PREVENTING INJURY IN THE LIBRARY

A GUIDE FOR LIBRARY EMPLOYEES

Ergonomics for Circulation Desk Activities

Health, Safety and Environmental Management System

Developed by Tim Black PT, HSEMS Consultant

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How to Use this Document

This document provides basic tools that will allow you to work safely in the library environment with the aim of reducing the risk of musculoskeletal injuries and protecting your health. It supplies practical advice on material handling in the library, ergonomic factors, stretches, and the nature of musculoskeletal injuries. The photos in this manual were taken in the Murray Library at the main circulation desk. The principles apply to all circulation desk activities and tasks at branch libraries although the details of the circulation desk configuration and equipment may vary. If specific information or guidance is required for your particular situation, then please contact your supervisor.

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Disclaimer

The guidelines presented in this manual are voluntary and may not be suitable in every situation. This guide is not intended to address specific injuries, restrictions or medical conditions. In these situations an ergonomic professional should be consulted. A formal ergonomic evaluation for personnel with preventative concerns or ongoing musculoskeletal symptoms can be requested by contacting the library’s director of Financial and Physical Resources. If you are experiencing significant pain, discomfort or other musculoskeletal symptoms, then consult a health care professional.
Preventing Injury in the Library

- As an employee of the library, both you and your employer are responsible for injury prevention in the workplace.

- It is your responsibility to be aware of any of your actions that may put you at risk for injury and take steps to work safely.

- The library is responsible for informing you of the risks of injury in your job and providing you with the proper tools, training, and information to minimize these risks. If you feel that there is something unsafe in your working environment, inform your supervisor.

- Library employees may be required to perform tasks that are repetitive in nature and injuries may occur if adequate steps in preventing injuries are not taken in a timely manner.

- If aspects of your work are repetitive, symptoms of repetitive strain/cumulative trauma injuries may occur. Such symptoms may be minimized with early identification and appropriate management. Talk to your supervisor.

Components of the Musculoskeletal System

The main components of the musculoskeletal system are:

- **Ligaments** – dense, strong, fibrous tissue that joins bone to bone, usually crossing a joint. Provide stability to joints. Tend to heal slowly.

- **Tendons** – strong, more elastic, fibrous tissue that connects muscle to bone. Some run in sheaths that provide lubrication and protection.

- **Muscles** – the main tissue that generates force to move the body. Injuries to muscle heal relatively quickly due to their excellent blood supply.

- **Joints** – allow the body to move by allowing a point of articulation between adjacent bones. Have several structures such as cartilage, fluid, and capsule to perform this function.

- **Nerves** – these allow communication between the brain and almost all structures of the body. Motor nerves signal the muscles to contract and sensory nerves relay feedback signals from muscles, tendons, ligaments and joint structures to allow for smooth coordinated movement and proprioception or the sense of where the body segments are in space and in relation to each other.

- **Blood Vessels** – provide nutrition to almost all structures in the body to enable their function, maintenance, and repair.
The Spine
The human spine forms the core of the musculoskeletal system and is robust and sturdy. It is subject to significant mechanical forces. When respected and properly maintained, the spine serves us well despite its reputation as a vulnerable part of the body.

The spine is composed of 24 vertebrae in three regions, lumbar (5) or low back, thoracic (12) or where the 12 pairs of ribs attach, and cervical (7) which comprise the neck. The vertebrae are connected by discs and strong ligaments. The spine protects the spinal cord and a pair of spinal nerves exits between each vertebrae. The triangular bone at the base of the spine is called the sacrum.

The spine, viewed from the side has an S shape. The thoracic and sacral curves are called kyphosis. The cervical and lumbar curves are called lordosis. When the curves are maintained and the spine is not rotated or bent to the side, this is called the “neutral” position of the spine. In this position, the spine is most stable and able to cope with external forces.

The spine is subject to certain mechanical problems, which can be minimized or avoided by maintaining spinal flexibility and trunk muscle fitness, keeping active, and having a good level of aerobic fitness, minimizing excessive forces applied to the spine from heavy material handling, using good body mechanics for all daily activities, and maintaining good posture when sitting, standing or lying.

Mechanical back problems include muscular strain, ligament sprains, joint problems (stiffness, hypermobility, and arthritis), disc bulges and herniations, and nerve root compression. While most adults (80%) will experience low back pain at some point in their life, most back pain is self-limiting and 90% of acute cases will recover within 6 weeks.
What Causes Injuries?

Certain ergonomic risk factors can lead to fatigue, discomfort, or pain. These include:

- Exerting **force** to perform a task or to use a tool.
- Working in **awkward postures**, such as bending or twisting the back, overhead reaching, kneeling, or stooping.
- Actions that are **repetitive**, i.e. repeated rapidly over and over in the same pattern of movement with inadequate rest.
- Remaining in a **sustained posture** for a long time with little or no movement.
- Continuous pressure from a hard surface or edge on any part of the body (**contact stress**).
- Working in **hot or cold** temperatures.
- Holding equipment that **vibrates** (for example, the handle of a pressure washer).

If You Develop Any Symptoms or Signs:

- **Such as**: Persistent or recurring pain, numbness or tingling, swelling, weakness, stiffness, cold hands, changes in skin colour (redness, bruising, whiteness), increase in skin temperature in area.
- **Talk** with your supervisor about your symptoms right away.
- **Seek** medical treatment to assess the problem and recommend appropriate treatment, especially if your symptoms do not decrease or go away within a few days, if they increase, or if they continue to recur. Early treatment is more effective.
- **Consult** with your supervisor to determine the cause and to seek alternate ways to conduct your work.

What Can You Do Right Away?

For minor pain and swelling in the acute stage of the injury (first 7-10 days), you can try the **PRICE** principle.

This acronym stands for:

- Protect
- Rest
- Ice
- Compression
- Elevation

For details on this treatment regimen consult the following resource: [http://sportsmedicine.about.com/cs/rehab/a/rice](http://sportsmedicine.about.com/cs/rehab/a/rice).
General Upper Body Stretches

These can be performed at any time to prevent or help alleviate symptoms. The stretches below focus on the upper body, arms and hands, which is where the majority of overuse injuries occur.
Injury Reporting

1. All faculty and staff should report any injury as soon as possible to their supervisor.

2. All faculty and staff must complete an Incident Report Form found on the U of S Workplace Safety and Environmental Protection (WSEP) website, [http://www.usask.ca/wsep/](http://www.usask.ca/wsep/). The report is submitted to WSEP in electronic form. *Please note: the incident report is an internal U of S document and completing one does not generate a Worker’s Compensation Board claim.*

Workers’ Compensation

3. At this time faculty and teaching professions are exempt from the Workers’ Compensation Board legislation, and time loss due to work injury is covered under their disability plans.

When a staff member requires medical attention (i.e. is seen by a Doctor) and/or misses time from work after the first day of a workplace injury, the employer is obligated to file a report with the Workers’ Compensation Board (WCB). *Please contact the library’s Director of Human Resources, as soon as you become aware of an injury, to assist in the reporting process.* The supervisor must complete a WCB E1 form within 5 days of being made aware of the injury.
Circulation Desk Ergonomics

Basic Lifting Principles

• To begin: Plan the lift if it is unfamiliar. Make sure the area is clear and you are not confined in your movements. Ensure that the path and area you are moving to are clear and ready.

• The spine is best protected from injury when it is kept in a “neutral” position. This means maintaining the normal curves of the spine. In this position there is less stress on the discs, joints, ligaments and muscles of the spine.

• Engage your core trunk muscles by tightening your abdominals. Think “pull your navel in”. This will help increase the stability of the spine as you lift.

• Keep the weight or load as close as possible to the body. This greatly reduces the forces on the spine.

• Use a wide base of support for stability.

• Avoid twisting when lifting.

• Lift smoothly and do not use excess inertia.

• Avoid lifting with the knees straight and the spine flexed. This puts the discs under increased pressure, the ligaments on stretch, and the muscles at a disadvantageous length to function efficiently.

• Do not hold your breath while lifting. This can cause increased blood pressure.
Retrieving Books from Patrons

• Do not overreach to retrieve books placed by patrons. This causes excessive strain on the back, neck and shoulders.

• Avoid lifting books at full arm’s reach. Instead, slide the books closer to you and then lift them. This minimizes the forces on the spine and arms.

• Instead, ask the patron to move the books closer to you for a more convenient reach.
Computer Use

- When using the computer, line up the keyboard and the monitor so you stand facing them.

- Avoid twisting the neck or back.

- Try to maintain a neutral or “straight” wrist position when using the keyboard.

- Avoid positions that put the wrists at an awkward angle.
• If using the keyboard, the monitor should be approximately one arm’s length away.
• The top of the monitor should be approximately at eye level.

• If using the touchscreen function, the monitor should be lower and closer to avoid straining the arm.

• The monitor/touchscreen angle can be adjusted to what is comfortable for you.
Barcode Scanning

- Do not stack items to be scanned higher than 12 inches. This will help to minimize shoulder and elbow strain.

- Use arm movements rather than hand or finger movements to scan the bar code on books.

- If you have many items to be scanned then alternate hands. This will decrease shoulder strain on your dominant side. This may take practice to get used to.
Desensitizing

- Do not overreach when using the desensitizers.

- Only reach as far as necessary to desensitize the items.

- Do not handle items with one hand.
- Avoid awkward wrist angles and movements.

- Use two hands to handle the items.
- Keep your wrists as neutral as possible.
Handling Returned Books in Bookdrop Bins

- Avoid retrieving books from the bin by bending at the waist only. This places excessive strain on the low back.

- Bend the knees and maintain a neutral spine.
- Support with one hand if retrieving a single item.
- Heavier or multiple items should be handled with two hands.

- Avoid balancing a tall stack of books when lifting. Reactions to catching falling books can cause injury. Let any falling books drop to the ground.
- When emptying book return bins, place library materials face down on the trucks or on the circulation counter so the books will be in the correct position for scanning.
- Newer books with barcode labels on the back cover will have the barcode labels exposed. Older books that have barcodes inside the back cover will already be facing down so you will only have to flip open the back cover to wand the label.
Handling Laptop Computers

- When handling the laptop computers on the lowest shelves, it is beneficial to kneel down on one knee.
- Use two hands to slide out and lift the laptop.
- When lifting, bend the knees and maintain a “straight” or neutral spine.

- Laptops on middle shelves can be handled with a simple semi-squat lift
- Continue to be conscious of maintaining good body alignment
Other Low Level Tasks

- Use the pull out shelves, if available, to handle sorted materials.
- Use sound lifting technique when handling these items.
- If working on these shelves for an extended period of time, then use a kick stool to sit on.
- Use the pull out shelves to make the printer easier to access.
- Papers can be retrieved by using a simple semi squat lift.