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ART OF MEDICINE

Need More Reasons to Curb Gun Violence?

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Abstract

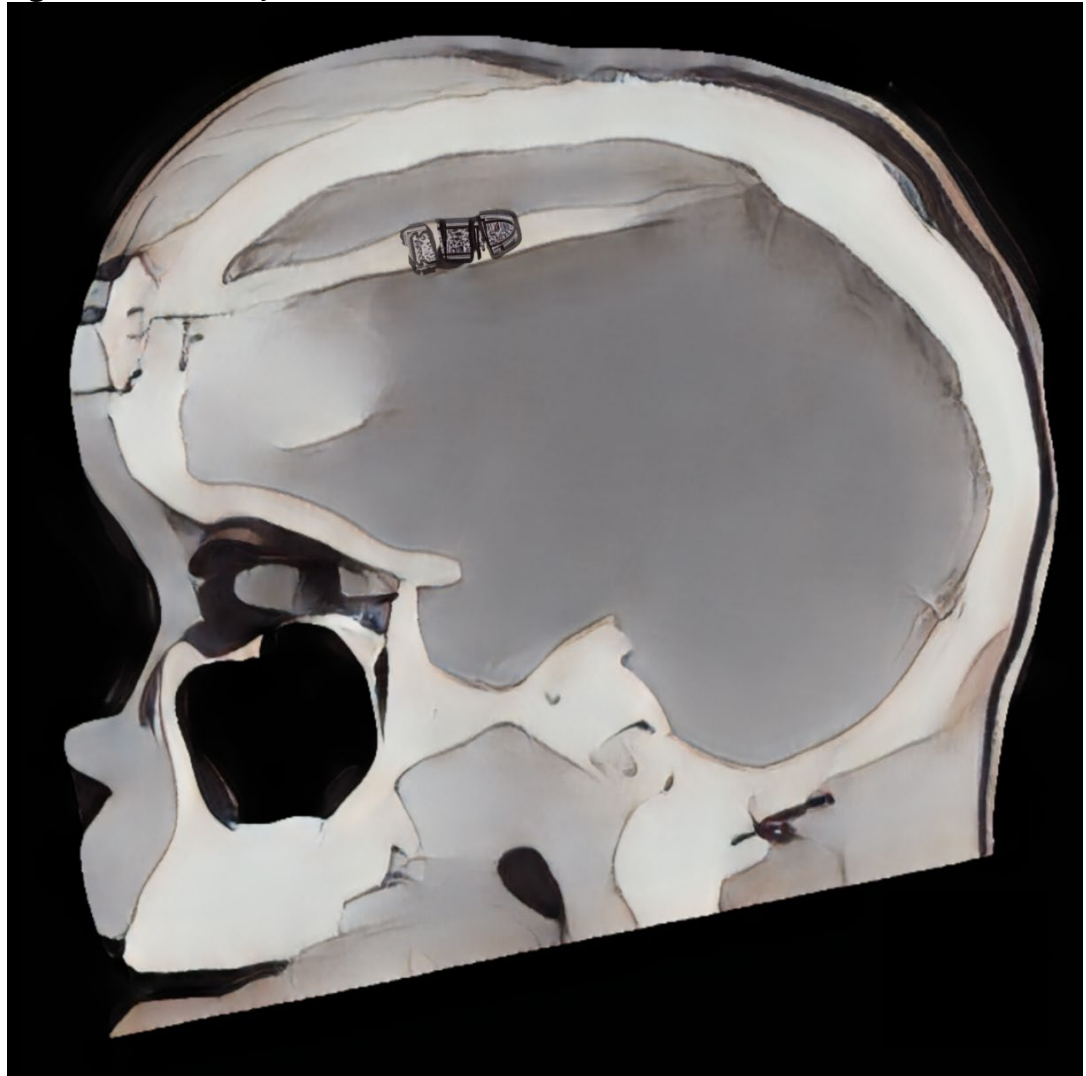
This collection of images considers complex ethical, public health, and sociopolitical dimensions of firearm injuries. Since many firearm bullets contain lead, visual parallels are drawn between clinical and public health approaches to managing lead poisoning and efforts to reduce gun violence. Like lead toxicity from paint or water, gun violence and toxicity from retained ballistic fragments can adversely influence health and should be a source of concern to clinicians.

Lead Toxicity

Lead poisoning has long been a threat to health. Water crises like those in Flint, Michigan, remind us that lead toxicity threatens 21st-century United States residents, particularly those of lower socioeconomic status.^{1,2} In addition to its multisystem contributions to cardiovascular, reproductive, and gastrointestinal disease, lead is a potent neurotoxin and contributor to neurodevelopmental inequity during a person's childhood and entire life span.³

Lead exposure commonly occurs through one's work, drinking water, soil, or paint. Public health efforts, such as clinical screening and policy changes, continue to attempt to mitigate these exposures. New legislation, for example, has catalyzed phasing out lead contamination from paint and promoted replacement of lead pipes with installation of lead-free civic plumbing and water supply infrastructure.⁴ The increasing prevalence of **firearm violence** demands health policy to mitigate additional sources of lead toxicity: nonlethal bullet penetration can increase lead exposure risk because ammunition can contain lead.^{5,6} Fractures, recent trauma, bullet fragment retention (especially in body fluid compartments, such as intra-articular spaces), and increased metabolism at a time of injury might exacerbate a gunshot wound victim's risk for lead toxicity.⁷

Figure 1. *Intentionally Retained*



Media

Canva design software iterated through Media.io and LunaPic.

Caption

The digitally created sagittal head computer tomography scan shows bullet fragment retention in the brain matter of an injured patient.

Figure 2. *Intentionally Fragmented*



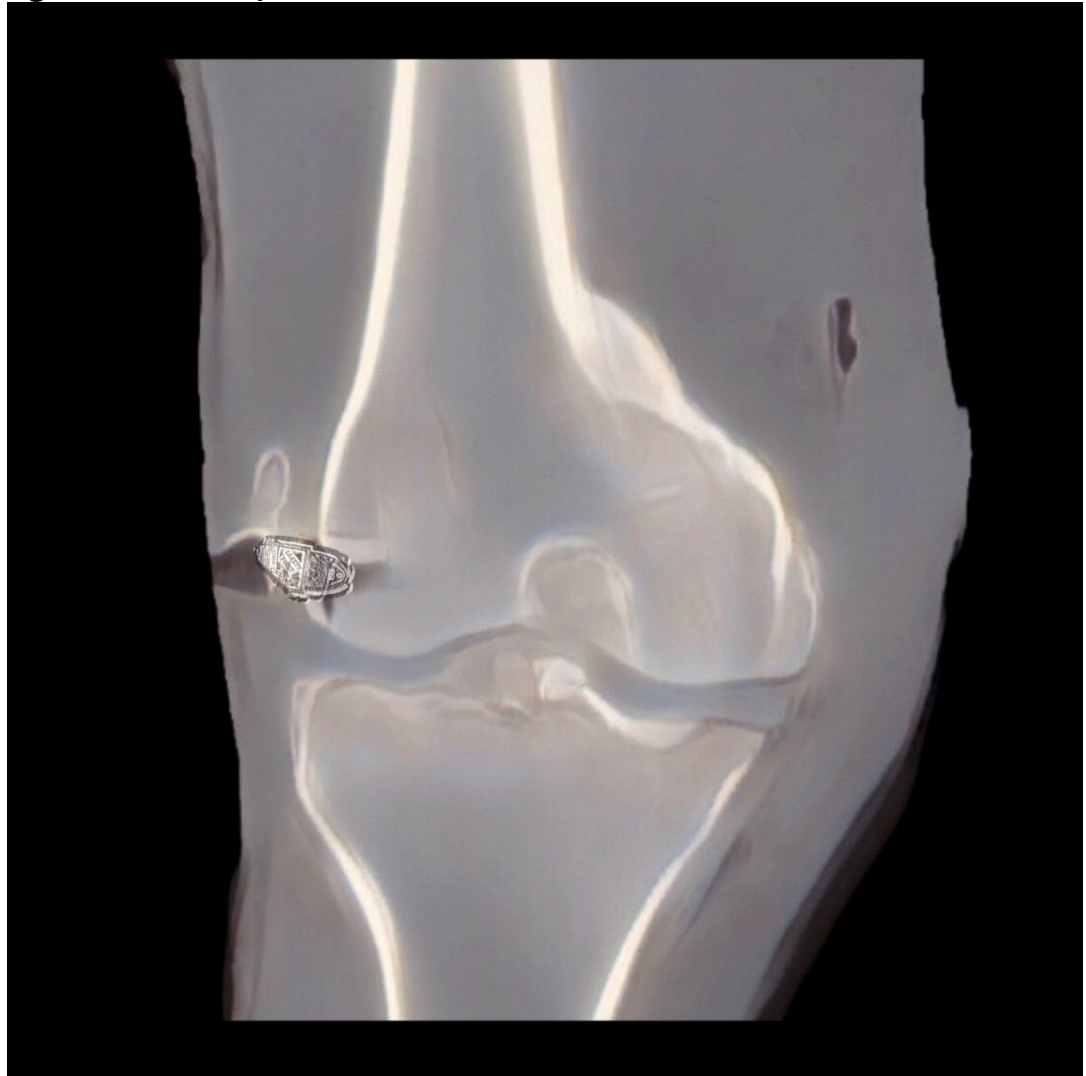
Media

Canva design software iterated through Media.io and LunaPic.

Caption

Zooming in on ammunition fragments retained in a patient's brain depicts a collage of **social, cultural, and political features** of gun violence.

Figure 3. *Accidentally Retained*



Media

Canva design software iterated through Media.io and LunaPic.

Caption

This digitally created knee computer tomography scan shows bullet fragment retention in the knee of an injured patient.

Figure 4. *Accidentally Fragmented*



Media

Canva design software iterated through Media.io and LunaPic.

Caption

Zooming in on ammunition fragments retained in a patient’s knee depicts a collage of questions about the adequacy and implications of the individual right to self-defense as an interpretation of “the right of the people to keep and bear Arms” clause of the Second Amendment to the United States Constitution.

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