

Nail gun

Nail guns have been in use since the 1950s.¹ Low-velocity nail guns, used on wooden surfaces, are pneumatically driven, and high-velocity ones, which fire single nails or bolts into concrete or metal surfaces, use an explosive cartridge. Nail guns have a ballistic potential comparable to that of conventional firearms, being capable of firing projectiles at speeds of 100–150 m/s and distances of up to 500 m.²

The anatomical location of a nail-gun wound, in combination with radiographs of the nail before its removal, are important for distinguishing cases of accidental and intentional injury in forensic investigations.³ Radiographs indicating a bent-nail are suggestive of accidental injury from a nail ricochet.⁴ Straight-nail injuries, especially in the

extremities, also usually represent straightforward industrial accidents.⁵ Straight-nail injuries to people other than the nail gun operator also occur when a nail over-penetrates a surface, often passing through a wall and striking a worker in an adjacent room. Suicide should be considered for straight-nail wounds to the chest, head or abdomen, as many completed suicides reported in the literature have involved wounds to these locations.⁶

Apart from indicating that a nail may have ricocheted, radiography can identify additional foreign bodies buried in the wound, such as debris from the explosive charge and fragments of the copper wires that string together pneumatically driven nail chains.⁷

Children have been injured directly by nail guns³ and indirectly by their explosive cartridges. Reports exist of adolescents being injured after finding cartridges lying around construction sites and detonating them with tossed bricks.⁸ Such incidents underline the importance of operators storing and securing nail guns and cartridges as responsibly as they would any firearm and ammunition.

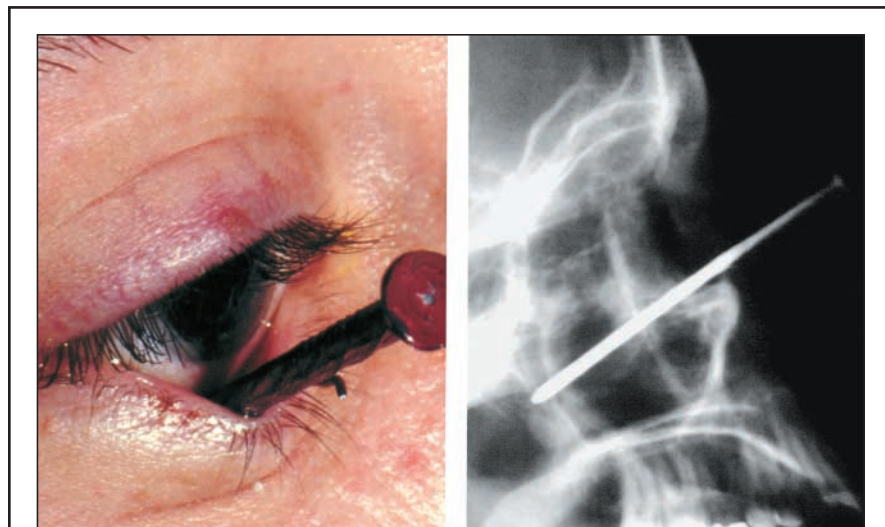
A MEDLINE search with the terms “nail gun” and “injury” identified a case report of a young French soldier in whom encephalopathy and seizures developed.⁹ The recruit was found to have tungsten toxicity (detected by testing samples of his hair and nails), which resulted from his drinking a mixture of beer and wine from a hot gun barrel. The *CMAJ* editors are in agreement that such a practice, like tossing bricks at nail-gun cartridges, is unwise.

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References

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This construction worker was injured by a coworker's nail gun. Fortunately serious injury was averted: the nail entered the orbital rim and penetrated the maxillary sinus without damaging any important eye structures. No other foreign bodies were visible on the radiograph. The nail was pulled out directly under conscious sedation in the emergency department, tetanus vaccination was administered, and the patient was discharged with no further ophthalmologic sequelae. — Ari Giligson, Ophthalmologist, North Delta, BC.