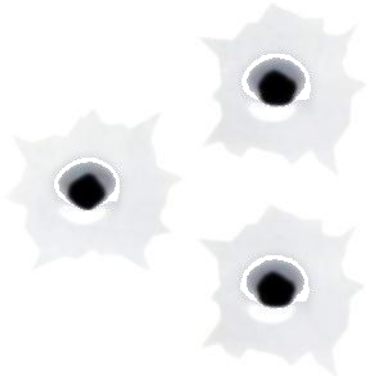


HIT ME WITH YOUR BEST SHOT

An Analysis of Soft Tissue Damage from
Simulated Firearm Injuries



By: Kelsey Wofford

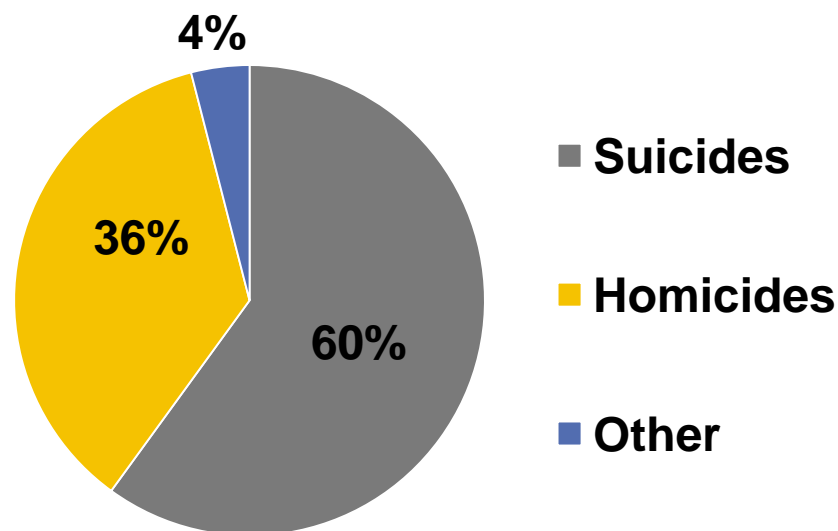
Anthropological Significance

- Forensic Anthropology: The application of the science of physical anthropology to the legal process.⁽¹⁾
- Evaluation of soft tissue damage relates to holistically reconstructing criminal context.

Ballistics in Forensic Anthropology

- Projectile patterns
- Commonality in legal cases
- 31,347 firearm deaths in 2009

Deaths by Firearms in 2009



Pigs as Models for Humans

- Pigs have a similar soft tissue, digestive system, and weight composition.



Research Questions

- Do different weapons produce visible differences when they are fired into soft tissue?
- Do the same weapons produce visible differences when they are fired from various distances into soft tissue?



Hypotheses

- The larger the caliber of the weapon the greater the damage will be in the soft tissue.
- The closer the distance the greater that the damage will be in the soft tissue.



Materials: Firearms

.22mm Pistol + ammunition



.38mm Revolver + ammunition



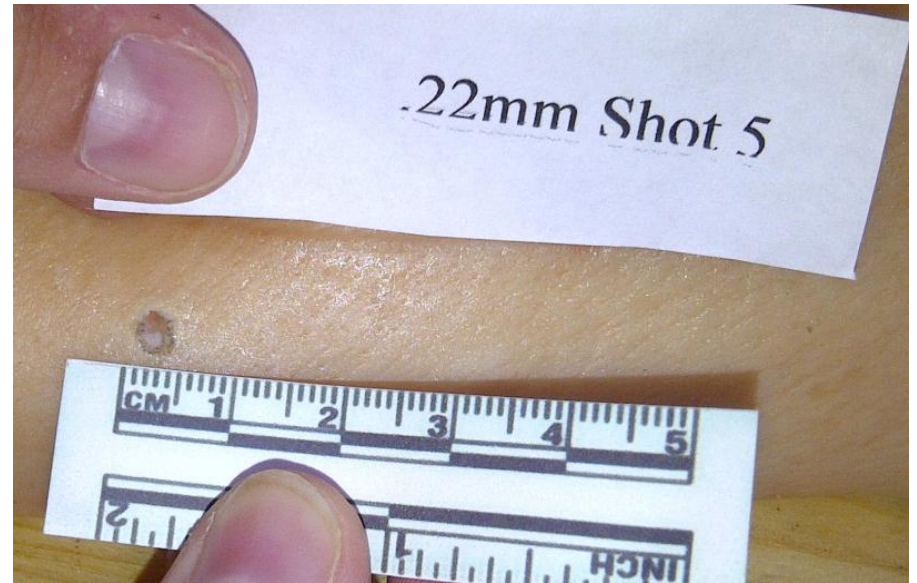
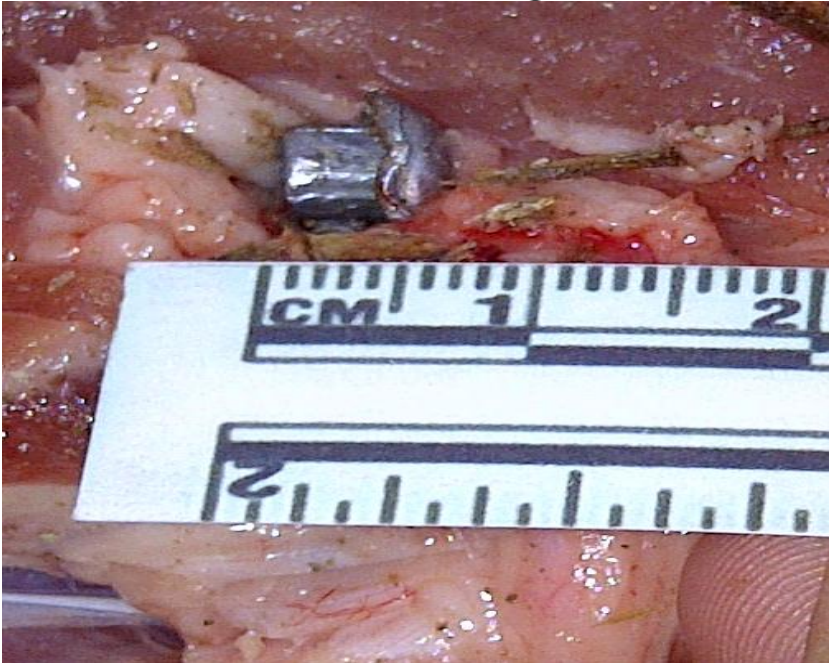
Materials: Specimens

- Pigs:
 - 12 soft tissue samples taken from shoulder
 - 3 specimens per distance and weapon
 - Skin was still attached



Methods

- Measurements
 - Entry wound
 - Exit wound
- Evaluate damage



Experiment Setup

- Calibrate distance
- Test firing



Results: Entry Wound

.22mm Pistol from 10 ft.

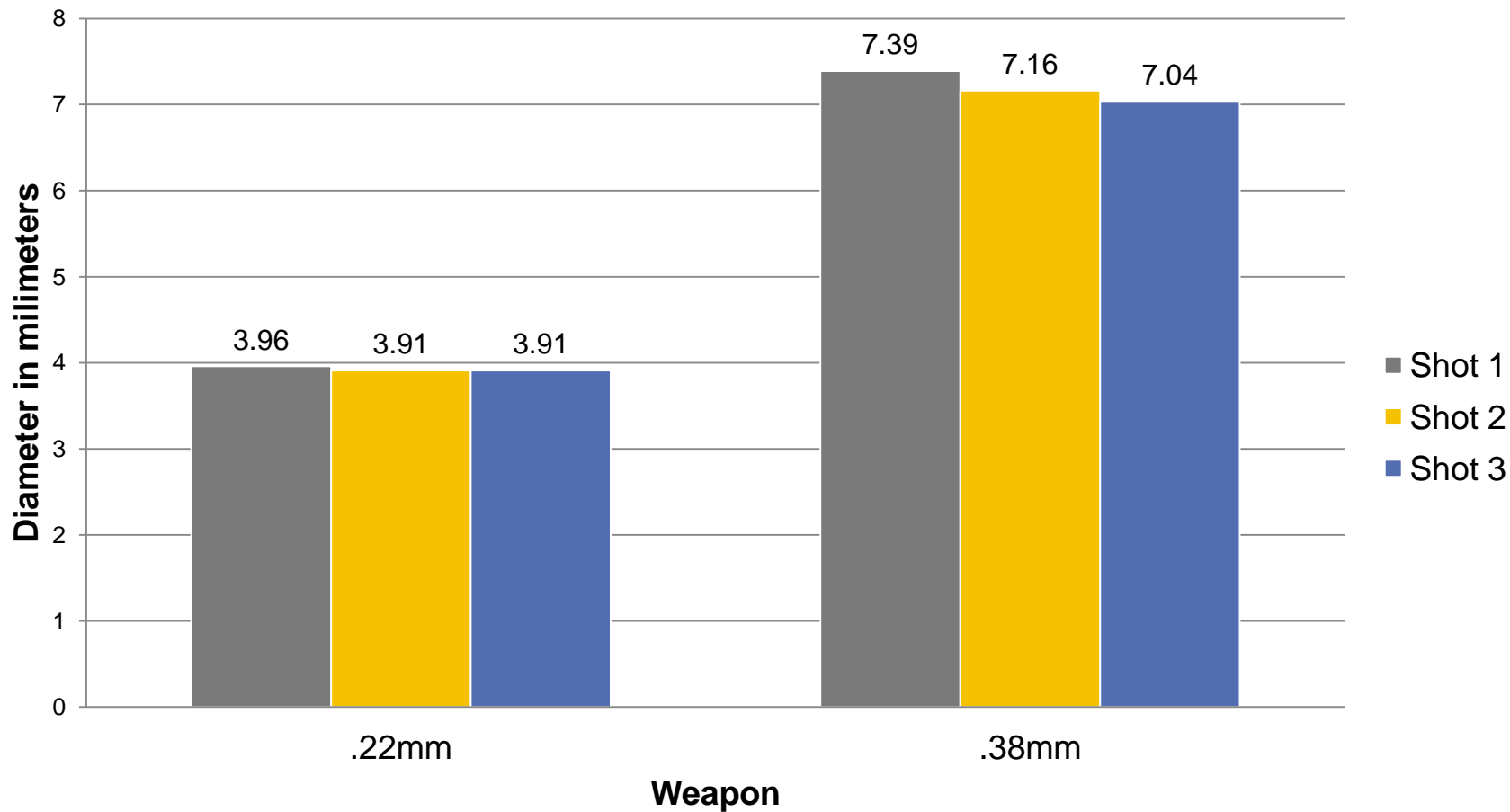


.38mm Revolver from 10 ft.



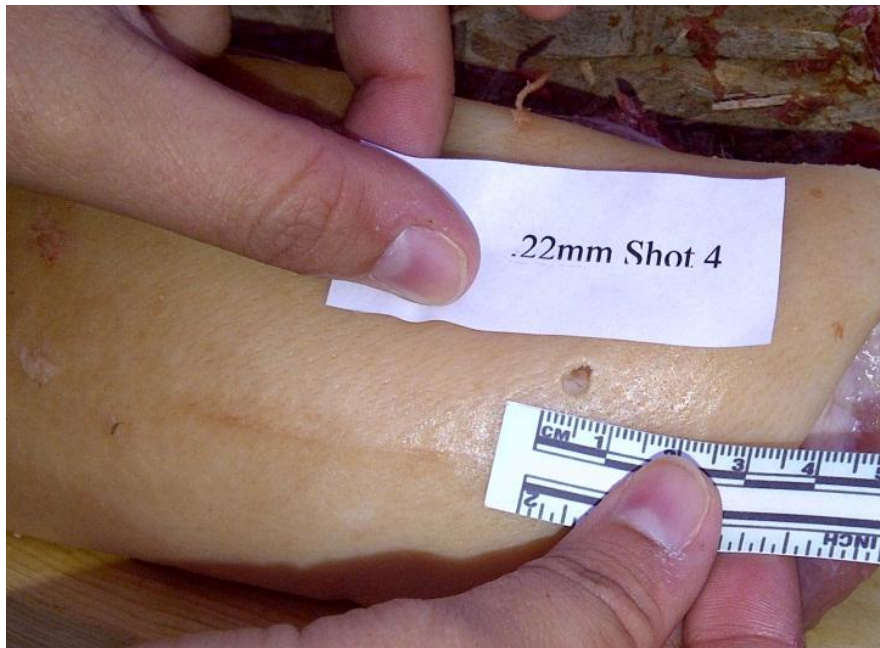
Results: Entry Wound

Entry Wound Diameter from 10ft



Results: Entry Wound

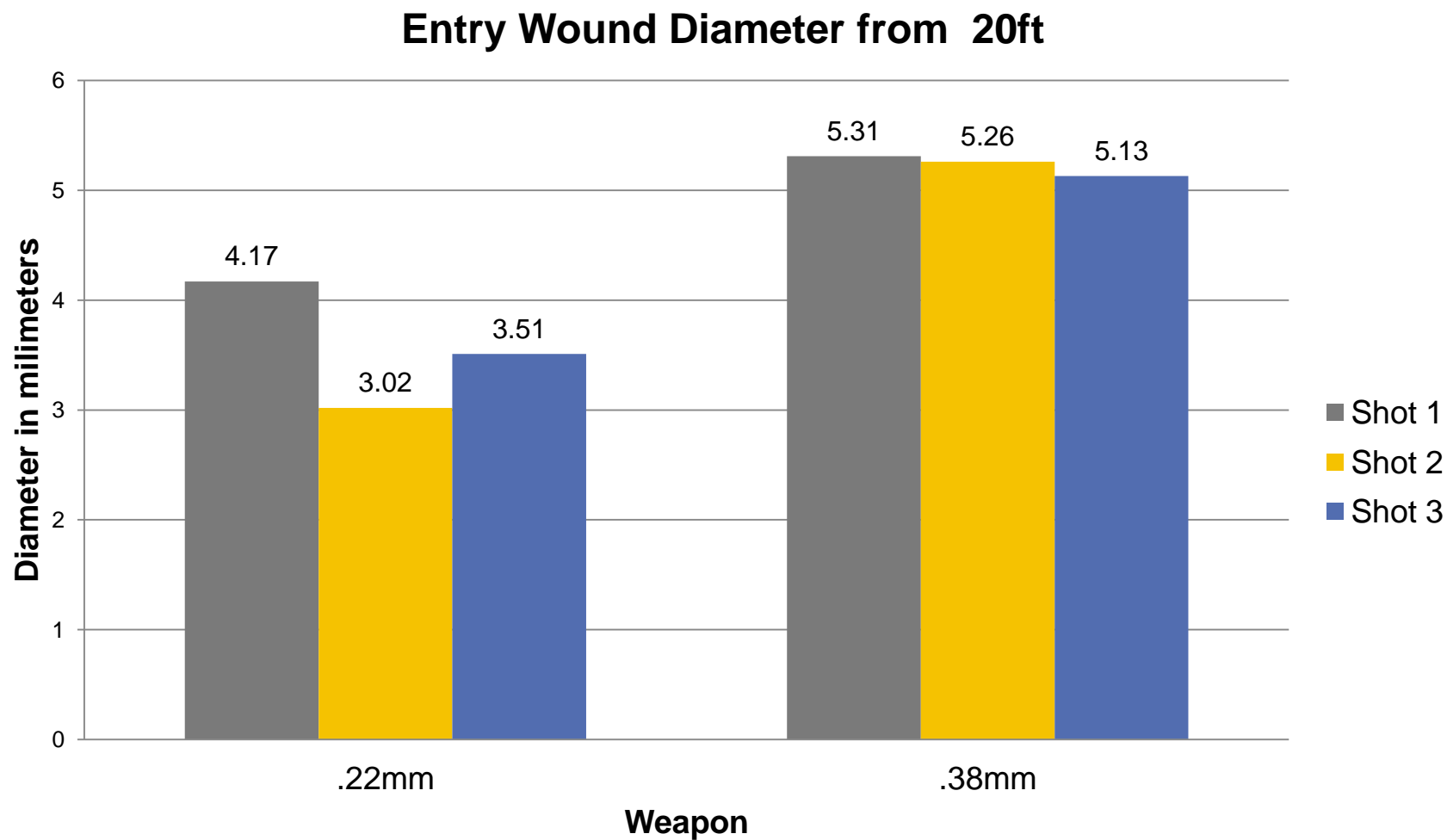
.22mm Pistol from 20 ft.



.38mm Revolver from 20 ft.



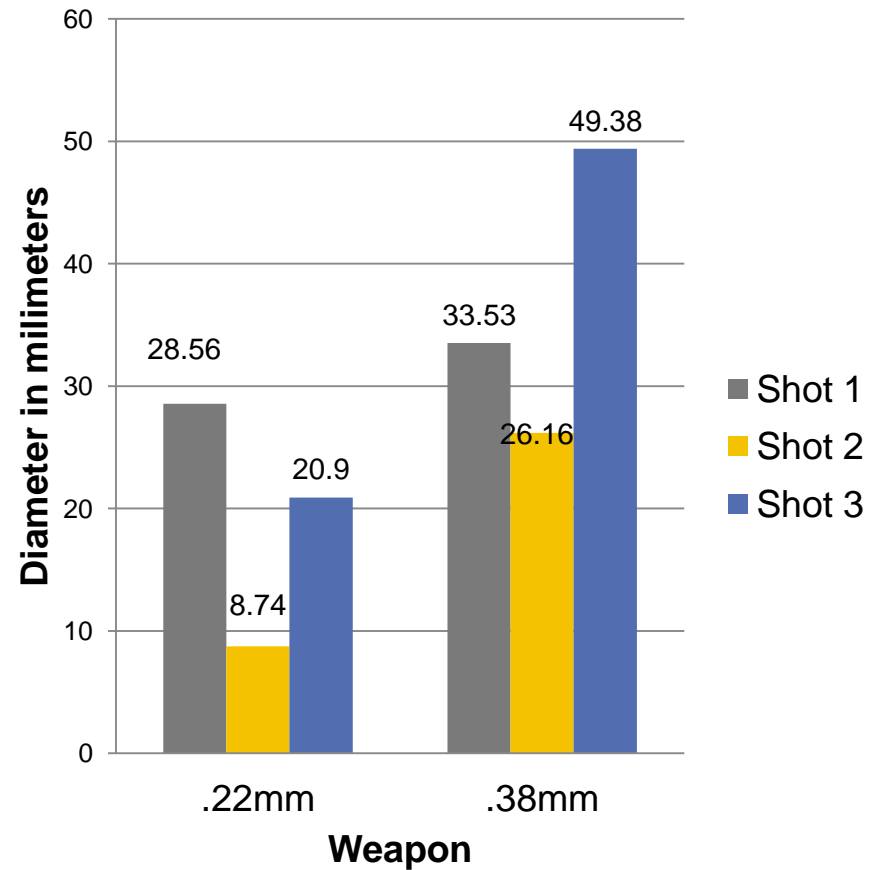
Results: Entry Wound



Results: Exit Wound

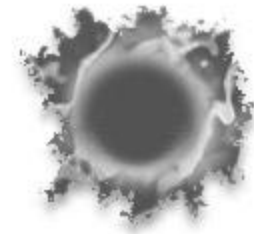
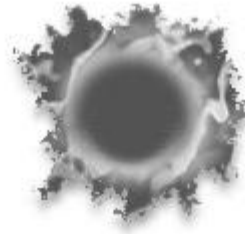


Exit Wound Diameter for 20 ft.



Discussion

- Larger caliber
 - Larger entry wound
- Closer distance
 - Larger entry wound



Conclusion

- There are visible differences regarding the caliber of weapon and firing distance.
- This information can provide guidelines to help reconstruct crime scenes.

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