How to Prevent Slips, Trips and Falls (STF) at Your Facility

Introduction

We have created this guide based on CDC/NIOSH principles, to help you identify STF risks at your facility and offer potential prevention strategies. Each facility's needs are unique and dependent on many variables. Use this comprehensive outline to evaluate your facility's STF hazards, make necessary improvements and train staff to help prevent STF accidents and reduce your liability risk.

The leading causes of STF are:

1. Liquids spilled on floors
2. Walking surface irregularities
3. Rain, ice and snow
4. Inadequate lighting
5. Poorly constructed or maintained handrails and stairs
6. Improperly used ladders and stepstools
7. Loose cords, hoses and clutter
8. Improper use and maintenance of mats and runners.

Each of these causes is addressed separately below with areas of concern and specific prevention strategies outlined.

1. Liquids on Floors

Liquid spills on floors are the leading cause of STF incidents. Water, grease, and other fluids can make walking surfaces slippery. Well-documented housekeeping procedures, non-slip flooring materials and treatments, regular floor cleaning, proper use of mats and signs, accessible clean-up materials, and slip-resistant shoes all help reduce the risk of slip and falls.

Areas of Concern:

- Food services areas: kitchen, cafeteria, serving line, buffet, ice machines, freezers, dishwashers, sinks, and drains.
- Soap dispenser leaks and drips.
- Drinking fountain leaks and overspray.
- Building entrances, where rain and snow are tracked inside
- Showers, tubs and restrooms.
- Pools and spa surrounds.

Prevention Strategies:

a. Maintain a written housekeeping program

A written housekeeping program can help ensure the quality and consistency of housekeeping procedures. Your housekeeping program should be explained and given to all employees, and an up-to-date version should be easily accessible for quick reference. Be sure to include:

- How to immediately contact the housekeeping department.
- Where and how cleaning materials and products are stored.
- When to use wet floor signs and barriers and where signs are stored.
- When specific areas of the facility are scheduled to be cleaned.
- What cleaning methods are used for different areas and surfaces.

b. Keep floors safe and clean

- Where possible, have surfaces treated with non-slip products.
- Encourage staff to cover, clean, or report spills promptly.
- Hang or place spill pads, paper towel holders, pop-up-tent wet floor signs in convenient locations throughout the facility so staff have easy access to products to clean, cover, and highlight a spill.
- Advertise contact information for housekeeping through emails, posters, and other general awareness campaigns.
- Place water-absorbent mats where water, ice, or soap may accumulate. Use beveled-edge, flat, and continuous mats.
- Provide paper towel holders, trash cans, and umbrella bags near entrances to minimize wet floors.
- Mats should be large enough so that several footsteps will take place on the mat; if there is

water around or beyond the mat, it means that the mat is not large enough or is saturated and needs to be replaced.

- Secure mats from moving and make sure they have slip-resistant backing. Remind staff to lay mats in the correct position daily. Use visual cues such as tape on the floor if necessary.
- Make sure that drip pans of ice machines, vending machines and food carts are properly maintained so that water does not spill onto the floor.

c. Prevent entry into areas that are wet

- Use caution signs to inform people to be careful and avoid the area.
- Block off areas during floor cleaning, stripping, and waxing.
- Use barrier products or caution tape to prevent entry to an area being cleaned or from stepping on a spill.
- Use a long barrier device if a dry lane must be kept clear for passage.
- Use barrier devices to prevent water and other fluids from entering hallways when cleaning rooms. Use in conjunction with tension bar in the doorway or other blocking device so the floor barrier does not become a tripping hazard.
- Remove all signs once the floor is clean and dry, so they do not become commonplace and ignored.

d. Fix poor drainage: pipes and drains

- Check that pipes are correctly aligned with the drain they are emptying into.
- Unclog drains regularly, particularly in kitchens.
- Redirect downspouts away from sidewalks and other pedestrian areas.

2. Indoor and Outdoor Walking Surface Irregularities

Damaged, warped, buckled, or uneven flooring surfaces inside and poorly maintained, uneven ground, protruding structures, holes, rocks, leaves, and other debris outside are major cause of slips, trips, and falls.

Areas of Concern:

- All indoor walking surfaces
- Building entrances
- Lawns and landscaping
- Parking garages and lots

- Walkways to and around buildings
- Around drains in the ground
- Outdoor pools and water features

Prevention Strategies:

- Replace or re-stretch loose or buckled carpeting.
- Remove, patch underneath, and replace indented or blistered vinyl tile.
- Patch or fill cracks in indoor walkways greater than ¼" wide.
- Reduce or eliminate trip hazards over ¼” high in all areas of pedestrian travel. For changes in level ¼” to ½” high, bevel with a slope no greater than 1:2. For heights greater than ½” high consider a ramp.
- Create visual cues. Highlight changes in walkway elevation
- Treat or replace smooth flooring materials in areas normally exposed to water, grease or particulate matter.
- Make sure elevators are leveled properly so that elevator floors line up evenly with hallway floors.
- Patch or fill indoor floor cracks greater than ½" wide.
- Patch, fill, or repave outdoor areas that have deep grooves, cracks, or holes.
- Concrete wheel stops in parking lots can be a tripping hazard and should not be used. Consider using bollards instead.
- Keep all outdoor walking surfaces free of debris.
- Ensure that underground watering system structures are covered or highlighted.

3. Rain, Ice and Snow

Rain, ice and snow can create slip hazards outside and in entry areas.

Areas of Concern:

- Entrances to buildings
- Parking garages and lots
- Walkways
- Outside stairs

Prevention Strategies:

- Immediately remove ice and snow from parking lots, garages, and sidewalks. Use ice melting treatments on all outdoor pedestrian areas.
- Distribute winter weather warnings to staff when ice and snow are predicted.
- Place freezing weather warning monitors in outdoor areas.
- Display contact information for maintenance staff to encourage employees to report icy conditions.
- Treat indoor entry area flooring to reduce slipperiness from tracked in water
- Use additional mats and warning signs in entrances during winter months and when it rains.
- Provide slip-resistant footwear (including ice cleats) for employees who work outdoors.

4. Inadequate Lighting

Poor lighting impairs vision and ability to see hazards. Proper lighting allows people to see their surroundings and notice unsafe conditions in time to avoid them.

Areas of Concern:

- Parking structures
- Storage rooms
- Hallways
- Stairwells
- Indoor and Outdoor walkways

Prevention Strategies:

- Install more light fixtures in poorly lit areas.
- Check that backup emergency lighting is adequate.
- Ensure staff has flashlights on hand for emergency use.
- Verify light bulbs have an appropriate brightness and are promptly replaced when out.
- Install light fixtures that emit light from all sides.

5. Stairs and Handrails

Proper construction and maintenance of stairs and handrails can reduce hazards. Stairs that are poorly marked or uneven, as well as handrails that are not of the appropriate size, height, or are poorly maintained can lead to missteps and can cause employees to trip and fall.

Areas of Concern:

- Indoor and outdoor stairs
- Elevated or sloping walkways
- Parking structures
- Ramps

Prevention Strategies:

- Create visual cues. Paint, tape, or highlight the edge (nosing) of each step, including the top and bottom, to indicate a change in elevation.
- Make sure all tread and nosing surfaces are slip resistant. This is especially important for outside stairs exposed to the elements or indoor stairways exposed to wet conditions or spills.
- Ensure that stairs are kept free of ice, snow, water, and other slippery contaminants.
- Check that stairwells have adequate lighting.
- Consider adding a handrail to all stairways including those with less than four steps.
- Confirm all handrails are within an appropriate height range (34–38" from the stepping surface).
- Check that discontinuous handrails are of a consistent height.
- Check that handrails extend full length of stair and extend 12 inches at top and one tread depth at bottom.
- Check that handrails are available on both sides. For stairs >44 inches wide, two handrails are recommended. For stairs <44 inches than at least one handrail on right side descending stairway. Check local code requirements.
- Check, for open stairways, that a two-rail system is present; a top rail at 42 inches and a second handrail at 34 inches minimum and 38 inches maximum vertically above stair nosings. Protect the open area under the top rail to the stairway steps by installing a fixed barrier.

6. Ladders and Stepstools

Stepstools and ladders used to work from heights can create a hazardous situation if not used properly.

Areas of Concern:

- Outdoors
- Kitchens and pantries
- Any areas with elevated storage
- Window cleaning and other maintenance activities

Prevention Strategies:

Train employees on the proper use of ladders and stepstools including:

- Placing ladders and stepstools on level surfaces before climbing.
- Checking that stepladders are fully opened before climbing.
- Always maintaining three points of contact with the ladder while ascending and descending (two hands and one foot or one hand and two feet).
- Wearing appropriate footwear for climbing--shoes should have a closed back and sufficient tread on the sole to prevent slipping on ladder rungs or steps.

7. Tripping Hazards: Loose Cords, Hoses, Wires, and Clutter

Exposed cords on the floor, stretched across walkways, and tangled in workspaces can lead to a trip and fall incident. Clutter can build up in storage areas, work areas, hallways, and walkways and create a trip hazard.

Areas of Concern:

- Storage areas
- Hallways and walkways
- Workstations and offices
- Maintenance, landscaping and janitorial activities

Prevention Strategies:

- Organize storage areas to eliminate clutter.
- Consider wall-mounted storage systems, shelves, hose spools, cord holders, etc.
- Ensure walkways are always kept clear.

- Cover cords on floor with a beveled protective cover or tape cords to flooring.
- Properly mount and organize cords in workstations.

8. Improper use of Mats and Runners

While mats and carpet runners can be used to provide slip-resistant walking surfaces they can be a hazard when improperly used or maintained. Old or poorly placed mats can contribute to slips, trips, and falls. Consider treating floors to reduce slipperiness and over-reliance on mats.

Areas of Concern:

- Food preparation and serving areas
- Entryways and foyers
- Under sinks and water fountains
- Pool and spa areas
- Restrooms and showers

Prevention Strategies:

- Mats and runners in facility entrances should be sufficiently large so that several foot-steps fall on the mat, cleaning contaminants off the shoes, before the shoes contact the flooring.
- Place additional mats, if necessary, in entrances during ice, snow, and rainy conditions. If there is water on the floor beyond the last mat, additional mats or runners may be necessary.
- Use non-slip mats in areas where employees may routinely encounter wet flooring.
- Use beveled-edge, flat, and continuous or inter-locking mats.
- Replace mats that are curled, ripped, or worn--secure edges with carpet tape if needed.
- Paint small markers on the floor to remind staff of proper mat position.
- Instruct staff to check mat alignment daily.