

## **LABORATORY ERGONOMICS CHECKLIST**

**Name of Lab:**

**Employee/Lab Coach:**

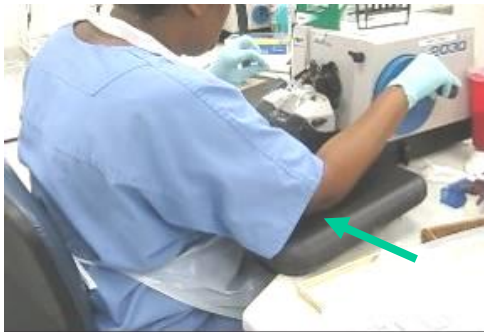
**Lab Supervisor/Manager:**



**Date:**



**If you have any questions, please call the Ergonomics Division at 668-ERGO (3746)**

### Laboratory Ergonomics Checklist


<b>Laboratory Benches</b> (“Benches” Video) <a href="#">Laboratory Ergonomics   Duke OESO</a>			
Question	Response	Recommendations if Response is No:	Comments
If employees stand, are short anti-fatigue matting supplied?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Order anti-fatigue insoles or short anti-fatigue matting for areas with prolonged standing. Refer to <a href="#">recommended products website</a> . (Note: Long anti-fatigue matting is not necessary for standing tasks and may pose a trip hazard).	Consult with Supervisor/Manager on ordering.
Are work areas free of contact stressors, such as bench tops with sharp edges?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Apply padding to the edge of sharp work surfaces to reduce contact stress on arms and elbows. Refer to <a href="#">padding website</a>	Consult with Supervisor/Manager on ordering







<p>Is the height of the bench appropriate so that the employees are either:</p> <ul style="list-style-type: none"> <li>• Sitting with feet flat on the ground or</li> <li>• Standing with upright postures</li> </ul> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<ul style="list-style-type: none"> <li>• For seated tasks, adjust the chair height so feet are on the ground.</li> <li>• Contact the Ergonomics Division if stool height chairs are used or if the employees are standing at 37” high benches.</li> <li>• Refer to the following link for <a href="#">working height guidelines</a></li> </ul>	<p>Contact the Ergonomics division for additional assistance.</p>
<p>Is there adequate leg and foot room at all seated work areas?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>To create foot room, remove drawers and/or move equipment from underneath.</p>	<p>Consult with Supervisor/Manager on removing drawers.</p>
<p>Is bench work performed separate from computer work?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Contact the Ergonomics division</p>	

<b>Laboratory Chairs</b> ("Chair Adjustment" Video) <a href="#">Laboratory Ergonomics   Duke OESO</a>			
Question	Response	Recommendations if Response is No:	Comments
<p>Can all laboratory chairs be adjusted to accommodate employees so they can sit:</p> <ul style="list-style-type: none"> <li>• With feet on ground</li> <li>• With hips/knees at same height</li> <li>• Leaning back on the chair</li> </ul> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<ul style="list-style-type: none"> <li>• If chairs are adjustable, adjust them according to the employee.</li> <li>• If chairs are not adjustable, consult with supervisor/manager on new chairs/stools.</li> <li>• If stool height chairs are used, contact the Ergonomics Division.</li> </ul>	<p>Contact the Ergonomics Division for information on new chairs/stools.</p>
<p>If stool height chairs are used, are employees able to safely get on/off the stools?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Contact the Ergonomics Division</p>	
<p>Can employees comfortably rest their feet on the floor?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Contact the Ergonomics Division if employees sit on stool height chairs.</p>	

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<p>Do employees know how to adjust the chairs?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<ul style="list-style-type: none"> <li>• Read chair manuals</li> <li>• Refer to the chair vendor's web site for instructions</li> <li>• Try the various levers and buttons</li> <li>• Consider a chair in-service, provided by the vendor, who should be contacted by the department.</li> </ul>	<p>Consult with Supervisor/Manager on arranging vendor in-service.</p>
<p>Are chairs free of armrests or can arms be removed to allow for freedom of movement?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Remove armrests from chairs. Contact maintenance or the chair vendor.</p>	
<p>Are the chair casters appropriate for the flooring? Rubber or locking casters should be used for hard floors, and vinyl casters for carpeted surfaces.</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>		<p>Consult with Supervisor/Manager on contacting chair vendor to order appropriate casters.</p>

Microscopes <input type="checkbox"/> N/A			
Refer to <a href="https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips">https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips</a>			
Question	Response	Recommendations if Response is No:	Comments
<p>Do employees work with:</p> <ul style="list-style-type: none"> <li>• Neutral shoulder postures (without rounded shoulders or in a hunched position)</li> <li>• Upright neck (without excessive neck bending)</li> <li>• Upright back</li> </ul>  	<input type="checkbox"/> Yes <input type="checkbox"/> No	<ul style="list-style-type: none"> <li>• Move microscope to edge of desk</li> <li>• Sit as close to microscope as possible</li> <li>• Lean back on back rest.</li> <li>• If available on chair, tilt chair forward slightly to lean back on chair for back support</li> <li>• Raise microscope so eye piece is at eye level- use <a href="#">microscope support</a></li> </ul>	<p>Consult with Supervisor/Manager on purchasing microscope support.</p>
<p>Is the work area free of contact stresses between sharp edges and the forearms?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<p>See recommended products list for recommendations on edge padding and/or arms supports.</p>	<p>Consult with Supervisor/Manager on ordering edge padding.</p>




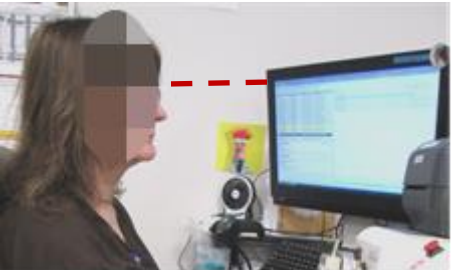


Is the microscope pulled out to the edge of the workbench?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Move microscope closer to edge of workbench.	
Have employees been trained how to properly sit at a microscope workstation?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Coach employees on better work practices with microscope use.	
Are microscope work breaks provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Provide frequent short breaks (every 20 minutes) to stretch and move around.	Consult with Supervisor/Manager on stretch breaks.
<b>Pipetting</b> <input type="checkbox"/> N/A <b>Refer to <a href="https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips">https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips</a></b>			
Question	Response	Recommendations if Response is No:	Comments
Is manual pipette use minimized?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Minimize manual pipetting. Consider options from recommended products list such as electronic or latch mode <a href="#">pipettes</a> .	Consult with Supervisor/Manager on ordering.
Are electronic or latch mode pipettes provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If pipetting for more than 5-10 minutes at a time, consider electronic pipettes.	Consult with Supervisor/Manager on ordering.



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<p>Is the pipette designed to minimize contact with the hand on sharp edges?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>See recommended products list for electronic and latch mode pipettes without sharp edges.</p>	<p>Consult with Supervisor/Manager on ordering.</p>
<p>Have employees been trained how to properly operate the pipette (e.g., pickup tips, eject tips, program electronic pipettor, etc.).</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Coach employees on pipette use.</p>	<p style="background-color: #cccccc;"> </p>
<p>Is pipetting frequency minimized (less than 2 hrs per day)?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Limit periods of continuous pipetting to 20 minutes or less. Vary activities and rotate pipetting tasks among several people.</p>	<p>Consult with Supervisor/Manager</p>
<p>Are frequent breaks provided?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Take frequent short breaks (e.g., 2 minutes for every 20 minutes of pipetting).</p>	<p>Consult with Supervisor/Manager</p>
<p>Is the pipettor electric or multi-channeled to allow for computer-activated multiple dispensing instead of finger-activated dispensing?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Consider purchasing new Pipettes. See recommended products list.</p>	<p>Consult with Supervisor/Manager on ordering.</p>


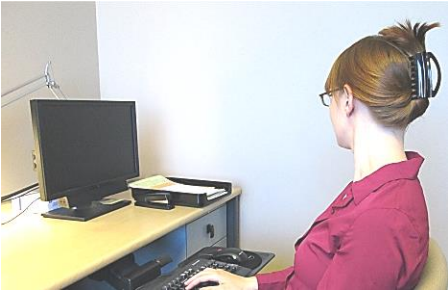





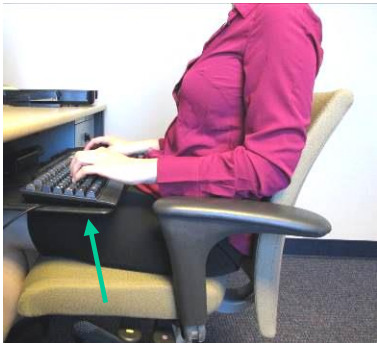
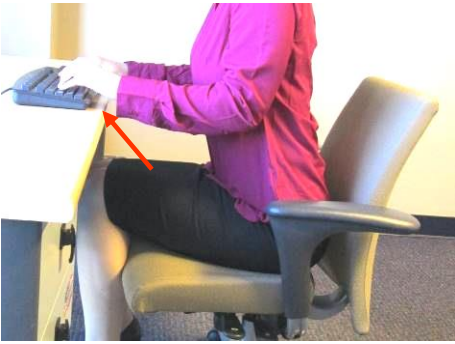
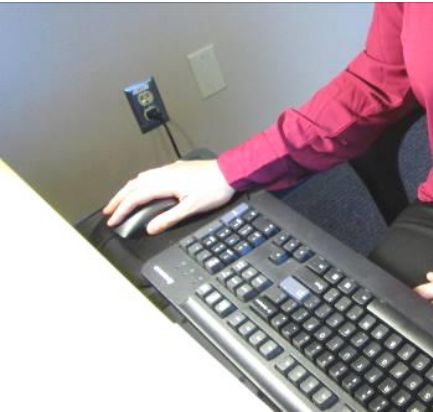


<b>Fine Motor Skills</b> <input type="checkbox"/> N/A Refer to <a href="https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips">https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips</a>			
Question	Response	Recommendations if Response is No:	Comments
Are vials with the fewest amounts of threads allowable used?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Use plastic vials with fewer threads to reduce twisting motions during capping and uncapping of lids.	
Is dissection or micromanipulation tasks with forceps performed less than 5 hours per week?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Split micromanipulation tasks between lab workers and take breaks often to stretch and change postures.	Consult with Supervisor/Manager
Are frequent micro breaks provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Provide frequent micro breaks (20 seconds each).	Consult with Supervisor/Manager
<b>Microtomes/Cryostats</b> <input type="checkbox"/> N/A Refer to <a href="https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips">https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips</a> for microtome or cryostat			
Question	Response	Recommendations if Response is No:	Comments
Is the workstation at a height and distance that allows the arms to be as close to the body as possible?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Adjust the chair or move the equipment closer to minimize reaching.	
Do employees have access to an automatic microtome/cryostat?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Purchase an automatic microtome to replace manual unit.	Consult with Supervisor/Manager

<p>Do employees work with:</p> <ul style="list-style-type: none"> <li>• Straight backs/necks</li> <li>• Arms to side</li> <li>• Minimal twisting, leaning or reaching while operating the microtome, cryostat or while embedding?</li> </ul> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<p>Coach employees to:</p> <ul style="list-style-type: none"> <li>• Adjust chair to reduce reaching/leaning/looking down</li> <li>• Move closer to bench</li> <li>• Pivot chair instead of twisting</li> <li>• If foot pedal is available for microtome, use when feasible.</li> </ul>	
<p>Do employees have straight necks when looking at monitors?</p> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<ul style="list-style-type: none"> <li>• Lower monitor as far as able, and bring as close to front as able.</li> <li>• Pivot chair instead of twisting.</li> <li>• Adjust chair so eyes are closer to top of monitor screen.</li> </ul>	
<p>Are frequent breaks provided?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Provide frequent breaks.</p>	<p>Consult with Supervisor/Manager</p>

<b>Laboratory Hoods and Biosafety Cabinets</b> <input type="checkbox"/> N/A (“BSC” Video) <a href="#">Laboratory Ergonomics   Duke OESO</a> <b>Refer to <a href="https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips">https://www.safety.duke.edu/ergonomics/laboratory-ergonomics/general-laboratory-and-workbench-tips</a></b>			
Question	Response	Recommendations if Response is No:	Comments
Are short anti-fatigue mats used if employees stand for prolonged periods?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Order short anti-fatigue matting for standing areas. See recommended products list for examples.	Consult with Supervisor/Manager on ordering.
Are materials inside the hoods/biosafety cabinets as close as possible so as not to require reaching?  	<input type="checkbox"/> Yes <input type="checkbox"/> No  	<ul style="list-style-type: none"> <li>• Move most frequently used items closest to employee to minimize reaching.</li> <li>• Sit/stand close to the hood.</li> <li>• Adjust chair as needed to reduce reaching/leaning forward.</li> </ul>	
Are lighting levels inside the hoods/biosafety cabinets appropriate?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Make sure that lights in hoods/BSCs are working properly. Replace bulbs when necessary.	

<p>Do employees work with neutral neck/back postures?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<ul style="list-style-type: none"> <li>• Move closer to hood.</li> <li>• Lean back on chair for support.</li> <li>• Adjust chair height to reduce reaching/leaning.</li> </ul>	<p style="text-align: center;">■</p>
<p>Are frequent breaks provided for prolonged hood/cabinet use?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<ul style="list-style-type: none"> <li>• Provide frequent micro breaks (20 seconds every 20 minutes).</li> </ul>	<p>Consult with Supervisor/Manager</p>
<p><b>Computer Workstations</b> <input type="checkbox"/> N/A          (“Computer Workstation Set Up” Video) <a href="#">Laboratory Ergonomics   Duke OESO</a></p>			
Question	Response	Recommendations if Response is No:	Comments
<p>Are monitors adjusted so top of screen is at/slightly below eye height?</p> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<ul style="list-style-type: none"> <li>• Adjust monitor so top of screen at eye height or</li> <li>• Adjust chair so eyes are at monitor height (Note: Ensure feet are on floor or on short footrest, thighs parallel to ground, and keyboard at elbow height) or</li> <li>• Replace with adjustable monitors or monitor arms.</li> </ul>	<p>Consult with Supervisor/Manager on using adjustable monitors or monitor arms.</p>

<p>Are monitors positioned directly in front of individuals?</p> 	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> 	<p>Position monitor directly in front of body.</p>	
<p>Are monitors positioned so they do not face or back up to a window?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Move monitors so they are 90 degrees to the window.</p>	
<p>Are keyboards positioned directly in front of body?</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Position keyboards directly in front of the body.</p>	

<p>If keyboards/mice are used at least 4 hrs. a shift, are they on height adjustable surfaces?</p> 	<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> 	<ul style="list-style-type: none"><li>• If on a height adjustable surface, adjust keyboard/input devices to match elbow height. If computer is used less than 4 hrs. adjust the chairs so keyboard/mouse is at the same height as the elbows. (Note: Ensure feet are on the floor or on a footrest and thighs parallel to ground)</li></ul>	<p>Consult with bench vendor on installation procedures for keyboard trays.</p>
<p>Are input devices positioned as close to the keyboards as possible?</p> 	<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p> 	<p>Position input devices closer to the keyboards.</p>	

Are headsets available for employees who frequently use the computer and phone simultaneously?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Purchase headsets- inquire at the Duke Computer store <a href="mailto:cpustore@duke.edu">cpustore@duke.edu</a>	Consult with supervisor/manager on ordering.
Is task lighting sufficient for tasks such as reading and writing?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Purchase task lights	Consult with supervisor/manager on ordering.
Are other frequently used items (calculator, reference books) within reach?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Move frequently used items closer	
Are document holders available for employees who frequently reference documents?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Purchase <a href="#">document holders</a> , such as the VuRyte Vision Vu.	Consult with supervisor/manager on ordering.

\*Adapted from the NIEHS Laboratory Self-Assessment Checklist

**NOTE: Supervisors/Managers are responsible for implementing recommendations for items with “No” responses. Please contact the Duke Ergonomics Division for assistance if necessary at [ergonomics@mc.duke.edu](mailto:ergonomics@mc.duke.edu), or 688-ERGO (3746).**