Youth @ Work Activity

Making the Job Safer

This Activity at a Glance

This activity has been adapted from "Youth @ Work — Talking Safety," a curriculum for youth employment programs developed by the Labor Occupational Health Program at UC Berkeley and the Education Development Center, Inc. in Newton, Mass.

In this activity students learn about strategies for reducing or eliminating hazrads at work. After a short introduction by the instructor, teams of students play a game where they consider various scenarios and come up with ideas for controlling the hazards shown. They organize their solutions into categories.

Learning Objectives

By the end of this lesson, students will be able to:

- Describe the three main ways to reduce or eliminate hazards at work.
- Explain which methods are most effective in controlling hazards.

Materials Needed

- Overheads
- Game board & score sheet on flipchart paper
- Masking tape
- Different colors of 2" Post-its (one color for each team)
- Watch or timer
- Pens or pencils
- Prizes

Total Time = 55 minutes

Detailed Trainer's Instructions

A. Introduction—Teens and safety.

(5 minutes)

1. As a warm-up discussion, ask the class:

   "What kind of jobs have you had?"

   "Have you ever been injured at work, or do you know someone who has? If so, how were they hurt?"

2. Let the class briefly discuss their answers. They are designed to get students thinking about safety issues in their own job experience.

B. Brainstorm—What is a hazard?

(10 minutes)

1. Ask students if they know the definition of a **hazard**. After people respond, write the definition on the board:

   A hazard is anything at work that can hurt you, either physically or mentally.

2. Ask the class to quickly brainstorm a list of possible health and safety hazards that might be found on various jobs with which they are familiar. Prompt them to include more obvious hazards, such as heavy lifting or chemicals, as well as hazards that are less obvious because they might not hurt you right away. Examples include noise, infectious diseases, or repetitive motions.

   As students call out different hazards record them on the board. Your completed list may be similar to this example.

   - Slippery floors
   - Knives & other sharp objects
   - Poor air quality
   - Infectious diseases
   - Repeated movements
   - Awkward posture
   - Noise
   - Machines without guards
   - Unsafe electric cords or outlets
   - Lack of fire exits
   - Violence
   - Chemicals
   - Tools
   - Hot grease
   - Ovens & other hot surfaces
   - Cluttered work areas
   - Heavy lifting
   - Ladders
   - Very hot or cold temperatures
   - Fast pace of work
   - Stressful work

Note: If students list the **effects** of hazards (for example, cuts or burns), try to get them to say what would **cause** the effect (knives or hot grease). The latter is the **hazard** that should be listed. This approach will help later when students discuss how to eliminate or control the hazard.

C. Controlling hazards.

(10 minutes)

1. Pick one job hazard from the list. (For example, you might choose "slippery floors.") Ask the class:

   "How can this workplace hazard be reduced or eliminated?"

2. As students suggest answers, write them on the blackboard or on a separate piece of flipchart paper. Possible solutions for slippery floors might include:

   - Put out "Caution" signs.
   - Clean up spills quickly.
   - Install slip-resistant flooring.
   - Use floor mats.
   - Wear slip-resistant shoes.
   - Install grease guards on equipment to keep grease off the floor.

3. Explain to the class that there are often several ways to control a hazard, but some are better than others. Hold a class discussion of the three main control methods: remove the hazard, improve work policies and procedures, and use protective clothing and equipment.

Use Overhead #1 and the sections below to help explain these methods. After you discuss a method, apply it to the list you created on the flipchart, as indicated.

1. Remove the Hazard

The best control measures remove the hazard from the workplace altogether, or keep it isolated (away from workers) so it can't hurt anyone. This way, the workplace itself is safer, and all the responsibility for safety doesn't fall on individual workers.

Here are some examples:

- Use safer chemicals, and get rid of hazardous ones

- Store chemicals in locked cabinets away from work areas
- Use machines instead of doing jobs by hand
- Have guards around hot surfaces.

Ask the class:

"Which of the solutions on the flipchart really get rid of the hazard of slippery floors?"

Students should answer that slip-resistant flooring, floor mats, and grease guards are the items on the list that really remove the hazard. On the flipchart, put a "1" next to these solutions.

2. Improve Work Policies and Procedures

If you can't completely eliminate a hazard or keep it away from workers, good safety policies can reduce your exposure to hazards.

Here are some examples:

- Safety training on how to work around hazards
- Regular breaks to avoid fatigue
- Assigning enough people to do the job safely (lifting, etc.).

Ask the class:

"Which of the solutions for slippery floors on the flipchart involve work policies and procedures?"

Students should answer that putting out "Caution" signs and cleaning up spills quickly are in this category. On the flipchart, put a "2" next to these solutions.

3. Use Protective Clothing and Equipment

Personal protective equipment (often called "PPE") is the **least** effective way to control hazards. However, you should use it if it's all you have.

Here are some examples:

- Gloves, steel-toed shoes, hard hats
- Respirators, safety glasses, hearing protectors
- Lab coats or smocks.

Ask the class:

"Why should PPE be considered the solution of last resort?"

Answers may include:

- It doesn't get rid of or minimize the hazard itself.
- Workers may not want to wear it because it can be uncomfortable, hot, and may make it hard to communicate or do work.
- It has to fit properly and be used consistently at the right time to work.
- It has to be right for the particular hazard, such as the right respirator cartridge or glove for the chemical being used.

Ask the class:

"Which of the solutions for slippery floors on the flipchart involve protective clothing and equipment?"

Students should answer that wearing slip-resistant shoes is in this category. On the flipchart, put a "3" next to this solution.

When you have finished marking the three categories on the flipchart, your completed table may look like this:

HAZARD	**POSSIBLE SOLUTIONS**
Slippery floors	• Put out "Caution" signs. (2) • Clean up spills quickly. (2) • Install slip-resistant flooring. (1) • Use floor mats. (1) • Wear slip-resistant shoes. (3) • Install grease guards on equipment. (1)

Tell students that they will learn more about these control methods during the next activity. They will play a game called the $25,000 Safety Pyramid.

D. $25,000 Safety Pyramid game.

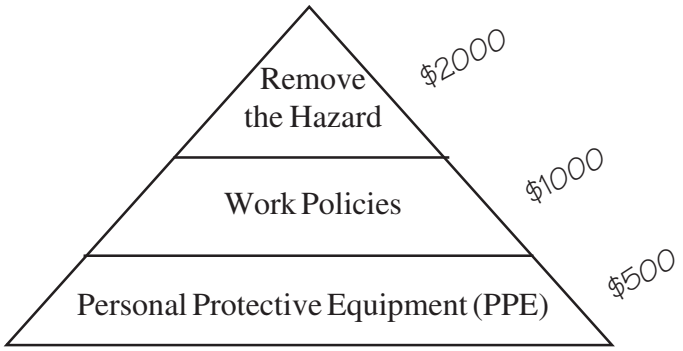
(25 minutes)

Instructor's Note. If you wish, you can present this material as a class discussion instead of a game. Show Overheads #2–10 to the class. For each Overhead, ask students for their ideas about possible ways to prevent the injuries described.

Prior to teaching this activity, review the stories (see pages 8–16 and Overheads #2–10) and select those stories most relevant to your students.

1. If you are presenting the material as a game, draw a game board like the one below on flipchart paper, and tape it to the wall.

$25,000 Safety Pyramid Game



2. Explain that in each round of the game, you will read aloud a true story about a youth who got injured at work.

   Students will work in teams. Teams should think of themselves as safety committees, responsible for finding ways to control the hazard that caused the injury described. Teams will be given a pad of Post-it notes on which to write their solutions.

   Notice that the pyramid divides solutions into three categories:

   - Remove the Hazard (often called engineering controls)
   - Work Policies (often called administrative controls)
   - Personal Protective Equipment (PPE).

Explain that this is a fast-paced game and time counts. After you read each story, the teams will have one minute to come up with solutions and post them on the game board.

One team member should be chosen as the "writer" for the team. Each solution the team comes up with should be written on a separate Post-it note. Another team member should be chosen as a "runner" who will post the team's notes in the correct categories on the game board.

Tell the class that you will decide whether each solution is a good one. To be valid, it must:

- Relate to the story
- Be realistic
- Be specific about the solution (for example, not just PPE, but *what kind* of PPE).

Remember that some solutions may fall in more than one category. The same solution written on two Post-its placed in two categories should count once. Tell the class that in some cases there may be no good solutions in some of the categories. Explain that if teams put a good solution in the wrong category, you will move that Post-it to the proper category and give them the points.

Explain that, after each round, you will tally the points. Each valid solution in the *Remove the Hazard* category is worth $2,000. Each valid solution in the *Work Policies* category is worth $1,000 and in the *PPE* category is worth $500 because these are usually less protective solutions, or solutions more prone to failure.

3. Select teams of 3-5 participants each. Ask each team to come up with a team name. Record team names on the chalkboard or on a sheet of flipchart paper, where you will keep track of the points.

   Pass out Post-it note pads, with a different color for each team.

4. Using Overhead #2, conduct a practice round. For this round, teams shouldn't bother writing down solutions, but should just call out their answers. Add any solutions the class misses.

Practice Round: Jamie's Story

Read the story aloud:

Jamie is a 17-year-old dishwasher in a hospital kitchen. To clean cooking pans, she soaks them in a powerful chemical solution. She uses gloves to protect her hands and arms. One day, as Jamie was lifting three large pans out of the sink at once, they slipped out of her hands and back into the sink. The cleaning solution splashed all over the side of her face and got into her right eye. She was blinded in that eye for two weeks.

Ask the class:

"What solutions can you think of that might prevent this injury from happening again?"

Suggested answers include:

Remove the Hazard. Substitute a safer cleaning product. Use disposable pans. Use a dishwashing machine.

Work Policies. Have workers clean one pan at a time. Give them training about how to protect themselves from chemicals.

Personal Protective Equipment. Goggles.

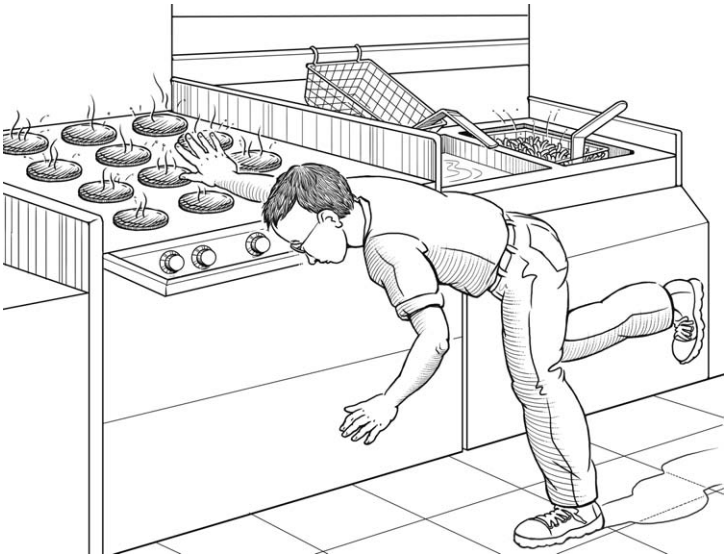
5. Begin the game. Play as many rounds as it takes for a team to reach $25,000. When a team wins, award prizes.

At the end of each round, review the solutions teams have posted and total the points for valid answers. You can identify a team's solutions by the color of its Post-it notes. Add any solutions the teams missed.

Round 1: Billy's Story

Read the story aloud:

Billy is a 16-year-old who works in a fast food restaurant. One day Billy slipped on the greasy floor. To catch his fall, he tried to grab a bar near the grill. He missed it and his hand touched the hot grill instead. He suffered second degree burns on the palm of his hand.



Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Give the teams one minute to write down their solutions and put them on the board. Then compare them to the suggested answers below.

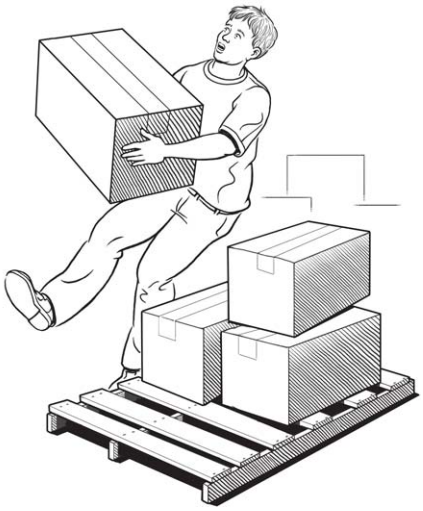
Remove the Hazard. Design the grill so the bar is not so close to the grill. Cover the floor with a non-skid mat. Install non-skid flooring. Put a shield on the grill when not in use to prevent people from accidentally touching it. Put a cover on the french-fry basket so grease won't splatter out.

Work Policies. Have workers immediately clean up spilled grease. Design the traffic flow so workers don't walk past the grill.

Personal Protective Equipment. Non-skid shoes. Gloves.

Round 2: Stephen's Story

Read the story aloud:



Stephen is a 17-year-old who works in a grocery store. One day while unloading a heavy box from a truck onto a wooden pallet, he slipped and fell. He felt a sharp pain in his lower back. He was embarrassed, so he got up and tried to keep working. It kept bothering him, so he finally went to the doctor. He had to stay out of work for a week to recover. His back still hurts sometimes.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. Use a mechanical lifting device. Pack boxes with less weight. Unload trucks in a sheltered area so workers aren't exposed to weather, wind, or wet surfaces.

Work Policies. Assign two people to do the job. Train workers how to lift properly. Enforce a policy that teens never lift over 30 pounds at a time, as recommended by the National Institute for Occupational Safety and Health (NIOSH).

Personal Protective Equipment. Wear non-slip shoes. (Note: A recent NIOSH study found that back belts do not help. For more information see *www.cdc.gov/niosh/belting.html*.)

Then ask the class:

"What is the proper way to lift heavy objects?"

Demonstrate the following. Tell the class that the rules for safe lifting are:

1. Don't pick up objects over 30 pounds by yourself.
2. Keep the load close to your body.
3. Lift with your legs. Bend your knees and crouch down, keep your back straight, and then lift as you start to stand up.
4. Don't twist at your waist. Move your feet instead.

Round 3: Terry's Story

Read the story aloud:

Terry is a 16-year-old who works in the deli department at a grocery store. Her supervisor asked her to clean the meat slicer, although she had never done this before and never been trained to do it. She thought the meat slicer was turned off before she began cleaning it. Just as she started to clean the blades, the machine started up. The blade cut a finger on Terry's left hand all the way to the bone.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. There should be a guard on the machine to protect fingers from the blade. There should be an automatic shut-off on the machine.

Work Policies. There should be a rule that the machine must be unplugged before cleaning. No one under 18 should be using or cleaning this machine because it is against the child labor laws.

Personal Protective Equipment. Cut-resistant gloves.

Round 4: Chris' Story

Read the story aloud:

Chris works for a city public works department. One hot afternoon the temperature outside reached 92 degrees. While Chris was shoveling dirt in a vacant lot, he started to feel dizzy and disoriented. He fainted due to the heat.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. Limit outdoor work on very hot days.

Work Policies. Limit outdoor work on very hot days. Have a cool place to go for frequent breaks. Have plenty of water available. Provide training on the symptoms of heat stress and how to keep from getting overheated. Work in teams to watch one another for symptoms of overheating (such as disorientation and dizziness).

Personal Protective Equipment. A hat to provide shade. A cooling vest.

Round 5: James' Story

Read the story aloud:

James is a 16-year-old who works in a busy pizza shop. His job is to pat pizza dough into pans. He prepares several pans per minute. Lately he has noticed that his hands, shoulders, and back are hurting from the repetitive motion and standing for long periods of time.

Ask the teams:

"What solutions can you think of that might prevent this musculoskeletal strain?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. Provide a chair or stool for sitting while doing this task.

Work Policies. Vary the job so no one has to make the same movements over and over. Provide regular breaks.

Personal Protective Equipment. None.

Round 6: Maria's Story

Read the story aloud:

Maria works tying up cauliflower leaves on a 16-acre farm. One day she was sent into the field too soon after it had been sprayed. No one told her that the moisture on the plants was a highly toxic pesticide. Soon after she began to work, Maria's arms and legs started shaking. When she stood up, she got dizzy and stumbled. She was taken by other farmworkers to a nearby clinic. Three weeks later she continues to have headaches, cramps, and trouble breathing.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. Use pesticide-free farming methods. Or use a less toxic pesticide.

Work Policies. Wait the required number of hours or days after the crops are sprayed to re-enter the field. This should be on the label.

Personal Protective Equipment. Wear impermeable gloves and work clothes. If needed, wear a respirator.

Round 7: Sara's Story

Read the story aloud:

Sara works as a nursing aide at a local hospital. She is expected to clean bedpans and sometimes change sheets, which requires lifting patients. Lately she has been feeling twinges in her back when bending over or lifting. She knows she is supposed to get help when lifting a patient, but everyone in the unit is so busy that she is reluctant to ask. At home, as she is going to sleep, she often feels shooting pains in her back, neck, and shoulders. These pains seem to be getting worse every day.

Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. Stop lifting alone. Lift patients only when other people are available to help. Or use a mechanical lifting device.

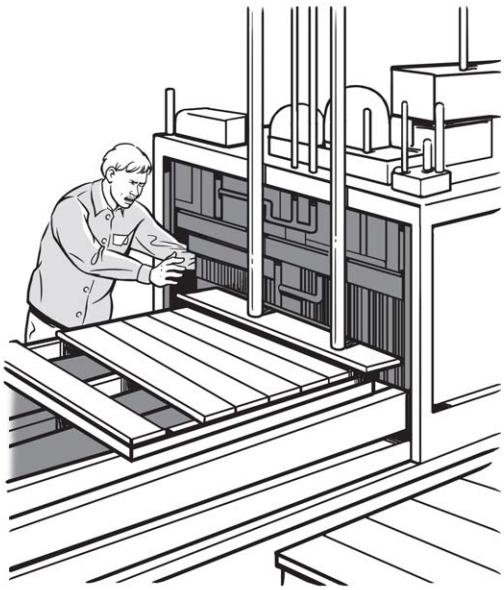
Work Policies. Make sure workers who have already been injured are not required to lift. Create a policy that workers may lift patients only in teams or when using a lifting device. Train workers about safe lifting methods.

Personal Protective Equipment. None.

Round 8: Brent's Story

Read the story aloud:

Seventeen-year-old Brent worked after school in his father's pallet making business. One day Brent was working on a machine that helps take old pallets apart by cutting through wood and nails. The machine sorts out the old nails into a bin and then cuts the remaining wood into small pieces that can be ground into shavings. Brent's sleeve got caught in the mechanism of the saw. Before he realized what was happening, his arm was cut off. He was rushed to the hospital, but the arm could not be saved.



Ask the teams:

"What solutions can you think of that might prevent this injury from happening again?"

Have the teams post their solutions and compare them to the suggested answers below.

Remove the Hazard. There should be a guard on the machine to protect body parts from the moving parts of the machine. There should be an emergency shut off button in reach of the operator. The machine might be designed so the operator has to keep both hands on the controls. This would keep hands away from the moving parts.

Work Policies. There should be a rule that no loose clothing may be worn around the machinery.

Personal Protective Equipment. None.

6. Tally the dollar amounts. Determine the winners and hand out prizes.

E. Review.

(5 minutes)

1. Review the key points covered in this lesson.

   We've talked about how hazards can be controlled and injuries prevented. Remember that your employer is required under the Occupational Safety and Health Act to provide you with a safe and healthful workplace.

   It's best if your employer gets rid of a hazard completely, if possible. If your employer can't get rid of the hazard, there are usually many ways to protect you from it.

Overhead #1

Controlling Hazards

First Choice: **Remove the hazard**

Examples:

- Use safer chemicals.
- Put guards around hot surfaces.

Next Choice: **Improve work policies and procedures**

Examples:

- Give workers safety training.
- Assign enough people to do the job safely.

Last Choice: **Use protective clothing and equipment**

Examples:

- Wear gloves.
- Use a respirator.

Overhead #2

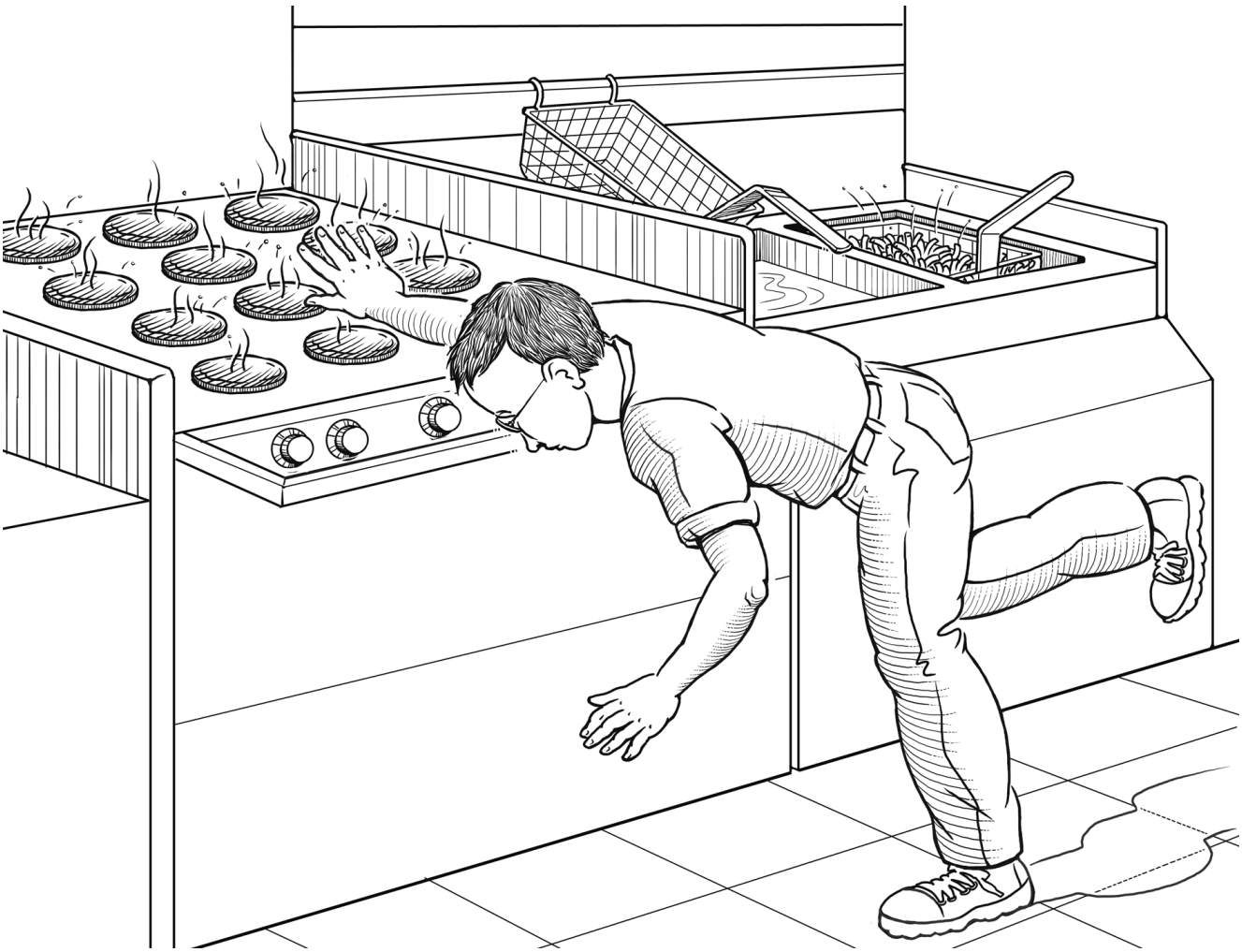
Jamie's Story

Job: Hospital dishwasher

Injury: Dishwashing chemical splashed in eye

Overhead #3

Billy's Story

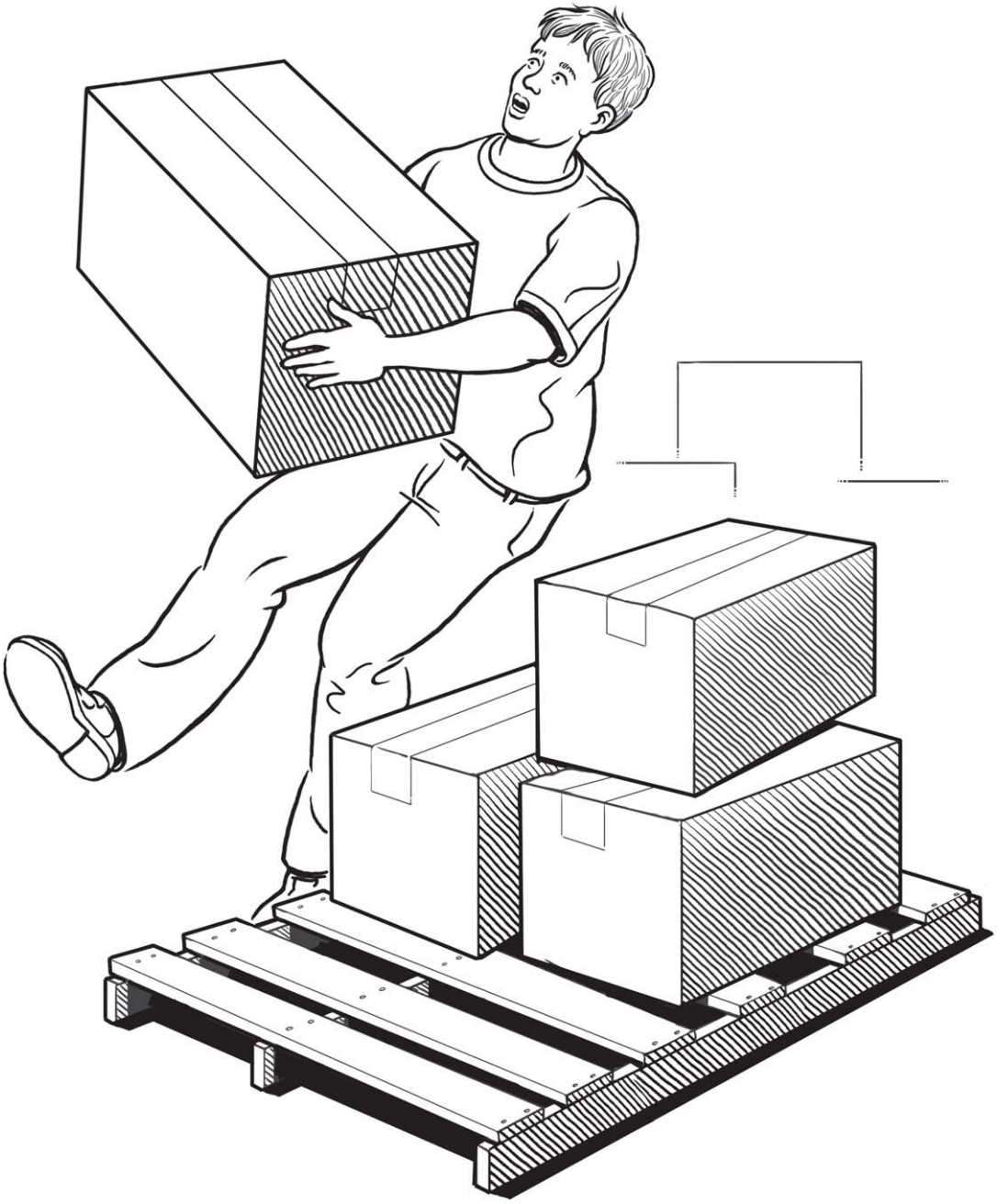


Job: Fast food worker

Injury: Burned hand on grill

Overhead #4

Stephen's Story



Job: Grocery store clerk

Injury: Hurt back while loading boxes

Overhead #5

Terry's Story

Job: Grocery store deli clerk

Injury: Cut finger on meat slicer

Overhead #6

Chris' Story

Job: City public works employee

Injury: Fainted due to heat

Overhead #7

James' Story

Job: Pizza shop employee

Injury: Repetitive motion injury

Overhead #8

Maria's Story

Job: Farmworker

Injury: Pesticide poisoning

Overhead #9

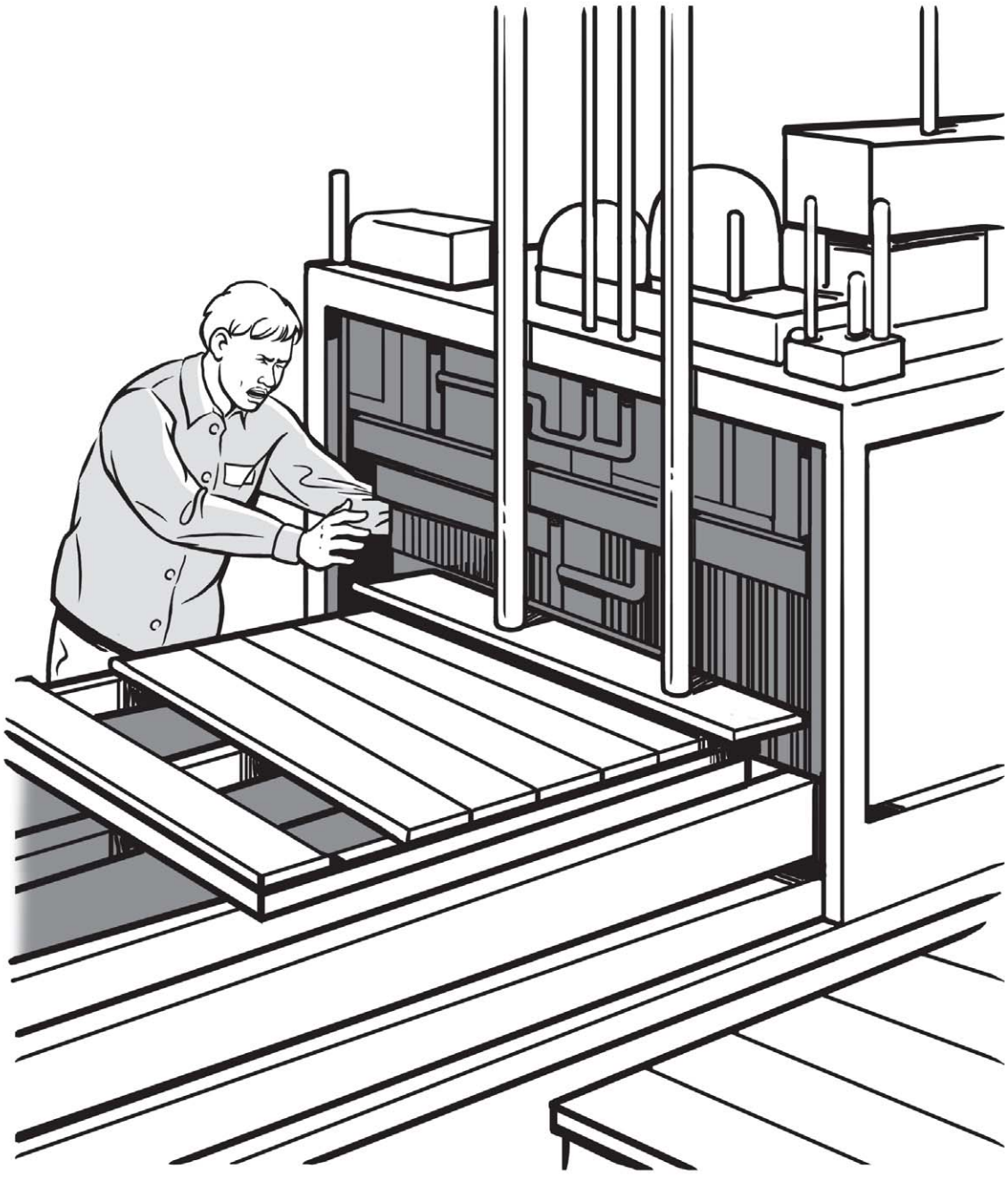
Sara's Story

Job: Nursing aide

Injury: Back, neck, and shoulder pain

Overhead #10

Brent's Story



Job: Pallet making

Injury: Amputated arm

Overhead #11

Key Points: Making the Job Safer

- Cal/OSHA requires employers to provide a safe workplace.

- It's best to get rid of a hazard completely, if possible.

- If your employer can't get rid of the hazard, there are usually many ways to protect you from it.