Appendix A
Health and Safety Rights and Responsibilities

**Rights under the Nova Scotia Occupational Health and Safety (NS OHS) Act:**

The staff member has the **right** to:

1. **Know** about the hazards they work with and be informed on issues that affect personal health and safety.
2. **Participate** on health and safety committees as per the Committee’s Terms of reference, report unsafe conditions, and voice concerns or opinions on any issue that may affect personal health and safety or that of the workplace.
3. **Refuse** work they believe will endanger their safety or health.


1. Ensure NSHA’s Occupational Health and Safety program, policies, procedures, and training requirements are implemented and compliant with the Nova Scotia Occupational Health and Safety Act, and prescribed Regulations in their areas of responsibility.
2. Ensure all Staff at the Workplace are made aware of any health or safety hazards that may be met by them at the Workplace.
3. Ensure all Staff are made familiar with the proper use of all devices, equipment, and personal protective equipment and clothing for their protection.

References


Appendix B
NS OHS Act Responsibilities - Employees

Responsibilities – All Staff (Province of Nova Scotia, 2017; NSHA, 2015).

1. Report to their supervisor or manager, as soon as possible, any hazardous conditions, acts, near miss, injury, or illness related to the Workplace.
2. Protect their health and safety and that of others in the Workplace.
3. Contribute to a positive and healthy safety culture.
4. Demonstrate a commitment to a safe and healthy Workplace.
5. Cooperate with co-workers, Management, JOHSC, Health and Safety departments and any person exercising authority under the OHS Act.

References


Appendix C
Risk Factors for Work-Related Musculoskeletal Disorders

The following are risk factors for work-related musculoskeletal disorders (CCOHS, 2019).

- Work postures and movements.
- Repetitiveness and pace of work.
- Force of movements.
- Vibration.
- Temperature.
- Lack of influence or control over one’s job.
- Increased pressure (e.g., to produce more).
- Lack of or poor communication.
- Monotonous tasks.
- Perception of low support (e.g., manager or co-worker).

In Central Zone, NSHA, the above physical risk factors are broken down into:

- **Excessive Force** - Excessive effort used in lifting, lowering, carrying, pushing, pulling and gripping.
- **Awkward Posture** - Joints working in severe range of motion (e.g. bend forward without bending knees, twisting, contorting, reaching around objects, etc.).
- **Static Posture** - Muscular effort maintained with no movement for more than 30 seconds.
- **Repetition** - Repeating the same movement or task over and over during a given time period or activities that are performed more than 50% of the workday. This risk is increased when repetitions are increased or the rest breaks between repetitions are shortened.
- **Contact Stress** - Occurs when a part of the body presses against a hard or sharp surface.

**Tips to reduce** the stresses (NIEHS, n.d.).

- **Excessive Force**
  - Clean equipment and ensure it is in good working order.
  - Use the leg muscles as much as possible instead of arm or lower back.
  - Get close to your work.
  - Use assistive devices, when available.
  - Avoid awkward postures.
  - Use two hands instead of one.
- **Awkward Posture**
  - Maintain a neutral posture.
  - Avoid twisting - point your shoulders, nose and toes in same direction.
  - Get closer to the item.
  - Keep tools and supplies within easy reach.
- **Static Posture**
  - Take short, frequent breaks.
  - Alternate methods for holding object.
  - Change position often.
  - Stagger high-risk activities throughout shift.
- **Repetition**
  - Take short, frequent breaks.
  - Take stretch breaks.
  - Alternate tasks - perform tasks that use different muscle groups.
  - Alternate arms.
  - Reduce awkward posture.
- **Contact Stress**
  - Change posture so that body part is not in contact with surface.
  - Place padding between body part and object.
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- Pinch Grip
  - Choose the right tool for the job.
  - Alternate grip.
  - Use thin, flexible, properly fitted gloves to reduce forces.

**The following recommendations are specific to the lab:**

**General Recommendations** (HR, University Western Ontario, 2019; University of Waterloo, n.d.; University of California, n.d.).

- Store heavy objects on shelves below shoulder height, when possible.
- Avoid twisting by turning and facing the object.
- Use CSA approved stepladder to reach objects stored on high shelves.
- Store frequently used materials on shelving units between knuckle and chest height.
- Reduce unnecessary reaching. Set up items closer to you to decrease reaching.
- Shift weight frequently when standing, use a footrest or bottom of bench to prop one foot up at a time.
- Sit against the back of the chair, hips as far back in the chair as possible.
- Keep elbows close to the body and shoulders relaxed.
- Take microbreaks 2-4 times per hour, if possible.
- Modify tool grip, if necessary.
- Computers - avoid progressive lenses.

**Chairs and stools** (NIEHS, n.d.).

- Sit in chair so that hips are as far back in the seat as possible and your back is supported against the backrest.
- Ensure there is sufficient space for your legs and knees to get as close to the work as possible.
- Remove items from under the bench that can get in the way of having sufficient space for your legs/knees.
- Avoid using the foot ring of a stool and/or lab chair. Instead, use a footrest in front of you.
- If you are standing at the workstation, use anti-fatigue mats and supportive shoes.
- If setting up the workstation for both sit and stand, anti-fatigue mat should be removed.

**Workstation Height** (HR, University Western Ontario, 2019; University of Waterloo, n.d.; University of California, n.d.).

- Precision work - workstation should be above elbow height.
- Light work - workstation should be at elbow height, or slightly lower.
- Heavy/hard work - workstation should be below elbow height.
- The items you use most should be close.

**Microscope** (HR, University Western Ontario, 2019; University of Waterloo, n.d.; University of California, n.d.).

- Maintain straight wrists and avoid tilted head/neck postures.
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- Bring the microscope as close to the edge of the work surface as possible.
- Take a microbreak every 20-30 minutes to stretch your back and neck.
- Use microbreaks to rest eyes and focus on far objects.
- Ensure your chair is properly set up as per Central Zone, NSHA “checklist” prior to using a microscope (NSHA LMS, n.d.). This includes:
  - Back against chair to reduce leaning forward and a head forward position.
  - Get as close to the counter as possible to reduce reaching and awkward wrist positions.
  - Adjust height so that you look through eyepiece with neck and back in neutral position.
  - Remove armrests if they prevent getting close or interfere with your arms.
- Avoid forward leaning when viewing through eyepiece.
- Alternate using a microscope and other lab tasks, when possible.
- Maintain a neutral spine (neck and back).
- Use armrests or padding to reduce contact stress.
- Ensure enough leg and foot room to avoid awkward postures or twisting.
- Tilt storage bins toward you to get supplies. This reduces awkward postures.

Other Hazards specific to Anatomical Pathology:

- Musculoskeletal injuries, many related to ergonomics (Johnsrud, n.d.; Fritzche et al., 2012; George, 2010).
- Visual refraction errors, mainly myopia (Fritzche et al., 2012).
- Cutting injuries. Can help reduce with cut-resistant gloves (i.e. Kevlar). This does not help to reduce needlestick injuries (Fritzche et al., 2012).
- Needlestick injuries (Fritzche et al., 2012).
- Splash injuries (Fritzche et al., 2012; Burton, 2003).
- Chemical exposure, (e.g. Formaldehyde that off-gases from Formalin) (Fritzche et al., 2012; Burton, 2003).
- Depression and burnout (Fritzche et al., 2012).
- Biohazard injuries (Ehdaivand, Chapin, Andrea, & Gnepp, 2013; Burton, 2003).

References:


Appendix C
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Appendix D – Body Mechanics and Prolonged Posture

**Principles** of Proper Body Mechanics (Heiserman, 2015; MCCC, n.d.).

- Remain close to the object.
- Keep object in your base of support.
- Widen base of support (feet) as necessary.
- Use the largest muscle groups (e.g. legs) possible.
- Avoid twisting.
- Push, pull, roll or slide an object instead of lifting, if possible.

**Prior to moving an object** (Heiserman, 2015; MCCC, n.d.).

- Prepare yourself mentally and physically.
- Look for any obstacles.
- Choose the best method to move the object.
- Get help if necessary.
- Give full attention to the task at hand.
- Determine if there is a piece of equipment that can make it safer (mechanical lift, cart, etc.).
- Consider your abilities and limitations.

**Prolonged Sitting versus Prolonged Standing**

Detrimental effects of prolonged sitting (a.k.a. sedentary physiology):

- Metabolic Dysfunction (Tremblay, Colley, Saunders, Healy, & Owen, 2010; SBRN, 2017):
  - Decreased high-density lipoprotein (HDL),
  - Decreased insulin sensitivity.
- Reduction in bone mineral density (Tremblay et al., 2010; SBRN, 2017).

- Deleterious effects on vascular health (Tremblay et al., 2010).
- Associated increase in Type 2 Diabetes (Tremblay et al., 2010; SBRN, 2017).
- Increased risk of cancer (Tremblay et al., 2010).

Detrimental effects of prolonged standing:

- Sore feet (Waters & Dick, 2015; CCOHS, 2019).
- Swelling of the legs (Waters et al., 2015; CCOHS, 2019).
- Varicose veins (Waters et al., 2015; CCOHS, 2019).
- General muscular fatigue (Waters et al., 2015; CCOHS, 2019).
- Low back pain (Waters et al., 2015; CCOHS, 2019).
- Stiffness of the neck and shoulders (Waters et al., 2015; CCOHS, 2019).
- Lower limb discomfort and pain (Waters et al., 2015).
- Cardiovascular disorders (Waters et al., 2015).
- Cardiovascular insufficiency (Waters et al., 2015).

Essentially, avoid prolonged sitting or standing, when possible:

- Avoid standing in one spot more than one hour at a time and four hours per day.
- Avoid sitting more than one hour at a time. If possible, get up 2-4 times per hour.
- If sitting for a full hour, try to walk around for 5 minutes at the end of the hour.
References:


