

## Hazard vs Risk

The terms 'hazard' and 'risk' mean very different things. However, due to many people not fully understanding this difference, the two terms are often used interchangeably.

It is important to note how we use these terms can affect the way health and safety practices are implemented for the jobs CUPE members perform.

In short, CUPE advocates that the question that needs to be asked is not "What is the chance someone will get hurt?" but "Have all hazards been removed or controlled so that no one will get hurt?"

### Hazard Analysis

Work related hazards can come from a wide range of sources. A hazard analysis is the process of determining and describing in detail the hazards in a workplace, job or task, then defining how each could cause harm so that the hazard(s) can be removed or adequate controls can be put in place.

It is best to perform a hazard analysis in a systematic manner. One way is to examine one task at a time, so as not to be overwhelmed by everything that a person does as part of their job. After each task in a job has been examined, the entirety of all the tasks in a job can be examined to determine if the hazards within each task could be contributory to other hazards in the cause of injury.

To do this, a detailed analysis of the materials, tools and equipment in relationship to their intended use or application must be performed. In this process, historical hazard and incident data can be useful at identifying hazards. It is important to also consider hazards that could occur over the system life cycle.

After each hazard has been identified, each should be considered in light of the hierarchy of controls;

**Elimination:** Can the hazard be removed, or substituted with a less hazardous product?

**Engineering Controls:** Can a barrier be installed that prevents the worker from coming into contact with the hazard?

**Administrative Controls:** Are there rules or procedures that people can be trained to follow to prevent their exposure?

**Personal Protective Equipment.** As a last resort, is there protective equipment that can keep the worker from being exposed?

The hierarchy should be applied with elimination first, and other options down the hierarchy should not be considered until the higher level, more protective control has been eliminated as an option.

### Risk Assessment

Risk assessment is a term used to describe the overall process or method where hazards are identified and each is examined to determine the likelihood of exposure and the level of harm that is expected if exposure takes place.

Risk assessments should form a portion of the hazard assessment. Knowing the likelihood and severity of exposure is important, as it helps to drive decisions around what should be corrected first. But it should never be used to deter a committee from seeking improvements for all hazards that are related to the jobs that CUPE members perform.

The Canadian Standards Association defines hazard and risk as follows:

**Hazard** – a potential source of harm to a worker.

**Risk** – the combination of the likelihood of the occurrence of a harm and the severity of that harm.

Unfortunately, many organizations use ‘Risk Matrices’ like the one picture below. This leads to many employers arguing that once they move a hazard to a low enough risk category, they do not have to take further control measures beyond monitoring. This leads to debates over what terms like ‘seldom’, ‘moderate’ or ‘negligible’ mean in the context of a worker injury. It also leads to employers moving to behaviours of implementing ‘acceptable’ level of risk, even for the most dangerous hazards (like carcinogenic chemicals).

Risk Probability	Risk Severity				
	Catastrophic	Critical	Moderate	Minor	Negligible
Frequent	X	X	X	X	X
Likely	X	X	X	X	X
Occasional	X	X	X	X	X
Seldom	X	X	X	X	X
Improbable	X	X	X	X	X
Risk Index	Response Criteria				
	Unacceptable and requires immediate corrective action.				
	Manageable under existing risk control & mitigation.				
	Acceptable after review of the operation.				
	Acceptable with continued data collection				

### Push Back

While it may not be possible to completely remove all hazards and their associated risk, CUPE members should not accept dangerous conditions because employers have justified their existence in a risk table. While we should continue to push for the elimination of hazards we can also protect our members from the misapplication of risk matrices by understanding the factors that go into calculating risk and making it difficult for those factors to be misstated.

**Frequency of Exposure** – How often a worker is exposed to the hazard is one of the factors used in calculating risk. This is often described in terms of daily, weekly, monthly and annually. The more frequently a task is performed; the higher the risk severity will be.

**Probability of Incident** – The likelihood of an exposure to a hazard causing incident or injury is the second factor used to calculate risk. It can often be underestimated if incidents or near-miss incidents have not been documented and reported to the employer. Provincial workers’ compensation authorities often have data on how commonly types of injury occur in a particular sector.

**Severity of Harm** - The final factor used to calculate risk is a subjective assessment of how severe the incident would be if it were to occur. If the potential injury is underexaggerated the level of risk will appear artificially low.

Where employers adopt the “Risk Matrix approach”, it is up to health and safety committees to provide the counter arguments. Every jurisdiction has a general duty clause, which requires employers to provide jobs that are healthy and safe. If hazards are not being removed or the risk controlled in such a way that a worker cannot be injured, then the job is not safe, and the committee must continue to push the employer to take measures to ensure the work is safe for all workers.