



Occupational
Health Clinics
for Ontario
Workers Inc.

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

RSI Day 2023

Concussions in the workplace

Daryl Stephenson, PhD
Ergonomist, AE
OHCOW Hamilton

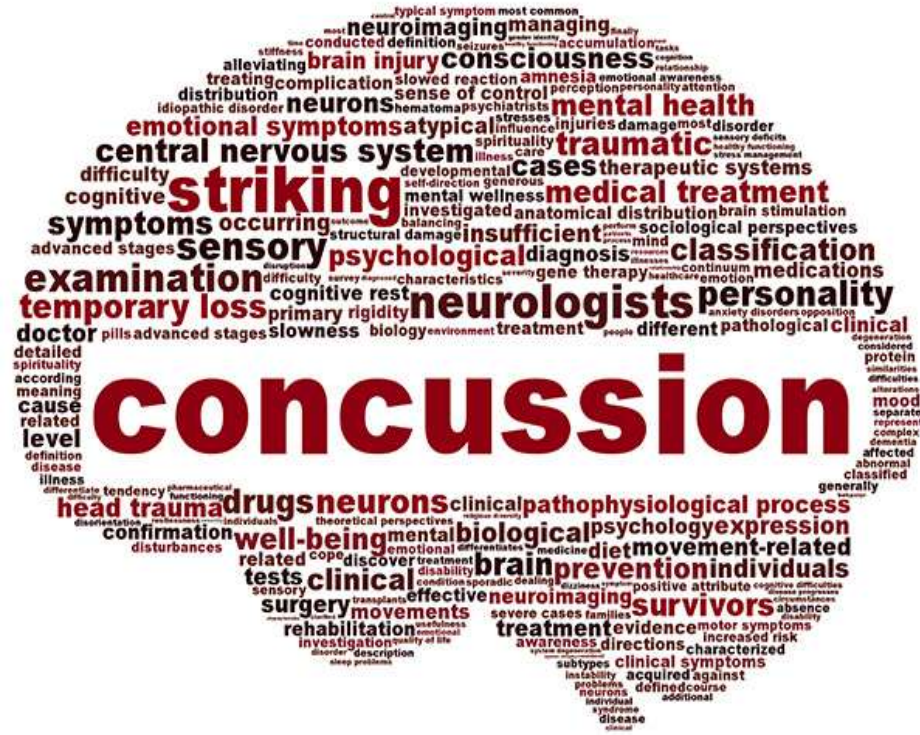


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Presentation outline

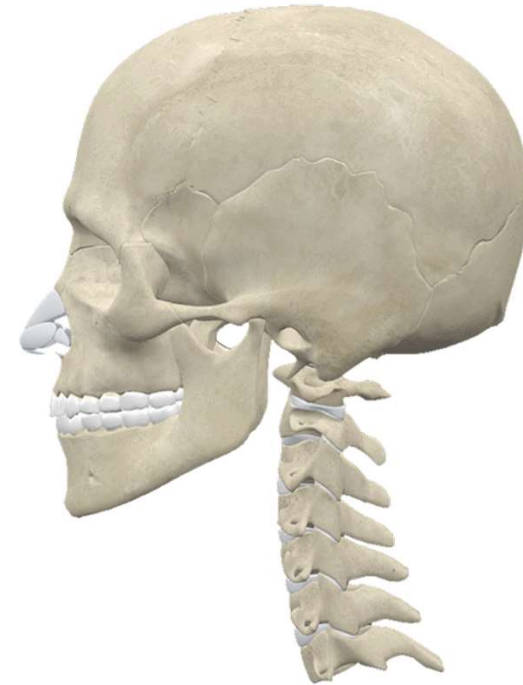
Concussion overview, signs and symptoms, long-term effects, underreporting, return to work, and prevention.

Goal - Raise awareness, promote steps to take action to prevent concussions.

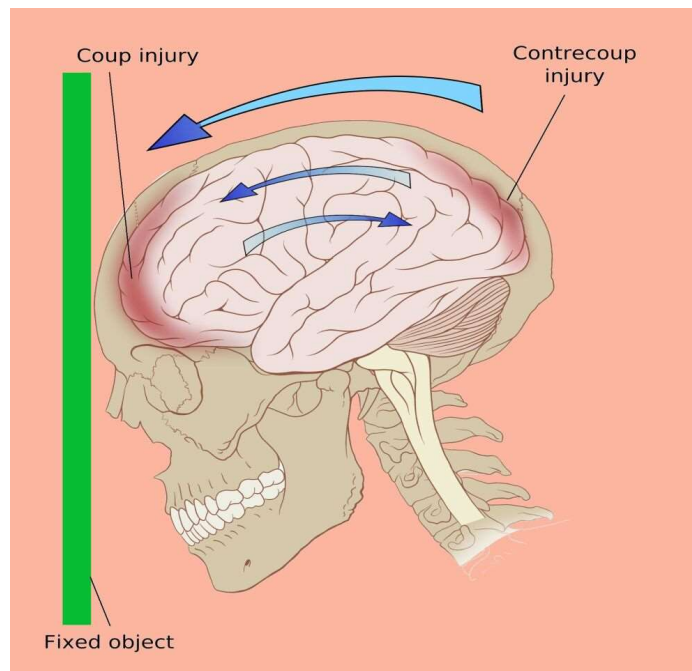


What is a concussion?

- A traumatic brain injury induced by linear or rotational acceleration and deceleration forces on the brain
- Varying symptoms



What Happens in a Coup Contrecoup Injury / Concussion Event?



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(Law Offices of Phillips & Hunt - Youtube, 2015; www.neuropetvet.com)

Ambiguity in the definition of concussions and post-concussion symptoms

Variety of terms used

- Concussion, mild head injury, mild traumatic brain injury (mTBI), cerebral concussion

Slang expressions

- “being dinged” or “having one’s bell rung” or “seeing stars.”



Common misunderstandings

Does not require direct hit to head

Does not require a loss of consciousness

Symptoms can be delayed and may evolve over a number of minutes to hours.



Common Signs and Symptoms of a Concussion

Physical

- Headache or pressure in head
- Dizziness, dazed or stunned
- Ringing in the ears
- Blurred vision
- Sees stars, flashing lights
- Nausea or vomiting
- Stomach aches/pains
- Poor co-ordination or balance
- Slurred speech
- Blank stare/glassy-eyed
- Sleeping more or less than usual
- Sensitivity to light or sound

Cognitive

- Easily distracted
- Poor concentration
- Slow to answer questions or follow directions
- Not participating well

Emotional

- Sad
- Nervous
- Anxious
- Irritable
- Strange or inappropriate emotions (i.e., laughing, crying, getting mad easily)

Red Flag Symptoms

- Seizures/convulsions
- Loss of consciousness, deteriorating conscious state
- Double vision or a loss of vision
- Weakness, tingling in arms
- Severe headache
- Worsening of symptoms over time



Large list of **potential consequences**, including



Cognition (memory, judgment, communication)



Movement ability (strength, co-ordination, balance)

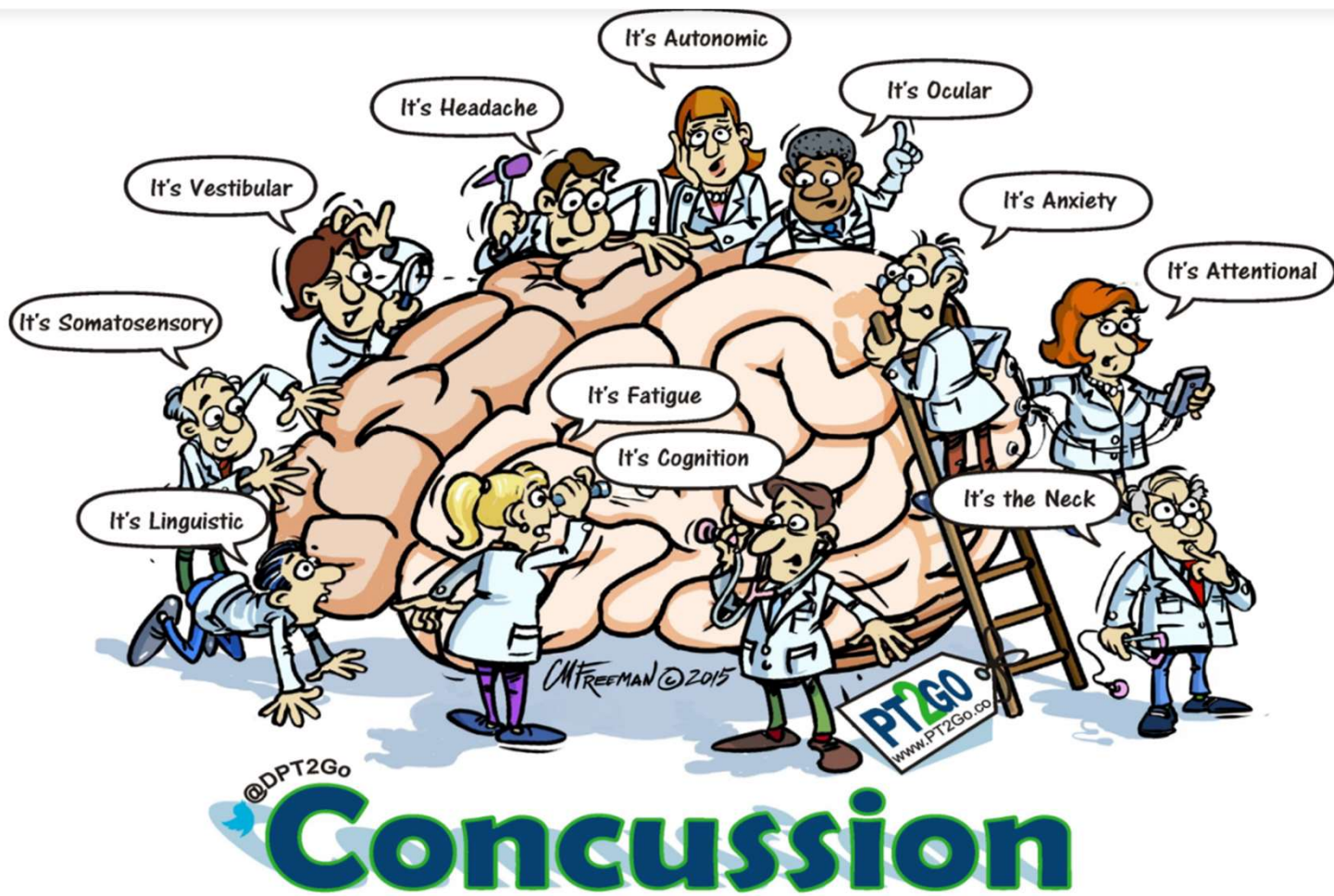


Sensory (vision, hearing, tactile)



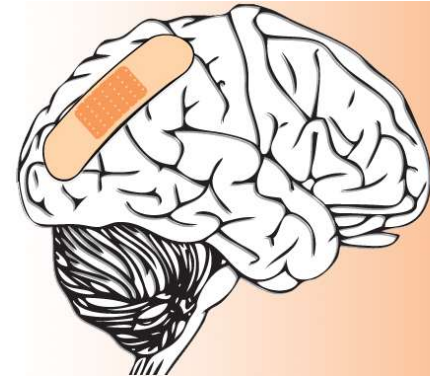
Social relationships





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Concussion recovery



- Unpredictable
 - Majority return to work within one to two weeks, but can be months or years
- Early physiological symptoms such as headaches can turn into psychopathological issues such as anxiety and hypersensitivity, depression.



Limited treatment options

Rest

- Traditional advice

Exercise

- Research is showing benefits of exercise for those who can tolerate exercise without increasing their symptoms.

Rehabilitation therapy

- may include speech therapy, occupational therapy, physical therapy, vestibular rehabilitation, or a combination of others.

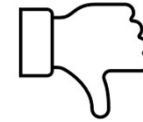
Important to discuss options with qualified health care professionals.



General concussion recovery tips



- Get adequate rest and sleep
- Check with doctor about when you can safely return to exercising, driving, biking, and operating heavy machinery
- Get back to your normal activities slowly and gradually
- Monitor symptoms as best as possible
- Follow a protocol/guidelines





Avoid (until approved by a doctor)

- Alcohol, recreational drugs
- Sleeping pills, sedatives
- Any other medication not prescribed and/or approved by your doctor
- Physically and mentally exhausting activities
- Sustained computer use, video games, television



Factors associated with poor functional outcomes

- Number of symptoms reported at follow-up
- Posttraumatic stress
- Cognitive impairments on tests of memory and executive functioning
- Financial compensation-seeking
- Loss of consciousness
- Pre-existing mental health difficulties (anxiety, depression)
- Lower pre-morbid intelligence/cognitive ability
- Pre-injury work history
- Dizziness
- Reduced social interaction 
- Job loss 



Post-Concussion Syndrome – Persistent Symptoms

- Up to 80% of people who experience moderate to severe concussion symptoms may develop PCS.
- Likely that biological, physiological, psychological, and social elements all play a role in symptom persistence.
- May delay an individual's return to work, adversely affect one's quality of life, developmental trajectory, and result in additional social and economic costs.
- The syndrome can involve a **cluster of symptoms** such as memory loss, headaches, vertigo, cognitive delay, anosmia, phonophobia, photophobia, anxiety, depression and fatigue



Factors that may contribute to persistent post-concussion symptoms

Medication-induced fatigue

Headache of migrainous or cervical origin

Benign paroxysmal positional vertigo

Deteriorated sleep hygiene

Alcohol use

Depression



PCS challenges



- Impacts memory, mood and function which can be **difficult to prove.**
- Tests show that everything's normal, yet you still are unable to attend work.
- Hard to understand how concussed person is **really feeling.**
 - No visible signs.
- Challenge of self-assessing symptoms
- Symptoms can return when returning to work



Mental health issues after concussion

Mood swings,
irritability

Anxiety, panic
attacks

Social
situations
become difficult

Depression

Low self
esteem

PTSD

Lack of energy,
motivation,
interests



Caring for mental health symptoms from concussion

Find appropriate care

Multidisciplinary care - collaboration with a physician

Additional support - mental health professionals

Follow-up care - even for mild cases of concussion.

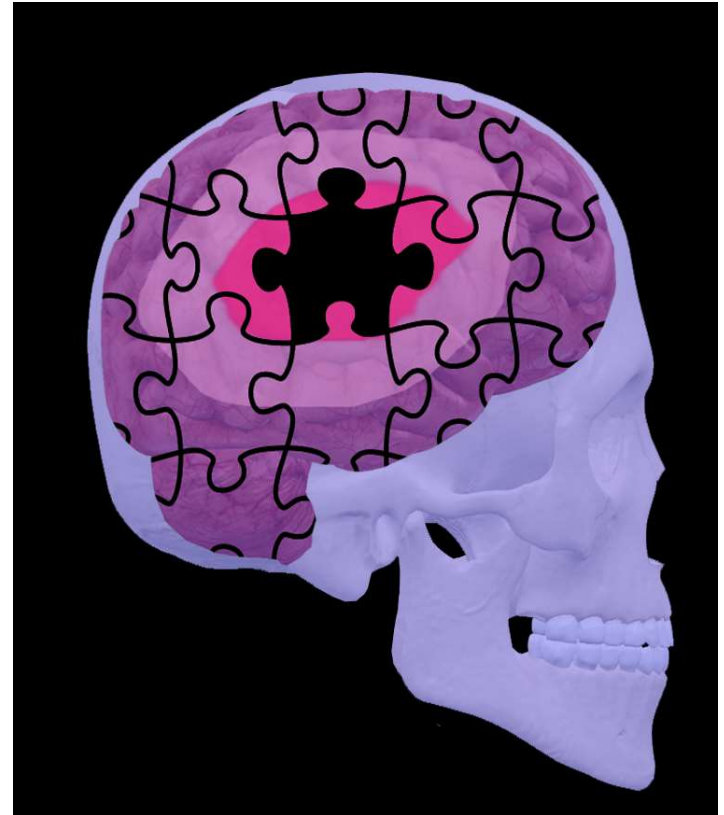
Education and patient reassurance by a trained and knowledgeable healthcare practitioner.



Other future concerns with brain injury

Repetitive brain trauma is also associated with:

- Alzheimer's-like dementia
- Parkinsonism
- Motor neuron disease including Amyotrophic Lateral Sclerosis (ALS).
- Higher suicide risk

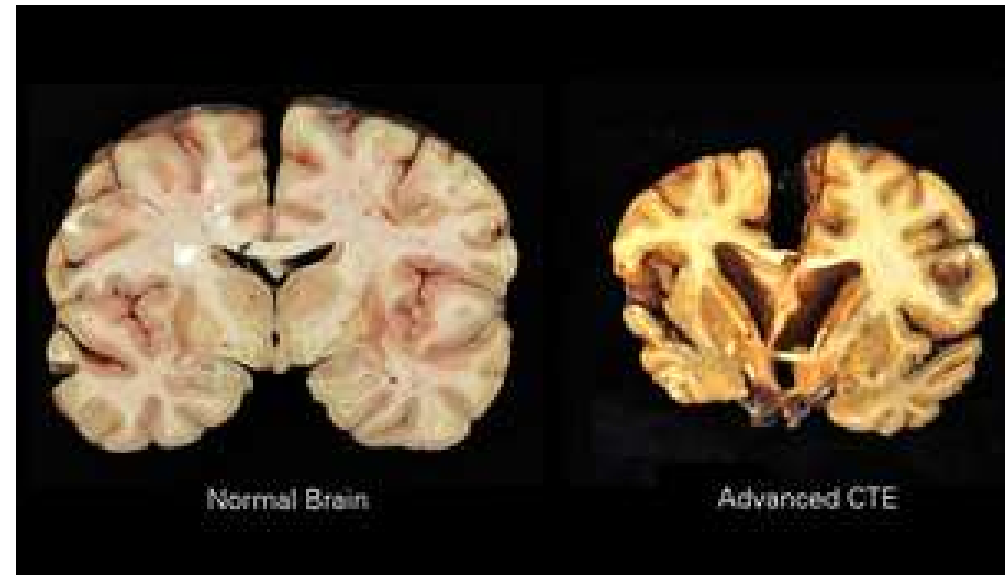


What is Chronic Traumatic Encephalopathy?

Neurodegenerative condition known as chronic traumatic encephalopathy (CTE).

Accumulate over time with repetitive impacts or concussion like events

Can show up many years later, and can cause many complications for day to day life.



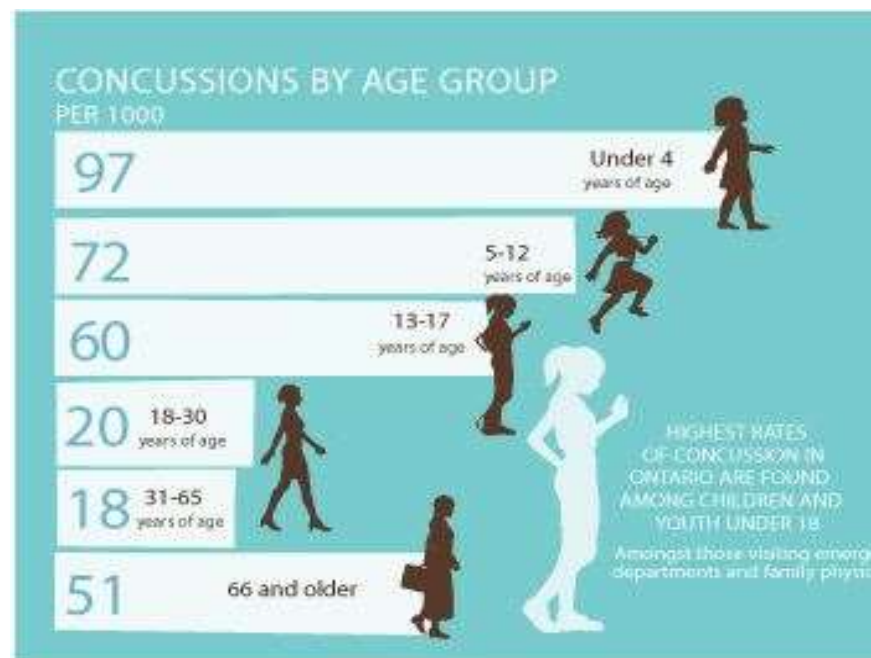
Second Impact Syndrome

- **Second impact syndrome** is caused when a second concussion like event happens to someone who has already undergone a previous concussion and still having symptoms.



What causes concussions in Ontarians?

- Depending on the population, the most likely events to cause a concussion are vehicle accidents, falls, sports and recreational activities, and assaults.



Traumatic brain injuries in Ontario

From 1993-2001 7.3 per cent of traumatic brain injuries were work-related. 12.4% increase in total over period.



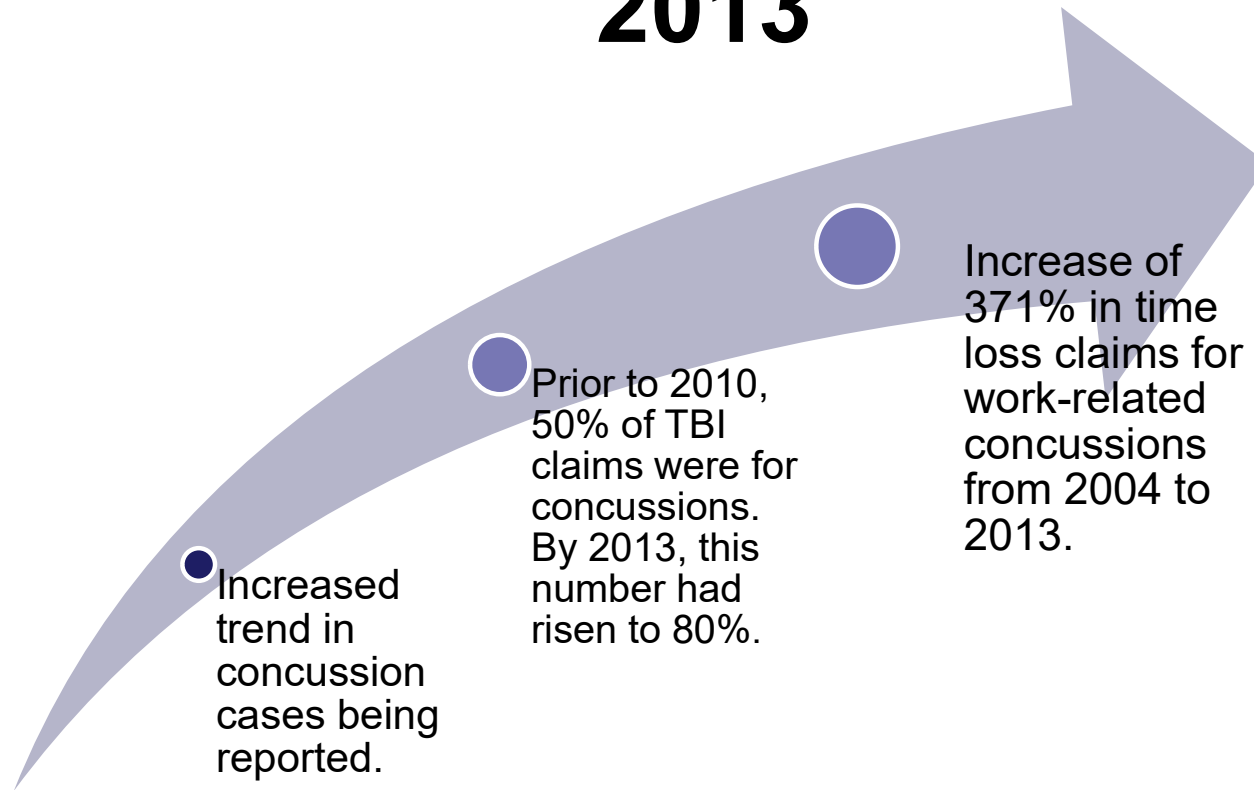
1,644 claims requiring time off work in Ontario in 2012, up from 790 in 1996.



According to the Public Health Agency of Canada, traumatic brain injuries will be the most prevalent neurological condition by 2031.



Concussions in Ontario workers prior to 2013



Concussion claims accepted in Ontario by year, count and cost



Who is at risk?

In Canada, the highest rates of workplace concussions are in the industries of:

- Transportation
- Storage
- Government, and primary industries
 - Forestry
 - Fishing
 - Mining



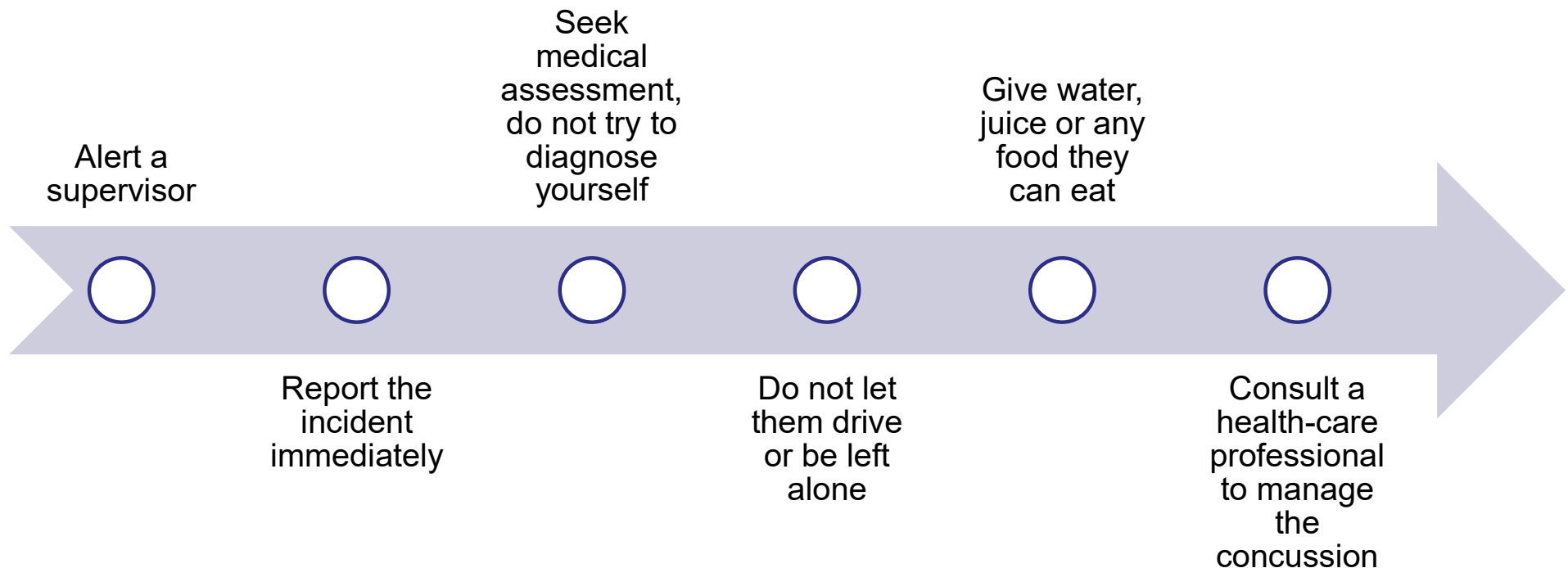
What causes concussions in the workplace?

Varies by industry and occupation. Most common causes at work are:

- Slips, trips, falls
- Being struck by or against an object (falling boxes)
- Motor vehicle collisions
- Assaults



Steps to take if a worker has concussion symptoms or a concussion like event



Why are concussion symptoms underreported?

- Knowledge
- Invisibility of injury
- Difficulty assessing
- Expectations
- Uncertainty in diagnosis and risk to continue work



Why are concussion symptoms underreported?

- Symptoms not drastic enough
 - Pain killers may mask symptoms
- Social identity
- External Pressure
- History with concussions
- Job Security/Fear of job loss
- Financial concerns



Why are concussion symptoms underreported?

- The importance of upcoming deadlines and work goals
- Stigma about concussions in the workplace
- The normalization of concussion symptoms
- Delayed symptoms – why reporting any incident is important!



Returning to work after a concussion

- Activities may be too demanding or stressful from a cognitive perspective
- Leaving very exhausted and may forget things, or doing things without their required mental capacity.



Problems faced returning to work

- The invisibility of their injury
- Continuing symptoms affecting their ability to do their job.
- Lack of advice and guidance on returning to work.
- Poorly coordinated and managed return-to-work support systems.



Returning to work after concussion common steps

1. Rest
2. Light activity
3. Increased activity
4. Return to modified work
5. Return to regular position with caution/accommodation
6. Return to regular duties

All steps require frequent monitoring of symptoms



How to accommodate for a worker who has previously had a concussion.

- Restrict from dangerous activities
- Plan safe commute
- Provide a calm, dim, quiet work or rest area
- Flexible hours and job tasks
- Introducing other meaningful activities



General considerations for the worker during recovery



Respect work restrictions

Reduce physical and cognitive exertion

Gradual, incremental return to normal work



Be positive! 😊

- Reassure the person about their recovery.
- They may be in a vulnerable state mentally
 - Further anxiety just makes their situation worse.
- Reduce stigma surrounding concussions in the workplace

~~STIGMA~~



Preventing concussions in the workplace

- Clear tripping hazards
- Use signage
- Maintain cleanliness and organization of shelves and storage areas
- Place risky objects closer to the floor or the lowest possible shelving.
- Wear proper safety footwear
- Increased training and supervision



Preventing concussions in the workplace



Use appropriate step stools, access platforms, ladders and handrails to avoid falls.



Caution when working from heights, use fall protection/restraint equipment.



Use an appropriate hard hat, properly fitted, and in good condition.



Report unsafe conditions



Validated tools to measure Post-Concussion Syndrome

- Concussion Recognition Tool 5 (CRT5)
- The Rivermead Post-concussion Symptoms Questionnaire (RPQ)
- The British Columbia Post-concussion Symptom Inventory-Short Form (BC-PSI-Sf)
- The Post-concussion Syndrome Symptom Scale (PCSSS)
- The Post-concussion Syndrome Checklist (PCSC)
- Post-Concussion Symptom Scale (PCSS)
- Post-concussive Symptom Questionnaire (PCS Questionnaire)
- Neurobehavioral Symptom Inventory (NSI)
- Head Injury Scale (HIS)
- The New Swedish Post-Concussion Symptoms Questionnaire (Swedish PCSQ)
- The Sport Concussion Assessment Tool SCAT5
- ImPACT
- The World Health Organization disability assessment schedule 2.0 (WHODAS 2.0)



The Rivermead Post-Concussion Symptoms Questionnaire*

After a head injury or accident some people experience symptoms which can cause worry or nuisance. We would like to know if you now suffer from any of the symptoms given below. As many of these symptoms occur normally, we would like you to compare yourself now with before the accident. For each one, please circle the number closest to your answer.

- 0 = Not experienced at all
- 1 = No more of a problem
- 2 = A mild problem
- 3 = A moderate problem
- 4 = A severe problem

Compared with before the accident, do you now (i.e., over the last 24 hours) suffer from:

Headaches.....	0	1	2	3	4
Feelings of Dizziness	0	1	2	3	4
Nausea and/or Vomiting	0	1	2	3	4
Noise Sensitivity,					
easily upset by loud noise	0	1	2	3	4
Sleep Disturbance.....	0	1	2	3	4
Fatigue, tiring more easily	0	1	2	3	4
Being Irritable, easily angered	0	1	2	3	4
Feeling Depressed or Tearful	0	1	2	3	4
Feeling Frustrated or Impatient	0	1	2	3	4
Forgetfulness, poor memory	0	1	2	3	4
Poor Concentration	0	1	2	3	4
Taking Longer to Think	0	1	2	3	4
Blurred Vision	0	1	2	3	4
Light Sensitivity,					
Easily upset by bright light.....	0	1	2	3	4
Double Vision	0	1	2	3	4
Restlessness	0	1	2	3	4

Are you experiencing any other difficulties?

1. _____ 0 1 2 3 4
2. _____ 0 1 2 3 4

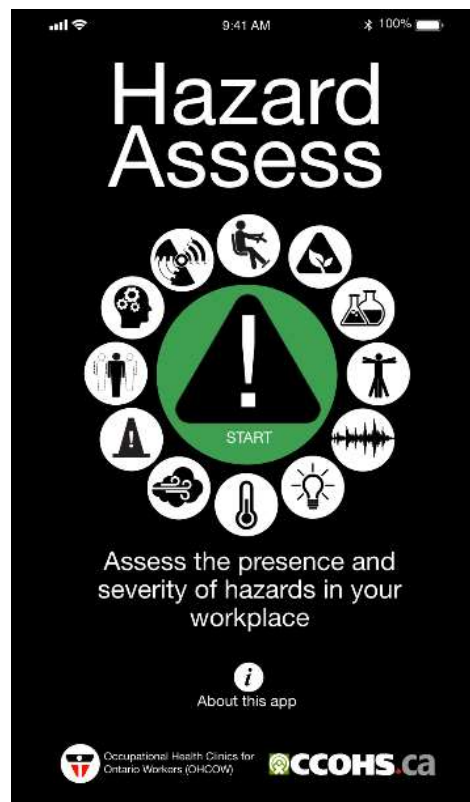
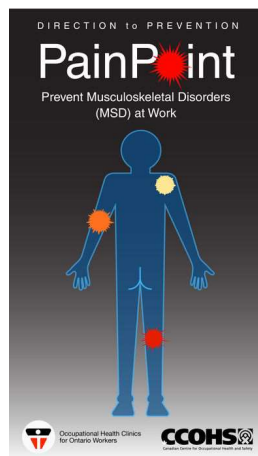
*King, N., Crawford, S., Wenden, F., Moss, N., and Wade, D. (1995) J. Neurology 242: 587-592



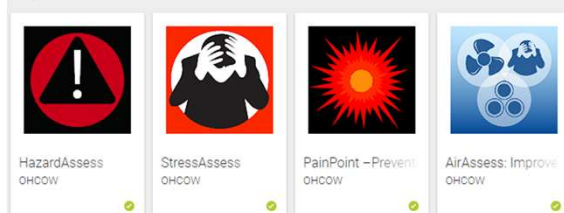
Resources

- <https://parachute.ca/en/injury-topic/concussion/>
- <http://www.wsib.on.ca/> (Program of care for mild traumatic brain injuries page)
- <http://www.braininjuryguidelines.org/concussion/>
- <https://www.ontario.ca/page/rowans-law-concussion-safety>
- <https://cattonline.com/workers-workplaces/>
- https://www.cdc.gov/headsup/basics/concussion_prevention.html
- https://www.ccohs.ca/products/courses/preventing_falls/
- https://www.ccohs.ca/products/podcasts/Episode129_ConcussionTips_English.htm
- Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2017
- <http://concussionsontario.org>
- <https://ccn-rcc.ca/wp-content/uploads/2022/09/2022-CONCUSSION-AWARENESS-WEEK-TOOLKIT-NEW.pdf>
- <https://sirc.ca/concussion/>
- <https://obia.ca/resources/brain-injury-information/concussion-resources-for-adults/>
- <https://safety.ophea.net/concussions>
- <https://www.worksafebc.com/en/resources/health-safety/books-guides/concussions?lang=en>
- <https://www.worksafebc.com/en/resources/health-care-providers/guides/post-concussion-syndrome-validated-symptom-measurement-tools?lang=en&direct>
- <https://www.sfmic.com/work-related-concussions-prevention-tips/>





Apps



SOBANE:

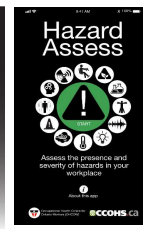
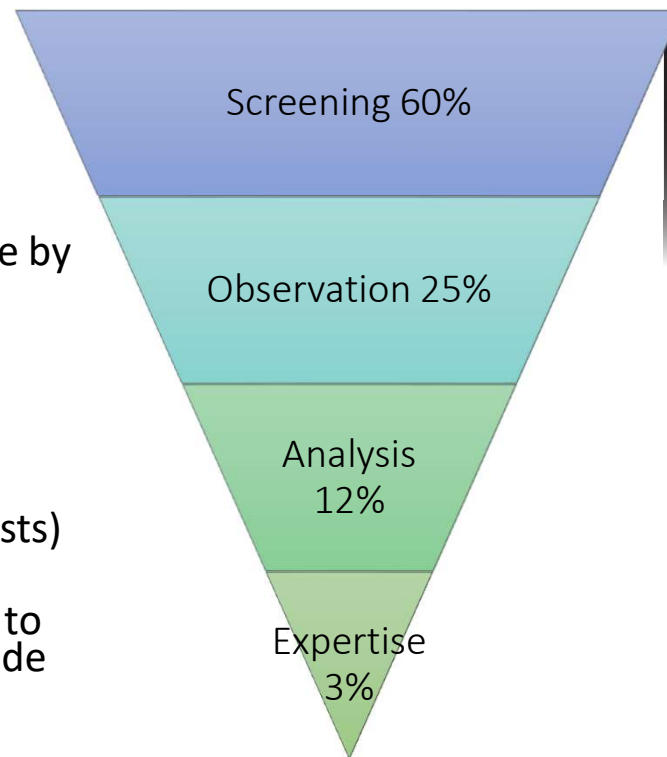
Levels of hazard identification

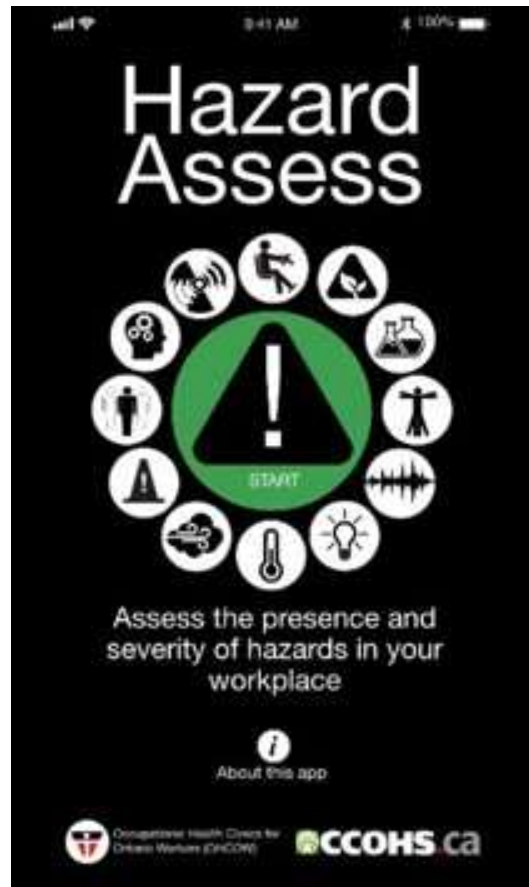
Screening: is when **workers** identify hazards based on their first hand experience

OBservation: is qualitatively organized investigations using checklists, can be done by **JHSC**

ANalysis: is the quantitative evaluation traditionally associated with H&S professionals, internal OH practitioners (safety officers, occupational physicians, industrial hygienists, ergonomists)

Expertise: is the outside help that is needed to solve a particularly difficult problem, outside OH practitioners/experts.





App for the reporting of workplace hazards

- **HazardAssess** is an app designed to help workers identify and report hazards
- Runs through a checklist of **12 categories** of hazards
- Rated on the same scale as described above (“concerned”, “annoyed”, “interferes with getting the work done”)
- Also asking to report if there are **exposure related symptoms**, identify the **source of the hazard** and provide **suggestions for eliminating/reducing the exposure**
- Annotated **pictures** can be attached (... “circles and arrows and a paragraph” ...)
- Results can be **emailed** to supervisor, H&S rep, (MOL?), ... anyone you have an email address for
- A tool to **facilitate the IRS process**

What are workers worried about?












Many surveys about what exposures workers are concerned about:

- Ergonomics, Musculo-skeletal disorders (MSD's}, lifting etc
- Physical conditions – noise, lighting
- Unsafe conditions – accident hazards
- Workplace stress, psychosocial factors, often a top issue
- Air quality (inhaling contaminants/chemicals/allergens/mould/etc.)
- Thermal discomfort (too hot, too cold, draughty, stagnant, etc.)
- Radiation, Electro-magnetic fields, WiFi, cell phone towers.
- Biological exposures (infectious diseases)
- Chemical exposures
- Working alone
- Driving hazards




Hazard Assess

Select All

	Radiation ?	<input type="checkbox"/>
	Driving ?	<input type="checkbox"/>
	Biological ?	<input type="checkbox"/>
	Chemical ?	<input type="checkbox"/>
	Ergonomics ?	<input type="checkbox"/>
	Noise ?	<input type="checkbox"/>
	Lighting ?	<input type="checkbox"/>
	Thermal Comfort ?	<input type="checkbox"/>
	Air Quality ?	<input type="checkbox"/>
	Safety ?	<input type="checkbox"/>
	Working Alone ?	<input type="checkbox"/>



Hazard Assess

2022-02-24 (1) 

Hazard Categories





Select the categories that you want to track/report then select Next

Select All

	Radiation ?	<input type="checkbox"/>
	Driving ?	<input type="checkbox"/>

(workstation design/layout, furniture, tools, lifting, pushing, pulling, aids)

OK


	Ergonomics ?	<input checked="" type="checkbox"/>
	Noise ?	<input type="checkbox"/>
	Lighting ?	<input type="checkbox"/>
	Thermal Comfort ?	<input type="checkbox"/>

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Hazard Assess

Next >

2019-10-25 (1)



How well are safety hazards dealt with?

1

2

3

4


5


2) present but not usually an issue/concern

Exposure details

too much clutter!

my piles keep falling, worried about being injured





Home

Hazards

Results

History

More


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Hazard Assess

Next >

too much clutter!

my piles keep falling, worried about being injured





go paperless

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XCLEAR

NEXT >

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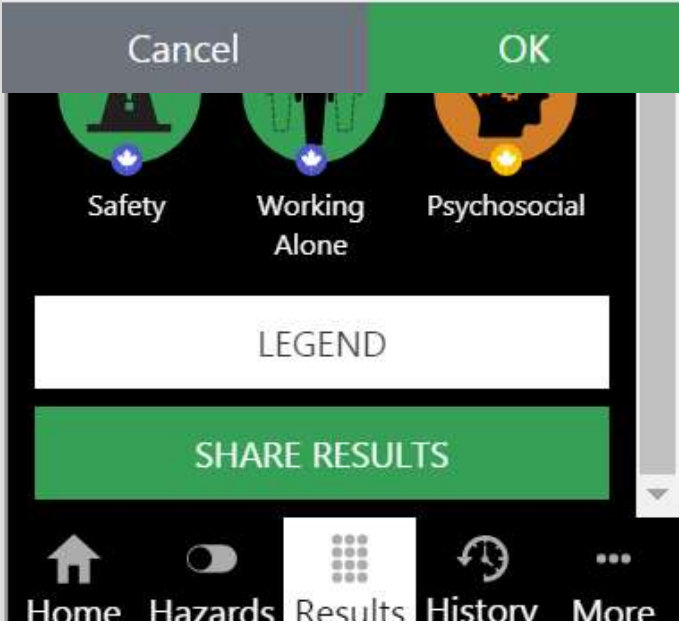
Results

History

More



Are you sure you want to generate a PDF of results (1) from 2019-10-25?



Hazard Assessment

Date: 2019-10-25 (1)
Area of Concern: Chemical
Question: How well are dangerous chemicals handled?

Exposure Specifics: asbestos, paraformaldehyde, HCl, industrial concentrated neutral cleaning solution stored in office
Possible Solutions: wear a mask!



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Hazard Assess

Additional Resources

1. Radiation
2. Driving
3. Biological
4. Chemical
5. Ergonomics
6. Noise
7. Lighting
8. Thermal comfort
9. Air quality
10. Safety
11. Working alone
12. Psychosocial

Home Hazards Results History More

8:40

https://www.ccohs.ca/os...

CCOHS
Canadian Centre for Occupational Health and Safety

[Home](#) → [OSH Answers](#)

OSH Answers Fact Sheets

Ergonomics

Ergonomics is the science of matching the job to the worker and the product to the user. This section covers situations such as lifting, lighting, office/desk set up, etc. that may contribute to injury.

This section also includes information on health and safety concerns when working shiftwork and extended work days.

For more information on a particular topic, click on the document title below:

CCOHS
Canadian Centre for Occupational Health and Safety

[Home](#)

Hazards

There are many types of hazards - chemical, ergonomic, physical, and psychosocial, to name a few - which can cause harm or adverse effects in the workplace. Get resources on specific hazards and their control, including identification, risk assessment and inspections, to keep your workplace healthy and safe.



Choose from the following types of hazards:

Chemicals

Summary

- Concussions can happen in various ways.
- Concussion symptoms are unpredictable, highly variable, can develop over time and lead into mental health problems.
- Remove person from work/activity immediately until proper diagnosis has happened.
- Seek professional care for management of concussion recovery
- Be cautious and caring when dealing with any suspected concussion and respect return to work needs
- Your support matters
- Develop plans to promote awareness in the workplace
- Involve workers in screening for hazards and developing prevention solutions



Thank You

If you have any questions about this presentation,
please contact me at the email below
dstephenson@ohcow.on.ca

**Or visit the OHCOW website @
www.ohcow.on.ca**

