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**Background** Incidence of fire-related deaths in Finland is higher than in majority of the westernised countries exceeding 2 deaths/100 000 persons. No nationwide epidemiological study focused on severe fire-related injuries existed.

**Aims/Objectives/Purpose** This study attempts to provide comprehensive overview on injuries due to smoke, fire and flames during 2000–2009 in Finland.

**Methods** Patients with fire-related injury following with inpatient care during 2000–2009 were studied in a register based study.

**Results/Outcome** Annually 293 patients on average (population 5.3 million) had fire-related injuries with in-patient care. Majority of these patients were males (74%). Females were older in general having mean age of 51 years while mean age for males was 40 years. During the 10 year period the mean age of both males and females has been increasing.

**Significance/Contribution to the Field** The nationwide picture was provided and the findings showed several implications for prevention. House fires were the most typical for late middle aged and older while injuries from campfires, barbecues, incinerating and flammable substances were distinctively more associated with younger age. Interesting is also the increasing trend among combustion gas poisonings.