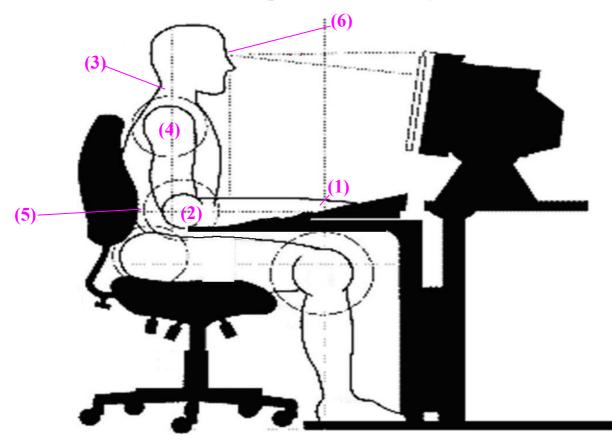
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Occupational Overload Syndromes



(1) Wrist and/or Hand pain

- Carpal Tunnel Syndrome
- DeQuervain's Tendinopathy (thumb pain)

(2) Elbow and/or Forearm pain

- Lateral Epicondylagia (Tennis Elbow)
- Medial Epicondylagia (Golfer's Elbow)
- Ulnar Neuropathy at the Elbow

(3) Neck and Shoulder and/or Arm Pain

- Neck Tension Syndrome
- Cervical Radiculopathy

(4) Shoulder and Arm Pain

• Thoracic Outlet Syndrome

(5) Lower back Pain

• Low back pain (general)

(6) Eye Strain

• Computer Vision Syndrome

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(1) Wrist and/or Hand pain

Carpal Tunnel Syndrome

What is it?

Carpal tunnel syndrome is a painful disorder of the hand caused by pressure on the main nerve that runs through the wrist.

Site/Area of pain

Pain is located at the heel of the hand and may refer to the index, middle and ring fingers.

Type of pain/Symptoms

- Numbness
- Pins and needles in the thumb, index and middle finger
- Pain mostly intense at night
- Shooting/Sharp pain from the wrist
- Radiated or referred pain into the arm and shoulder

Most Common Occupational Related Causes

Carpal tunnel syndrome can be caused by a combination of factors:

- Typing for prolonged periods without rest
- Forceful and repetitive movements with your hands using the mouse or keyboard
- Faulty positioning of the keyboard at an increased tilt causing excessive bending of the wrist.
- Size of your hand does not conform to the size of your mouse thereby causing excessive bending forces to the nerves and tendons of the wrist/hand.

Conservative measures of treatment consist of:

Rest from any positions or movements that make the symptoms worse

- Non-Steroidal anti-inflammatory medication and ice to reduce the inflammation
- Wearing a wrist splint, especially at night to keep the wrist in a neutral position.
- Ergonomic review and necessary changes
- Seek professional advice for optimal treatment option.

Ergonomic Suggestions;

- Take regular breaks every 30-40 minutes to stretch your hands and upper limb
- Ultra-Flat, soft touch or split keyboard to reduce finger travel time while typing
- 3M Joystick or Evoluent mouse to change hand position while mousing
- Wrist rests for keyboard or mouse use to position the wrist in a neutral alignment and decrease pressure on the nerve at the wrist.
- Wireless IT accessories to reduce drag on upper limb/hand

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de Quervain's Syndrome (Thumb Pain)

(Other clinical names: as washerwoman's sprain, Radial Styloid Tenosynovitis, de Quervain disease, de Quervain's Tenosynovitis, de Quervain's Stenosing Tenosynovitis or mother's wrist)

What is it?

A common condition of inflammation around the tendons that control the thumb.

Site/Area of pain

Pain is located at the thumb side of the wrist.

Type of pain/Symptoms

When condition is severe, catching or snapping with thumb movement or numbness on the back of the thumb and index finger may be experienced.

Most Common Occupational Related Causes

- Typing for prolonged periods **without rest** causing toxin build up in hand muscles and tendons.
- **Forceful and repetitive** movements with your hands using the mouse or keyboard predisposing finger tendons to fatigue
- Faulty positioning of the keyboard at an increased tilt causing excessive bending of the wrist.
- Size of your hand does not conform to the size of your mouse which may predispose the thumb to get overused.

Conservative measures of treatment consist of;

- Rest from any positions or activity that make the symptoms worse
- Non-Steroidal anti-inflammatory medication and ice to reduce the inflammation
- Wearing a wrist/thumb spica splint to offload overused tendons of the thumb (seek physiotherapist's advice).
- Gentle joint mobilisations, wrist and finger stretches as well as strengthening exercises introduced by a physiotherapist
- Ergonomic review and necessary changes

Ergonomic Suggestions;

- Take regular breaks every 30-40 minutes to stretch your hands and upper limb
- Ultra-Flat or soft touch keyboard to reduce finger travel time while typing
- 3M Joystick or Evoluent mouse to change hand position while mousing
- Wrist rests for keyboard or mouse use to position the wrist in a neutral alignment and prevent extreme thumb positions.
- Wireless IT accessories to reduce drag on upper limb/hand
- Reduce repetitive clicking by using shortcuts on your keyboard

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(2) Elbow and/or Forearm pain

Lateral Epicondylagia (Pain on the outside of the elbow)

Other clinical names: Tennis elbow, lateral Epicondylitis, Extensor Carpi Radialis Brevis tendinosis/tendinopathy.

What is it?

It is a common cause of elbow pain most often from repetitive stress and thereby small tears to the tendon fibres of the elbow.

Site/area of pain

Outside of the elbow and top of the forearm and/or sometimes wrist

Type of pain/Symptoms;

- Pain on the outside of the elbow when the hand is bent back at the wrist against resistance.
- Sharp pain while lifting or grasping objects
- Pain radiating down the forearm when pressing just below the elbow bone on the outside

Most Common Occupational Related Causes;

- Typing for prolonged periods without rest causing toxin build up forearm muscles.
- Forceful and repetitive movements with your hands using the mouse or keyboard predisposing forearm muscles to fatigue
- Faulty positioning of the keyboard at an increased tilt causing excessive bending back of the wrist.
- Size of your hand does not conform to the size of your mouse which may force the wrist to become hyperextended.
- Typing with your elbows and forearms unsupported can create forearm muscle fatigue.

Conservative measures of treatment consist of;

- Rest from any positions or activity that make the symptoms worse
- Ice painful area to reduce inflammation and promote healing
- Obtain clear diagnosis from physiotherapist of physician for optimal management of condition
- Forearm stabilising brace to offload painful area (seek physiotherapist's assistance)
- Ergonomic review and necessary changes

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes to rest hand after prolonged use
- 3M Joystick or Evoluent mouse to change hand position while mousing
- Ultra-Flat or soft touch keyboard to reduce finger travel time while typing
- Wireless IT accessories to reduce drag on upper limb/hand

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Medial Epicondylagia (Pain on the inside of the elbow)

Other clinical names; Golfer's Elbow, Medial Epicondylitis, Pronator Teres syndrome

What is it?

It is a common cause of pain most often from repetitive stress to the common flexor tendon and forearm muscle group that attach to the inside of the elbow.

Site/area of pain

Inside of the elbow and top of the forearm and/or sometimes inside surface of wrist

Type of pain/Symptoms;

- Pain at the inside of elbow is a classic symptom.
- The pain may increases when flexing the wrist, and may radiate down the forearm.
- Activities that use the flexor muscles in a bending motion or grasping with the hand can increase the symptoms.

Most Common Occupational Related Causes;

- Typing for prolonged periods without rest causing toxin build up forearm muscles.
- **Forceful and repetitive** movements with your hands using the mouse or keyboard predisposing forearm muscles to fatigue
- Faulty positioning of the keyboard at an increased tilt causing excessive bending back of the wrist.
- Leaning heavily on the elbows while gripping the mouse forcefully can create soft tissue overload to the common flexor muscle group on the inside of the elbow.
- Typing with your elbows and forearms unsupported can create forearm muscle fatigue.
- Size of your hand does not conform to the size of your mouse which may force the wrist to become hyperextended.

Conservative measures of treatment consist of;

- Rest from any positions or activity that make the symptoms worse
- Ice painful area to reduce inflammation and promote healing
- Obtain clear diagnosis from physiotherapist of physician for optimal management of condition
- Forearm stabilising brace to offload painful area (seek physiotherapist's assistance)
- Ergonomic review and necessary changes

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes to rest hand after prolonged use
- 3M Joystick or Evoluent mouse to change hand position while mousing
- Ultra-Flat or soft touch keyboard to reduce finger travel time while typing
- Wireless IT accessories to reduce drag on upper limb/hand
- Maintain neutral wrist position and proper forearm support with a Posturepod keyboard station.

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<u>Ulnar nerve Neuropathy at the elbow</u>

Other clinical Names: Ulnar Nerve entrapment

What is it?

Ulnar neuropathy is an inflammation or compression of the ulnar nerve, which runs on the inside of the elbow joint.

Site/area of pain

Inside of the elbow and outer side of the arm and hand near the little finger.

Type of pain/Symptoms;

- Pain at the inside of elbow is also associated with numbness and tingling in the outer side of the arm and hand near the little finger.
- Weakness is ever-present in a main muscle controlling wrist movement as grip and dexterity may become affected.
- Activities that use the flexor muscles in a bending motion or grasping with the hand can increase the symptoms.

Most Common Occupational Related Causes;

- **Leaning heavily on the elbows** while gripping the mouse forcefully can create compression on the ulnar nerve.
- Typing for prolonged periods **without rest** causing toxin build up forearm muscles.
- Holding phone handset for prolonged period of time can create sustained compression at the elbow and thereby starve the nerve from any oxygen.

Conservative measures of treatment consist of;

- Rest from any positions or activity that make the symptoms worse
- Use of nonsteroidal anti-inflammatory drugs to control swelling around the nerve.
- The use of splints or cushions can ease the discomfort and the stress on the ulnar nerve (Consult physiotherapist for proper advice).
- Obtain clear diagnosis from physiotherapist of physician for optimal management of condition (e.g.: nerve stretches and mobilisation as needed)
- Ergonomic review and necessary changes
- Surgery is a useful option if conservative measures fail.

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes to rest hand after prolonged use
- 3M Joystick or Evoluent mouse to change hand position while mousing
- Ultra-Flat or soft touch keyboard to reduce finger travel time while typing
- Wireless IT accessories to reduce drag on upper limb/hand
- Maintain neutral wrist position and proper forearm support with a Posturepod keyboard station.

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(3) Neck and/or Shoulder Pain

Neck Tension Syndrome (Pain in neck and shoulder)

Other clinical names: Trapezius myalgia, "Tech Neck", Postural related neck pain, cervical strain, Cervical Facet Joint Irritation

What is it?

Neck pain most commonly as a result of muscular fatigue secondary to overuse.

Site/area of pain

Pain at the base of the neck and between the shoulders and often radiated into the upper arm.

Type of pain/Symptoms;

- Aching discomfort at the base of neck and upper back.
- Discomfort can be located to one side of neck and shoulder and/or upper arm
- Headaches due to tension in neck muscles
- Intermittent muscle spasms in neck muscles
- Dull pain may refer to the upper limb, elbow, forearm and hands

Most Common Occupational Related Causes;

- Sitting unsupported and leaning forward in chair for prolonged periods
- Monitor height not in line with seated eye level and/or to far to the side
- Cradling handset with neck during long phone conversations can compress joint structures thereby causing muscle tension.
- Insufficient back support from chair
- Typing with your elbows and forearms unsupported can create neck muscle fatigue.
- Repetitive head tilting while referring to documents

Conservative measures of treatment consist of;

- Use of nonsteroidal anti-inflammatory drugs and muscle relaxant medication to subdue muscle irritation and promote relaxation respectively.
- Use of heat to relieve muscle tension
- Neck stretches, deep tissue work, joint mobilisations provided by physiotherapist
- Postural strengthening program prescribed by physiotherapist
- Ergonomic review of workstation and necessary changes

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes and stretch neck muscles
- Monitor stands to promote optimal monitor height
- Document stand to neutralise neck position and prevent unnecessary head tilting while referring to documents
- High back chair to support the spine while seated (Ergo3HB, Gregory etc...)
- Headset to promote neutral neck posture during phone use.

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Cervical Radiculopathy

Other clinical names: Cervical Disc syndrome, Spinal Stenosis

What is it?

Injury to the vertebrae or disks in the neck causing a pressure on the nerve roots exiting close to the spine.

Site/area of pain

Discomfort on one side of the neck and back of the arm, sometimes radiating to the fingers.

Type of pain/Symptoms;

- Pain that radiates down into your arms from your neck
- Pins and needles or numbness in forearm and particular fingers
- Pain often exacerbated with certain positions of the neck
- Weakness in your arm is a warning sign that the condition is serious.

Most Common Occupational Related Causes;

- Sitting unsupported and leaning forward in chair for prolonged periods
- Unnecessary repetitive reaching
- Insufficient back support from chair forcing neck and spine to slouch
- Typing with your elbows and forearms unsupported can create neck muscle fatigue and nerve pressure.
- Cradling handset with neck during long phone conversations can compress nerve structures.
- Repetitive head tilting while referring to documents can reduce joint space for the nerve exiting the spine.

Conservative measures of treatment consist of;

- Use of nonsteroidal anti-inflammatory drugs, muscle relaxants to subdue muscle irritation and promote relaxation respectively.
- Time off work will be necessary to allow healing to occur.
- Seek physiotherapist advice for neck stretches, deep tissue work, joint mobilisations provided by physiotherapist
- Postural strengthening program prescribed by physiotherapist once symptoms settle.
- Seek professional medical assistance if muscle weakness is evident.
- Ergonomic review of workstation and necessary changes

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes, avoid prolonged neck positions.
- Monitor stands to promote optimal monitor height
- Document stand to neutralise neck position and prevent unnecessary head tilting while referring to documents
- High back chair to support the spine while seated (Ergo3HB, Gregory etc...)
- Headset to promote neutral neck posture during phone use

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(4) Shoulder and Arm Pain

Thoracic Outlet Syndrome

What is it?

It is a compression injury to the nervous or blood vessel bundles from narrow passageways at the base of the neck passing under your collarbone and into your arm.

Site/area of pain
Shoulder and Arm

Type of pain/Symptoms;

- The arms and hands feel cool and tire easily.
- Vague, aching pain in the neck, shoulder, arm, or hand.
- Overhead activities are particularly difficult.

Most Common Occupational Related Causes;

- Sitting unsupported and leaning forward in chair for prolonged periods
- Unnecessary repetitive reaching (especially, overhead movements).
- Insufficient back support from chair forcing neck and spine to slouch as the shoulders follow
- Typing with your elbows and forearms unsupported and shoulders rolled forward can compress nerves and blood vessels in the armpit.

Conservative measures of treatment consist of;

- Use of nonsteroidal anti-inflammatory drugs to ease the pain
- Physical therapy can help strengthen the muscles surrounding the shoulder so that they are better able to support the collarbone.
- Postural exercises can help you stand and sit straighter, which lessens the pressure on the nerves and blood vessels.
- If you are overweight, your physician may recommend that a weight loss program.
- You will need to change your workstation and avoid strenuous activities.
- In rare instances, surgery may be recommended if conservative treatment fails.

Ergonomic Suggestions

- Take regular breaks every 30-40 minutes, avoid prolonged unsupported sitting positions.
- Monitor stands to promote optimal monitor height
- Make sure all necessary documentation and equipment are within easy reach.
- Document stand to neutralise neck position and prevent unnecessary head tilting while referring to documents
- High back chair to support the spine while seated (Ergo3HB, Gregory etc...)
- Posturepod keyboard station to promote forearm and wrist support while seated

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(5) Lower Back Pain

Clinical names for this condition: Spinal Stenosis, Spondylosthesis, Degenerative Disk Disease

What is it?

Low Back pain is a sudden or gradual onset of pain in the low back. The nature of the condition can be quite complex as many structures around the low spine can contribute to the discomfort.

Site/area of pain

Pain mostly between the bottom of the ribs and the top of the legs at the back.

Type of pain/ Symptoms;

- Dull, aching pain in the low back can be constant or movement related.
- Pain may radiate down into the buttock and sometimes in the front, side, or back of your leg.
- The pain may become worse with activity or with prolonged sitting.
- Occasionally, numbness and tingling down the leg and into the foot is most often due to a
 disc compressing on the nerves exiting close to the spine.

Most Common Occupational Related Causes;

- Sitting unsupported and leaning forward in chair for prolonged periods can compress discs in the low back
- Sitting with the legs unsupported or knees higher than hip can slouch the pelvis and strain your back.
- Insufficient lumbar support from chair or poorly adjusted chair
- Monitor is too close forcing you to lean forward in order to view the screen.

Conservative measures of treatment consist of;

- Conservative treatment is successful in most cases of low back pain
- Use of nonsteroidal anti-inflammatory, analgesics and muscle relaxant drugs can help to decrease inflammation and relieve muscle spasm
- Short –term rest and activity modification to offload injured structures in the spine.
- Seek Physiotherapist's help for manual therapy and exercises to help treat the condition.
- Ergonomic review of workstation and necessary changes

Ergonomic Suggestions;

- Avoid prolonged sitting and get up regularly to stretch your spine every 30-40 minutes
- Find an ergonomic chair with proper lumbar support (Ergo3HB, Gregory...)
- Make sure monitor distance and height are adequate for task and workstation dimensions
- Footrest may be needed to help support lower back by having the feet supported.

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(6) Eye Strain

Computer Vision Syndrome

We all know that it's good to take breaks during prolonged periods of monitor use. But what's really happening when we overexert ours eyes? Staring at your monitor can lead to a variety of ailments, including headaches, eyestrain, blurred vision, dry and irritated eyes, slow refocusing, neck and/or backache, sensitivity to light, double vision and color distortion - all common symptoms of a condition known as Computer Vision Syndrome (CVS). (The American Optometric Association defines it as the "complex of eye and vision problems related to near work, which are experienced during or related to computer use"). Let's take a look at some of the symptoms and solutions:

What are the symptoms of CVS?

• CVS can be headaches

Headaches are the primary reason most people seek an eye exam. They're also one of the most difficult problems to diagnose and treat effectively. Visual-related headaches most often:

- o Occur toward the front of the head (there are a few exceptions to this)
- o Occur most often toward the middle or end of the day
- o Don't appear upon awakening
- o Don't produce visual 'auras' of flashing lights
- Occur in a different pattern (or not at all) on weekends than during the week
- o Occur on one side of the head more than the other

What To Do: Headaches can be caused by a variety of sources. A complete eye exam should be first on your list; if the headaches don't seem eye-related, consider going in for an internal medical exam.

• CVS can be dry or irritated eyes

Although blinking is a reflex, we tend to blink less often when looking at a computer than when reading or performing other tasks. This causes our eyes to become dry and uncomfortable (and possibly blurred).

<u>What To Do</u>: Try to blink more often when using your computer. Artificial tears are helpful (and even essential) in some office environments, and are also good for contact lens wearers. (Be sure the drops are not the kind that "whiten" the eye).

• CVS can be blurred vision (distance or near)

In your work environment, blurred vision can be the result of something as simple as a dirty screen, poor viewing angle, reflected glare, or a poor quality or defective monitor. However, they can also result from more serious conditions like refractive errors (such as hyperopia, myopia, astigmatism), improper prescription lenses, presbyopia or other focusing disorders.

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<u>What To Do</u>: Glasses are the most likely solution to a blurred vision problem. They may be worn for distance viewing or for near viewing, depending on the findings of the eye examination.

• CVS can be eyestrain.

"Eyestrain" is a vague term that the eye doctors rarely use. It's more than just "tired muscles", as our eye muscles are much stronger than they need to be. In the computer environment, eyestrain can also be caused by different environmental (and visual) conditions.

<u>What To Do</u>: Eyestrain usually results from a combination of poor ergonomics, improper work habits or an undetected visual condition. A complete eye exam, an on-site ergonomic evaluation, and instruction on correct working habits should all be considered if this problem exists.

CVS can be slow refocusing.

When you focus on "close-up" objects (such as reading materials) for extended periods of time without taking breaks, your eye's muscles begin to "adapt" to that range of vision. This stresses the muscles, which then have difficulty relaxing. When you look away, other objects may appear as a brief blurred image as you change from near-to-far or vice versa. Although this is most often a temporary condition, it can be an indication of a future vision problem - if it persists, consult your doctor.

What To Do: Make sure you take adequate rest breaks. Eye doctors generally recommend following the 20/20 rule: every 20 minutes, take a 20 second break. During the breaks, make sure not to do the same kind of work you were doing before; that is, if you were copying information from a report, don't take a break to read a magazine! Look far away if doing near work, and close-up if doing far work. Eye exercises can help to increase your ability to focus, but consult your doctor if you're over 40.

• CVS can be neck and/or backaches

Nature's made our visual system so dominant that we will often alter our body's posture to accommodate any deficiency in the way we see. If our visual system isn't seeing properly, we may assume awkward positions to compensate, which can lead to neck and back pain.

<u>What To Do</u>: Correct your posture! However, people who wear glasses often sit in an awkward posture to see properly, so make sure that your eyesight isn't causing you to sit poorly. (Also note that uncorrected eye conditions can cause this same type of problem, so make sure to get regular eye exams.)

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• CVS can be double vision

Because we have two eyes, they must coordinate properly for us to see just one image instead of two. When the coordination system breaks down - as it can when you work at close distance for extended periods - people may experience double vision. Proper eyeglasses or therapy exercises can solve this problem.

<u>What To Do</u>: Double vision can be the sign of a severe problem, so you should receive a complete eye exam.

• CVS can be color distortion

Modern monitors are full color, so this condition is rarely seen today. However, staring at the single color of a monochrome monitor for extended times can cause temporary color distortions following usage. Taking breaks will be helpful.

<u>What To Do</u>: If at all possible, switch to a full color monitor and use black letters on a white background - the best combination for visual comfort.