Abstract

The authors have previously shown [1] that the casualty criterion for wounds from firearms, particularly the shot penetration, is given by the energy/area of presentation of the missile in question. The impact velocity must exceed that required for penetration of human skin. The threshold velocity for skin penetration by steel spheres is given [2] as 125–170 ft/s. Against this the energy criterion [2–4] alone (which is quoted between 40–100 ft-lb or 5.5–14 m-kg) is misleading and subject to forensic misuse. Likewise, it is imprecisely reported [5,6] that shotguns ordinarily have an effective range of 30–40 yd, ignoring the shot size in question. For forensic purposes, a missile is effective as long as it penetrates into the human body, irrespective of the accuracy of the ammunition. A 12-bore rifled slug is quoted [7] as having an extreme range of 800 yd, and American Eastern Buckshot 0 (equivalent to British shot size SG) a range of under 700 yards. "Whenever a Police weapon is used, the extreme range must be taken into account" [7]. It can be shown that an American Eastern Buckshot 000 (equivalent to British shot size SG) fired from a shotgun with a muzzle velocity of 800 ft/s will have sufficient wounding power (corresponding to energy/area of presentation = 3 m-kg/cm²) even at a distance of ~200 yd and a threshold value for penetration into human skin at ~300 yd, vide infra. Obviously, it was of interest to evaluate experimentally the criteria for penetration of human skin by lead shot and the extent of this penetration further into human muscle as a function of energy/area of presentation, $E/a$, of the missile.
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Firearm-related injuries are caused by a wide variety of weapons and projectiles. The definitive interdisciplinary reference work for wound ballistics — Fundamentals - Physics, arms and ammunition, ballistics Simulating gunshot wounds - Virtopsy — a virtual autopsy method, combining CT, MRT and surface scanning - Materials that reproduce the interaction of soft tissue, bone and blood vessels with a bullet that penetrates the body. Wound ballistics for — Short-range and long-range weapons - Fragments, such as those from bombs and. Under special conditions, other patterned skin marks located near a gunshot entrance wound may give the impression to be part of the muzzle imprint. A potential mechanism causing a patterned pressure return fire as directed or required try to keep yourself from getting shot Try to keep the casualty from sustaining additional wounds. Take the casualty with you when you leave. of trauma resulting in neck pain or unconsciousness should still be treated with spinal immobilization unless the danger of hostile fire constitutes a greater risk in the judgment of the treating corpsman or medic. diver should be alert for a possible loss of consciousness on the part of the injured diver while swimming away from the target area. If the casualty does subsequently lose consciousness, his swim partner should try to surface if this is now tactically fea-sible, since an unconscious diver is in grave danger of aspiration of sea water and death from drowning.