

## Low Incidence of Heat Injuries During Combat in the Gaza Strip – What We Have Learned from the Iron Swords War

**To cite this article:** Elefant Y, Talmi Yaakov Z, Benov A, Ketko I. Low incidence of heat injuries during combat in the Gaza strip – what we have learned from the ‘Iron Swords’ War. J Isr Mil Med September 2024; 21(63): 21-25.

**Keywords:** Heat injury, exertional heat stroke, military training, heat stress, cooling, heat stress

**Background:** Heat injuries range from mild symptoms to life-threatening heat strokes, which can cause disability and even might be fatal. Most cases occur during training, and their incidence, particularly heat strokes, appears lower in combat, despite limited adherence to heat-stress safety guidelines.

**Objective:** To assess whether the incidence of heat injuries and heat strokes is lower in combat than during training, and to evaluate measures taken to reduce their occurrence.

**Methods:** Structured debriefings were held with brigade and division medical officers and the head of the Combat Fitness Division. Heat injury data from October 2023 through July 2024 were extracted from the IDF Medical Operations Center, hospitalization monitoring system (“Qlik-Sense”), the Computerized Patient Record (CPR), and the Institute of Military Physiology database.

**Results:** In the first months of combat, exertional heat strokes and moderate heat injuries were reported less frequently than during training. Key factors included maneuver characteristics, operational risk management, motivation and peer pressure, the Logistics Directorate’s cooling-equipment program, and heightened awareness among commanders and medical staff led by the Surgeon General HQ. Nonetheless, debriefings highlighted that heat stress significantly impaired performance, causing fatigue, reduced concentration, and discomfort. Existing cooling methods offered partial relief, but more effective solutions are needed.

**Conclusions:** Heat injuries primarily happen during training, particularly during marches. Training protocols should integrate combat-derived lessons, with emphasis on awareness, early recognition, and treatment by commanders. Applying combat-level cooling measures to training, alongside novel approaches, may reduce risk. Findings are specific to Gaza operations and may not apply to other geographical areas, where combat and logistical conditions differ.

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