light for reading printed materials without over-illuminating the screen area.
- **Window Placement –** Position monitors perpendicular to windows (not facing or with back to windows). Use blinds or shades to control daylight.
- **Glare Reduction –** Apply anti-glare screen filters if repositioning is not possible. Matte screen finishes are preferred over glossy.
- **Eye Breaks –** Follow the 20-20-20 rule: every 20 minutes, look at something 20 feet away for 20 seconds to reduce eye fatigue.

PARAMETER	RECOMMENDED RANGE
General office ambient light	**300–500 lux**
Computer-intensive tasks	**300 lux (lower end)**
Detailed paper reading	**500–750 lux (task lamp)**
Screen brightness	**Match ambient light level**
Color temperature	**3500–5000K (neutral white)**

6 ACCESSORIES & ERGONOMIC TOOLS

Supplemental accessories bridge the gap between standard furniture and individual body dimensions. They are often the most cost-effective interventions for resolving ergonomic issues.

- **Footrest –** Use when feet do not reach the floor after adjusting the chair to proper desk height. The footrest should tilt and be large enough to allow shifting foot position.
- **Document Holder –** Position a copy holder between the monitor and keyboard, at the same height and distance as the screen, to prevent repetitive neck turning.
- **Headset –** Route a headset for any employee who uses the phone more than 15 minutes per day. Cradling a phone between the ear and shoulder is a leading cause of neck injury.
- **Laptop Riser –** Use a laptop riser to elevate the screen to eye level, paired with an external keyboard and mouse. Never use a laptop flat on a desk for extended periods.
- **Monitor Arm –** Place monitors on adjustable arms to fine-tune height, depth, and angle. Arms also free up desk surface area.

■ INSURANCE INSIGHT

Ergonomic accessories are a fraction of the cost of a single workers' compensation claim. A $150 chair adjustment or $50 footrest can prevent claims that average $15,000–$30,000 for cumulative trauma disorders. Document all interventions for your loss-control file.

7 WORK HABITS & MOVEMENT

Even the most perfectly designed workstation will cause problems if the worker remains static for hours. Human bodies are designed for movement, and regular micro-breaks are essential to preventing cumulative strain.

- **Micro-Breaks –** Take a 30–60 second micro-break every 20–30 minutes. Stand, stretch, or simply shift position.
- **Stretching –** Perform gentle neck rolls, shoulder shrugs, wrist circles, and standing back extensions at least twice per shift.

- **Sit-Stand Rotation –** Alternate between sitting and standing if a sit-stand desk is available. Aim for a 1:1 or 2:1 sitting-to-standing ratio.
- **Active Workspace –** Organize the work area so that printers, file cabinets, and shared resources require short walks throughout the day.
- **Material Placement –** Heavy or frequently used items should be stored between knee and shoulder height to minimize bending and overhead reaching.

✓ **PROGRAM TIP**

Pair this guide with the FUW Ergonomic Assessment Checklist (Form FUW-EAC-2026) to systematically evaluate each workstation. Conduct assessments at hire, after any workstation change, and at least annually for all employees. Document findings and corrective actions for your risk management file.

8 IMPLEMENTATION CHECKLIST

Use this checklist to systematically implement ergonomic improvements across your organization. Each step supports both employee health and your workers' compensation loss-control program.

- ☐ Conduct baseline ergonomic assessments for all workstations
- ☐ Identify and prioritize high-risk positions (repetitive tasks, complaints, claims history)
- ☐ Provide adjustable chairs with lumbar support for all seated workers
- ☐ Ensure monitors are at eye level with proper viewing distance
- ☐ Supply external keyboards and mice for all laptop users
- ☐ Install anti-fatigue mats at standing workstations
- ☐ Provide headsets for employees with frequent phone use
- ☐ Train employees on proper self-adjustment of chairs, monitors, and keyboards
- ☐ Establish a micro-break and stretching program with visual reminders
- ☐ Schedule annual re-assessments and post-incident evaluations
- ☐ Document all assessments, interventions, and outcomes in the risk management file
- ☐ Review workers' compensation claims data to track ergonomic program effectiveness

RELATED RESOURCES

FUW Ergonomic Assessment Checklist (FUW-EAC-2026) | OSHA Ergonomic Guidelines: www.osha.gov/ergonomics
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