

STANDARD OPERATING PROCEDURES (SOP) FOR COMPUTER WORK, DESK TOP

General Guidelines-Best Practices:

The following guidelines are applicable to office workers who sit at a desk and/or work on computers.

Postures:

Holding tensed muscles in a fixed or awkward position for long periods of time is called static work. Static work results in a burning sensation discomfort and fatigue because there is decreased blood flow to the tensed muscles. Fatigue leads to a buildup of waste materials at a muscle level, known as lactic acid. When fatigued the load is transferred to the tendons and ligaments. With time, this can lead to musculoskeletal disorders (i.e. repetitive strain). Therefore it is important to keep shoulders, neck, arms and hands in relaxed positions.

Working Heights:

Work heights have a major impact on job performance and musculoskeletal injuries. Working too high, with arms held away from the body (abduction), and shoulders lifted, contributes to static loading. Working too low results in employees bending forward which can lead to neck and back pain.

Reaches:

For work at elbow level (i.e. desk and computer work stations) reaching should be within 25 cm (10 inches) for frequently used items such as answering the telephone. For occasionally reached for items, say once every two minutes, reaching distance can be slightly longer at 50 cm or 20 inches from the body.

Ergonomic Chair:

- In general, one should be able to sit all the way into the chair with feet flat on the floor, knees and hips at approximately 90 degrees
- Foot rests can be provided when the height of the chair does not allow for feet to be flat on the floor
- The seat depth should allow approximately two fingers of space between the back of the knees and edge of the seat pan
- The low back should be supported by the back of the chair
- Some employees prefer additional support to the upper back area (high back)
- Chairs should be adjustable to allow for tilting between 95 and 110 degrees. This allows one to push back and alternate positioning as needed for comfort
- Arm rests should *not* be used while typing. Ideally, arm rests should be adjustable vertically and horizontally so that they do not interfere with the desk and/or

keyboard tray. If this is not possible, consider removing the arm rests from the office chair

Computer Workstation:

- Computer monitors should be placed directly in front of the employee
- Computer monitors should be placed approximately one arm's length from the front of the body. Typically, this is 19-26 inches.
- Top of monitor should be at about eye level, or slightly lower to avoid neck extension/flexion.
- Keyboard tray and keyboard should also be directly in front of the employee
- While resting on home row, fingers, hands, wrists should be in a neutral position
- Shoulders should be at rest, not hunched upwards as hunching upwards will place additional stress and fatigue on shoulders, neck and upper back areas
- While typing, elbows should be close to the body
- Computer mouse should be at same level as keyboard and close enough to prevent over extended reaches
- Employees may wish to consider alternating the computer mouse to the left and right side in order to alleviate excessive or constant use of one hand to perform computer mouse work
- Document holders should be considered for those who frequently type on to the computer from hand written documents. Document holders should be placed directly in front of the monitor and sit underneath the keyboard tray. This will help to promote a more neutral neck posture

Lap Top Users:

- Consideration should be given to incorporating an external keyboard and mouse that can be attached to the laptop when in use.
- When using a laptop it is important to ensure it is raised so that the top of the computer monitor is at eye level to help promote neutral neck postures
- Use of a roller cart is recommended when transferring a laptop and accessories

Desk/Telephone Area:

- Regularly used items (telephone, binders, reference material, etc) should be placed within 10 inches (25 cm) in front of the employee
- Items occasionally reached for can be within 20 inches (50 cm) in front of employee
- Employees who make frequent phone calls should consider using a head set. This will prevent cradling of the telephone between ear and shoulder while trying to take notes, or retrieving other information
- Employees may need to adjust chair (move higher) when relocating from computer work station to desk area as generally desks are positioned higher than are keyboard areas. While working at a desk, arms should continue to remain at a

comfortable, neutral position so that arms are at about 90 degrees at the desk, and shoulders are not hunched upwards

Eye Strain:

- Computer users should consider taking mini eye breaks throughout the day using the 30:30:30 rule: every 30 minutes, look some 30 feet away for 30 seconds. This will help to reduce any eye strain that can occur with prolonged computer use.
- Lowering the computer intensity, use of eye drops and hydration by drinking water can also help to ensure eyes do not tire.
- Palming is another activity which will help eyes relax. Periodically throughout the day, close eyes and cover placing palms over, but not touching the eyelids. Fingers should overlap above the nose onto the forehead. Take several deep breaths and visualize a relaxed setting. After 20 seconds or so, uncover the eyes and allow them to refocus.
- Dust gathers easily on computer screens. It is recommended that periodic cleaning be done to remove dust and fingerprints.

Other Considerations:

- It is also important for office workers, particularly computer users to vary postures and work activities as time and urgency permits. Examples of stretches are enclosed with this report. Employees should seek a medical opinion before incorporating the stretches into their daily routine.

Enclosure: Office Stretches

OFFICE STRETCHES

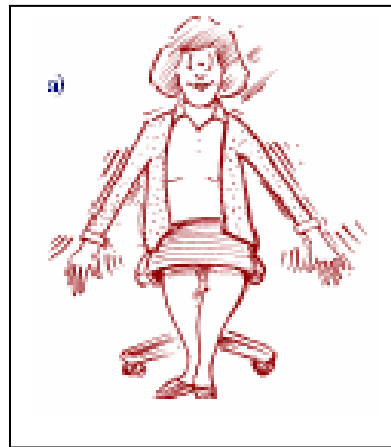
McMaster University Employee Work-Life Support Services

1. Perform all exercises in your comfort zone, if discomfort persists STOP immediately.
2. Stretch regularly.
3. Stretches should be done slowly and smoothly.
4. Take regular micro breaks, 10 minutes every one-hour, to relieve muscle aches, eyestrain and stress.
5. Use rest breaks to change activity i.e. stand up or move around.
6. If you are under treatment, or have any concerns regarding the exercises, please contact your physician before doing any of the following suggested exercises.

Wrist and forearm stretches:

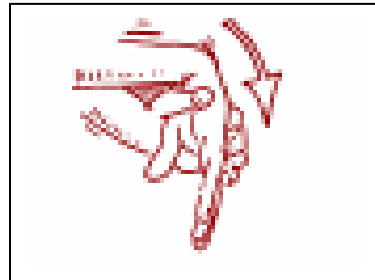
a) *Shake your arms*

- Drop your arms and hands to your side
- Shake them gently for a few seconds



b) *Wrist stretches*

- Keep your elbows straight
- Grasp hand and slowly bend wrist until you feel a stretch
- Hold stretch for 6-10 seconds.



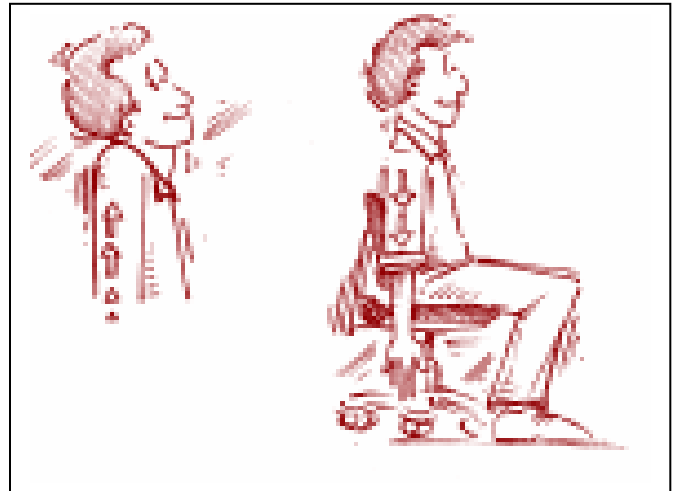
Shoulder/Arm Stretches:

- Reach with your arm across the chest
- Grasp opposite shoulder with opposite hand
- Gently pull the elbow across your chest towards the body
- When the stretch is felt in the shoulder hold this position for 6-10 seconds.



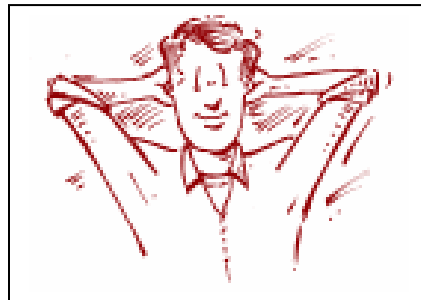
Shoulder Shrug:

- Sit in the chair with your back straight against the backrest.
- Let your head relax.
- Squeeze your shoulders up to your ears.
- Follow by stretching shoulders down with fingers pointing to the floor, draw chin in gently.
- Slowly change from one position to another.



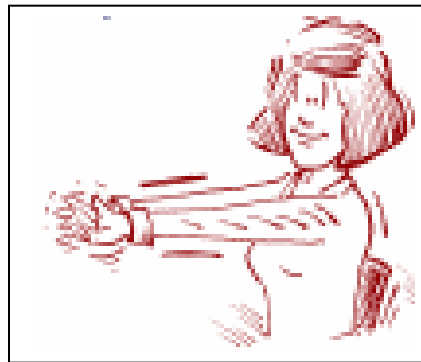
Executive Stretch:

- Lock your hands behind your head.
- Stretch slowly backwards in your chair.
- Arch your back slightly and gently.
- Hold stretch for 6-10 seconds.
- Repeat 5 times with 5-10 second rest period between stretches.



Upper Back Stretch:

- Extend your arms out in front of chest, keeping them at shoulder height.
- Interlock fingers with palms facing away from your body.
- Keep elbows straight, do not over-extend.
- Reach forward while maintaining an upright posture.
- Hold stomach muscles tight to avoid arching your lower back.
- Hold this stretch position for 6-10 seconds.
- Raise your arms over your head and hold this position for 10 seconds.
- Repeat 5 times.



Neck Stretches:

- Sit in your chair with back straight
- Draw chin in gently and bend head to the right so that your right ear moves towards your right shoulder.
- Hold the stretch for 5 seconds.
- Repeat to the other side.

