

# EFFECT OF LIVE-FIRE TRAINING DRILLS ON FIREFIGHTERS' PLATELET NUMBER AND FUNCTION

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## ABSTRACT

**Background.** The leading cause of line-of-duty death among firefighters is sudden cardiac events. Platelets play a critical role in the formation of an occlusive thrombus. The purpose of this study was to examine the acute effect of fire fighting on platelet number and aggregability. **Methods.** Apparently healthy male firefighters (age 29.4 ± 7.8 years) matched for BMI (27.1 ± 1.14) performed simulated fire fighting activity for 30 minutes. Blood samples were obtained before and after simulated fire fighting. Hematology and platelet function (platelet count, BCCT, and platelet number and function) were measured using a PFA-100 analyzer to assess platelet aggregability. Results showed a significant increase in platelet number and aggregability. **Conclusions.** Fire fighting resulted in a significant increase in platelet number and aggregability. This study suggests that live fire training drills may have a prothrombotic effect on platelets. **Key words:** platelet count, platelet number, platelet aggregation, firefighters.