

## Grasping Hand Safety

*There are skills and strategies everyone who works with their hands can learn that can reduce hand injuries*

By [Robert Pater](#), Ron Bowles | Jun 01, 2009

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Whatever can you do to get a handle on safety? Specifically, to prevent injuries to fingers, wrists, hands, and arms that are common to many industries, especially where people use hand tools, assemble, work on machines, lift, load, cut, push, pull, and more?

Hand and finger injuries can range from persistent (bruises, pinches, lacerations, abrasions, and strains) to severe (amputation, dislocation, carpal tunnel syndrome, Raynaud's Disease, and more).

In our four-plus decades of combined experience, we've found strains and sprains are easiest to significantly reduce. Next come slips, trips, and falls. Hand injuries are even more challenging, even after most companies have done a good job of addressing reach-in hazards and providing PPE/gloves.

So what's the underlying problem? Exposure and attention.

Consider the number of exposures. According to numerous in-the-field professionals, a worker might lift, use tools, push, or pull (exposures to soft-tissue injury) hundreds of times per day; the same person may take thousands of steps per day. But he will likely use his fingers and hands tens of thousands of times, each of which brings potential for acute or cumulative injury.

Further, the more someone engages in any activity, the greater the risk of complacency and the less likely he'll be fully attentive of every movement—each of which is an "opportunity" for injury. With so many finger and hand movements, his Level of Accepted Risk rises. ("It won't happen to me. I've done this a thousand times.")

Now compound this "hand attention deficit" with the likelihood most people are one-side dominant to the degree they often have minimal awareness of their "off" (nondominant) hand. Understandably, when people are working with their hands and something goes wrong, they instinctively react by extending their hands to guard their body. This further puts their hands at risk. And, bear in mind, there are more effective ways for self-protection through training to reset default reactions.

The good news is, experience has shown it's possible to make significant improvements in preventing hand injuries—as well as strains/sprains and slips/trips/falls—with an approach that first puts workers in control of their own hand safety and then reinforces improvements in skills and actions.

### **Apply Strong Strategies for a Hand Full of Results**

We've found that different types of exposures require different "solutions." In other words, methods for helping prevent cuts from using a box cutter are different from those for working with a drill press. Still, there are skills and strategies everyone who works with their hands can learn that can greatly prevent hand injuries:

**"Awaken" workers to identify and lower their LOAR (Level of Accepted Risk)** to see those "hidden" hazards that fall below their "Warning Light" threshold, going beyond an "I've always done it that way" of thinking.

Waking people up through fear or pointed reminders has shown only limited, short-term results. Instead, consider helping workers learn to recognize patterns that lead to hand injuries in their environments. For example, people often associate lacerations and cuts as stemming from sharp tools, but statistics show many hand injuries come from burrs or from equipment that was never intended to be sharp but developed an edge through wear.

By training people to consciously see hazards, they can then begin to identify patterns instinctively.

**Boost mental skills for directing attention.** These include learning to deliberately: Select where to place attention; Switch attention toward areas of greatest safety and away from the highest hazard; Shift attention back to tasks after being distracted; and Sustain attention on a task, even when other sights and sounds exert a pull away. And then Shift attention back to tasks after being distracted or "spacing out." Finally, to be able to Sustain attention on a task, even when other sights and sounds exert a pull away.

**Elevate Eye-hand coordination.** The eyes physiologically lead movement. Our eyes are always scanning our environment, often unconsciously and in staggered movements (called "sacchades" by neurophysiologists). Workers can learn how to

sequence eye movements toward the safest and most efficient chain of desired moves to accomplish a task. These are specific skills that need practice, much more than just "awareness" of eye movement.

**Harness the Kinesthetic Connection.** Your hand position can either be supported or undermined by the position of your entire body. Help workers develop an internal "feel" for the best, most comfortable and controlled linkages of finger, hand, wrist, arms, shoulder, torso, hips, and legs.

**Strengthen balance.** Poor balance can contribute to hand injuries. For example, this can result in employees losing control of a tool or other object, resulting in a crushed-by or cut-by injury. Unfirm balance also can cause employees to reach out, using a hand to brace their weight in order to steady themselves, so they may potentially place their hands in a dangerous area (resulting in a wrist-finger-hand injury).

**Go beyond just reminders and "awareness."** Emphasis has to be on developing the specific skills needed for working safely, not just relying on cautions and warnings to "Pay more attention."

**Raise offhand control of the non-dominant hand during a given task.** In several types of injuries (e.g. cuts, burns, and pressure injection), the offhand is generally at greater risk. One reason may be that, when fatigued, people typically lean on their offhand, sometimes placing it in harm's way.

Similarly, people usually hold knives in their dominant hand, making offhand cuts more likely.

Lefthanded people have many more injuries than their righthanded counterparts, according to research done by University of British Columbia's Dr. Stanley Coren and others. This, in effect, is because they live in a world not designed for them. To accommodate this, many lefthanded people have learned to better use their offhand to a higher degree than do "righties."

Consider including lefthanded representatives on your Safety committees in order to give needed and "other-sided" input into procedures, training, and equipment purchasing.

**Promote unhampered alignment to simultaneously improve control and reduce accumulating forces.** This also has to be kinesthetic. It doesn't seem to work to just tell people to "keep your wrists straight" or "in a neutral position." Many don't know what these words really translate to in action. Or they forget to apply directions when they get involved in their tasks. Remember that if a picture is worth a thousand words, a kinesthetic feeling is worth a million. Training can help workers

recalibrate their internal sense of "naturally aligned" hand, wrist, and elbow positions—all critical to preventing both acute and cumulative injuries.

## **Practical Training Goes Hand-in-Hand With Safety**

High-level hand safety entails helping people better look out for hazards, thinking differently about where they put their hands and how to more effectively use their hands to do all sorts of jobs. This doesn't happen with posters, reminders, videos, or even with a one-shot training "program." Everyone needs ongoing retraining and coaching. And this doesn't have to take an exorbitant amount of time. Rather, this can be woven into the normal workday by the informal communications of trained peer Safety trainers.

Hand injuries happen in all kinds of work. But you can grasp real and significant improvements in hand safety with a concrete approach founded on developing the right (and left) mental and physical skills.

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