

**Title:** PEDESTRIAN ACCIDENTS IN FRANCE: A DESCRIPTIVE ANALYSIS BASED ON FATAL POLICE REPORTS

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**Abstract:**

The number of fatalities and injured people on the world's roads remains very badly known. The publications of the WHO of 2009 state 1.2 million persons killed and 50 million injured a year. These worrying figures probably underestimate the reality because in number of countries the information about the causes of mortality and morbidity is rudimentary, even non-existent. Furthermore all the studies match to assert that the road mortality is gradually going to climb in the coming 20 years. Among the exposed population, the vulnerable road users are the most concerned and especially the pedestrians (about 27 % in the world) with large disparities between countries (13% in Australia, 33% in Israel and Japan, 12% in US and 20 % in EU27). In France, the pedestrian mortality represents 13 % of all road fatalities in 2008 but with a light increase during last years. In order to have a better knowledge on these accidents, we set up a specific study based on fatal pedestrian accidents. The sample consists of 243 accidents sorted randomly from the fatal police reports between 2001 and 2003. Each case has been analyzed and coded by experts with a particular attention on the estimation of the collision speed and location of the first head impact.

Among the main characteristics we observed that 44 % of the pedestrians are of 65 and more years old; 62 % of the killed pedestrians are men; 56 % are located in urban area and 60 % occurred at night. In 69 % of these accidents, the driver was confronted with a crossing pedestrian. In this study, the first pedestrian's impact and the head impact locations on the vehicle were studied. The results showed that in 47 % of the cases the first impact was located on the right-hand side of the vehicle, in 26 % on the left and in 18 % on the center. For the pedestrian's head impact, 65% are located on the windscreen (30 % windscreen, 19 % on the rigid side, 10 % on the lower frame and 6 % on the upper frame).

The analysis of the driving speeds, showed an average 68 km/h in urban area, and 90 km/h in rural area. For 35 % of vehicles this driving speed was above the speed limit and for 58% of them this velocity exceeded the speed limit by more than 10 km/h.

The impact speeds analysis showed that the average was around 65 km/h, with 49 km/h in urban area and 84 km/h in rural area.

Fatal accidents with an impact speed lower to 40 km/h represented 18 % of the sample. Among these cases, pedestrians were mainly involved in frontal impacts (77 %). Most of these frontal impacts were located on the right-hand side of the vehicle (53 %). Concerning the age, 71 % of the pedestrians killed below 40 km/h were at least 65 years old.

This study has some limits essentially due to the lack of information in police report.

In order to improve our knowledge on the accidental and injury mechanisms, a new project has just been set up. This project concerns the collection and the analysis of a hundred pedestrian accidents studied on the spot and in-depth. First results are expected in 2011.