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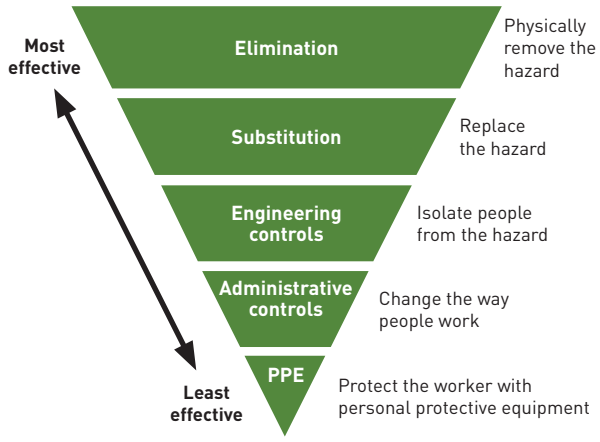
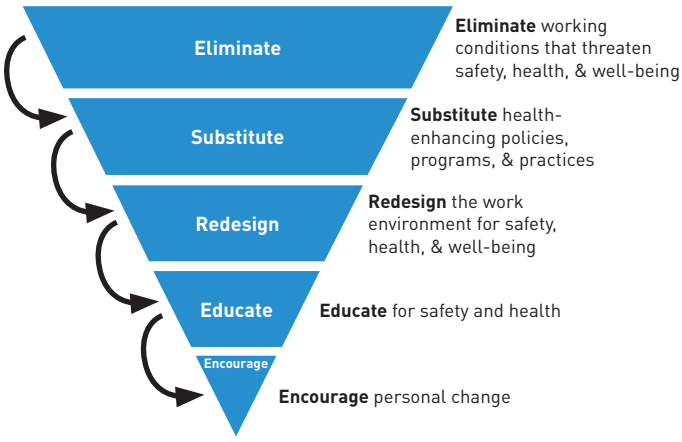
Hierarchy of controls:
a way to address hazards

This resource is part of SAIF's leadership project, which is meant to help employers and leaders of organizations establish strong and sustainable safety cultures using research-based concepts and strategies.

Traditional hierarchy of controls



The hierarchy of controls as applied to *Total Worker Health®*



The hierarchy of controls was developed by the National Institute of Occupational Safety and Health (NIOSH) to help employers address workplace hazards. The traditional model offered a way to control traditional workplace hazards that arise from the tasks that are performed. However, NIOSH has since concluded that worker health plays a big role in preventing workplace injuries, and they have developed a second hierarchy. It is applied to the *Total Worker Health®* approach and integrates worker safety with health and well-being.

Which should you use?

The simple answer is both. The traditional hierarchy when you are focusing only on job tasks, and the *Total Worker Health* (TWH) hierarchy when you are looking more broadly at worker well-being. The TWH approach recognizes there are workplace factors beyond traditional hazards that influence worker well-being, such as increasing work demands, shift work and fatigue, psychosocial hazards, and changing work environments.

Traditional hierarchy

When looking at the hazards of a specific job, it's useful to apply the traditional model. The most effective steps are at the top of the hierarchy, and they decrease in effectiveness each step down. The five steps are:

1. **Elimination** – The most effective step in the hierarchy, it is removing the hazard altogether. One example is a task that is performed by working from height, which presents a fall hazard. Moving the work to ground level eliminates the fall from height hazard.

2. **Substitution** – This refers to swapping out a hazardous practice for something that is less hazardous. One example is using a chemical that can cause serious harm from over exposure, or even small exposures over time, with a different chemical that doesn't cause that harm.
3. **Engineering controls** – This involves isolating employees from the hazard. An example is having a machine guard in place over rotating equipment; the guard prevents the worker from having contact with the equipment.
4. **Administrative controls** – This step focuses on establishing policies and procedures, providing training, and posting signs. It is less effective than prior steps because it requires workers to follow policies and procedures based on their training without fail. For example, following a lockout/tagout procedure every time you need to reach into equipment and not simply reaching in to unblock equipment because doing that takes less time.
5. **Personal protective equipment (PPE)** – The least effective method of control, it requires a person to wear PPE to protect them from the hazard. To work, the PPE must be properly worn and maintained. An example is wearing safety glasses where there is flying debris.

TWH hierarchy

The hierarchy of controls applied to TWH looks more broadly at the health and well-being of workers and encourages employers to examine their workplace to identify ways they can support workers to make healthier choices. Like the traditional hierarchy, the most effective controls are at the top, and the least effective are at the bottom. The five steps are:

1. **Eliminate** – Like elimination in the traditional hierarchy, this step is designed to eliminate any working conditions that provide a threat to workers. Because it can threaten safety, health, or well-being, eliminating a process that requires workers to perform tasks in an awkward position is one example.
2. **Substitute** – This involves substituting policies and practices that do not address worker well-being with policies and practices that do take worker well-being into account, such as minimizing workplace stress.
3. **Redesign** – This step addresses the physical workspace and redesigning it so it promotes safety, health, and well-being. One example might be adding walking paths and providing time for workers to use them during the workday. Another might be making it easier to access employer-sponsored health plans or programs.
4. **Educate** – Not unlike training in administrative controls, this step provides information to workers that's designed to promote health and well-being. Examples include improving sleep, reducing chronic stress, or strategies for eating better.
5. **Encourage** – The last step, and the least effective, involves encouraging workers to make healthier choices when it comes to their personal health and well-being. This can be active, through incentives for making healthier choices, or passive, like providing healthier food choices at employee gatherings.

Both hierarchies are useful for employers to look at controlling workplace hazards. Choosing which one to use depends on the purpose for applying the hierarchy. Each can be used to set organizational goals and can aid in planning for a safer and healthier workplace.

Activity ideas

- Pick a task at your workplace and identify the hazards. Now, come up with controls based on the traditional hierarchy of controls. Try to find one at each step.
- Using the hierarchy of controls for TWH as a guide, look at the overall workplace. What can you change or start doing that will promote worker well-being?
- Look at your current practices for identifying and eliminating hazards. Can you improve it by using the hierarchy of controls?