

MEDIA FACT SHEET

NAIL GUNS – RISKS AND PREVENTION

The Problem for Construction Workers

Nail guns (or nailers) are used on construction sites every day, for work such as framing, roofing, and flooring. While they help to get the job done quickly, they can just as quickly cause serious injuries or death.

More than half of all nail gun injuries are to the hands and fingers, but injuries also occur to the legs, thighs, knees, feet, and toes, and even the spinal cord, head, neck, eyes, and internal organs. Such injuries have resulted in paralysis, blindness, brain damage, bone fractures, and even death.¹

Between 2011 and 2016, 2,010 construction workers were injured from nail guns.² However, the number may be higher since, according to the National Institute for Occupational Safety and Health (NIOSH), many nail gun injuries are not reported or given any medical treatment.¹

One study found that a majority of nail gun injury claims were the result of an unintended nail gun discharge or misfire. It is estimated that 12% of injuries actually happen to a nearby coworker, and not the worker operating the nail gun.³ The type of trigger system and the extent of training are important contributors to these injuries. This is because contact triggers (bump triggers) allow the user to fire the tool any time the trigger and the nose of the gun — the contact element — are both depressed, increasing the risk for unintended nail discharges and double fires. Research shows that nail guns with contact triggers carry twice the risk of acute injury compared to those with sequential triggers. Single or full sequential triggers are considered safer options because they require the nose of the gun to be depressed before the trigger can be pulled, decreasing the risk for injury.¹

Injuries and Fatalities are Preventable

The Occupational Safety and Health Administration (OSHA) and NIOSH recommend in [Nail Gun Safety: A Guide for Construction Contractors](#) that employers use full sequential trigger nail guns because they have the safest trigger mechanism. They also advise employers to provide training to their employees about the causes of nail gun injuries and how to reduce them, the differences among triggers, and how to operate nail guns safely. In addition, OSHA requires employers to¹:

- Maintain nail guns in a safe condition. Modifying the nail gun can lead to safety problems for anyone who uses it, particularly if safety mechanisms are disabled or bypassed.
- Provide, at no cost to employees, personal protective equipment (PPE) such as hard hats, safety glasses, and hearing protection.
- Not exceed the manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings.
- Ensure that nail guns with an automatic fastener feed, which operate at more than 100 pounds per square inch, have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.
- Ensure workers do not use hoses for hoisting or lowering tools.

CPWR Research and Resources

- Nailgunfacts.org – an online resource dedicated to nail gun safety.
- **Nail Guns Hazard Alert Card** – a brief, image-driven handout to help workers understand how to use nail guns safely. Available in [English](#) and [Spanish](#).
- **Nail Guns Toolbox Talk** – a short discussion guide for use by foremen or supervisors to raise worker awareness and discuss site-specific actions to identify and address nail gun hazards. Available in [English](#) and [Spanish](#).
- [IMPACT Card – Sounding the Alarm on Dangerous Nail Guns](#) – a summary of the hazard and how CPWR's research generated solutions that have made an impact.
- **Studies** –
 - ◇ [Prevention of Injuries from Nail Guns in Residential Construction \(2004-2009\)](#)
 - ◇ [Prevention of Nail Gun Injuries in Residential Construction \(2009-2014\)](#)
 - ◇ [Buyer Beware: Personnel Selling Nail Guns Know Little About Dangerous Tools](#)
 - ◇ [Surveillance of Nail Gun Injuries by Journeymen Carpenters Provides Important Insight into Experience of Apprentices](#)
 - ◇ [Nail Gun Injuries Among Construction Workers](#)

Other Resources

- [Nail Gun Safety](#) – OSHA’s main website for nail gun safety.
- [Nail Gun Safety](#) – NIOSH’s main website for nail gun safety.

About CPWR

CPWR - The Center for Construction Research and Training [CPWR] is a 501(c)3 non-profit dedicated to reducing injuries, illnesses, and fatalities in construction, and currently serves as NIOSH’s National Construction Center. Through research, training, and service programs, CPWR works in partnership with industry stakeholders, safety and health professionals, academics, and key government agencies, to identify and find solutions for occupational hazards and improve the safety and health of construction workers. For more information, please visit: www.CPWR.com

References

¹National Institute for Occupational Safety and Health [NIOSH], and the Occupational Safety and Health Administration [OSHA], 2011. *Nail Gun Safety: A Guide for Construction Contractors*. https://www.osha.gov/Publications/NailgunFinal_508_02_optimized.pdf

²U.S. Bureau of Labor Statistics. *Census of Fatal Occupational Injuries (CFOI) - Current and Revised Data*. <https://www.bls.gov/iif/oshcfoi1.htm>. Accessed March 22, 2018. The data is for the private sector construction industry.

³CPWR, 2012. *Sounding the Alarm on Dangerous Nail Guns*. <https://www.cpwr.com/sites/default/files/publications/NailGunsIMPACTCard.pdf>