



Occupational
Health Clinics
for Ontario
Workers Inc.

Centres de
santé des
travailleurs (ses)
de l'Ontario Inc.

Ergonomics & Hairstyling

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And

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OHCOW Ergonomists



Presentation Overview

- ❖ **OHCOW**
- ❖ **Introduction to Ergonomics**
- ❖ **Ergonomic Hazards**
- ❖ **Musculoskeletal Disorders (MSD)**
- ❖ **Ergonomic Hazards in Hairstyling**
- ❖ **Controls**
- ❖ **Questions**

OHCOW



- Health & Safety Association funded under the prevention section of the MOL
- Unique because OHCOW is a “free” service
- Assist with vulnerable workers, high hazards, small companies, non-profit organizations
- Referrals from: health care professionals, JHSC, advocates and workers

Our Services



Multidisciplinary Team

Physicians
Nurses
Occupational Hygienists
Ergonomists
Administration



INDIVIDUAL WORKERS



GROUP EVALUATIONS



INQUIRIES



EDUCATION



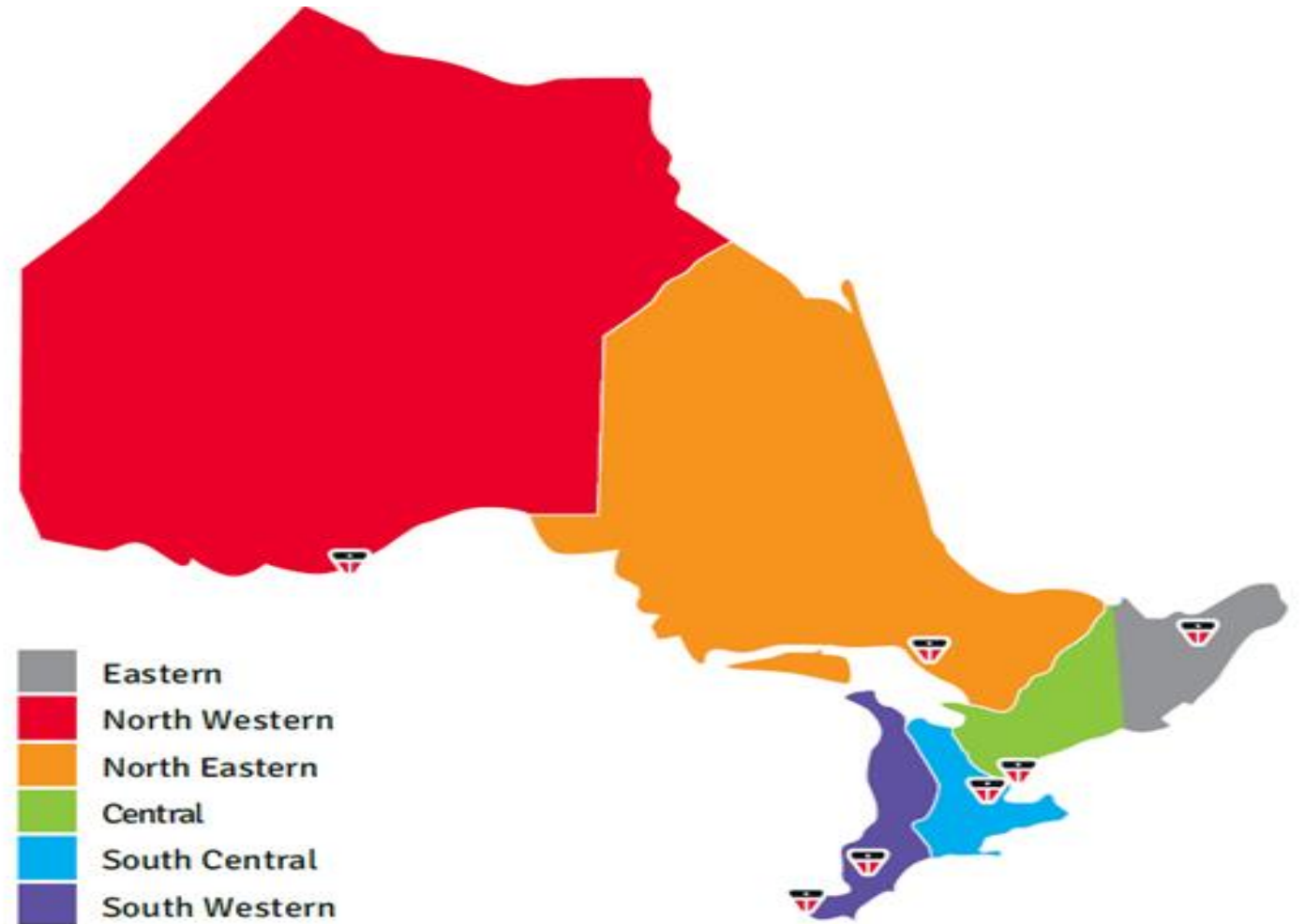
RESEARCH

Teamwork Throughout Ontario



Clinics:

- Ottawa
- Thunder Bay
- Sudbury
- Toronto
- Hamilton
- Sarnia
- Windsor



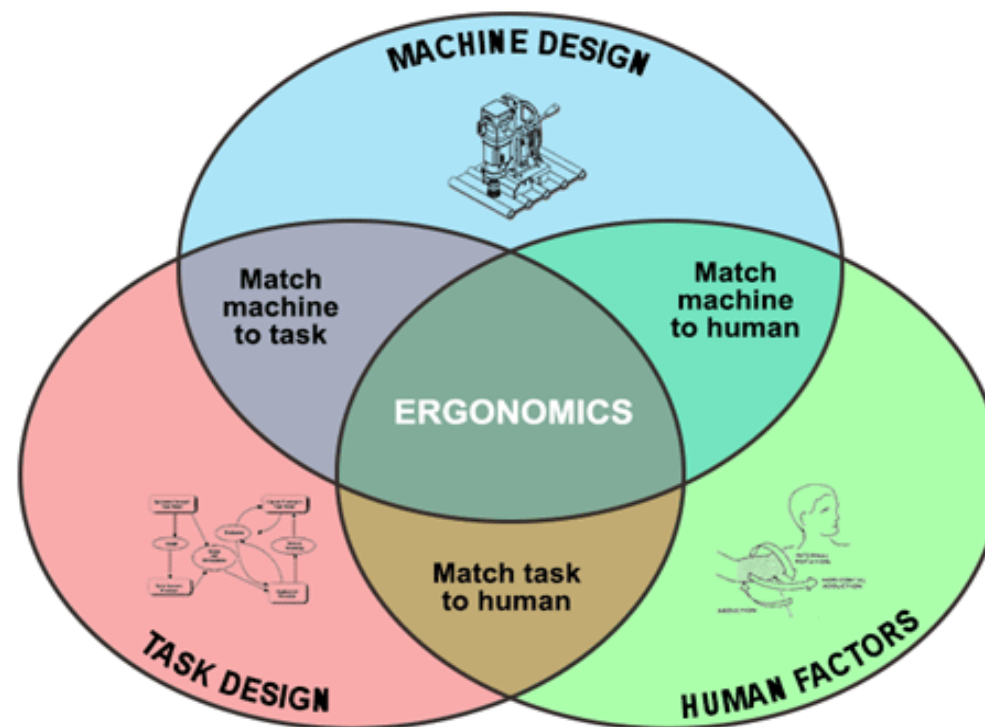


What is Ergonomics?

Matching job design, equipment, and workstations to workers

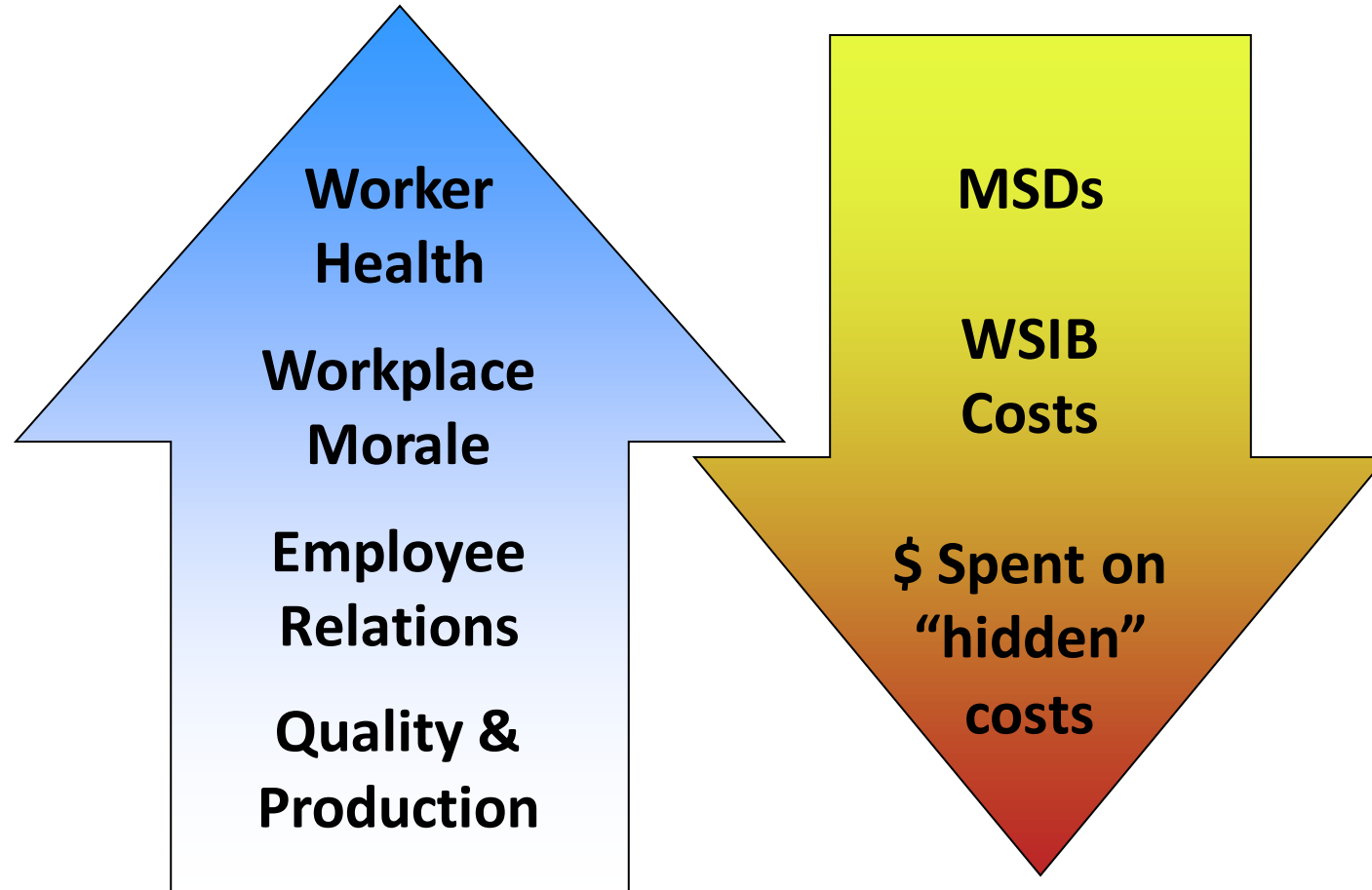
Encompassing the fields of:

- Biomechanics
- Engineering
- Biology
- Psychology



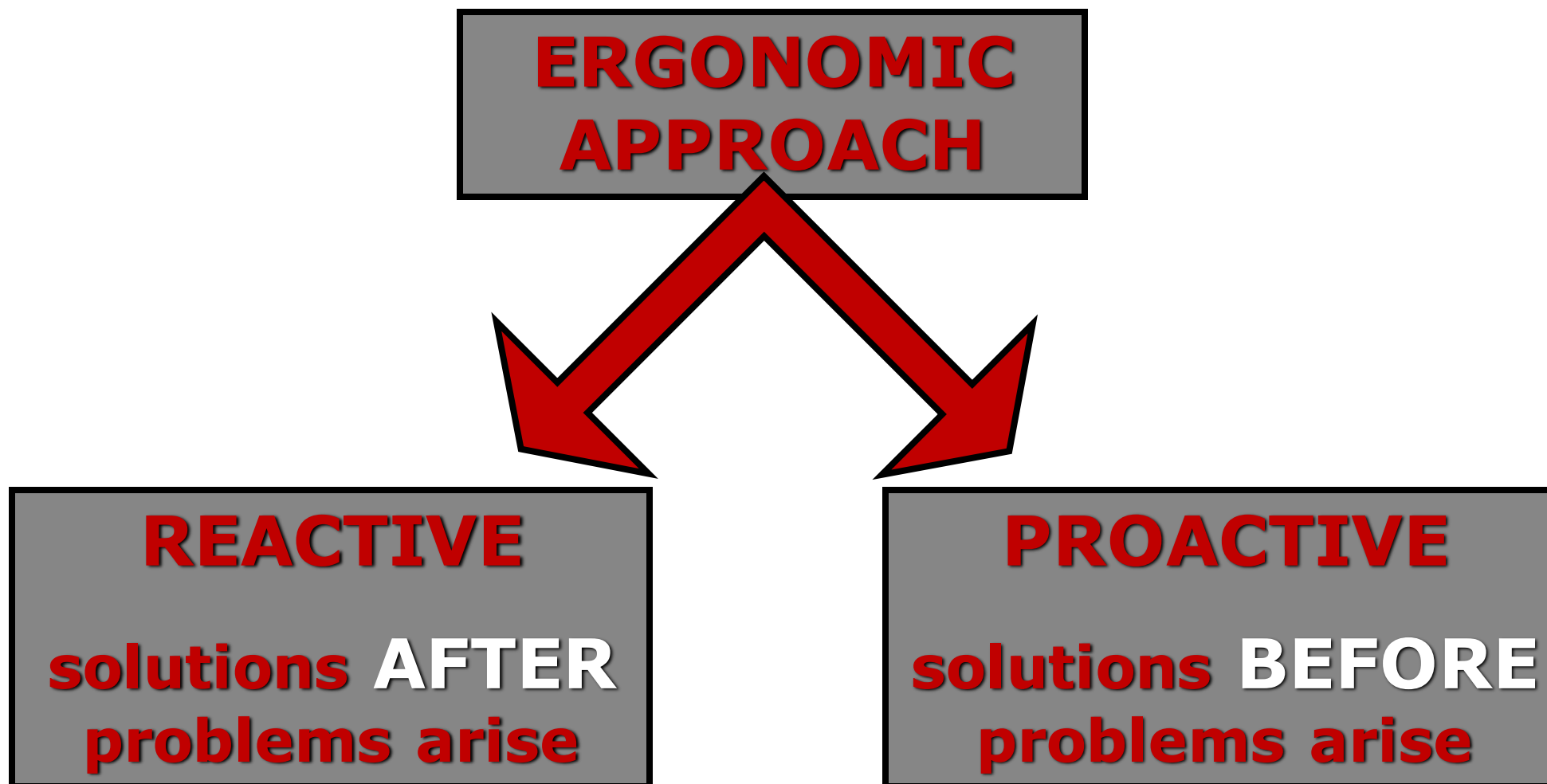
“Working smarter *not* harder”

Why Ergonomics?





Reactive vs. Proactive





Musculoskeletal Disorders (MSD)

- An umbrella term for several injuries/ disorders of the muscles, tendons, nerves, etc.
 - Muscles, tendons and tendon sheaths
 - Nerves
 - Bursa
 - Blood vessels
 - Joints / spinal discs, and
 - Ligaments





What Causes MSDs?

- MSD are usually associated with physical demands of work activities including:
 - Lifting or pushing heavy loads
 - Reaching or bending in awkward postures
 - Holding the same position for a long time
 - Repetitive movements with little rest or recovery



What Causes MSDs?

Symptom	Signs (what you might See, Say or Do)
Pain (with or without movement)	<ul style="list-style-type: none">-Protect their hand and wrist-Say it hurts when they sneeze or cough-Wear a splint-Use awkward postures
Stiffness and Swelling	<ul style="list-style-type: none">-Have difficulty standing up or moving around-Have difficulty getting out of bed in the morning-Massaging their muscles, lower back, arms
Numbness and Tingling	<ul style="list-style-type: none">-Shake out an area that hurts
Tenderness	<ul style="list-style-type: none">-Use slow restrictive movements-Protect, hold or support wrist or other area-Rub an affected area



MSD

Musculoskeletal Disorders: Painful disorders of the muscles, tendons, and nerves that develop over time from tasks that repeatedly cause stress and injury to tissues (CCOHS, 2016)

3 Stages of a MSD:

	1st	2nd	3rd
Symptoms	pain, aching, fatigue	pain, aching, fatigue, may affect sleep	constant pain, aching and fatigue; sleep disturbance
Duration	weeks or months	months	months to years
Occurrence	at work	at work and at home	constant, even at rest
Job performance	not affected	decreased	unable to perform light duties
Visible signs	absent	may be present	often present
Effectiveness of treatment	conditions may be reversible if treated early	increasingly difficult and slower recovery	greater risk of permanent damage



The Function of Tissues

Bones – add structural stability

Muscles – create movement by contracting and relaxing

Tendons – connect the muscle to the bone (to create movement)

Ligaments – connect bone to bone (stability)

Nerves – carry messages to and from the brain

Intervertebral Discs – provide shock absorption, flexibility



Commonly Injured Areas

- Tendons
 - Flexible bands of fibrous tissue that connects muscles to bones. They are meant to glide smoothly as muscles contract.
- Lower Back
 - Low back injuries are usually caused when the hairstylist stands for prolonged periods of time as well as from twisting and bending.
- Wrist
 - The wrist is put under a lot of pressure when performing hairstyling activities.



MSD Hazards

Psychosocial

REPETITION

Force

Static Postures



CONTACT STRESS

AWKWARD POSTURES

VIBRATION

Extreme Temperatures



Force

External forces

- Applied to the body by outside objects
- *E.g. weight of an object being held*



Internal forces

- Generated by muscles in response to task demands
- *E.g. force required of the shoulder/neck to support the arms*





Force

Effort exerted to do work

- If force exerted is too much, can lead to injury
- Example:





Repetition

Repetition

- Using the same muscles, tendons, and other soft tissues repeatedly with little chance of rest or recovery can lead to injury





Repetition



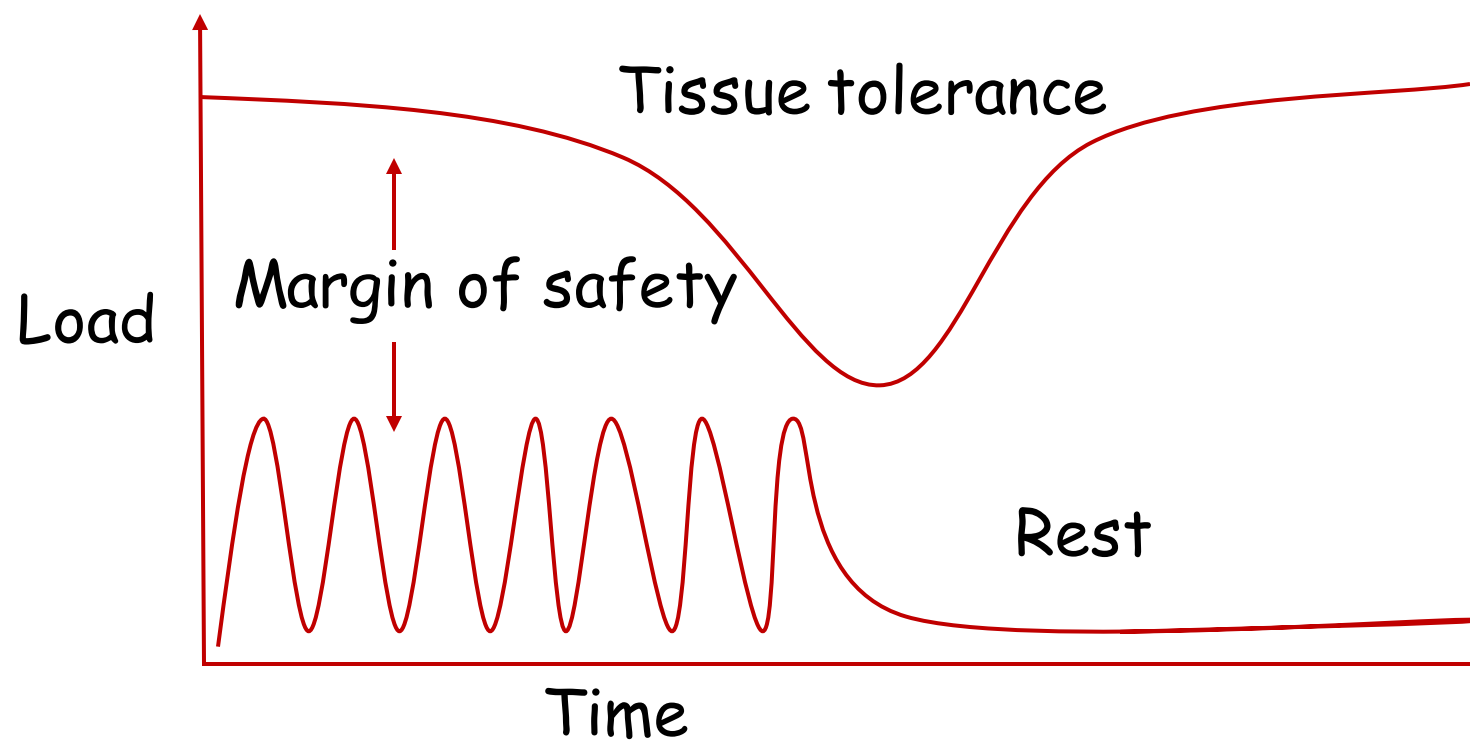
Repetitions = Exertion or effort

- Requires greater recovery time
- Examples of Repetitive Tasks: Cutting using Scissors, drying, brushing





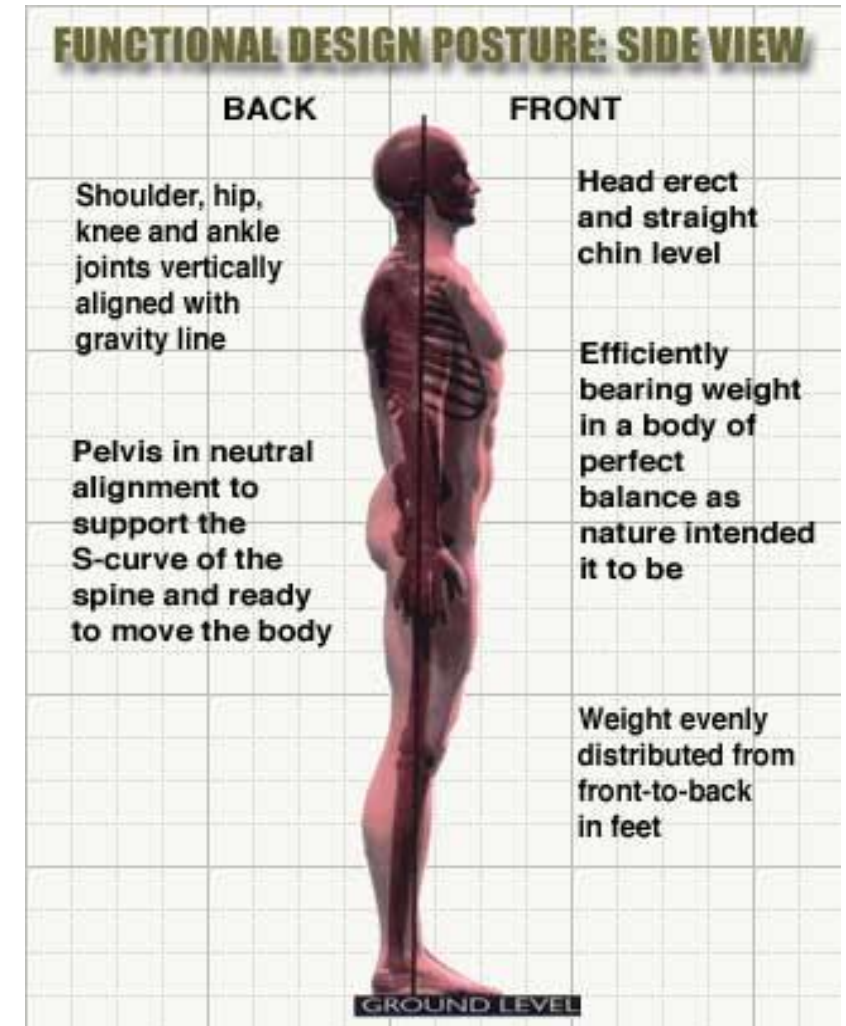
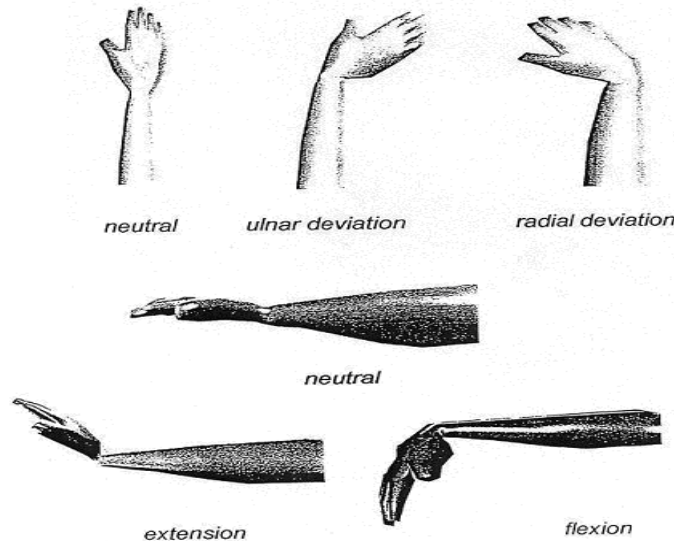
Repetition / Duration



Posture



- *Neutral posture*
 - Position which minimizes stresses on the body
 - Safest & most efficient position to work





Awkward Posture

Awkward postures can increase risk of injury

- Muscles operate less efficiently, and more force must be expended due to the task
- Overhead reaching, bending down, twisting





Static Postures

- Occur when a posture is held for a long period
- Reduced blood flow to muscles
- Can lead to early onset of fatigue
- Examples: standing, neck & trunk flexion





Effects of Static Postures



Resting

Blood Needed **Blood Flow**



Dynamic Effort

Blood Needed **Blood Flow**



Static Effort

Blood Needed **Blood Flow**



Adapted from E. Grandjean's, "Fitting the Task to the Man"



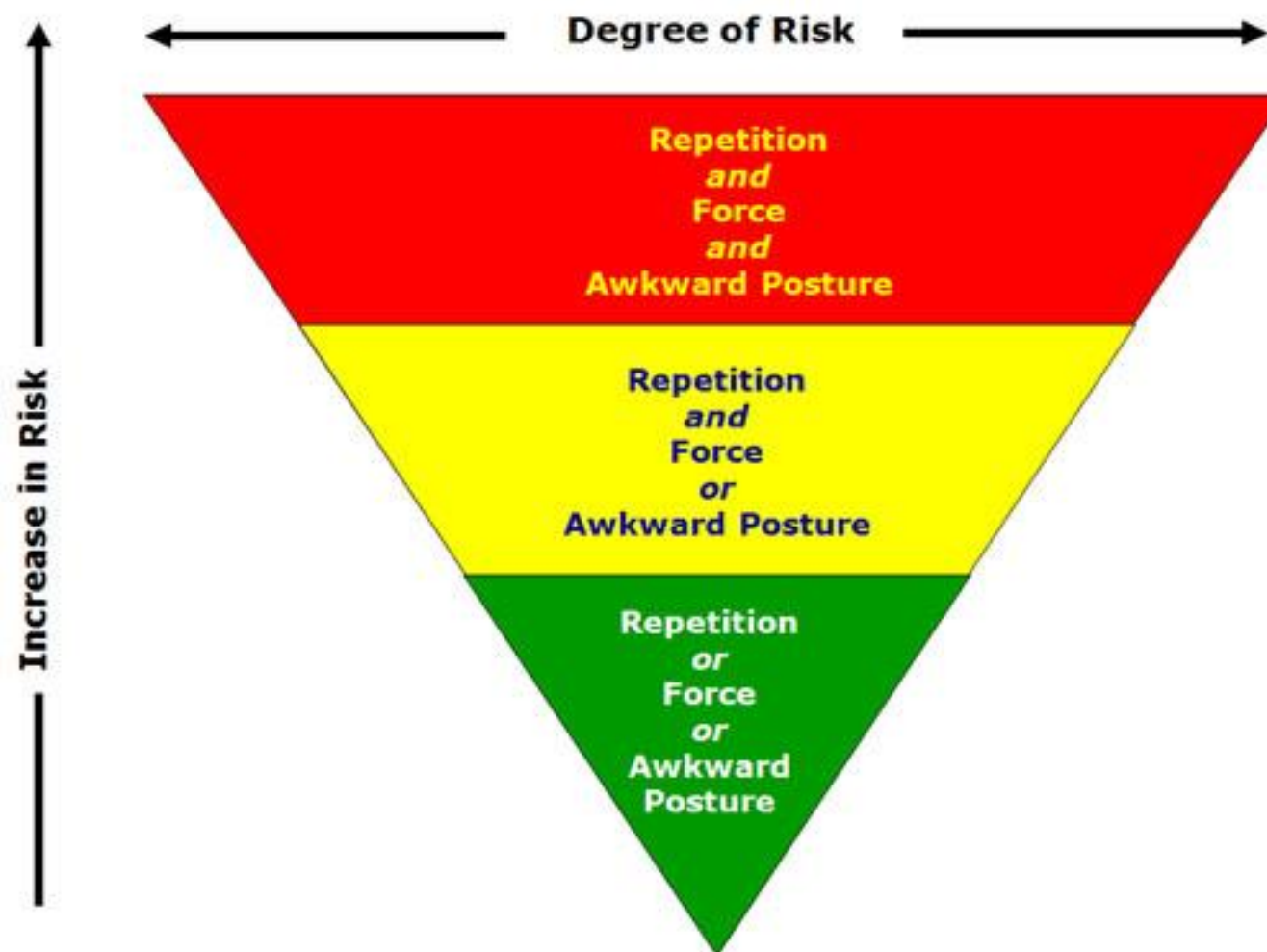
Contact Stress

- Stress on tissues of the body that come in to contact with hard or sharp objects
- Direct pressure on underlying tendons and nerves resulting in decreased blood flow





Understanding the Hazards





Key Ergonomic Hazards for Hairstylists

- Standing for long hours.
- Working in awkward postures
 - Abduction
 - Shoulder Elevation
 - Pinch Gripping & Wrist Deviation
 - Neck Flexion
 - Lateral Bending
- Performing repetitive tasks.
- Lifting or carrying heavy loads.
- Fatigue and other health problems from long hours of work



Common MSD in Hairstylists

The areas of the body affected are:

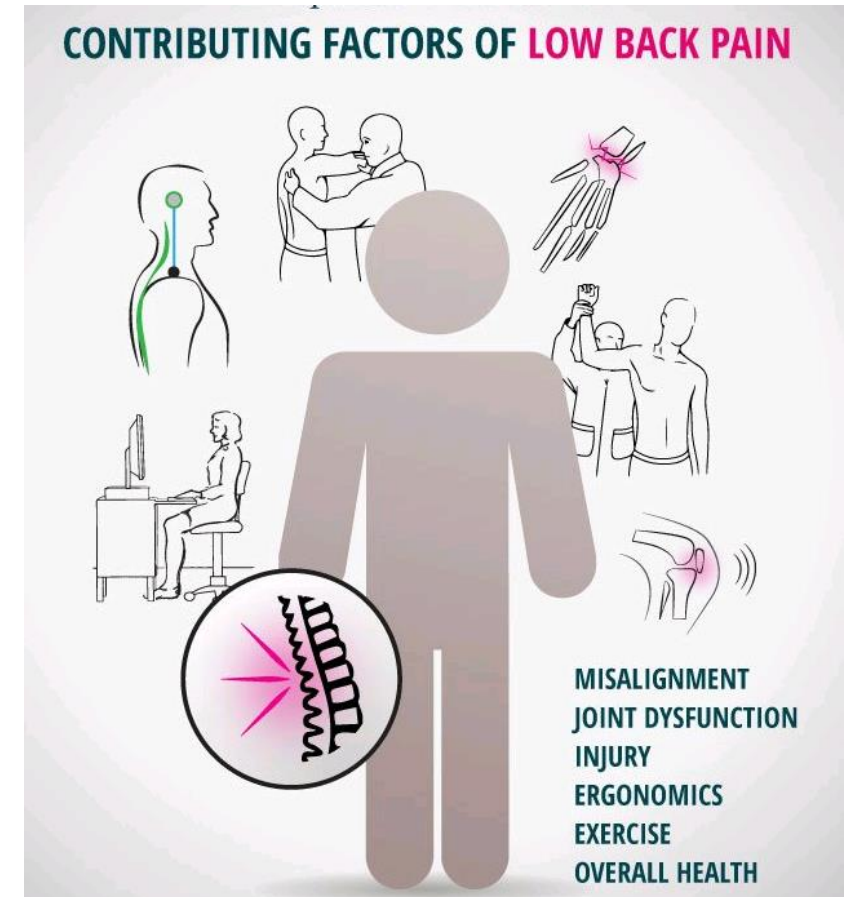
- Back
- Neck
- Shoulders
- Hand/Wrists/Fingers

Biggest Ergonomic Hazard???



Low Back Pain Statistics

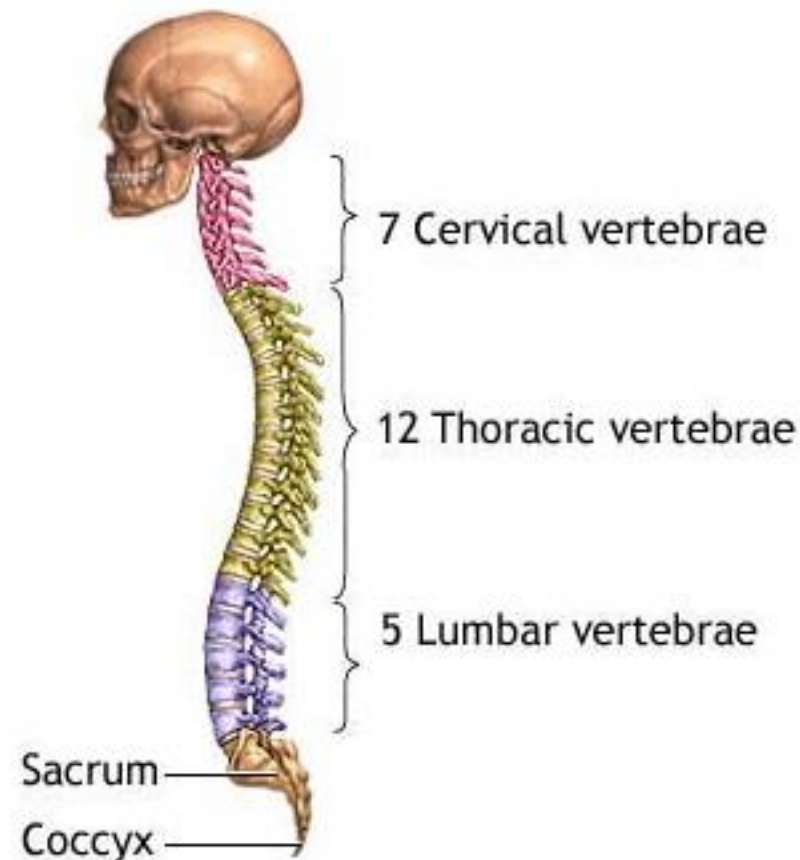
- In a 6 month period, 5 in 10 Canadians suffered low back pain
- Up to 85% of working people can expect to experience low back pain in their lifetime
- The estimated costs of low back pain in Canada is between 6 and 12 billion dollars annually
- Low back is the most common injury in Ontario
- Accounts for 16% of lost time claims





Lower Back Injuries

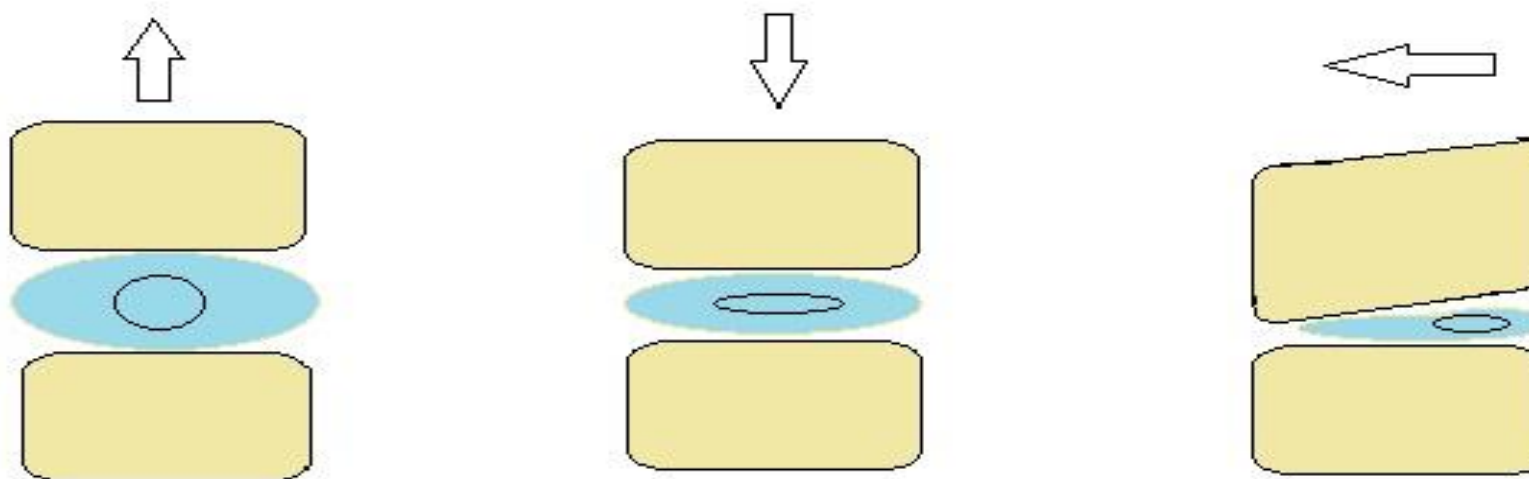
- The spine is divided into 4 parts
- They all support the body and protect the spinal cord
- Lumbar (lower back) vertebrae are larger as they are designed to bare weight



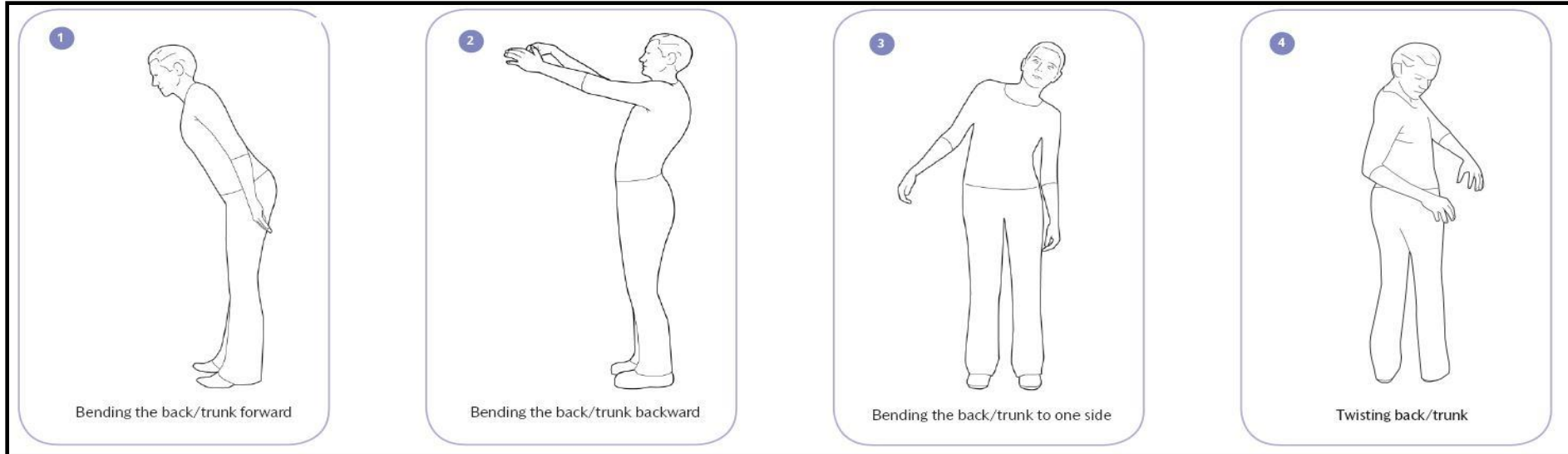


Lower Back Injury Causes

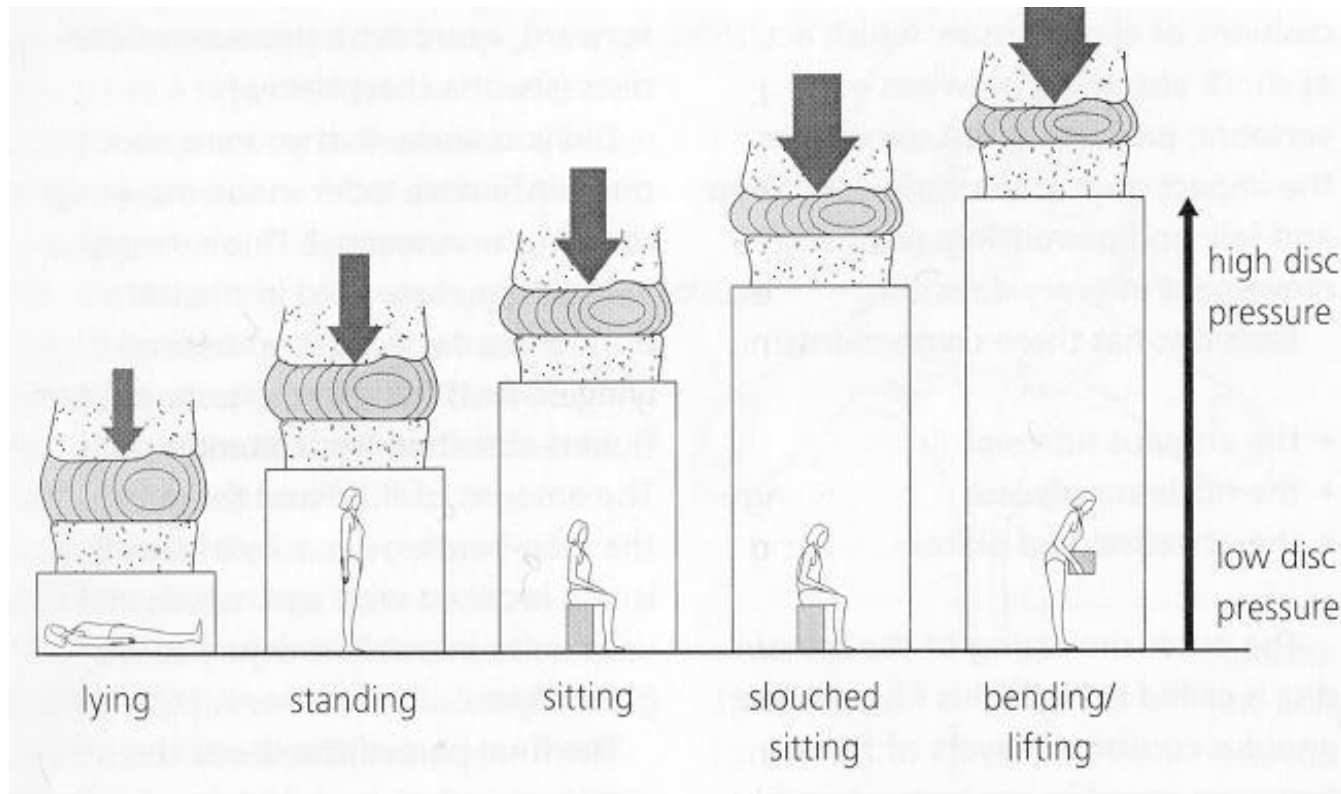
- In between are intervertebral disc or “shock absorbers”
- When factors such as large forces or awkward postures act on the Intervertebral discs, injuries can occur
- This can have an instant or gradual onset



Awkward Back Postures



Why Posture is Important





The Wrist

- The wrist can move in many directions, however, a neutral wrist posture is the strongest and safest
- Many different types of tasks can flex, extend, or deviate the wrist increasing its probability of injury



The Wrist

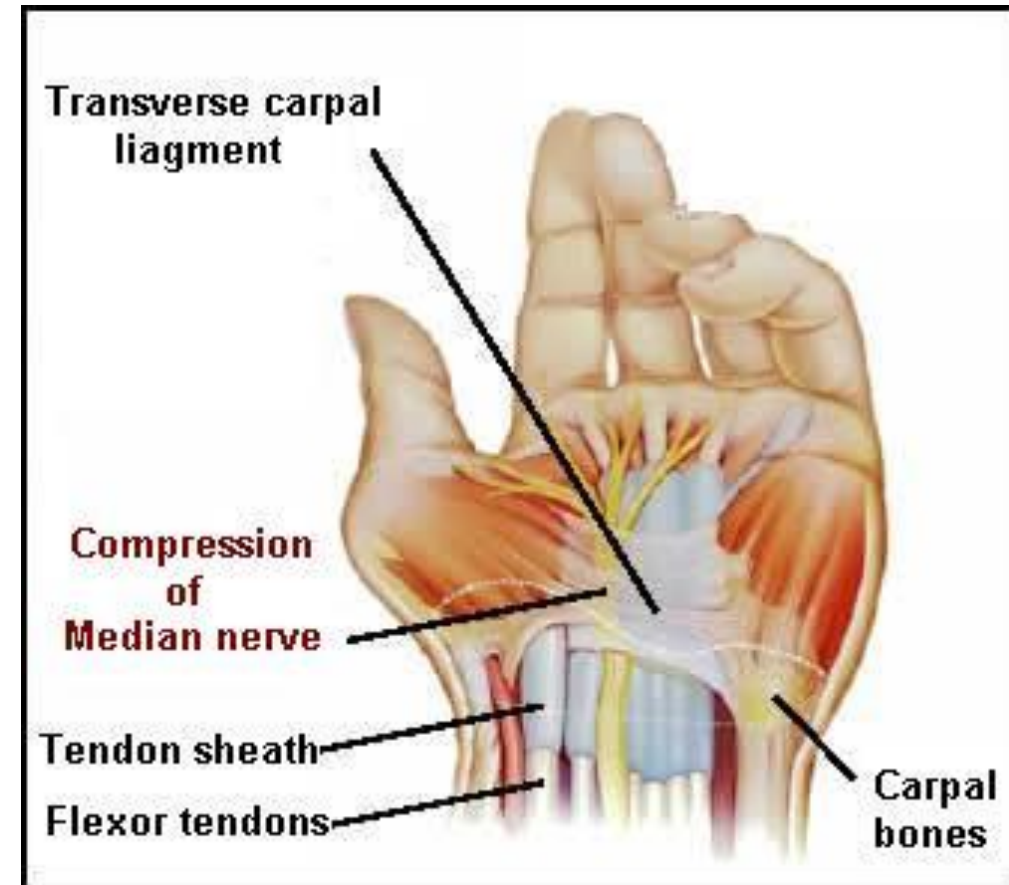


Carpel Tunnel Syndrome:

- Compression of the median nerve underneath the ligaments
- Symptoms include numbness, tingling and reduced grip strength

Risk Factors:

- Excessive force, awkward postures, repetition, and prolonged gripping



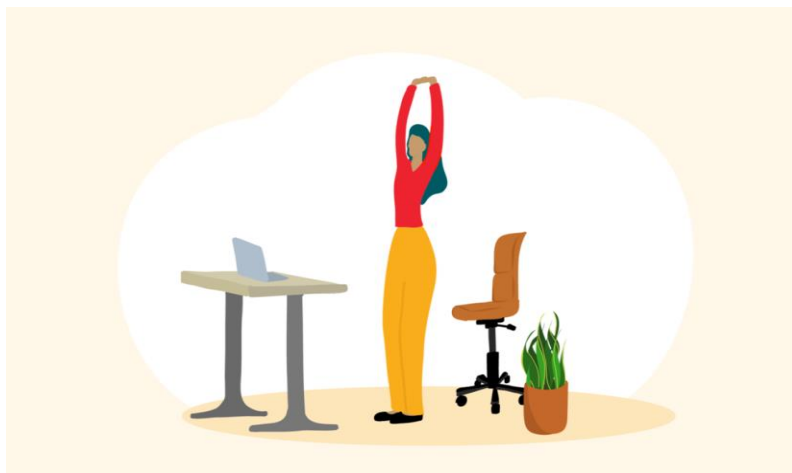
Shoulder Tendonitis



- Smooth gliding of tendon is impaired leading to inflammation of the tendon
- Using the muscle becomes irritating and painful
- Commonly found in tendons with poor blood supply
- Cause: Too much strain as a result of heavy loads, repetition and static or awkward postures



Movement Break





OHSA

Keep equipment in good condition

Under clause 25(1)(b), employers must make sure the equipment, materials and protective devices they provide are maintained in good condition. Equipment that is in disrepair can increase the physical demands of workers.

Provide information, instruction and supervision

Under clause 25(2)(a), employers must provide workers with information, instruction and supervision to protect their health and safety.

Take every precaution reasonable in the circumstances

Under clause 25(2)(h), employers must take every precaution reasonable in the circumstances for the protection of a worker, including MSD hazards while manually handling objects

Communicate hazards

Under clause 25(2)(d), employers must make sure that the worker or a person in authority over a worker are acquainted with the hazards in their work. This includes MSD hazards when manually handling objects



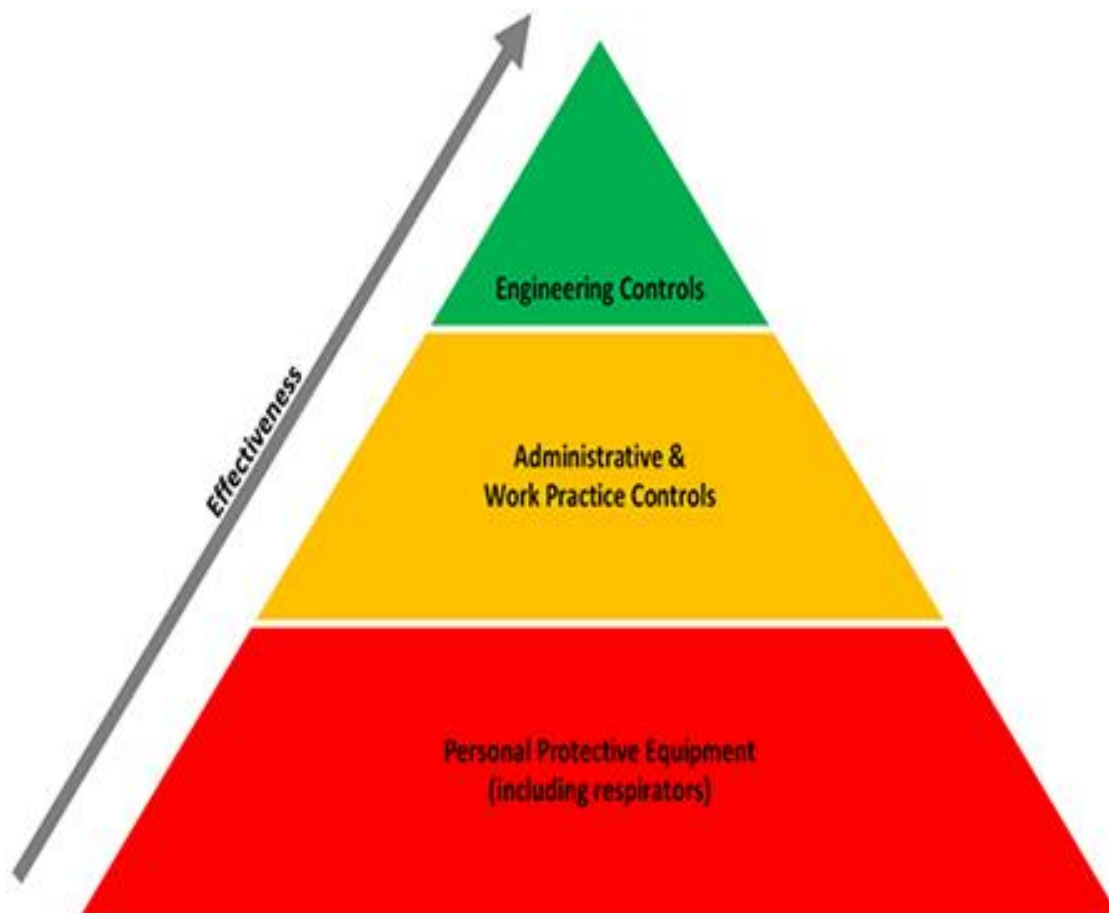
WSIB

- Types of businesses that are **not legally** required to register with the WSIB include banks, insurance companies, barbers or hair salons (with exceptions), private schools or daycares, travel agencies, and several others.
- However, many employers in these industries still choose to register with the WSIB to ensure their workers are fully protected.





How to Control for the Hazards



Modifications to work, equipment to reduce the exposure

Alter the way work is done, timing, policies, work practices and SOPs (i.e. training, equipment maintenance)

Equipment worn to reduce exposure (i.e. knee pads, gloves)



How to Control for the Hazards

Engineering Controls

- Eliminate the risk factors in specific work tasks
 - Using alternative equipment that is lighter/allows for neutral postures
 - Minimize the amount of reaching (i.e. height adjustable equipment)
 - Replace carrying tasks with use of carts/dollies (i.e. laundry hampers on wheels)



How to Control for the Hazards

Administrative Controls

- Restrict the weight individuals can lift or carry at one time (i.e. capacity limiting baskets, totes, stock)
- Scheduling of appointments to allow rest/recovery
- Employees should be trained on the ergonomic hazards associated with daily tasks and importance of proper workstation setup and equipment
- Setup station correctly from the start
- Require employees to use proper equipment
- Preventative Maintenance on tools



How to Control for the Hazards

PPE Controls

- PPE used to control MSD hazards is limited (i.e. gloves)
- Glove Use for Hairstylists: typically used when handling chemicals though also used to protect the hands from skin conditions
 - Improperly fitted gloves can lead to MSD

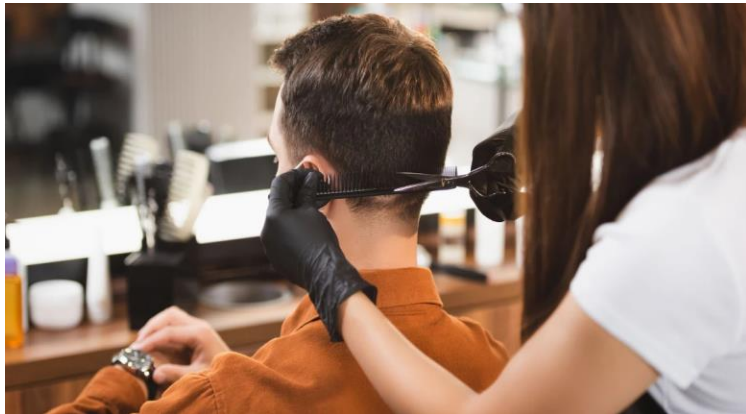


Glove Use

Improperly fitted gloves can increase the worker's risk of a MSD

Considerations for glove use:

- It's not a one size fits all
- Select the right glove for the job (i.e. precision task)
- Material and thickness of the glove are important factors





MSD Risks in Hairstylists

- Cutting Hair
 - Chair Height
 - Scissors
 - Combs/Brushes
 - Location of Supplies
- Washing Hair
 - Basin Height
 - Chair Height
 - Supply Area
- Blow Drying Hair
 - Dryer
- Standing for long periods of time
- Cleanup

Cutting Hair



Client Chairs:

- Stylists come in all sizes so salons must ensure each one has a chair suitable for his or her height.
- Wide hydraulic range is optimal
- Rotational
- Adjust the chair to suit you rather than the client
- Adjust chair throughout





Cutting Hair

Hair Cutting Stools:

- Allows for more neutral working postures
- Allows for a change in posture
- Reduction in fatigue associated with standing for long periods



Cutting Hair



Hair Cutting Stools:

- Should have casters
- Should have a swivel seat
- Should have a seat that slopes gently forwards so that the hips tilt slightly forward to maintain the natural curve of the spine
- Should be easily height-adjustable
- You should not use the rolling stools for all tasks. You will notice quickly enough when they are not suitable
- If you have to stretch out too much, stand up to work.



Cutting Hair

Shears:

- Awkward postures when holding shears and cutting
- Repetitive use of small muscle groups
- Dull shears
- Failure to use ergonomic shears: places excessive strain on all joints



Cutting Hair



- **Shear Considerations**

- Light and balanced weight
- Allow for neutral postures of the hand & wrist
- Handle and ring configuration
- Distance between thumb and finger rings
- Angle of the handle
- **NOT A ONE SIZE FITS ALL**



Cutting Hair



- **Shear Use Considerations**



- <https://www.youtube.com/embed/D36FXJfjuNs>



Cutting Hair

Maintain Equipment

- Clean scissors on daily basis to remove residue on the blades
- Adjust tension (but do not over tighten)
- Oil scissors daily
- Get them sharpened regularly



Washing Hair



- Trunk flexion due to low-height wash basins
- A good washbasin
 - Should be height-adjustable and adapted to the physique of each hairdresser
 - Can be put in a diagonal position
 - Should not be too long
 - Should be free-standing so that the hairdresser can move around it (at least partially)
 - Should have sufficient room underneath for knees and feet.

Washing Hair



- The optimal height when working at the washbasin is around elbow height because washing hair requires the use of a certain amount of force. This means that the working height at the basin should be lower than the working height in the hairdressing chair.



Brushes



- A good hairbrush
 - Should be light and not put too much strain on hands and arms
 - Should have a sufficiently long handle (min. 11-12 cm) and be sufficiently wide (3 cm), so that the brush can be held with the whole hand
 - Should have a non-slip handle.

Drying Hair



- Equipment Considerations
 - Light weight
 - Power (watts) – ↑ Air Flow = ↓ Time
 - Cord length
 - Ensure cord length allows freedom of movement
- Dryer design
 - Grip
 - Angle
 - Adjustability





Drying Hair

Failure to use a good hairbrush and ergonomic blow dryer: Forces repetitive movements and excessive strain on the neck, shoulders, wrists, hands and elbows

- Postural Considerations
 - Body position relative to customer
 - Minimize reaches
 - Minimize wrist flexion/extension
 - Different designs require understanding for proper use



Equipment Location



Equipment

- It is important that items used regularly are close to stylists to avoid extended reaches and awkward postures
- Trolley
- Tool Belt / Apron with pockets
 - Limit weight



Equipment Location



Trolley:

- Should have casters
- Should be sufficiently high or be height-adjustable to avoid you having to bend over too much.
- Use a trolley to keep your material close to hand and at a good height.
- Position the trolley on your good side. So, if you are right-handed, the trolley should be on your right.

Towels



- Towels are used to dry client's hair and are then placed into laundry baskets.
- As more towels are placed in the basket the heavier it becomes.
- Consideration need to be given to the type of basket it is placed in as heavy lifting may lead to an acute or cumulative back injury.
- Considerations:
 - Basket on wheels
 - Elevated basket
 - Storage of laundry not at ground level
 - Limit on the amount of laundry in the basket

****Training employees on proper lifting techniques**



Standing



Standing:

- On hard surfaces increases fatigue in the lower extremities and low back
- Anti-fatigue mats are used to decrease foot and lower limb disorders for workers who stand in one position for long periods

What should be considered when a person stands all day:

- 1. Changes in working/standing position**
- 2. Footwear**
- 3. Flooring**



Standing



Change Position:

- Work should be organized so that the worker has some choice about his/her working position and an opportunity to change position frequently.
- A workplace that includes an optional seat (chair, sit/stand stool) and some kind of footrest increases the variety of body positions and encourages frequent changes between them.

Standing



Proper Footwear:

Comfortable, suitable shoes:

- Should be comfortable and provide cushion
- Should have sufficient support
- Should not have high heels
- Should have insulating and moisture-repellent anti-slip soles
- Should be closed (preferably with laces). This stops hair getting into them and irritating the skin.



Standing



Flooring:

- Hard, unyielding floors, like concrete, are the least comfortable surface to work on. Walking on a hard floor is similar to the impact of a hammer pounding the heel at every step.
- Wood, cork, carpeting, or rubber - anything that provides some elasticity - is generally gentler on workers' feet. More than that, softer floor coverings reduce fatigue and improve safety by reducing slips and falls on slippery floors.

Movement



Breaks

- Taking regular short breaks gives your muscles a chance to relax. Let your hands hang down every now and again and wiggle them about or walk about a bit. This will help muscles and tendons to relax. It reboots the circulation and the risk of health damage or of having to take time off because you are ill will be considerably reduced.

Scheduling to allow for muscular relief

- Provide a period of rest between appointments
- Provide variability within the schedule (i.e. Womens' cut and colour followed by a men's haircut)



Lighting

Bad lighting (shadows, glare) or wrong use thereof

- Increase in awkward postures
- Increases risk when moving around because obstacles and differences in height are more difficult to see.
- Results in tired eyes, and in turn a greater danger of falling or slipping etc.



Take Home Message

- ❖ Know the signs and symptoms of MSDs
- ❖ Apply the principles of safe lifting
- ❖ Perform PM on all equipment
- ❖ Be aware of your posture
- ❖ Ensure the proper tools are being used
- ❖ Educate yourself and others

Work Smarter NOT Harder