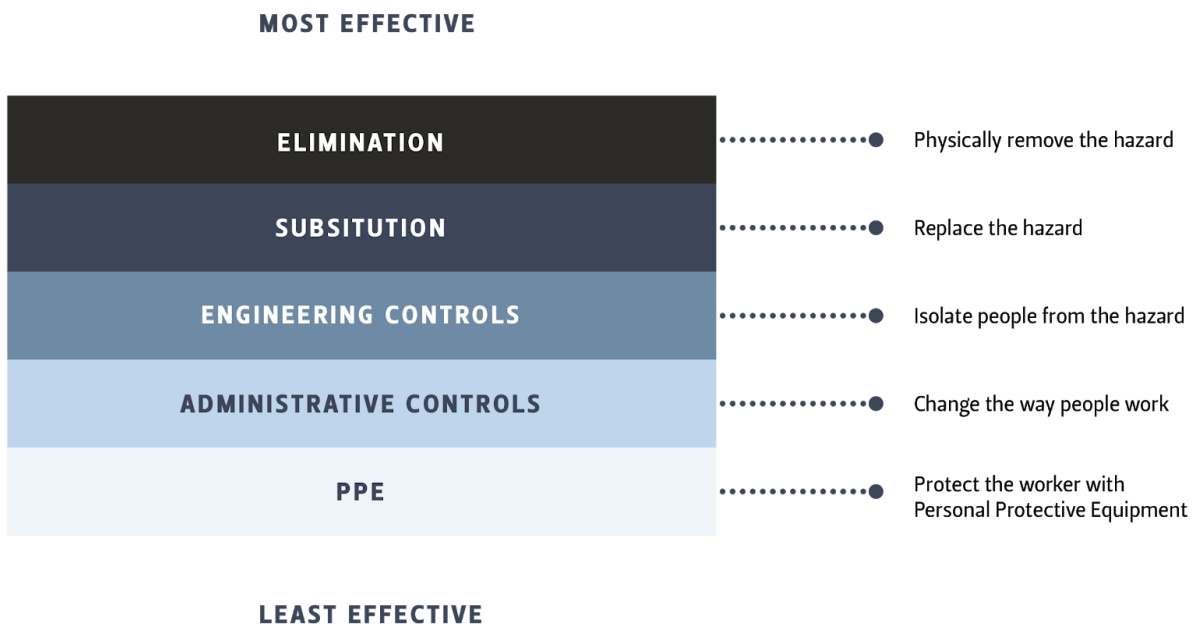


# Hierarchy of controls

*Controlling exposures to occupational hazards is the fundamental method of protecting workers. Traditionally, a hierarchy of controls has been used as a means of determining how to implement feasible and effective control solutions.*

## *Hierarchy of Controls*



The idea behind this hierarchy is that the control methods at the top of the graphic are more effective and protective than those at the bottom. Following this hierarchy normally leads to the implementation of inherently safer systems, where the risk of illness or injury has been substantially reduced.

### **Elimination and substitution**

Elimination and substitution, while most effective at reducing hazards, also tend to be the most difficult to implement in an existing process. If the process is still at the design or development stage, elimination and substitution of hazards may be inexpensive and simple to implement. For an existing process, major changes in equipment and procedures may be required to eliminate or substitute for a hazard.

### **Engineering controls**

Engineering controls are favored over administrative and personal protective equipment (PPE) for controlling existing worker exposures in the workplace because they are designed to remove the hazard at the source before it comes in contact with the worker. Well-designed engineering controls can be highly effective in protecting workers and will typically remove most of the “human factor.” The initial cost of engineering controls can be higher than the cost of administrative controls or PPE, but over the longer term, operating costs are frequently lower, and in some instances, can provide cost savings in other areas of the process.

### **Administrative controls and PPE**

Administrative controls and PPE are frequently used with existing processes where hazards are not particularly well controlled. Administrative controls and PPE programs may be relatively inexpensive to establish but, over the long term, can be very costly to sustain. These methods for protecting workers have also proven to be less effective than other measures, requiring significant effort by the affected workers. Workers can still be injured due to the “human factor”, also known as “user error” with these categories of controls.

#### **Site specific requirements:**

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#### **Employee participants:**

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#### **Date:**

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