Ergonomics Toolkit for Supervisors and Ergonomic Assessors

Office Ergonomic Practices Overview

The purpose of this toolkit is to provide resources that enable agencies, boards and commissions to reap the benefits of good office ergonomics. Implementing good practices promotes employee wellness, productivity, comfort and safety. By setting up workstations to fit the employee, the physical stresses and muscular strains associated with awkward postures and repetitive motion are greatly reduced. Employers who implement good office ergonomics experience decreased absenteeism, health care needs for their workers, and workers' compensation costs.

The Cost of Bad Ergonomics

Although there is no hard data to quantify the exact costs of workers' compensation claims or lost productivity specifically resulting from poor ergonomics, we often suspect musculoskeletal disorder (or MSDs) claims as potentially arising from work arrangements or processes that involved inadequately considered ergonomics. Since 2009, over 4,500 MSD claims have been filed leading to 8,400 missed days from work and over $3,000,000 in paid costs. The true costs of MSDs are believed to be higher.

Establishing Ergonomic Expectations of Employees

A major cornerstone of this toolkit is to facilitate the employee's self-adjustment of their workstation. The role of the supervisor or manager then becomes primarily to ensure:

- Ergonomically adjustable furnishings are provided.
- Some furnishings (primarily workstation seating) are available to fit employees who are larger/taller and shorter/smaller than the mainstream sizes of furnishings in the marketplace.
- Employees receive a good orientation on the expectation of practicing good ergonomics and where and how to access the resources available.
- When self-fit doesn't work and a trained assessor is needed, one is provided.

When to Address Ergonomics with Employees

For supervisors and managers there are several opportune times to check the need for an employee's workstation to fit their current needs:

- Upon hire
- Following reports of discomfort
- Before and after a change in workstation furnishings
- After an injury has occurred at home or in the office
- After a vehicle accident
- After a surgery
- After the purchase of new glasses
- After an accommodation has been requested

If the employee expresses that they can't adjust their workstation and make it comfortable, it is a good time to request a trained ergonomic assessor's opinion.

Trained Ergonomic Assessors

Agencies are encouraged to have several employees who are trained to provide ergonomic consultations. Ergonomic assessors can measure employees for chairs, adjust them once purchased, advise on awkward position corrections and adjust (or recommend) workstation peripherals for fit, comfort and reduction of muscular stress such as:

- New chair measurements
- Chair adjustments
- Monitors (position and height)
- Keyboards and trays (types)
- Workstation surfaces (heights)
- Pointer Devices (mouse types and speeds)
- Phones (position and headset needs)
- Work tools (positioning of resources)
- Troubleshooting unusual situations

Remote ergonomic assessments may also be performed. To accomplish this, contact a trained ergonomic assessor and send the assessor pictures or videos of the occupied workstation in question. The assessor is able to discern problematic areas with the use of these tools and make recommendations to improve an employee's ergonomics.

Ergonomic Assessor Training

SAIF Corporation is the state's workers' compensation insurer and provides two levels of training for employees who are interested in becoming ergonomic assessors. Attendees of the first level, Office Ergonomics Assessor Training, learn to fit and adjust a seated workstation to individual employee's needs. Level 2, Next Step: Beyond the Office, expands an assessor's knowledge about more unique ergonomic situations, office lighting and driving ergonomics. Attending the Level 1 training prior to attending Level 2 is advisable, but not required.

These four-hour courses have follow-up assignments for attendees to complete prior to certification. Sessions are offered periodically and around the state. To register to attend an assessor class, access the following website or contact SAIF's state agency training contact at 503-373-8107.

http://www.saif.com/employer/2378_208.htm

Ergonomics - What to buy

Because one size does not fit all, adjustable chairs and peripherals are always a smarter purchase from an ergonomic perspective.

Ergonomically fitted peripherals follow the Green, Yellow and Red Zone standards. The Green Zone is the best ergonomically suitable placement range for peripherals. It is the area where the body and muscles are in more relaxed, neutral positions.

The Yellow Zone is second best, though less desirable. When in this zone, the body is partially extended and joints are partially flexed. The Red Zone is to be avoided. In this zone, joints are at or near full extension.

Ergonomic Chairs and Self-Adjustment Resources

Each manufacturer of ergonomic chairs on the State of Oregon pricelist meets good ergonomic standards for adjustability and provides links to manufacturer's videos for self-adjustment of their chairs. Current manufacturers and their contact information may be found in Appendix A.

The videos show how to utilize the mechanisms and adjustment features to achieve the best fit and maximize employee comfort while seated. Current chair manufacturers and video links:

Manufacturers	Links
Office Master, Inc.	http://officemaster.com/products/infinite_adjustments.php
Ergonomic Accessories Intl	Non-video: http://www.ergonomicaccessories.com/v/vspfiles/assets/images/Ergohuman_Original_1.pdf
RFM Manufacturing	http://www.rfmseating.com/arm-control-adjustments
Art Design International, Inc.	http://www.adi-artdesign.com/en/mechanisms.php?lang=en&mech=2
ErgoGenesis	http://www.ergogenesis.com/videos.html
Chair Contracts	http://www.oregon.gov/DAS/EGS/Risk/pages/ErgoTaskChairs.aspx

In addition, there is a step by step written guide endorsed by the Ergonomic Consensus Guideline workgroup. This is a highly recommended resource and also includes considerations for adjusting workstation peripherals. The guide is also available in a PowerPoint presentation format called Office Ergonomics Self-Assessment Training.

The following is a listing of all the Ergonomic resources on the DAS Risk Management website developed to assist agency implementation of the guidelines.

Resource Websites	Links
Office Ergonomics Guidelines	http://www.oregon.gov/DAS/EGS/Risk/docs/Office_Ergonomics_Guidelines_Overview.pdf
Ergonomics Toolkit for Supervisors and Ergonomic Assessors	http://www.oregon.gov/DAS/EGS/Risk/docs/Ergonomics_Toolkit_for_Supervisors_Assessors.pdf
Introduction to the New Ergonomic Guidelines	http://www.oregon.gov/DAS/EGS/Risk/docs/Introduction_to_the_New_Ergonomic_Guidelines.pdf
Office Ergonomics Self-Assessment Training	http://www.oregon.gov/DAS/EGS/Risk/docs/Office_Ergonomics_Self_Assessment_Training.pdf
Office Ergonomics Self-Assessment Form	http://www.oregon.gov/DAS/EGS/Risk/docs/Office_Ergonomics_Self_Assessment_Form.pdf
Multi-User Workstation Toolkit	http://www.oregon.gov/DAS/EGS/Risk/docs/MultiUser_Workstations_Toolkit.pdf
OR-OSHA's Ergonomic Fact Sheet	http://www.orosha.org/pdf/pubs/fact_sheets/fs56.pdf

Workstation Peripherals - Recommendations, Issues and Adjustments

Most workstation peripherals are available from a resource on price agreement. If you need ergonomic peripherals with special specifications that are not shown in their online catalogue, contact these vendors and ask if they are able to provide the needed product. If they are unable to provide, you must seek an exception to buying online. In these cases, contact your agencies Procurement Specialist.

Vendor	Ergonomic Peripherals Available	Links:
Office Max	See: Technology/Computer Accessories	http://www.officemax.com/technology/computer-accessories
Metro Office	See: Computer Accessories/Accessories	https://www.tmgwebstore.com/catalog.aspx?C=67449&SC=34613&SSC=34626
Staples	See: Technology/Desktop Computers	http://www.staples.com/Computers-Accessories/cat_SC5485

Generally monitors, keyboards and mice are decided upon at the time new computers are ordered as part of various packages on agreement. It is important to consider what is most beneficial ergonomically for employees prior to ordering. In the long run, this can save time, frustration and additional expenses.

The following price agreements exist for Computer Systems (WSCA-NASPO Hardware):

Vendor	Contract #	Link:
Apple Computer, Inc.	9781	http://orpin.oregon.gov/open.dll/open?sessionID=5933295 If you are unable to access the contracts in this system, contact either your agency's procurement specialist or contact DAS Procurement with this link: http://www.oregon.gov/DAS/EGS/ps/Pages/eprocurement.aspx
Hewlett Packard	9760	
Lenova (United States) INC	9759	
Dell Marketing L.P.	9758	

The following price agreements exist for Systems Furniture & Components:

Vendor	Ergonomic Systems Available	Links:
Herman Miller, Inc	Multiple concepts Sit/Stand	http://www.hermanmiller.com/products/workspaces.html http://www.hermanmiller.com/research/topics/all-topics/the-surprising-benefits-of-sit-to-stand.html
Haworth Inc. c/o Facilitec of Oregon	Multiple concepts Sit/Stand	http://www.haworth.com/home/systems http://www.haworth.com/home/tables

Use the following tables to self-assess peripherals, needed adjustment and what adjustments to make.

Peripheral - Monitors	Recommended Adjustability	Issues and Adjustments
Best practices for most: Place monitor at fingertips distance away.	Purchase monitors with: 1. Non-reflective screens 2. Upward and downward screen tilt capability 3. Side to side pivoting capability	Screen glare: Tilt screen upward or downward away from light sources. Adjust contrast and brightness to match eye comfort levels. Consider non-glare light bulbs or light fixture covers that disperse light differently. Do not set white paper directly in front of a reflective screen. Use a document holder that sits directly to the side or in front of the monitor. Glare guards are not recommended as they can cause eye strain from depth distortion.

Have first line of text at eye level or below. The natural plain of vision is downward.	4. Screen height adjustment.	Blurriness: To eliminate blurriness, move the screen closer to you or further from you until the screen comes into focus. Enlarge the font size of your text. Talk to your optometrist about getting computer glasses or trifocals that magnify your short distance, straight-ahead vision. Head turned greater than 15°: Center screen(s) in front of you and align with keyboard to avoid unnecessary head twisting.

Peripheral – Keyboard tray	Recommended Adjustability	Issues and Adjustments
Best practices: The most common ergonomic setting for the keyboard is vertically within the distance between your elbow and lap and with the backside of the tray lower than the front side of the tray (tilted backward). While keyboarding, there should be no bending of the wrist – just a gentle downward, straight-lined slope from the elbow to the fingertips. Do not rest your wrist on hard surfaces or corners as this can lead to restricted blood flow, tendonitis and joint pain. Leave the feet located at the backend of your keyboard collapsed and unengaged.	Purchase keyboard trays that • move up and down • swivel side to side • have 15° negative tilt • slide closer to and further from the desk. These trays are frequently referred to as articulating keyboard trays.	Shoulders are raised toward ears (shrugged): Lower keyboard tray. Fingertips are higher than the wrist: Lower keyboard tray. Tilt keyboard tray backwards. Ensure legs at back of keyboard are not being used. Knees hit keyboard tray: Raise keyboard tray slightly, pull out further from desk, and/or try tilting the tray backward so that the slope of the tray matches the downward slope of your legs in the seated position. Also, try tilting the chair slightly forward using the forward tilt mechanisms. Keyboard sets on a nonadjustable surface: raise and lower the chair height to obtain those downward lines you need. Use gel strips to rest your wrists upon – they soften surfaces and, if used while keyboarding, help to raise the wrists into a straight-lined position.

Peripheral – Mice	Recommended Adjustability	Issues and Adjustments
Best Practices: Mice should be sized to fit the employee's palm so that the fingers have a gentle, relaxed curve to them. They should be placed in the green zone and not in an area	Mice should have their pointer speed set to fast to avoid wide flexion of the wrist. Set the mouse's speed following this sequence: the computer's control panel/mouse/pointer options. The tail of the mouse should be able to extend into	Have to pick up mouse to go from one end of the screen(s) to the other: Increase cursor speed Wrists are resting on the edge of the work surface: Use a mouse-sized gel wrist rest.

requiring full extension of the arm or too far off to the side.	the Green Zone. If it does not, consider a tail-less mouse.	Employees complain of sore wrists: Consider a vertical mouse, right-sizing the mouse. In extreme need, a foot mouse can be considered.

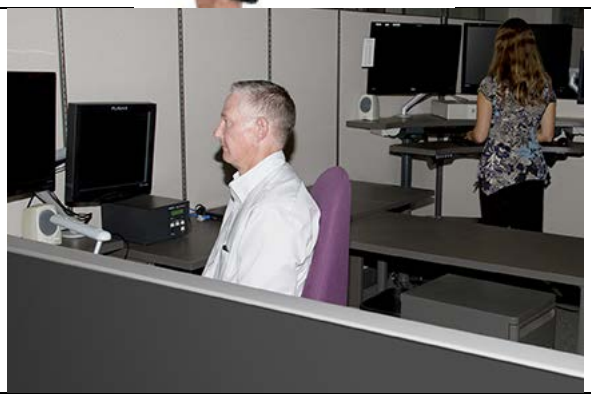
Peripheral – Keyboards	Recommended Adjustability	Issues and Adjustments
Best Practices: The purchase of keyboards is based on hand and wrist comfort. The style of keyboard should not require flexed upward or downward wrists and should be kept in the Green Zone (see illustration in the Ergonomics – What to Buy section.	If the keyboard comes with feet that raise the top end of the keyboard, they should be kept in the collapsed position to avoid flexing the wrist upward unnecessarily.	The keyboard causes too much wrist flexion: lower the keyboard by lowering desk surface or keyboard tray, or use a gel strip to "straighten" the wrists.

Peripheral – Footrests	Recommended Adjustability	Issues and Adjustments
Best Practices: The purchase of footrests is desirable for allowing variability in foot positioning throughout the day. They are frequently used where work surfaces are too high and fixed. For standing workstations they may be used to shift weight from one foot to the other and avoid excessive foot/leg fatigue.	Purchase pivoting, heated (with fan to circulate heat) footrest with a height adjustable pedestal. Note: May need approval of Facilities manager to use heated footrests.	Cold work area: Provide a heated footrest with a fan to help circulate heat. Feet dangle and do not touch the floor: Use footrest for solid foot placement. Poor circulation in feet: Use a footrest that pivots back and forth to allow foot and leg flexion. Experience muscular fatigue when standing too long: Use footrest alternately between one foot and the other to shift weight periodically and reduce stress on the small of your back.

Special Ergonomic Considerations: Seated/Standing/Fitness/24 Hour Workstations

The most current advice available from nationally recognized safety and health authorities is that there are great health benefits to be derived from use of ergonomic sit/stand workstations. For the seated portion of these workstations, no study recommends stools. This is most likely due to the safety considerations for increased instability from the higher center of gravity, the instability of footrest rings used as a step up into the stools, and while seated on the stool to use the wrists in awkward positions to pull oneself closer to and push away from the work area. No current studies by recognized safety and health authorities recommend neither the use of exercise balls nor other fitness equipment as workstation furnishings. This too is most likely due to the safety considerations of slips and falls this type of equipment poses.

The following sit/stand workstation configurations are currently recommended by the Consensus Guidelines Workgroup:

Type	Picture	Features
Mixed Fixed Surface Heights Workstation		Uses fixed surfaces set at both seated and standing heights. Computer is generally on the seated-height surfaces but may be on the standing-height surfaces.
Adjustable Work Surface Heights Workstation		Uses electronic or crank mechanism to lower or raise work surfaces to the desired height.
Adjustable Computer Stands		These stands set on a seated height work surface and have keyboard trays and monitor stands that allow you to move these computer components up and down from seated to stand positions. There are several types of these devices including ErgoTrons and Kangaroos.
24 hour Workstations		These workstations are used by multiple people working separate shifts. Best practices for these work stations are that they need to be highly adjustable and heavy duty. Of special note is that most manufacturers will not honor normal guarantees for 24 hour workstation components.