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## Supplementary information to:

## Letter to the editor:

# DIFFERENCES IN BALLISTIC FINDINGS BETWEEN AUTOPSY AND POST-MORTEM COMPUTED TOMOGRAPHY IN THE HEAD AND NECK REGION OF GUNSHOT VICTIMS: A COMPREHENSIVE SYNTHESIS FOR FORENSIC DECISION-MAKING

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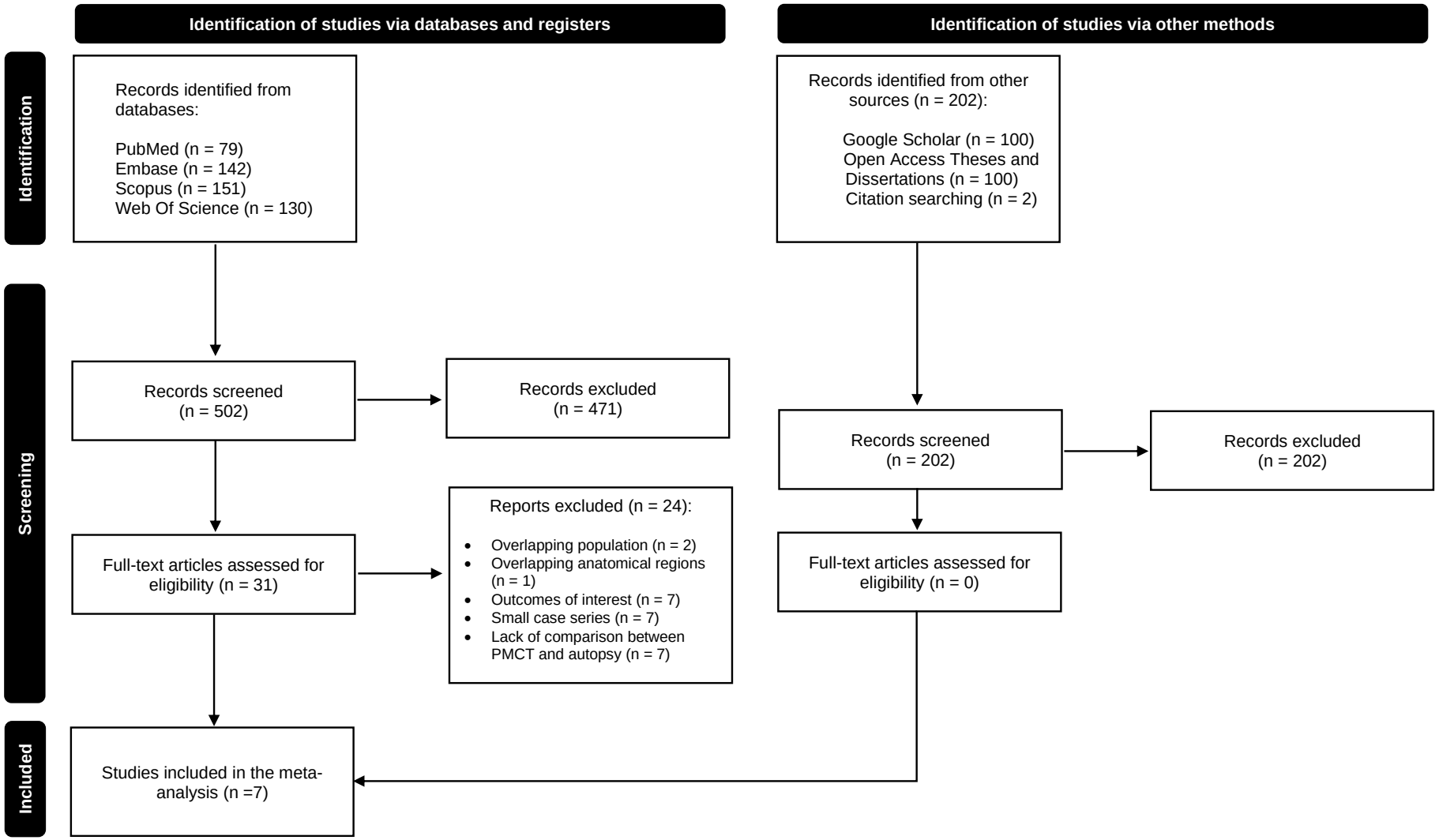


**Supplementary Figure 1:** Flow diagram of study selection

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| Question | Author | | | | | | |
|---|---|---|---|---|---|---|---|
| | Andenmatten *et al.* 2008 | Elkhateeb *et al.* 2018 | Graziani *et al.* 2018 | Kirchhoff *et al.* 2016 | Levy *et al.* 2006 | Ursprung *et al.* 2022 | van Kan, *et al.* 2019 |
| **1.** Were the criteria for inclusion in the sample clearly defined? | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ |
| **2.** Were the study subjects and the setting described in detail? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| **3.** Was the exposure measured in a valid and reliable way? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **4.** Were objective, standard criteria used for measurement of the condition? | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| **5.** Were confounding factors identified? | ? | ? | ? | ? | ? | ? | ? |
| **6.** Were strategies to deal with confounding factors stated? | ? | ? | ? | ? | ? | ? | ? |
| **7.** Were the outcomes measured in a valid and reliable way? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **8.** Was appropriate statistical analysis used? | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

**Supplementary Figure 2:** Risk of bias assessment

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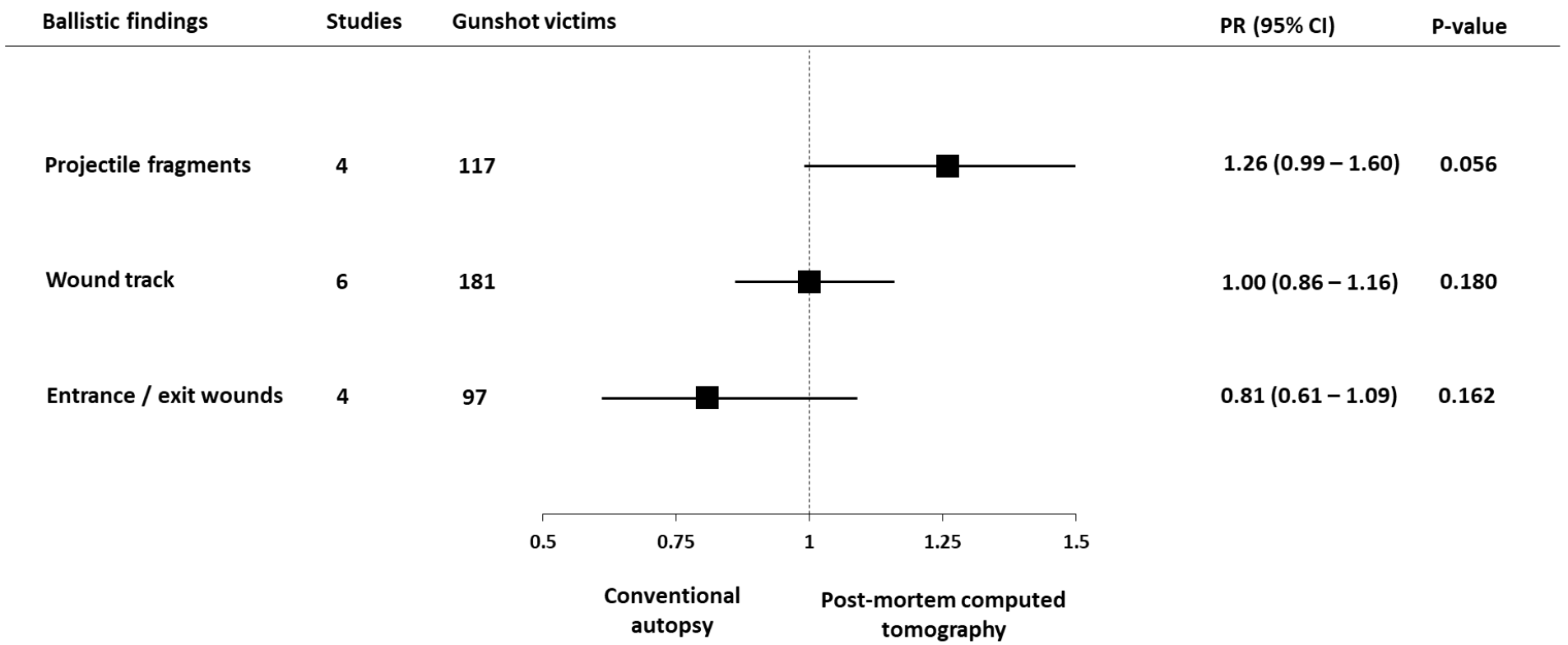


**Supplementary Figure 3:** Differences between post-mortem computed tomography and conventional autopsy in the head and neck region regarding projectile fragments, wound track, and entrance / exit wounds

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**Supplementary Table 1:** Search strategy

| Databases and other sources | Search strategy |
|---|---|
| **PubMed**<br>**Web of Science**<br>**Scopus**<br>**Embase**<br>**Google Scholar**<br>**Open Access Theses and Dissertations** | (“virtual autopsy” OR virtopsy OR “touch-free autopsy” OR “digital autopsy” OR “scalpel-free autopsy” OR “postmortem CT” OR “postmortem computed tomography” OR “postmortem CT” OR “postmortem computed tomography” OR “post-mortem CT” OR “post-mortem computed tomography” OR PMCT OR “robotic machine” OR virtibot OR “computed tomography virtopsy”) AND (gun OR gunshot OR gunshots OR gunfire OR shooting OR firearm OR firearms OR weapon OR weapons OR handgun OR handguns) |

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**Supplementary Table 2:** Characteristics of the included studies

| Author | Year | Country | Sample size | Sex | | Ballistic outcomes | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Male | Female | Entrance/exit wounds | Wound track | Projectile fragments |
| Andenmatten et al. | 2008 | Switzerland | 22 | 14 | 8 | Yes | NR | NR |
| Elkhateeb et al. | 2018 | Egypt | 30 | 24 | 6 | Yes | Yes | Yes |
| Graziani et al. | 2018 | Israel | 42 | NR | NR | NR | Yes | Yes |
| Kirchhoff et al. | 2016 | Germany | 51 | 40 | 11 | NR | Yes | NR |
| Levy et al. | 2006 | USA | 13 | 13 | 0 | NR | Yes | NR |
| Ursprung et al. | 2022 | Switzerland | 24 | 19 | 5 | Yes | Yes | Yes |
| van Kan et al. | 2019 | Netherlands | 21 | NR | NR | Yes | Yes | Yes |

NR, Not reported

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**Supplementary Table 3:** Method of image acquisition, processing, and visualization

| Author | Equipment | kV | mA | mAs | Acquisition time | Image reconstruction or visualization software |
|---|---|---|---|---|---|---|
| Andenmatten et al., 2008 | Somatom Emotion 6 (Siemens Medical Solutions) | NR | NR | NR | < 10 minutes | Syngo CT workstation (Siemens Medical Solutions) |
| Elkhateeb et al., 2018 | Somatom Sensation Cardiac 64 (Siemens Medical Solutions) | NR | NR | NR | NR | Syngo B workstation (Siemens Medical Solutions) |
| Graziani et al., 2018 | Toshiba Aquilion PRIME scanner or Phillips iCT 256 Scanner | 120 (under 100kg) 135 (over 100 kg) | 350 (Torso) 350 (Head) 400 (Neck) | 430 (Torso) 480 (Neck) 840 (Head) | NR | Phillips Portal or Vital-images Vitrea |
| Kirchhoff et al., 2016 | Brilliance 64 (Phillips) or GE Discovery 750 HD (GE Healthcare) | NR | NR | NR | NR | Picture Archiving Computer System |
| Levy et al., 2006 | LightSpeed 16 (GE Medical Systems) | NR | NR | NR | NR | Advantage (GE Medical Systems) |
| Ursprung et al., 2022 | Somatom Definition Flash (Siemens Medical Solutions) | 120 | NR | NR | NR | Leonardo workstation (Siemens Medical Solutions) and Picture Archiving Computer System |
| van Kan et al., 2019 | NR | 120 | NR | 350 (Head) 300 (Neck) 450 (Torso) | NR | OsiriX |

kV, kilovoltage; mA, milliampere; mAs; milliampere-seconds; NR, not reported