

Preventing serious injuries and fatalities (SIFs)

"We must continue to face the real risks of death in our workplaces head on. We must continue to honestly confront them as they occur, and we must continue to truly strive to identify their causes, and to eliminate those causes and to mitigate the underlying hazards."

— Michael Wood, Oregon OSHA Administrator

"We can't solve problems by using the same kind of thinking we used when we created them."

—Albert Einstein

True story

A 23-year old machine operator went to assist with a piece of equipment that had become jammed. With the machine running, the employee climbed under a guard to release the jam. They were caught in the moving parts of the machine and broke their neck.

What is a serious injury?

A serious injury or illness is any life-threatening injury or illness that, if not immediately addressed, is likely to lead to death. It usually requires emergency response personnel to provide life-sustaining support. Serious injuries or illnesses can also be life-altering, leaving the worker impaired or without use of an internal organ, body function, or body part. A few examples are significant head injuries, paralysis, amputations, heart attack, and broken or fractured bones.

Why SIFs occur

Failing to recognize a workplace hazard or risk is one of the reasons SIFs occur. Also, complacency or forgetting about the danger can set in over time with regular exposure to a hazard. Another reason is that some employers rely on workers as the last or one of the only defenses against serious hazards. In critical tasks, they use low-level controls, such as personal protective equipment, policies, or training. Workers are expected to never make mistakes.

The biggest reason SIFs occur is the failure to identify and address human and organizational performance (HOP) factors. Even the most experienced people make mistakes,

and these mistakes are often a result of the circumstances that were in place before the SIF occurred.

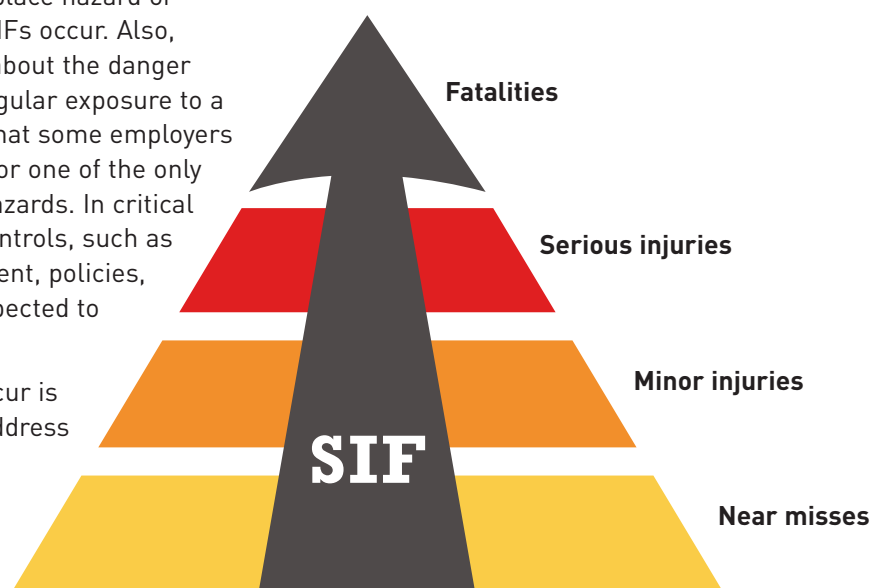
SIF background

For years, safety has focused on a theory that all injuries have the potential to be serious. If we work to reduce all injuries, we will also reduce severe ones. In 2007, a RAND study showed there was no connection between injury rates and the number of workplace fatalities. Indeed, workplace injuries have been declining for years, but we have yet to see the same reduction of serious injuries and fatalities.

That's because SIF causes are often different from those of less-serious injuries; reducing injury frequency doesn't necessarily reduce how severe they are.

New model needed | The SIF triangle

21% of injuries have SIF potential.



Graphic adapted from National Safety Council's Serious Injury and Fatality Prevention: Perspectives and Practices, 2018.

Todd Conklin, author of *Workplace Fatalities, Failure to Predict*, says every employer should ask their employees these three questions:

1. Where can someone die or get seriously injured?
2. What are the controls to prevent it?
3. Are the controls enough?

Using this model allows us to examine other causes, instead of just looking at unsafe behaviors.

When do SIFs occur | The fatal 10

A situation on the fatal 10 list is a high-risk situation that will eventually result in a serious injury or fatality if it continues without being identified and controlled. Some work activities have more risk than others, especially when paired with red-flag situations.

Another way to look at it is the context – what are the circumstances right before a SIF? It could have something to do with equipment, production deadlines, or worker fatigue.

SIF prevention best practices

Identifying and controlling red-flags, not as a one-time activity but as an ongoing process, is the best path to prevention. Remember these key points:

- Engage employees in prevention; their daily experience can provide the best insight on identifying and controlling SIF hazards.
- Don't just manage routine safety and OSHA recordables.
- Involve employees in risk assessments.
- Identify red-flags and serious hazards that are part of tasks.
- Add controls to critical steps.
- Flaws in the system impact individuals and vice-versa.
- Educate employees on SIF hazards.
- Provide training on identifying and eliminating SIF potential.

The simpler safety controls



Fatal 10

- Vehicle/equipment operation
- Working at heights
- Workplace violence
- Machine hazards/lockout failures
- Hazardous materials/environmental exposure
- Electrical/arc flash hazards
- Fire/explosion/hot work
- Confined spaces/trenching/engulfment
- Suspended loads
- Struck by objects and equipment

Red-flag situations

- Nonroutine work
- Stressors - physical, environmental
- Fatigue
- Production pressures
- Inadequate supervision and follow-through
- Working alone
- Inadequate operating procedures, training, and follow-up
- Poor equipment or task design
- New employees
- Lack of engineering controls

Summary

Every employer has the potential for SIFs, even if your business is considered low-risk. Using this information to identify SIF potential so you can work to prevent serious injuries and fatalities is a good first step to addressing severe workplace injuries.