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SAFETY WORKPLAN Reducing Slips, Trips, and Falls

Millions of people are treated at emergency rooms every year related to a slip, trip, or fall. Here's a look at 8 key roles supervisors play in implementing a company's slip, trip, and fall program.

What's at Stake

Falls remain the leading cause of workplace injuries. Even a fall from the same level—instead of a fall from a height—can cause a fatal or crippling injury. Two of the major causes of falls are tripping over an obstacle and slipping on a wet or unsafe surface.

8 Steps to Take

Your company will rely on you to do 8 things to implement its slip, trip, and fall prevention program:

Step 1: Use Housekeeping to Minimize Slip, Trip and Fall Hazards

Housekeeping requirements include general measures like keeping:

- Passageways, storerooms and service rooms clean, orderly and sanitary;
- Floors as clean and as dry as possible;
- Floors, working place and passageways free of slip, trip and fall hazards like protruding nails, holes and loose boards.

Step 2: Keep Fall Hazards Out of Aisles and Passageways

Such requirements include keeping aisles and passageways clean, in good repair and unobstructed. You must also maintain sufficient safe clearances for aisles, at loading docks, through doorways wherever mechanical handling equipment is used and ensure aisles and passageways are clearly and permanently marked.

Step 3: Use Covers and Guardrails to Prevent Falls into Things Below

You must provide covers and guardrails to protect your workers and other personnel from hazards of open pits, tanks, vats, ditches, etc.

Read More on Page 2 ▶

Step 4: Ensure Floors Can Support their Loads

To ensure that floors don't collapse, you must securely attach in a conspicuous place special plates that list the load capacities of floors used for industrial, storage and other purposes.

Step 5: Guard Floor and Wall Holes and Openings

Check federal, state, and provincial laws for specifics, but floor and wall holes and openings must be guarded, covered, or otherwise protected so employees can't and don't fall into them. Here are two common examples of when guarding is required:

1. "Floor holes," i.e., openings less than 12 inches but more than 1 inch in its least dimension and "openings," i.e., of 12 inches or more in its least dimension that a person may fall into must be guarded appropriately.
2. "Wall holes," openings less than 30 inches but more than 1 inch high of unrestricted width, in any wall or partition such as a ventilation hole or drainage scupper, and "wall openings," i.e., of at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

Step 6: Protect Open-Sided Floors, Platforms and Runways

The same is true for open-sided floors, platforms, and runways. You must provide adequate fall protection to any worker at risk of falling to a lower level by ensuring:

- Every open-sided floor or platform 4 feet or more above the adjacent floor or ground level is guarded by a standard railing or equivalent protection;
- The railing has a toeboard whenever there's moving machinery or equipment below that tools or other objects could fall into;
- Every runway is guarded by a standard railing, or equivalent protection on all open sides 4 feet or more above floor or ground level; and
- There are toeboards on each exposed side if tools, machine parts or materials are or are likely to be used on the runway.

TOOLS

- Use the Checklist on page 3 to carry out your own inspections.
- Give your workers the Slip, Trip, and Fall handout on page 4.
- Use the Fatality Report on page 8 to capture workers' and drive home the message that slips and trips can kill them.

You'll want to check federal, state, and provincial laws for specifics on height requirements.

Step 7: Keep Stairways Safe

Generally, building codes require every flight of stairs with 4 or more risers to be equipped with standard stair railings or handrails of specific dimensions depending on the width of the stairway.

Interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms or pits must meet specific design and use specifications and be equipped with proper safety equipment like handrails.

Step 8: Provide General Safety Training

General Training: You need to provide general slip, trip, and fall awareness training to employees.

At a minimum, workers need to walk away with an understanding of:

- Common slip, trip, and fall hazards at your workplace.
- How slip, trip, and fall injuries can happen.
- Actions to take to prevent slip, trip, and fall injuries.
- How to report slip, trip, and fall hazards.
- The kind of shoes to wear—and not wear—to avoid slips, trips, and falls.
- What PPE is required; and
- Other steps they must take to protect themselves. ❖

ABOUT US

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POLICIES AND PRACTICES

Slips, Trips, and Falls Inspection Checklist

Tailor this checklist to your workplace environment and use it when inspecting your workplace to: 1) Identify hazards that could cause workers to slip, trip or fall; and 2) Document actions needed to address the hazards identified.

Location: _____

Inspection Date: _____

Person(s) Performing Inspection: _____ Specific Inspection Location: _____

QUESTIONS	YES	NO	N/A	ACTION REQUIRED	COMMENTS
General					
Is a housekeeping program in place and enforced?					
Are all work areas clean and organized?					
Are there spill clean-up procedures in place?					
Are spill kits stocked and location(s) identified?					
Walkways and Aisles					
Are aisles and passageways kept clear?					
Are aisles and walkways appropriately marked?					
Are doorways blocked by equipment and other moveable objects?					
Floors					
Are there any hard, smooth floors in wet, dusty or oily areas?					
Are wet surfaces covered with non-slip materials?					
Can water be tracked through on to smooth floors on rainy days?					
Is poor drainage causing pooling of fluids?					
Are any anti-slip paint, coating profiles or tapes worn smooth or damaged?					
Are floor holes repaired, covered, or otherwise made safe?					
Are there any floor surface transitions that are sudden or not easily noticed?					
Is there a build-up of polish on any floors?					
Is there inadequate signage about hazards, for example, wet floors, steep steps?					
Stairs and Stairways					
Are there any isolated low steps? For example, a single step that people may not be expecting — commonly in doorways					
Is the lighting sufficient for ramps or steps to be seen clearly and without glare?					
Do any steps have a rise or tread that is too small or too large?					
Are handrails inadequate on stairs?					
Is there sufficient lighting? Passageways, outdoor walkways, flooring transitions, ramps or stairs					
Are any steps slippery, hard to see or damaged?					
Are handrails inadequate on stairs?					
Are ramps steep or slippery?					
Outdoor Areas					
Is there a build-up of soil, moss or other vegetation on pathways?					
Are there potholes in footpaths or walkways, raised, missing or broken pavers?					
Are there protruding or uncovered grates or drains in pedestrian access areas?					

Seven Ways to Avoid Slips, Trips, and Falls

WHAT'S AT STAKE?

Slips happen when there's not enough friction or traction between your feet (shoes) and the surface you're walking or working on.

Trips happen when your foot or lower leg hits an object and your upper body keeps on going, causing you to lose balance.

Falls happen when you slip, or trip and you're thrown too far off balance.

WHAT'S THE DANGER?

Falls are among the leading causes of death in the workplace and a fall at work can put you out of commission. Weeks in pain, months in a cast or years in a wheelchair can be the result of a simple slip, trip or fall. Even a fall from the same level - instead of a fall from a height - can cause a fatal or crippling injury.

The danger is amped up because slip, trip, and fall hazards are found in just about every work environment you can think of.

HOW TO PROTECT YOURSELF

Here are 7 ways to stop slip, trip, and fall accidents:

1. Slow down

- Many falls occur when a person walks too fast through the work area.
- You're not in a race and there's no prize for getting to the breakroom first. Even if there was, it would be hard to eat those donuts your co-worker brought if you've got a broken jaw caused by a fall.

2. Watch out!

- Watch for clutter and spills and for unexpected changes in the floor level, such as a step up, floor drains, or potholes and grates in the parking garage.

- Watch for hazards such as loose floor tile, loose carpeting and broken stair surfaces. Report these defects immediately so they can be repaired.
- Hallways, stairways, warehouse aisles and other traffic areas should be bright enough to see where you are going. If not, report issues to your supervisor.

3. Clothing not optional

- Wear well-fitting shoes with a low heel. Keep laces tied to prevent tripping.
- It's possible to trip over your own clothing. Baggy or flared pants are sometimes to blame.

4. Hands free

- Keep your hands free when you walk, to help you catch your balance if you start to fall.
- Don't walk with your hands in your pockets.
- Do not put your phone in your pocket or leave it at your workstation so you won't be tempted to text or use it while walking.

5. Move it

- Don't leave equipment, tools or materials on the floor.
- Don't block exits and aisles with materials or equipment.
- Don't leave items on stairs, even for just a moment.
- Don't run cords, cables or hoses across walkways.
- If you do have to carry something, make sure you can see over it or around it.

6. Keep it shut

- Always close drawers, even if they are in an area where you wouldn't expect someone to trip over them.
- Cap and close bottles, cans, drums, and other containers

to prevent their contents from spilling and creating a slip, trip, and fall hazard.

7. Stay alert

- Your chances for a tripping accident—or any accident—are greater if you are tired or distracted.

FINAL WORD

Slips, Trips, and Falls are a leading causes of workplace injury and death. They also cause a great deal of pain and suffering. Take slip, trip and fall hazards seriously, and don't let them trip you up. ❖

TEST YOUR KNOWLEDGE

1. Unless you drop from a height of 10 feet or more, there's little chance of being seriously hurt in a fall.
 True False
2. Stumbling over an obstacle is known as:
a. slipping
b. tripping
3. When your feet go out from under you because of lack of friction between your shoes and the walking surface, you have:
a. skipped
b. slipped
4. You should make sure you can see over or around an object you are carrying to prevent falls.
 True False

What Would You Do?

The parking area at work has several pot holes and other slip and trip hazards. You're not sure if your employer is responsible for the maintenance and safety of the parking area, but you have tripped a few times and even fallen. What would you do?

Analyzing Hazards: A Task for Many Hands—And Eyes

WHAT'S AT STAKE?

A hazard is the potential for harm that, if left uncontrolled, can result in an injury or illness. A job hazard analysis, JHA for short, is all about breaking down jobs and tasks into smaller steps to find the hazards and then ways to reduce or remove those hazards.

A JHA might also be called a job safety analysis (JSA).

WHAT'S THE DANGER?

Many jobs and tasks have hazards associated with them. It can be a job as simple as changing a light bulb or as complex as shutting down a nuclear reactor.

If these hazards aren't identified and corrected through safe work practices, engineering controls, or the use of PPE and other methods, they can lead to injury, equipment and property damage, catastrophic events, and death. This is true for the light bulb and the nuclear reactor.

HOW TO PROTECT YOURSELF

Typically, a JHA is conducted by a group made up of at least one supervisor and two or three employees who are well versed with the steps that a job entails.

One employee performs the task while the other JSA team members observe and note what they are seeing, using words describing actions such as "reaches into metal box next to machine" or "grasps casting and lifts it out of box."

Once the steps are listed, all potential hazards associated with those steps must be identified and fixes recommended. Recommendations for eliminating or minimizing those hazards must be tested by workers to ensure they are effective.

Your Role

You may think a JHA is best left to your supervisor's or safety manager, but you have an important role to play. Your experience in doing a job gives you insider knowledge of what can go wrong from a safety and health standpoint. You, and your fellow workers are a vital part of the JHA process and your input into safety issues in your job is essential to an accurate and successful JHA.

While some hazards would be obvious to everyone, you probably encounter situations that haven't been considered by others. If you keep that knowledge to yourself, the person who takes over your job while you're on vacation might discover a hazard the hard way.

If you are aware of situations where you or other workers have had close calls or became injured because of hazards of which they were not aware, you should ask your supervisor about the possibility of participating in a JHA.

Your employer might also use a JHA as a training guide for new employees, a "refresher" for existing employees, and as a tool for determining why an accident happened.

Changes and Updates

Finally, a job hazard analysis reflects the most up to date, safe and efficient way to do a job. Jobs do not tend to stay the same. New processes, materials and tools are being introduced all the time and what worked before might no longer be safe. Reviews and updates must be done regularly. Suggested times include:

- Periodically, once a year or every quarter for example.
- When the process changes.

- When equipment or materials are changed or added; and
- After an incident.

FINAL WORD

Any way you analyze it, becoming involved in a job safety analysis makes sense in keeping you and your co-workers safe. ❖

Meeting material to go: Safety meeting materials such as presentation tips, PowerPoint presentations, quiz answers and more are downloadable at: www.SafetySmart.com

TEST YOUR KNOWLEDGE

1. Separating a job into simple steps is the first part of its hazard analysis.
 True False
2. Jobs tend to stay the same.
 True False
3. A JHA is a good training guide for new employees.
 True False
4. A JHA can help determine why an accident happened.
 True False

What Would You Do?

A recent change happened to a process you do regularly. The change involves the use of a new chemical; one that you're not familiar with. A new JHA hasn't been performed yet and you're not sure if the change in chemical has created new hazards. What would you do?

SHOP TALK

PEMEP Risk Factors and Quiz

As a supervisor, you need to ensure any person performing a JHA can apply the five basic risk factors of hazard identification, described by the acronym PEMEP (People, Equipment, Materials, Environment, Process). Train workers responsible for conducting job hazard analyses on the five risk factors and then use the quiz to check their retention and understanding.

- **P for People:** The acts and omissions of workers, supervisors and others that may create hazards (and impact how you address them). Example: Safety devices on nail gun triggers won't prevent nail gun injuries if workers regularly disable the devices so they can work faster.
- **E for Equipment:** Hazards stemming from the tools and machines used at the workplace, such as nail guns without safety devices on trigger mechanisms or machinery with rotating parts that may ensnare workers by the hair or clothing.
- **M for Materials:** Raw materials, products and hazardous chemicals used in the workplace that can

The person who performs a JHA should understand a hazard is anything with the potential to harm a worker's health or safety.

harm health and safety, e.g., radioactive chemicals handled by nurses in a radiology lab or asbestos at construction projects.

- **E for Environment:** Hazards posed by the physical surroundings where the work is done, such as wet, cluttered or poorly lit walkways or isolated workplaces in which there's no prospect of immediate help or rescue.
- **P for Process:** Hazards created by the methods used to perform work. Example: An otherwise routine maintenance procedure like cleaning a tank may become very hazardous if it's carried out inside a tank that's a confined space. ❖

QUIZ

Scenario: A welder suffers severe burns in an explosion ignited by his welding torch. Factors in the injury:

- The welder was cutting a barrel previously used to contain solvents.
- Solvents are a source of combustible vapors.
- Welding torches are a potential ignition source.
- Vapors are denser and more combustible in the air inside the plant.
- Company safety procedure required doing the job outside.

1. Which of the PEMEP risk factors contributed to the injury?

- a. People
- b. Equipment
- c. Materials
- d. Environment
- e. Process
- f. All the above

Answer: F - All 5 of the PEMEP risk factors had a role in causing the explosion.

2. The presence of combustible vapors inside a solvent barrel is what kind of risk factor?

- a. People
- b. Equipment
- c. Materials
- d. Environment
- e. Process

*Answer: C - Combustible vapors were produced by the solvent, one of the **materials** used in the plant.*

3. The fact that indoor air makes solvent vapors more combustible is what kind of risk factor?

- a. People
- b. Equipment
- c. Materials
- d. Environment
- e. Process

*Answer: D - Indoor air conditions are a form of **environmental** risk.*

4. The welder's failure to follow safety procedure is what kind of risk factor?

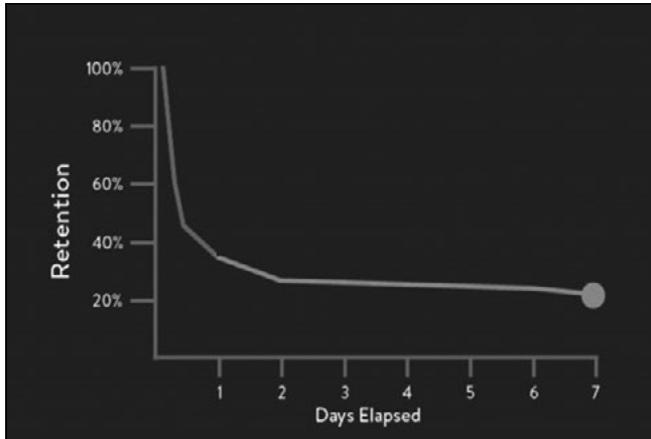
- a. People
- b. Equipment
- c. Materials
- d. Environment
- e. Process

*Answer: A - When safety controls are in place, but people choose not to follow them, it's a **people** factor.*

THE RETENTION REVOLUTION

How Does Your Memory Capacity Affect Safety Training? Part 2

In last month's article, *How Does Your Memory Capacity Affect Safety Training?*, we discussed Ebbinghaus's forgetting curve and the fact that we forget up to 70% of what we learn within 24 hours.



Even under the best circumstances, the forgetting curve is hard to beat. It's simply hard for our brains to absorb and remember something we are only exposed to once, or even once a year during annual training. This is where the retention revolution begins; increasing recall through spaced repetition.

Recall Through Repetition

Going back to the stat, *learners forget 70% of what they learn within 24 hours* it's easy to see that the effectiveness of learning and training would decrease dramatically if the original content is forgotten. You can't expect employees to put into practice what they can't remember, right?

Smarty-pants Ebbinghaus, also discovered that if a learner can activate the information they learn, post-training, at regular, spaced intervals, their retention of that material increases. In fact, *every time they repeat it, their retention rate goes up*.

Forgetting still sets in just as it did the first time the information was learned, but the difference is, the speed at which the learner forgets is much slower, and the forgetting curve becomes less steep with each interval.

SafetyNow's Retain software empowers safety managers to increase the retention of their training in the long-term by allowing you to schedule quizzes and refresher courses at precise intervals following the initial training. The net effect is employees with a higher retention rate and a safer workplace.

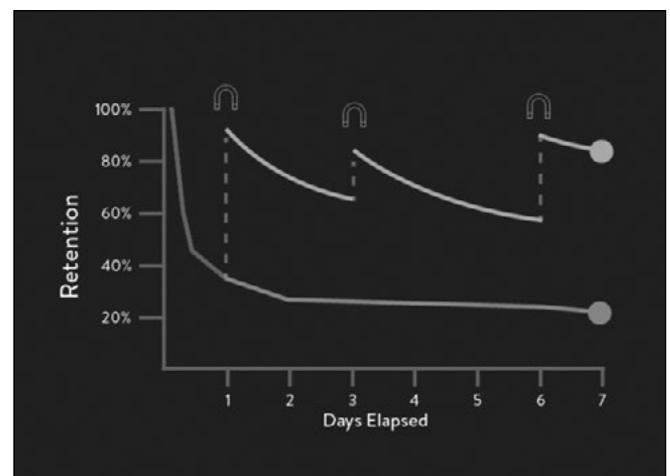
Over time, safety sticks. Retention rates soar, workers are safer, which leads to a safer workplace with fewer injuries and incidents

How Does Retain Work?

These retention events are more than asking a learner to reread the training information. Instead, they are active learning events that require a learner reply to a short series of questions about the new information, spaced out over 28 days. The retain events force the learner's brain to activate the memory, thereby deepening the connections.

Using the same graph of the forgetting curve we used earlier, look at the difference in the forgetting curve when retention exercises are used as part of training follow-up. The green magnets show what happens to retention when you follow up training with retention opportunities at 1, 3, and 7 days after a training event. You can see how the retention rates go up dramatically as the information makes its way past the working memory and into the learner's long-term memory.

Over time, safety sticks. Retention rates soar, workers are safer, which leads to a safer workplace with fewer injuries and incidents.



Conclusion

When an accident or incident happens at the workplace, it's too late to discover your safety training didn't stick. Not only has an employee potentially gotten hurt, but so has your company's bottom line. The only way you can ensure you avoid expensive and dangerous accidents and incidents is to make sure your training is grabbing employees' attention, and being committed to memory. ❖

FATALITY REPORT

Greenhouse Death

A 74-year-old employee of a nursery and landscaping company was fatally injured when he tripped over a pallet and fell to the ground. On the day of the incident, the victim was working inside the greenhouse watering plants and collecting dead plants for disposal. Upon leaving the greenhouse with a flat of dead plants in hand, the victim encountered a customer. He placed the flat on a pallet located just outside the greenhouse door. After assisting the customer, the victim returned to the pallet of topsoil to retrieve the flat, and dispose of the dead plants into the dumpster. As the victim took his first step, his left foot caught the edge of the pallet causing him to trip and fall head first to the ground. The victim was hospitalized and died 5 days later due to his injuries.

Final Word

After a fatality, an investigation by government regulators will almost certainly take place, it will also involve state and local investigators too. What they uncover during their inspection doesn't always directly relate to the actual incident, but an employer is still responsible for any violations, citations, fines and penalties found.

Safety inspectors conducted a full investigation and inspection of the worksite and the company was cited for several violations, some of which were not related to the incident. Citations included, failure to report the fatality within 8 hours and failure to properly complete required injury and illness logs, as well as missing machine guarding, and unsafe storage of compressed gas cylinders. ❖



The employee fell over the edge of the pallet, indicated by the circle.

SPOT THE SAFETY VIOLATION

Slip, Trip, and Impale



Working on a rooftop is dangerous enough; there's no need to add in several trip hazards and the potential for impalement to the party.

The chance for a slip, trip, or fall seems highly likely given the ropes, lines, and other objects present in just this small frame of the picture. Did you notice the glass pipe coming up out of the roof is also broken, sharp, and jagged? There are so many opportunities for things to go dangerously wrong.

Regardless of the size of the space or the location, (rooftop, basement, or anywhere in between) anything that presents a slip, trip, or fall hazard must be covered and marked, guarded or protected via guardrails, fencing or other means of protection, or removed, picked up, swept up, or put away. ❖