



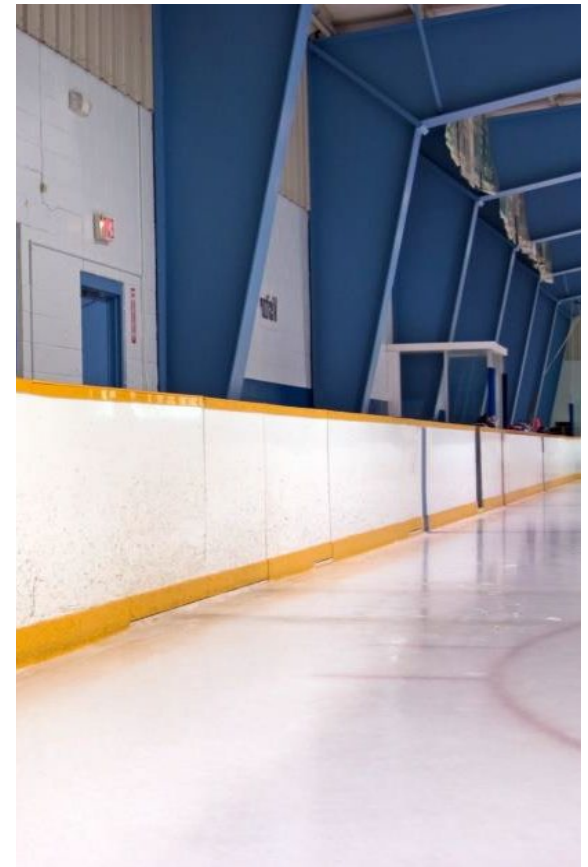
Safe Environments.
Healthy Workers.

Arena Safety

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 **PSHSA.ca**





PSHSA Vision:

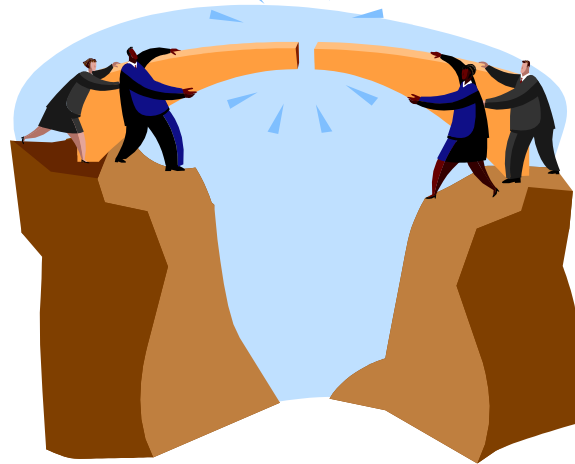
Enable a healthier and safer tomorrow for
Ontario's Public Sector Community



About PSHSA

We guide Employers in all things health & safety:

- Consulting
- Resources
- Training



Goal: reduce workplace risks and *prevent* occupational injuries & illness

Who We Are

PSHSA serves 1.7 million workers across 10,000 workplaces within broad range of Public sectors.



Emergency Services

- Fire
- Policing
- EMS
- Security
- Corrections



Healthcare

- Hospitals
- Long-term Care
- Community Care
- Diagnostic Services
- Public Health
- Mental Health
- Treatment Services



Education

- School Boards
- Universities
- Colleges
- Museums
- Libraries



Government

- Municipal Gov.
- Provincial Gov.
- Transit
- Parks & Rec.
- Public Works
- First Nations



Building Community Since 1947

Fernie B.C. Tragedy

- Oct. 2017: 3 dead ammonia leak Fernie arena
- ammonia colourless gas, very toxic if inhaled



Fernie B.C. Tragedy

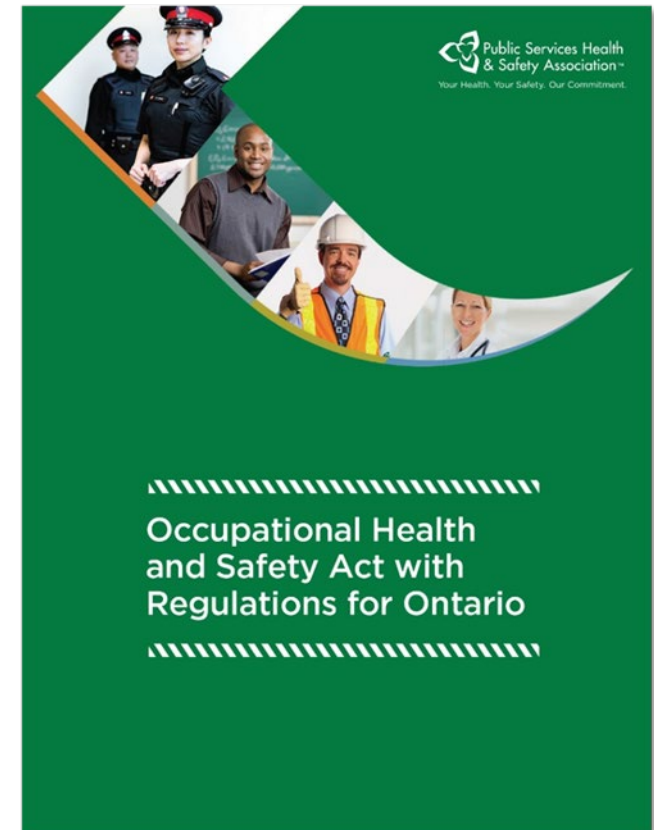
Root causes:

- Aging system
- Lack of proper maintenance & procedures
- Poor risk assessment & control
- Faulty system design & equipment
- Poor organizational management (e.g. infrastructure lifecycle management)
- Disabling of safety devices

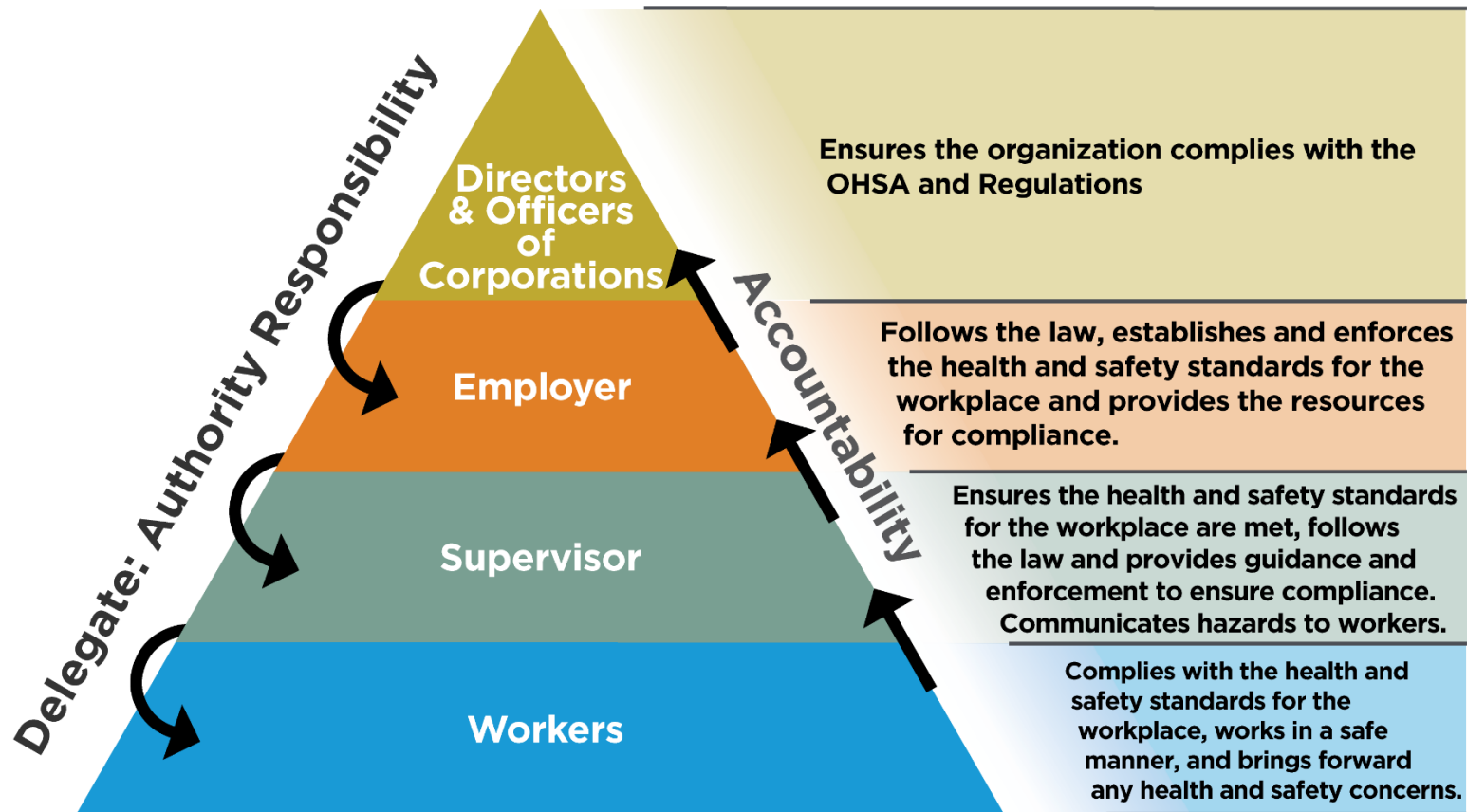
Occupational Health & Safety Act (OHSA)



What is purpose of OHSA?



Internal Responsibility System (IRS)



What are main Health & Safety hazards in arenas?



Main Health & Safety Hazards in Arena?

- Refrigeration e.g. ammonia
- Slips, trips and falls
- Working at heights
- Musculoskeletal Disorders e.g. low back injury
- Working alone
- Violence & Harassment
- Chemicals e.g. carbon monoxide
- Equipment
- Young workers

Refrigeration Plants



Technical Standards and Safety Authority (TSSA)

- Ontario governing body for Boilers and Pressure Vessels and Operating Engineers e.g. arena refrigeration plants
- Operating Engineers (OE) Safety Program registers, inspects and regulates the safety of plants in Ontario.
- Responsible for examination and certification of professionals who manage, operate and maintain plants and the equipment

Big Gap

- In reality, most plants are failing to meet minimum regulatory compliance



Slips, Trips & Falls



Slips, Trips & Falls

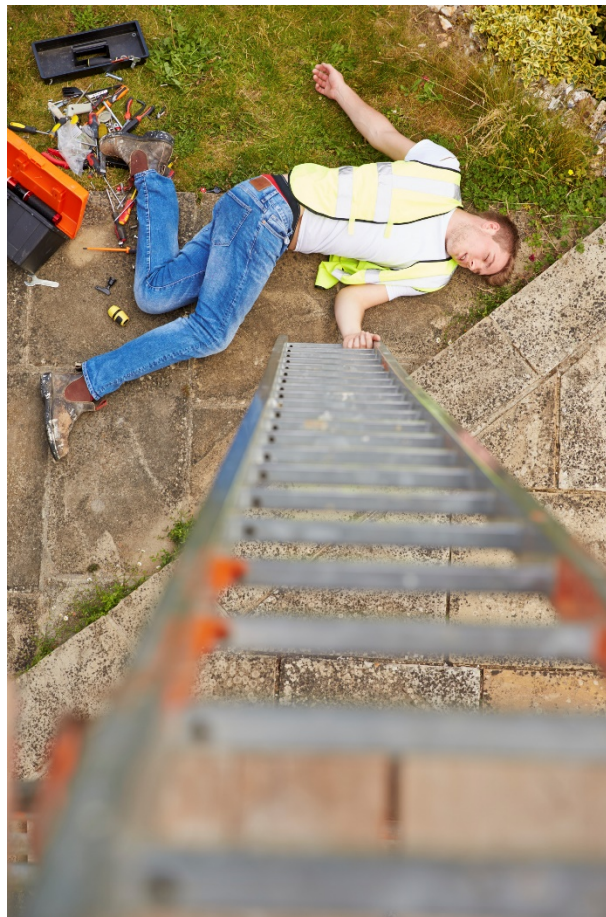
- Workers on ice
- Liquid on floors (snow, rain, spills)
- Equipment in walkways

Controls:

- Helmets ice workers
- Spill clean up
- Absorbent mats
- Footwear



Working at Heights



Working at Heights

- Ladders
- Person Lifts
- Roof maintenance
- Installing banners

Controls:

- Working at heights program
- Ladder safety program



Musculoskeletal Disorders (MSD)

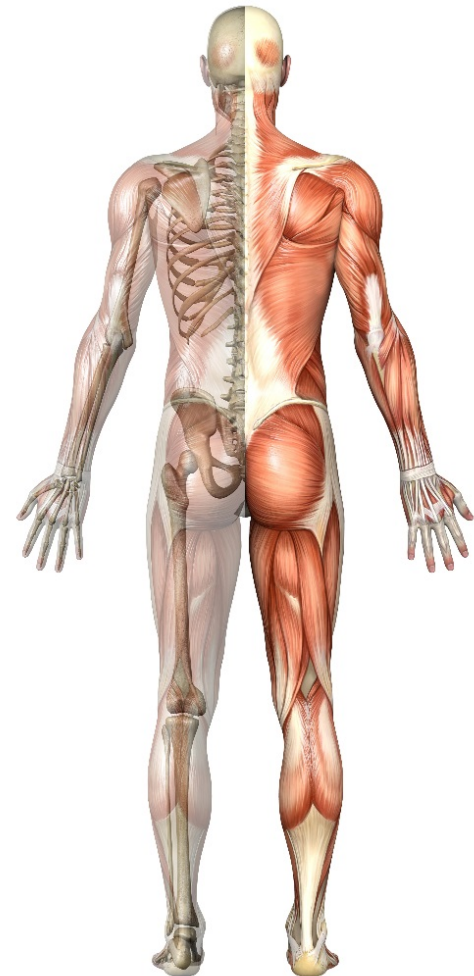


Musculoskeletal Disorders (MSD)

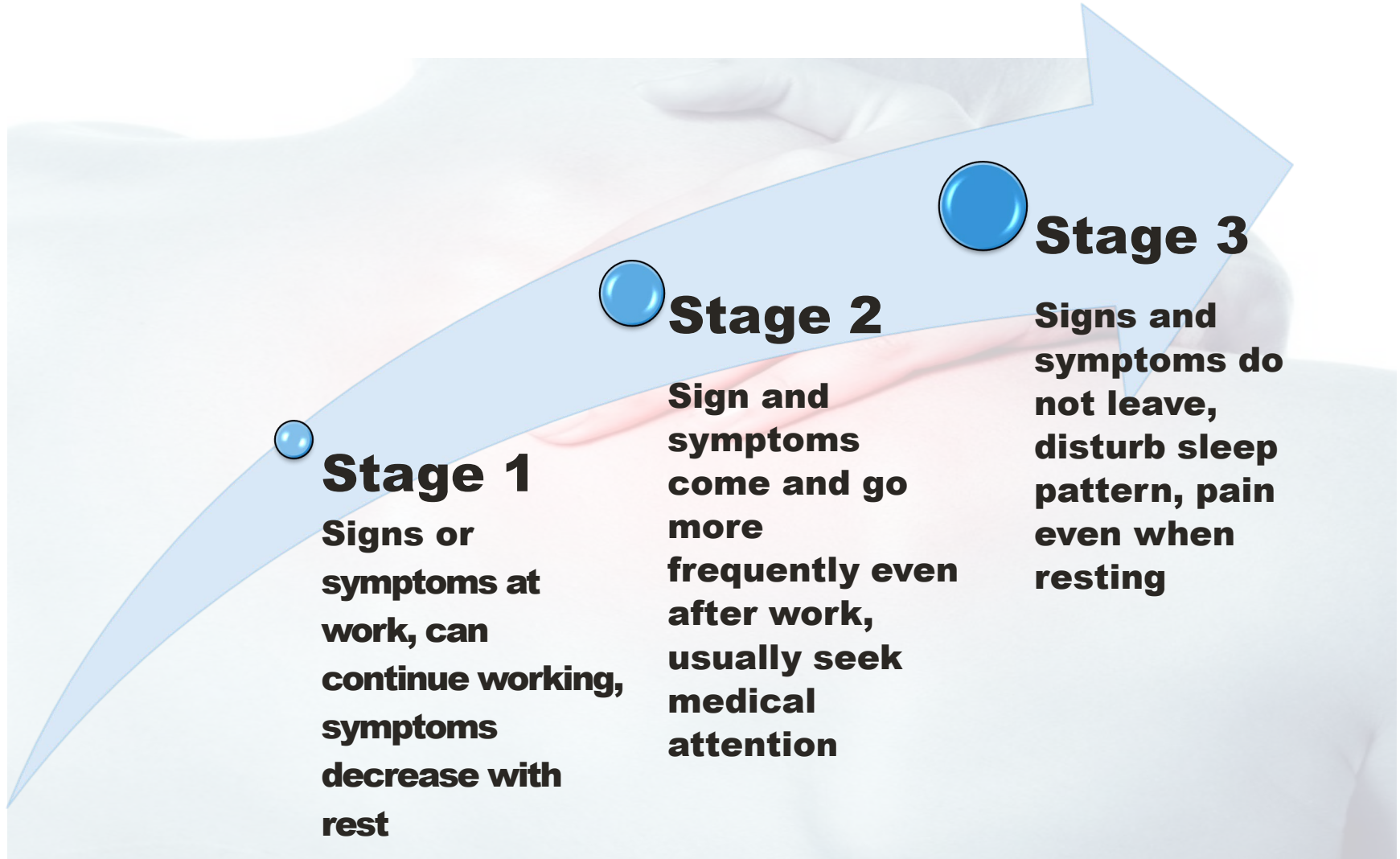
- 40% of all loss-time injuries

Injury to:

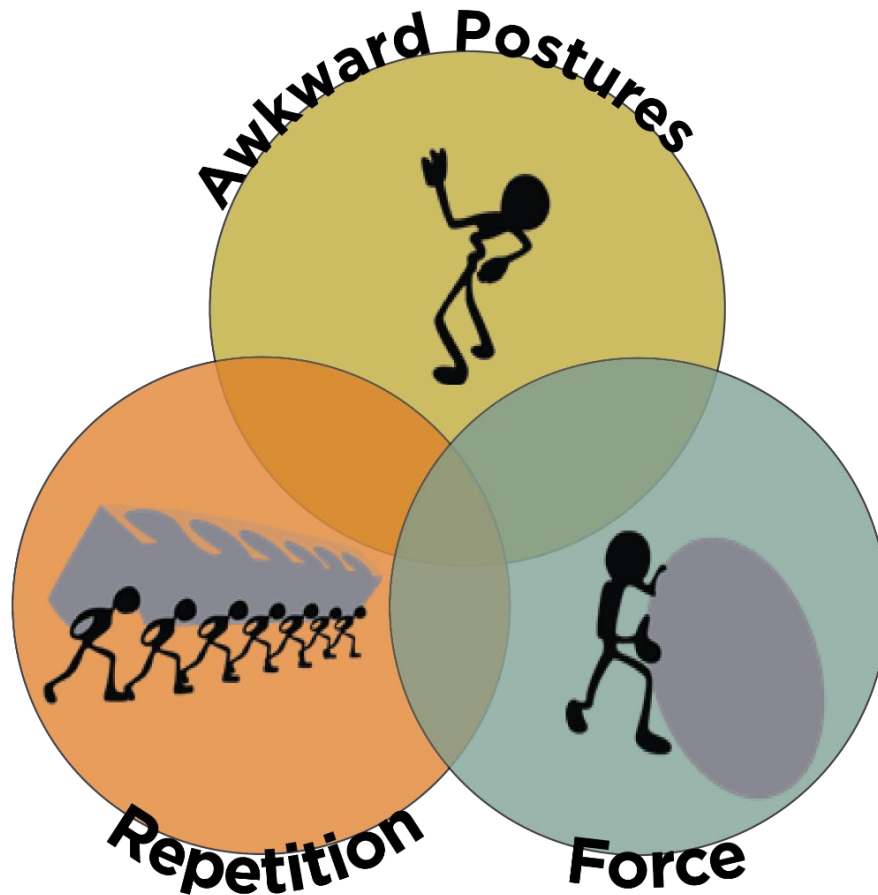
- Muscles
- Tendons
- Nerves
- Blood vessels
- Cartilage
- Ligaments
- Spinal discs



MSD Stages

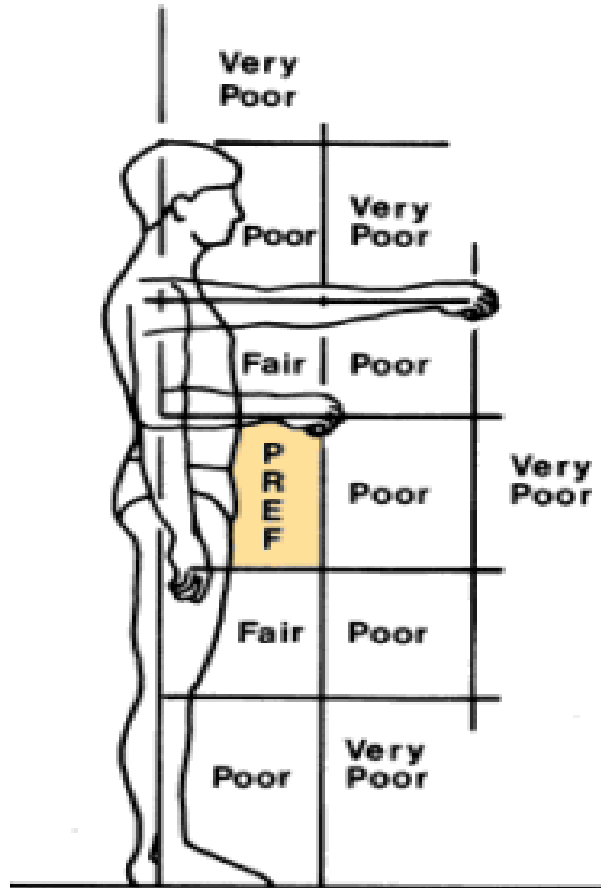


MSD Primary Risk Factors



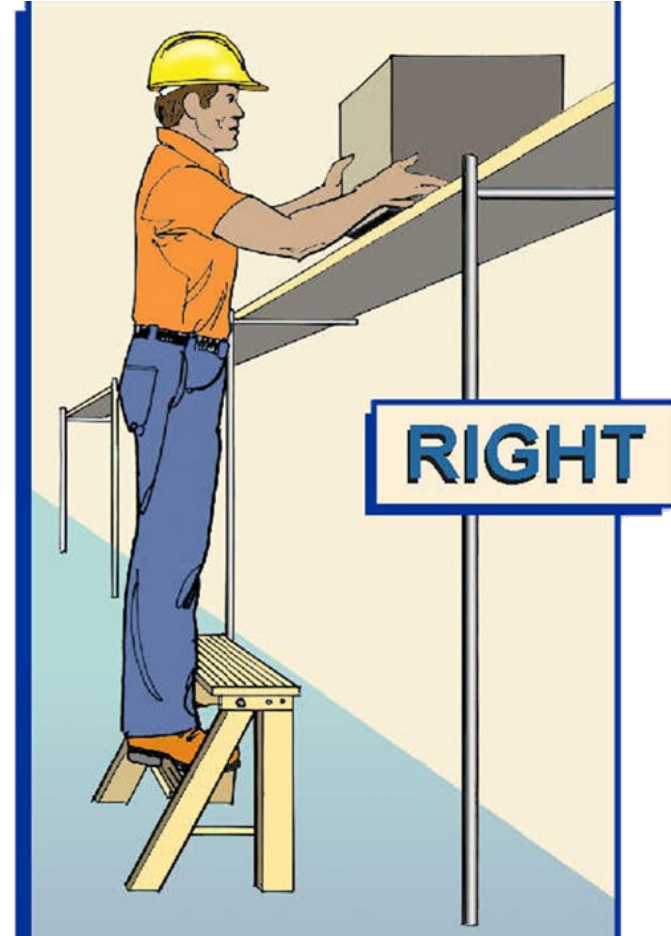
**Factors can occur in
combination**

Working Heights

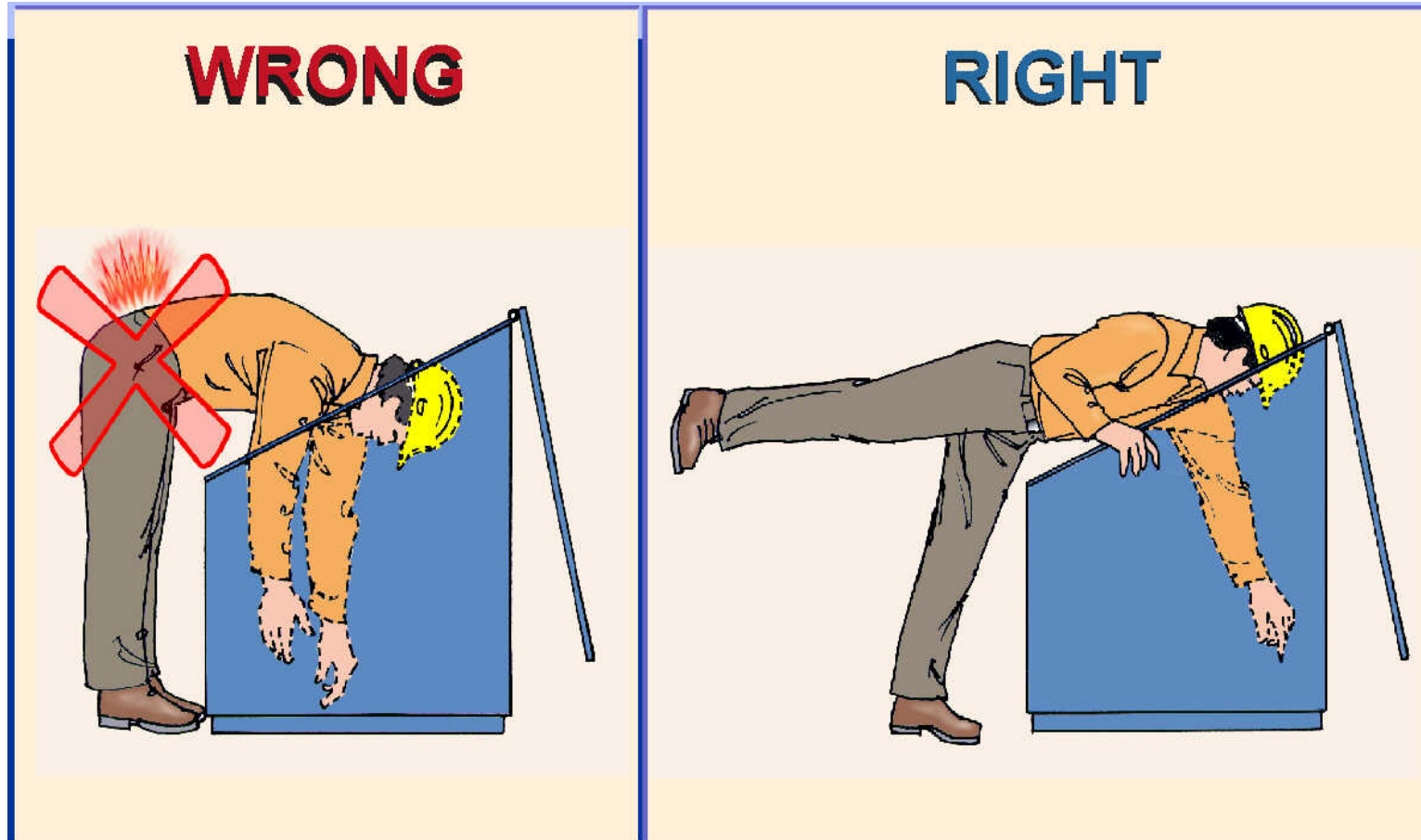




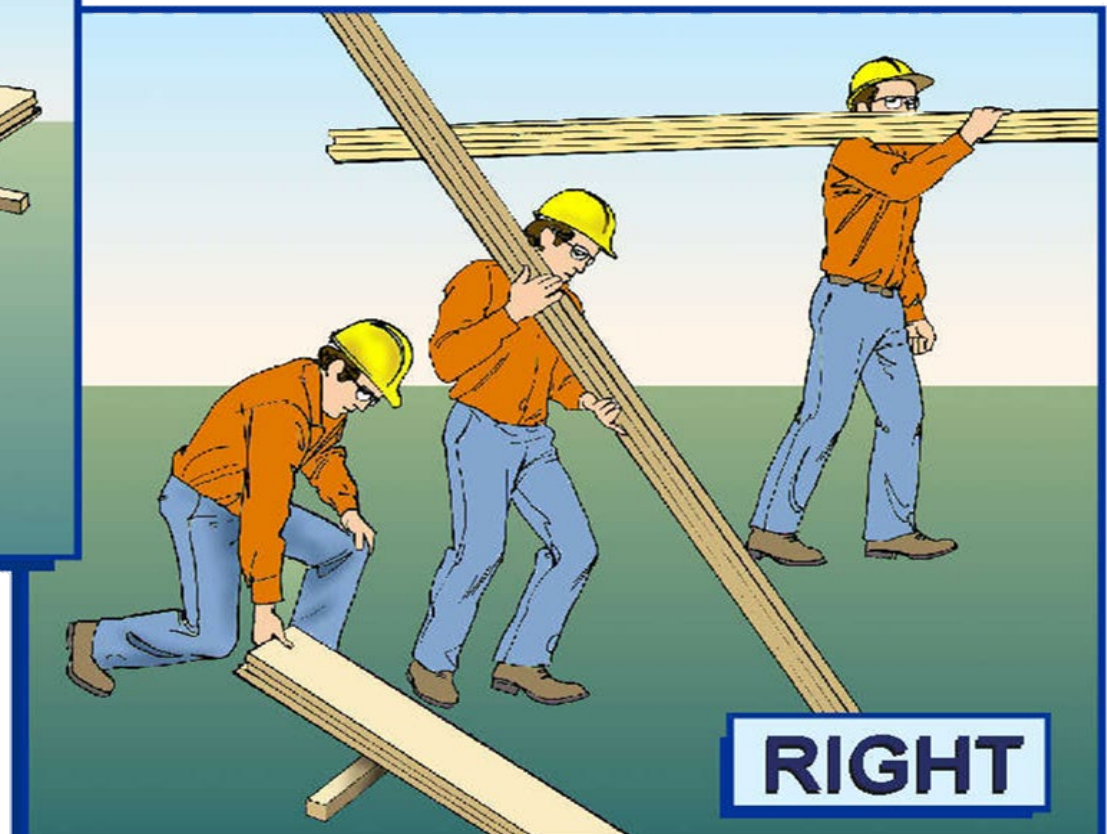
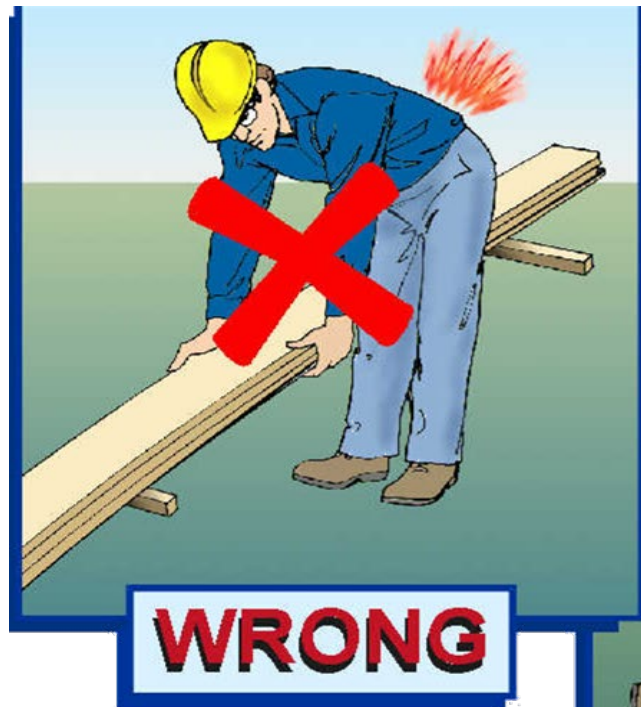
High reaching



Golfer's lift



Lifting long loads



Manual Lifting



Working Alone



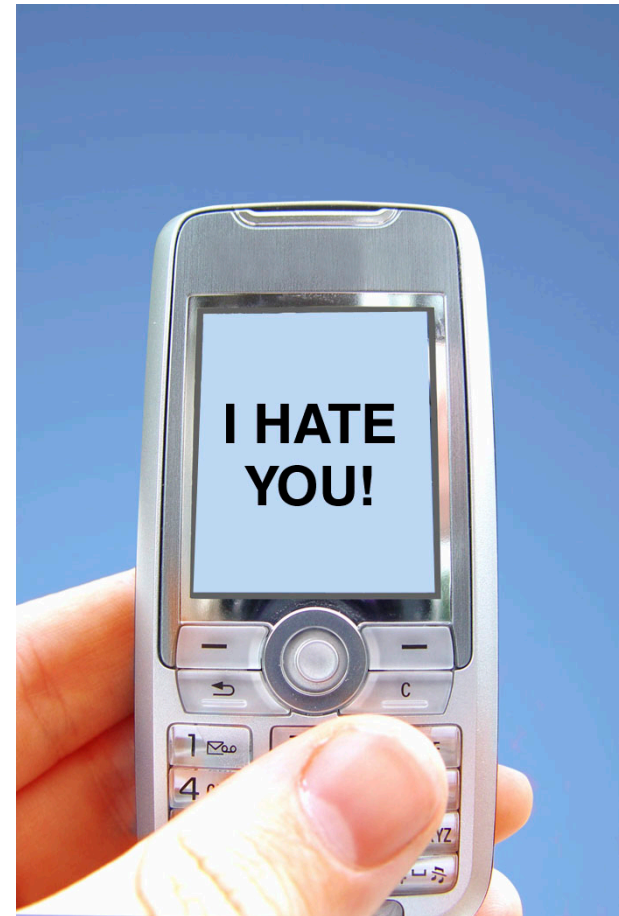
Working Alone

- Low staffing levels
- Working off hours (e.g. night)

Controls:

- Working alone program
- Communication
- Staff checks (e.g. when leave building)
- Security system

Violence & Harassment



Violence & Harassment

- Dealing with public
- Bullying & harassment by co-workers
- Crime or Terrorist (e.g. Las Vegas shooting)

Controls:

- Violence & harassment program
- Violence risk assessment
- Security system
- Lighting parking lot
- Park close to building at night

Chemicals



Chemicals

- WHMIS 2015- are you compliant?
Deadline: Dec. 1, 2018
- Volatile organic compounds (gas, oil, Varsol etc.)
- Cleaning products e.g. never mix bleach and ammonia

Chemicals

Dangerous Gases

- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)
- March 2019: carbon monoxide exposure in St. John's Arena- 80 people hospitalized

Chemicals

Dangerous Gases

➤ Sources:

- ice resurfacer if gas combustion engine
- Heating system

➤ Options: Electric resurfacer (high initial cost but save \$ gas)

➤ Heating system maintenance

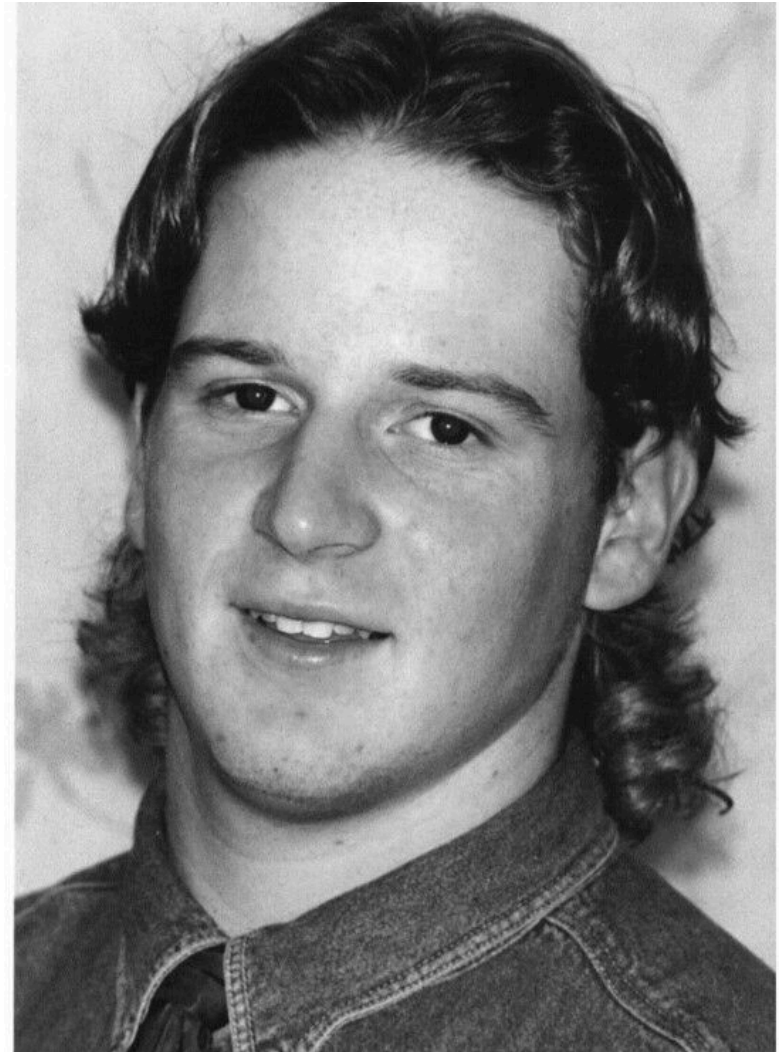


Equipment



Tim Hickman

- Silverwoods Arena City of London, 1996
- Overflow hot water onto gas tank
- Gas vapour escaped
- Explosion ignited by pilot light of natural gas hot water tank
- Severe burns, died 10 days later



Equipment

- Hand tools
- Powered equipment
- Material handling equipment



Controls:

- Training in safe use of equip.
- Supervisor enforce compliance

Personal Protective Equipment (PPE)



- Let's start with facility management – when you leave your office do you wear all your PPE? Do you lead by example?

Young Workers



- Often given minimal training
- The MOL is focused on ensuring young workers stay safe at work – are you?

Emergency Plan



- Legislation requires Emergency plans
- Up to date?

Local EMS



- EMS are often unprepared to deal with a significant refrigerant leak
- E.g. bunker gear won't prevent ammonia gas burns

Current Industry Pressure Points

- Aging infrastructure
- Financial pressures to maintain existing old equipment
- Retirement of skilled facility staff
- Young inexperienced workers
- Increasing compliance obligations



Conclusion

Safe arena operations
is within reach



***All workplace parties have a
stake in creating and maintaining
safe workplaces!***

Q&A





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Thank you!



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**Public Services Health &
Safety Association on
LinkedIn**



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