

KNIFE SAFETY IN THE WORKPLACE

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation. Featured are:

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

INTRODUCTION

While the blade of a knife may be sharp, it's not very bright. It cannot tell the difference between cutting work material or slicing a hand or finger. That's why your employees must stay sharp, always keeping their minds on safety when using industrial knives. They must follow safe work practices for each cutting task to prevent disabling lacerations, which often require months of intensive therapy for recovery. This program discusses common industrial knife safety rules and explains why a deep cut or laceration to a worker's hand can be so damaging.

Topics include sharpening knife blades, changing and disposing of utility knife blades, hazards of dull blades, keeping body parts and co-workers away from blade paths, cut-resistant gloves, the severity of nerve and tendon lacerations and response to knife injuries.

PROGRAM OUTLINE

BACKGROUND

- At some point, most of us have been exposed to safety rules concerning knives. It's an area that overlaps into many aspects of our lives; many of us use knives at work, at home or while enjoying our favorite recreational activities.
- While the rules about knife safety you may have learned as a youth still apply, today's wide variety of knives and various industrial applications for their use require *us* to stay sharp. We must always keep our safety in mind while using industrial knives.
- Knives in their simplest form consist of a sharp cutting blade and a handle. These knives come in various sizes and are used in a variety of applications.

TYPES OF INDUSTRIAL KNIVES

- A common variation of a fixed blade knife are those with retractable blades, such as the box cutter or utility knife.
- When two blades are joined at a pivot point, the leverage created at their handles allows us to cut a wide variety of material. We recognize this as a pair of scissors, sometimes called shears.
- Remember that the same leverage that allows us to cut through tough materials can quickly sever fingers as well.
- Blades can also be connected to a power source to aid in cutting. Fabric cutters and meat cutters are examples.

- There are countless types and styles of cutting devices. While each may have a different shape and function, they all have one thing in common: the ability to cause serious injury when used improperly or in a careless manner.

IMPORTANCE OF A SHARP BLADE

- No matter what type of application you have or environment you are working in, keeping a sharp blade makes it easier to cut through material. This allows the worker to exert less effort and makes it easier to maintain good posture while keeping the blade under control.
- Depending on the type of knife you are using, there are various ways to maintain a sharp blade.

UTILITY KNIFE BLADES

- The blade on some utility knives may be scored to allow the dull section to be snapped off and a sharp edge to take its place. When performing this function, always wear safety glasses because the blade may fly away with enough force to cause an eye injury.
- Always use an assist device to snap the blade, such as a pair of pliers. Never use your hand or force the blade against a solid object.
- Other types of utility knives require a new blade to be installed and the worn one replaced. Before doing this, make sure you know how to replace the blade and have the correct replacement on hand.
- Remember, even a worn blade is sharp and must be handled carefully. Only hold the blades on the unsharpened side; never hold a blade by the sharp side.
- When disposing of a used blade, it must be disposed of in a safe manner. Don't just throw it in the trash; this places others at risk.
- The best place to dispose of a used blade is in a "sharps" container. These containers are designed to safely handle sharp objects.
- An alternative disposal method is to carefully wrap several layers of tape around the blade before placing it in a waste container.
- Be sure to check with your supervisor for the specific disposal requirements for your facility.
- After installing a new blade, reassemble the knife, making sure all the screws are properly tightened to ensure the knife won't break open or come apart during use.

SHARPENING & INSPECTING FIXED BLADE KNIVES

- Fixed blade knives must also be kept sharp and inspected for good working condition.
- Before using a knife, check for any signs of damage such as cracked or damaged handles. Make sure the connection between the blade and the handle is secure.
- Knives with loose blades, damaged handles or other defects must be removed from service.
- While it is important to keep the blade sharp, knives should only be sharpened by a person properly trained and authorized by the company.
- Many companies have a specific sharpening schedule for fixed blade knives, specifying how often a knife should be sharpened. The period between sharpening depends on the frequency of use and the type of material being cut.

- Always follow your company's recommended frequency of changing to a newly sharpened blade, even if you think the blade is working fine. Studies have shown that the effects of a dull blade often begin before the user can perceive a need to change blades.
- This is especially important when performing tasks that require repetitive cutting. Using a dull blade add additional strain to the cutting motion, which can contribute to fatigue and the onset of musculoskeletal disorders over time.

SIGNS & HAZARDS OF DULL BLADES

- Many common uses of knives aren't controlled by a regular sharpening schedule, so it's up to us to recognize the signs of a dulling blade.
- If you notice an increase in the amount of force needed to cut material or see that the blade is tearing material rather than cutting it, it's time to get a new blade.
- Cutting with a dull blade causes us to apply more force and pressure to the blade in order to get it to cut. This can lead to a variety of unsafe situations such as 1) applying so much force that the blade bends or breaks; 2) a loss of balance when the blade slips free of the material; or 3) we become so focused on trying to make the cut that we quit paying attention to the path of blade travel, leading to an injury.
- Even with a sharp blade, applying too much pressure can be a source of injury. When cutting thick materials, make several passes, cutting a little bit each time rather than trying to cut through the material all at one time.

KEEPING BODY PARTS AWAY FROM BLADE'S PATH OF TRAVEL

- Another safety tip for preventing injuries while using knives is to maintain an awareness of where your body parts are located relative to the path the blade will travel.
- We have all heard the advice to always cut away from our body. This works well for whittling a stick, but is usually awkward in most industrial applications.
- In fact, when cutting on a flat surface, the most powerful and efficient cutting motion is towards your body.
- Cutting at a 90-degree angle to your body is also a safe, powerful stroke.
- Before beginning any cutting motion, make sure your free hand is out of the way. This may seem easy when performing simple, slow-paced cutting tasks like opening boxes, but when faced with a fast-paced repetitive task, it takes deliberate concentration and effort to avoid injury.

CUT-RESISTANT GLOVES

- Due to the increase risk of injury in these types of applications, many facilities require the use of a cut-resistant glove on the non-cutting hand.
- Various types of cut-resistant gloves are available to provide protection from an inadvertent cut or loss of control.
- Many times, a cut-resistant glove is worn under some other type of glove.
- If you are required to wear a cut-resistant glove while performing your job, be sure to do so. It only takes a moment for a serious injury to occur.

PROTECTING CO-WORKERS FROM KNIFE INJURIES

- When using knives, keep in mind that your co-workers may inadvertently be in the path of blade travel.

- Under ideal conditions, co-workers should stay at least an arm's length away from an exposed blade to minimize the possibility of inadvertent contact; however, in many applications this is simply not possible.
- When using a knife in close proximity to others, it is critical to keep the blade under control and in close proximity to the material being cut.
- Avoid making large, sweeping cuts that may carry your blade into an aisle way or near a co-worker.
- When approaching a worker using a knife, make sure he or she is aware of your presence before entering the cutting area.

ANATOMY OF THE HAND/TENDON LACERATIONS

- In order for our hand to open, close, grip, pinch and perform the various movements that give us the ability to perform even the simplest tasks, a complex combination of nerves, tendons and muscles must work together.
- When these structures are damaged, coordinated movement is no longer possible.
- Located on the back side of the hand are the extensor tendons, which are responsible for straightening out the wrist and the fingers. These tendons are very superficial, which means they are just under the skin.
- A cut through one of these tendons results in the inability to straighten the fingers or wrist, making it impossible to open the hand to reach around an object.
- The palm side of the hand contains the flexor tendons. These tendons give us the ability to bend the wrist downward as well as bending the fingers inwards into a fist.
- When these tendons are cut, you are unable to grasp, hold or pick up an object.
- Unfortunately, tendons do not grow back once cut nor can they repair themselves on their own. Lacerated tendons require repair by a qualified hand surgeon.
- This surgery is very delicate and is not always successful. Even when successful, surgery is just the beginning of the repair process.
- Most tendon lacerations require months of intensive therapy to regain functional use of the hand. This therapy requires specialized splinting and rigorous rehabilitation exercises that must be performed every hour the patient is awake, usually over the course of several months.
- Most individuals are not emotionally prepared for such an extensive rehabilitation program. All too often patients simply give up, never regaining functional use of the injured hand.

NERVE DAMAGE IN THE HANDS

- The hand and forearm also contain important nerves that, if lacerated, would result in significant functional loss. Nerves provide sensation and control the movement of the muscles.
- If the portion of the nerve responsible for movement is affected, the hand cannot move in a controlled manner, making grasping and holding objects almost impossible.
- If the portion of the nerve that controls sensation is damaged, the ability to feel hot and cold is affected, which often leads to further injury.
- Like tendons, nerves generally require surgical intervention to be repaired. Once surgically repaired, there is an additional amount of healing or "regeneration" that the nerve must undergo.

- This rate of regeneration is very slow—about an inch a month. So if you have a lacerated nerve that is four inches away from the tip of your index finger, you can anticipate a recovery period of about four to six months before sensation is restored to the fingertip.
- During this time, the patient has to endure protective splinting to prevent damaging the repaired nerve and therapy to “re-educate” the nerve to perceive objects with which the affected area comes into contact.

OTHER KNIFE SAFETY TIPS

- As users of industrial knives, we must make sure to avoid any moments of carelessness if we are to prevent injury.
- Never attempt to cut an object when either you or the object is unstable.
- Where possible, place objects on a flat, stable surface before cutting. When this is not possible, at least make sure you have a stable stance and have a clear path of blade travel before cutting.
- Never hold or carry a knife by the blade; any type of mishap could lead to an injury. This includes handing the knife to someone else while holding the blade.
- To prevent these types of situations, always return a knife with a fixed blade to its sheath, scabbard or designated storage area as soon as you are finished cutting.
- Simply following good housekeeping practices can prevent many knife injuries.
- Should you happen to drop a knife, never attempt to catch it. It’s better to let it hit the floor than risk grabbing the blade.
- If you have to travel while holding a fixed blade knife, keep the tip pointed down and walk carefully. Stay alert for co-workers who may be in your travel path.
- When using knives with retractable blades, always close the blade when finished or before handing it to another worker.
- Many types of knives have built-in safety features such as automatically retracting blades or special guards to provide additional protection. These devices are only as good as the person using the knife; they should never be defeated or removed.
- Any time you might save by taking a shortcut while using a knife is trivial compared to the extensive rehabilitation required by a serious hand laceration.

RESPONDING TO KNIFE INJURIES

- Every cut does not cause major damage. In fact, most small cuts and nicks only cause superficial damage; however, even a minor cut must still be reported and treated properly.
- First aid for a minor cut includes washing with soap and water, then cleansing the wound with some type of antiseptic to kill germs.
- Failing to properly clean a wound, especially in an industrial or food processing environment, can lead to serious infections.
- Because of the risk of illness spread by contact with human blood and other bodily fluids, any work area and knife blades contaminated by human blood must be properly disinfected. Simply wiping up the bloody area with a damp rag is not enough.

- A disinfecting solution must be used, which will kill germs and bacteria contained in human blood. A common choice is a mixture of bleach and water.
- It is very important that you be familiar with your company's procedures for reporting a cut or other injury. Only through the reporting process can the company ensure that you receive proper first aid and that your work area and knife blade are properly decontaminated.

PREPARE FOR THE SAFETY MEETING OR TRAINING SESSION

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Make an attendance record and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

Place or secure extension cords to prevent them from becoming a tripping hazard.

CONDUCTING THE PRESENTATION

Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new people joining the training session.

Explain that the primary purpose of the program is to demonstrate basic industrial knife safety tips and to show the debilitating consequences of a deep cut or laceration to an employee's hand.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Lead discussions about specific types of knives used in your workplace and the safety rules employees must follow to prevent injuries involving them. Use the review questions to check how well the program participants understood the information.

After watching the videotape program, the viewer will be able to explain the following:

- Basic knife safety rules that help prevent injuries;
- How and why knife blades should be sharpened regularly;
- How to protect body parts and co-workers from knife blade paths;
- Why tendon and nerve lacerations to the hand can be so damaging;
- What to do in the event of a knife injury.

KNIFE SAFETY IN THE WORKPLACE
REVIEW QUIZ

Name _____ Date _____

The following questions are provided to check how well you understand the information presented during this program.

1. What is the best way to dispose of a utility knife blade?
 - a. bury it under other materials in a trash can
 - b. wrap several layers of tape around it and throw it in the trash
 - c. put it in a sharps container

2. You may need to sharpen a knife before you notice any signs of it becoming dull.
 - a. true
 - b. false

3. You should always use a cutting motion that directs a knife blade away from your body.
 - a. true
 - b. false

4. _____ tendons are located just under the skin on the back side of the hand and are responsible for straightening the wrist and fingers.
 - a. Adductor
 - b. Extensor
 - c. Flexor

5. Tendons cannot grow back once they are cut and cannot repair themselves on their own.
 - a. true
 - b. false

6. The only time you should hold a knife by its blade is when you are handing it to someone else.
 - a. true
 - b. false

7. When traveling with a fixed blade knife, keep the tip pointed _____.
 - a. upward
 - b. outward
 - c. downward

8. Since minor nicks and cuts usually cause only superficial damage, they shouldn't be reported to your company.
 - a. true
 - b. false

ANSWERS TO THE REVIEW QUESTIONS

1. c

2. a

3. b

4. b

5. a

6. b

7. c

8. b