

Sudden Cardiac Death Among Firefighters ≤ 45 Years of Age in the United States[☆]

Justin Yang, MD, MPH^{a,b}, Dennis Teehan, MD, MPH^{a,b}, Andrea Farioli, MD^{a,b,c},
Dorothee M. Baur, MD, MS^{a,d}, Denise Smith, PhD^e, and Stefanos N. Kales, MD, MPH^{a,b,*}

Sudden cardiac death (SCD) is the leading cause of death in firefighters. Although on-duty SCD usually occurs in older victims almost exclusively because of coronary heart disease, no studies have examined causation across the career span. In the present retrospective case-control study, cases of SCD in young (aged ≤ 45 years) firefighters from the National Institute for Occupational Safety and Health fatality investigations ($n = 87$) were compared with 2 age- and gender-matched control groups: occupationally active firefighters ($n = 915$) and noncardiac traumatic firefighter fatalities ($n = 56$). Of the SCD cases, 63% were obese and 67% had a coronary heart disease–related cause of death. The SCD victims had much heavier hearts (522 ± 102 g) than noncardiac fatality controls (400 ± 91 g, $p < 0.001$). Cardiomegaly (heart weight >450 g) was found in 66% of the SCD victims and conveyed a fivefold increase (95% confidence interval [CI] 1.93 to 12.4) in SCD risk. Furthermore, hypertension, including cases with left ventricular hypertrophy, increased SCD risk by 12-fold (95% CI 6.23 to 22.3) after multivariate adjustment. A history of cardiovascular disease and smoking were also independently associated with elevated SCD risk (odds ratio 6.89, 95% CI 2.87 to 16.5; and odds ratio 3.53, 95% CI 1.87 to 6.65, respectively). In conclusion, SCD in young firefighters is primarily related to preventable lifestyle factors. Obesity entry standards, smoking bans, and improved screening and/or wellness program are potential strategies to reduce SCD in younger firefighters. © 2013 The Authors All rights reserved. (Am J Cardiol 2013;■:■–■)