

Hierarchy of Controls

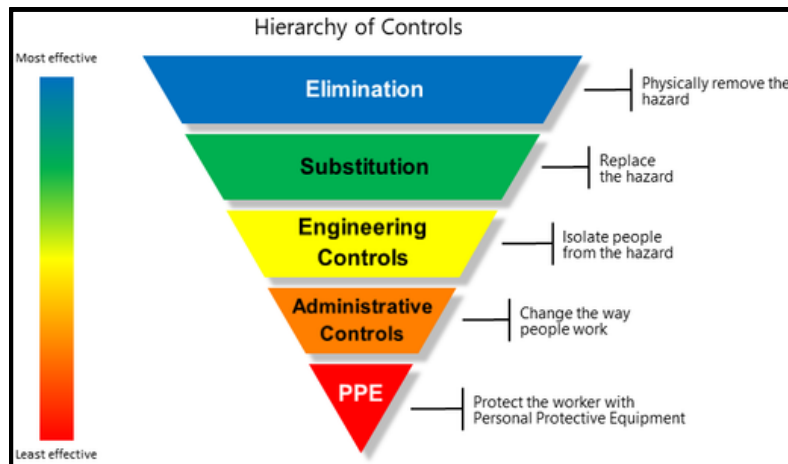
What is the Hierarchy of Controls?

The hierarchy of controls is a systematic workplace safety approach that outlines the steps taken to reduce employee risks, keep hazard exposure levels below permitted and recommended limits, and prevent diseases, injuries, environmental incidents, and property damage.

How is the Hierarchy of Controls Organized?

The hierarchy of controls is organized in descending order of their effectiveness. Elimination is the most effective safety control and PPE is the least effective safety control (see the diagram below).

- **Elimination:** Elimination means to physically remove the hazard from the workplace (e.g., ending the use of a hazardous material). Elimination is the most effective way to control a risk because the hazard is no longer present.
- **Substitution:** Substitution means to change out a material or process to reduce the hazard. (e.g., switching to a less hazardous material).
- **Engineering Controls:** Engineering controls mean that you should enclose or isolate the hazard (e.g., using local exhaust ventilation, machine guarding, guardrails, radiation shielding, interlocking systems, or other safety equipment).
- **Administrative Controls:** Administrative controls require workers to do things that reduce their exposure to a risk (e.g., completing standard operating procedures, safe work practices, safety training, warning signs, lockout/tagout, or alarms).
- **Personal Protective Equipment (PPE):** PPE (e.g., safety glasses/goggles, gloves, respirators, fall protection, ear plugs, and lab coat) is used to enhance existing engineering controls or when engineering controls are not available.



Important to Remember

- Employ engineering controls routinely such as using a chemical fume hood, biosafety cabinet, machine guarding, and guardrails to isolate the hazards.
- Read and understand administrative controls such as protocols, standard operating procedures, and warning signs. Complete safety training to understand occupational hazards and risks.
- Wear the appropriate personal protective equipment (PPE) for the hazard. Additional training and medical surveillance may be needed for certain PPE (e.g., air-purifying respirators).

References

- NIOSH: [Hierarchy of Controls](#)
- SJSU [Injury and Illness Prevention Program](#)