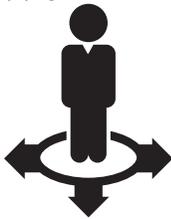


The Basics

Understanding key terms will help you apply processes and tools in this section.

A hazard is a thing or condition that can expose a person to risk of injury or occupational disease. It's any potential source of harm, damage or adverse health effects.



MVIs can also have sweeping consequences beyond physical injuries and personal harm. For road safety purposes, we need to think about hazards in terms of exposing people and organizations to losses associated with:

- property damage to vehicles and structures,
- business interruption and reputation damage,
- environmental damage (such as a fuel spill) and
- penalties for failing to meet legal requirements.



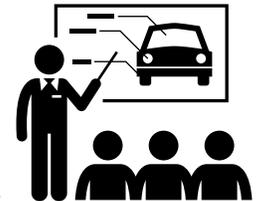
Our approach to driving-related hazards

Using a traditional definition, the primary hazards or sources of harm that we seek to eliminate are motor vehicle incidents and the energies unleashed during a crash. There are also plenty of driving-related hazards that don't involve a crash. Improper seating positions that cause musculo-skeletal injuries, the mental toll of intensely challenging road conditions, physical violence by a passenger, or being stranded by a vehicle break-down in extreme weather are a few.



Certainly, these hazards require attention.

As well, the traditional and somewhat restrictive understanding of hazard does not work very well for motor vehicle incidents. It is difficult to conduct a meaningful risk assessment of a hazard as complex as a crash. To get risk assessment results that you can readily use to build your action plan, we need to dig a little deeper and look closely at the things, conditions, circumstances, actions and inactions - the factors - that can cause or contribute to a crash. Therefore, our approach to driving-related hazards includes conditions and circumstances that a traditional approach would classify as contributing factors or risk factors.



Types of driving-related hazards include:

Physical

- objects - a sharp rock, wildlife, worn tire or faulty brake, unsecured objects inside the cab
- substances - carbon monoxide, drugs, alcohol, fuel and hazardous fluids in or on a vehicle
- materials - gravel road surface, ice
- temperature - extreme weather temperatures, contacting a hot surface



Energy

- kinetic - an oncoming vehicle, the speed of the vehicle you are in
- gravity - car falling off jack during tire change
- electrical - shock from an incorrect jumper cable connection
- noise - prolonged exposure to a loud exhaust system
- pressure - compressed air or hydraulic fluid



- Frequency of Exposure - how often and for how long workers are exposed to the hazard.
- Probability of Occurrence - the likelihood that a crash or other negative event will occur.
- Severity of Consequences - the severity of resulting harm or injuries, the magnitude of associated losses or negative consequences.

Conditions, processes and practices

- conditions - fatigued driver, poor traction, insufficient lighting or visibility, stressful driving circumstances such as heavy traffic or aggressive drivers
- processes - insufficient driver training, lack of vehicle inspections or maintenance
- practices - overloading vehicle; high-risk driving behaviours such as speeding, following too close or texting while driving; poor ergonomics such as improperly adjusted seat



The following formula explains risk.

$$\text{Risk} = \text{Exposure} \times \text{Probability} \times \text{Severity}$$

In the risk equation, implementing measures that make any one of the variables zero also makes the risk zero. For example, if no worker is exposed to a hazard, exposure equals zero and risk is zero.

Risk is the possibility or potential for loss.

Crashes have potential to incur a variety of losses - physical and psychological injuries to workers and others, financial costs of repairing or replacing damaged property or correcting negative environmental consequences, and impacts to business processes (for example, lost time, lower productivity and damaged reputation).

Three factors determine how much risk a given hazard can generate:

