

**Keeping It Too Simple? Performance of the New OTA-OFC3 Open Fracture Classification System**

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**Purpose:** A simplified version of the OTA Open Fracture Classification (OTA-OFC) has recently been proposed using the most severe of the 5 domains to summarize a fracture's severity. We hypothesized that this new classification (the OTA-OFC3) would perform better than the original OTA-OFC or the Gustilo-Anderson classification in predicting surgical site infection and unplanned reoperations.

**Methods:** This cohort study included 3338 patients with 3627 open fractures enrolled in 2 recently published multicenter clinical trials. The treating surgeon assigned the OTA-OFC and Gustilo-Anderson classification to each fracture at the initial irrigation and debridement. The OTA-OFC3 was calculated based on these data. The study outcomes included surgical site infection defined by Centers for Disease Control and Prevention criteria and unplanned reoperations within 1 year of injury. We measured prognostic performance as the area under the receiver operating characteristic curve (AUC) and compared AUCs between classifications with z-tests.

**Results:** Of the 3627 included open fractures, surgical site infections occurred in 11% and unplanned reoperations occurred in 15%. With an AUC of 0.61 (95% confidence interval [CI], 0.58-0.64), the prognostic performance of the new OTA-OFC3 score was not significantly different than the Gustilo-Anderson classification (AUC, 0.63; P = 0.40) or the 5 OTA-OFC domains in predicting surgical site infection (AUC, 0.64; p=0.32). The OTA-OFC3 (AUC, 0.62; 95% CI, 0.59-0.64) was similar to the Gustilo-Anderson classification (AUC, 0.63; P = 0.34) in its ability to predict unplanned reoperations but performed significantly worse than the 5 OTA-OFC domains (AUC, 0.69; P<0.001).

**Conclusion:** Simplifying the OTA-OFC to the new OTA-OFC3 significantly decreased its ability to predict unplanned reoperations and did not improve its ability to predict surgical site infection. The OTA-OFC3 demonstrated similar prognostic performance to the commonly used Gustilo-Anderson classification. These findings indicate that this newly proposed classification system, although simpler, omits important prognostic information captured in the original OTA-OFC.