

# HAZARD ALERT

CPWR  
THE CENTER FOR CONSTRUCTION  
RESEARCH AND TRAINING

# Nail Guns

**Serious - even fatal - injuries  
can happen even when used as designed.**



## What's the Problem?

Nail guns are popular for a reason. They get the job done quickly. But that rapid-fire action can just as quickly result in an injury, or worse.

Nail gun injuries are more common than people think. Most injuries involve puncture wounds to hands or fingers, but serious, even fatal, injuries have happened when a nail enters the head or other parts of the body.

It's not just nail gun users who are at risk. People nearby have also been injured by nails being misfired.

## How Do Nail Guns Work?

There are many types of nail guns. Most are pneumatic, meaning they are powered by compressed air. Pneumatic nail guns are typically triggered by a contact trip trigger or a sequential trigger. These triggers look the same, but the risks are different.

**Contact Trip Triggers** fire any time the trigger and the nose of the gun – the contact element – are both depressed. The trigger can be held down to allow “bump firing.”

**Sequential Triggers** require the nose of the gun to be depressed before the trigger can be pulled and the nail released. This helps avoid the accidental firing of nails.

**Dual Triggers** allow you to switch back and forth from a contact trip trigger to a sequential trigger. Confusing the two can lead to injuries.

### How Do I Know Which Trigger I'm Using?

All triggers look alike. If you don't know whether you have a contact trip or sequential trigger nail gun, test it before using. If you can “bump fire” by holding the trigger down and bouncing the nose of the gun along the workpiece to fire nails, you are using a contact trip trigger.

## How Do Injuries Happen?

Most nail gun injuries result from:

- ▶ Accidental or unintended firing, often when the nail gun recoils after firing;
- ▶ Holding finger on contact trigger when the nose is not firmly against the work surface;
- ▶ Ricocheting or airborne nails;
- ▶ Nail going through work surface;
- ▶ Bypassed safety features; or
- ▶ Awkward nailing positions.

## When Working With Nail Guns...

### 1 Use the Right Trigger

Research shows that a **full sequential trigger** nail gun is the safest trigger option.

Nail guns with contact trip triggers can **double your risk for injury** compared to sequential triggers. According to the research, they also **do not save you time overall**. Time saved depends more on the skills of the nail gun user than the trigger mechanism.

If you do not know how to use a nail gun properly you can be injured with either trigger. Ask your employer for **training on using nail guns safely** to reduce your risk for injury.

**Use a sequential trigger. A few minutes a day can prevent nail gun injuries.**

Source: Lipscomb, H. J., Nolan, J., Patterson, D., Makrozhopoulos, D., Kucera, K. L., & Dement, J. M. (2008). How much time is safety worth? A comparison of trigger configurations on pneumatic nail guns in residential framing. Public health reports, 123(4), 481-486. doi: 10.1177/003335490812300409

### 2 Wear Personal Protective Equipment (PPE)

When using a nail gun, wear:

- ▶ A hard hat;
- ▶ Safety glasses manufactured as Z87+;
- ▶ Steel-toe footwear; and
- ▶ Hearing protection.

### 3 Use Safe Work Practices

When using a nail gun, **NEVER**:

- ▶ Press the trigger unless the nose of the gun is pressed firmly against the work surface.
- ▶ Point it at yourself or other people.
- ▶ Carry it around with your finger on the trigger.
- ▶ Use a broken or modified trigger. **Do not** remove or tamper with the spring in the workpiece contact.
- ▶ Use the hose for hoisting or lowering the nail gun.
- ▶ Clean, clear jams, or adjust it when it's connected to the air supply.

Use a hammer if you cannot reach the work while holding the nail gun with your dominant hand!

### To learn more:

- ▶ **CPWR–Nail Gun Safety (also in Spanish):** <http://www.nailgunfacts.org> 
- ▶ **NIOSH–Nail Gun Safety:** <https://tinyurl.com/y6shqb3a>
- ▶ **OSHA–Nail Gun Safety:** <https://tinyurl.com/y234l58q>
- ▶ **OSHA–NIOSH Publication “Nail Gun Safety: A Guide for Construction Contractors”:** <https://tinyurl.com/yama85mj>

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are in danger:  
Contact your supervisor.  
Contact your union.  
Call OSHA  
1-800-321-OSHA**



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