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Brenda Nader

PS: What are some common occupational hand and finger injuries, and what can be done to prevent them?

Brenda: Common hand and finger injuries include anything from being bruised or squeezed to being mashed in machinery. Cuts and lacerations are serious concerns, and even worse is the potential for loss of fingers and hands. These injuries can result from not wearing proper PPE while working with hazardous equipment or from working on equipment improperly or using the wrong hand tools. Individuals must identify the hazards and risks associated with their jobs. The biggest problem is that hand injuries are so often caused by carelessness and a lack of awareness, possibly due to boredom or a general disregard for safety procedures and distractions.

PS: Describe the impact hand injuries have on various industries.

Brenda: Hand injuries are found in almost any industry. The manufacturing industry is a concern, as is the construction industry, in which serious hand injuries often result from cuts or punctures. Hand injuries cost the construction industry more than $380 million a year, based on data from the BLS. The cost per injured construction worker averages $17,000. These costs include medical bills, lost time, downtime, cleanup, and the indemnity costs that follow.

According to BLS, about 70% of workers who experienced hand injuries were not wearing gloves. The remaining 30% wore gloves but experienced injuries because the gloves were inadequate or damaged, or the wrong type for the hazards to which they were exposed. We have to make sure that we identify the task at hand and the hazards that are present, and that we train employees on the gloves that are needed for their protection during completion of the task. While the overall health and well-being of employees is always our primary concern, special attention must be paid to prevent hand and finger injuries, as they are second only to sprains and strains in lost work days in comparison to other common injuries in the manufacturing industry.

PS: How can an employer best identify the potential hazards that lead to hand injuries in the workplace?

Brenda: First, we have to look at the trends or patterns related to the injuries and incidents within our facilities. Trend analysis should cover a combination of lagging and leading indicators. It is important to train employees on critical task analysis and that they use it to identify the potential sources of hazards.

At Kimberly-Clark Professional, we take a systematic approach to formal hand hazard assessments through job safety hazard analysis to ensure that our risks and hazards are being monitored, measured and mitigated. A good job safety hazard analysis focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between workers, the task, the tools and the work environment. We use job safety hazard analysis along with our hierarchy of controls within our SH&E management system. When using a hierarchy of controls, eliminating the hazard or exposure throughout the process is the most important step toward preventing hand injuries.

We also have periodic audits to evaluate the effectiveness of our hand protection strategies and adjust the protection requirements that are needed. Throughout these audits, there should be observations of employee habits during a particular job task. These observations help determine whether employees are following procedures and wearing the right PPE. We have implemented a program called Safe Visits. The program encourages our leaders to spend time with our technicians on the floor, by observing them doing a particular task and asking them questions about how one could get hurt in the process. It is also vital to document those observations and continue to build a database and recommend corrective actions as needed.

PS: What types of PPE should employers provide to workers to protect them from hand injuries?

Brenda: Because gloves are a key part of preventing hand injuries, it is important that we consider how the materials are advancing in terms of their function, as well as their fit, comfort and style.

Proper fit is critical to worker acceptance, and it leads to improved productivity and compliance. For safety purposes, we must keep things like finger length in mind, because if a glove is too long, it can potentially get caught
inside of moving equipment. The circumference of the gloves should not be too small because tight gloves reduce the user’s range of motion. On the flip side, if a glove is too loose, it doesn’t give the protection needed. Like any other type of PPE, if a glove is comfortable to wear, then workers will be more likely to comply with PPE protocols.

For general applications, gloves must be breathable. When selecting gloves, look for features such as ventilated backs and breathable nylon backing, as well as seamless knit liners. Cotton and poly-cotton liners provide good perspiration absorption and include hand comfort but nonbarrier gloves must be worn.

When cut protection is needed in the task, employees should select comfortable, seamless gloves made with materials that provide protection without compromising comfort.

For workers who handle chemicals, make sure they wear chemical- and liquid-resistant gloves. Manufacturers should consider rubber and natural latex gloves, which protect workers against burns or irritation caused by contact with greases, oils and other types of chemicals.

In some cases, it is critical to select high dexterity hand protection, particularly for applications that require the use of fine motor skills. Some gloves feature increased dexterity features, such as grip-coated fingertips, textured fingertips or dotted palms.

**PS: How might one determine the best PPE to use if several risks, such as sharp objects, hazardous materials and high pressure are present?**

Brenda: Start with a critical task analysis and make sure you understand the task at hand, then choose the appropriate PPE for the task. Selecting the right pair of gloves can be challenging, and according to OSHA, it is essential that employees use gloves designed specifically for the hazards and tasks found in their workplace. Gloves designed for one function might not protect against risks associated with a different function.

The ANSI/ISEA 105-2011 standard has been a valuable glove selection resource. It provides a consistent and numeric scale method for manufacturers to rate their products against contaminants or exposures, including punctures and abrasions.

**PS: Beyond PPE, what can be done to prevent hand injuries in the workplace?**

Brenda: The first thing is to raise awareness. A key way of doing that is through training. Training is essential to hand protection and should include providing employees with the information that is needed about different types of gloves, how to wear them, how to care for them and when to replace them. Workers should be taught to visually inspect gloves before each use. They should also know that they must dispose of the gloves if there is any damage that might impair their protective abilities, such as pinholes or material degradation.

All employees utilizing hand protection must be trained initially and on a recurring basis. Training also should be task-specific so that employees understand the level of protection that is needed for their particular job and how to identify signs of exposure to potential hazards. To keep employees focused on safety, manufacturers can also require that shift workers who have been away from work for several days or weeks at a time receive refresher training before they return to the work environment.

Training is critical to engaging and empowering employees to be accountable for their safety. As long as we raise awareness and train them, they will take that accountability.

**PS: Explain the relationship between hand injuries and ergonomics.**

Brenda: At Kimberly-Clark Professional, we integrate ergonomics into our whole SH&E management system. Ergonomically designed gloves can increase productivity and reduce hand fatigue. One example is that gloves made out of cut-resistant materials can be formed in a natural hand shape to enhance a worker’s movement and allow the hands to bend and the fingers to flex more freely.

Proper fit and comfort are essential to workers who suffer arthritis or experience decreased levels of muscle strength in their hands and fingers. Gloves that are too small may restrict movement or blood flow and lead to cramping or hand fatigue or perspiration. And when a hand becomes fatigued, productivity is generally reduced.

**PS: How can a manufacturer best institute a plan to prevent hand injuries?**

Brenda: One must look at the causes first. The causes of hand and finger injuries can be multifaceted, but to address these challenges, a comprehensive hand care and protection plan should be established within any industry. Such a
plan will reduce exposures to risks, put good procedures in place, raise awareness and help employees understand that these procedures are to protect their well-being.

Using our hierarchy of controls, the first thing that we need to examine is our process and determine whether exposures to risk can be eliminated. PPE should be the last line of defense when taking care of employees. You also need to identify the task, perform hazard assessments to recognize the hazards, look at the important aspects of the glove's usage, and ensure proper fit and the right glove for the task. This approach will help improve compliance to PPE protocols and improves PPE comfort for workers.

The plan should include that the required hand protection be inspected, maintained and used properly. We must also raise awareness that success should be measured not only according to a company's ability to reduce risky behaviors but also its ability to connect with the hearts and minds of employees. This approach provides us with a roadmap for strengthening each facility's safety culture and building a sense of shared accountability among all employees to identify hazards before an incident occurs.

Periodic audits can be conducted to verify continued compliance while annual reviews should be performed. The success of any organization's hand care program relies strongly on planning and on leadership's commitment to safety as well as the employees being engaged in the process of creating a safe work environment for themselves and their coworkers. Only through open dialogue and collaboration are manufacturers able to achieve these positive results. As long as you can show your employees that you care, provide them with the right equipment and training, it's a win-win for the industry and employees alike.

**Brenda Nader** is an organizational effectiveness leader and North America safety leader at Kimberly-Clark Professional. Brenda has more than 20 years of leadership in SH&E management, with particular expertise in cross-functional team building, safety management systems, organizational effectiveness and lean manufacturing. She is responsible for helping drive the continuous improvement efforts of the Kimberly-Clark's North America mills. Brenda holds an M.B.A. from the University of Mobile, in Mobile, AL, with additional postgraduate work completed in occupational safety and hygiene at Georgia Institute of Technology. She also holds a bachelor's degree in business administration and management from Spring Hill College.