



## Project Number

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# Crash Risk for Low-Income and Minority Populations: An Examination of At-risk Population Segments and Underlying Risk Factors

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### Current Situation

Increasing bicycle use and pedestrian-oriented planning have made bicyclist and pedestrian safety a high priority in Florida. Statistics show that lower income, minority, and less educated persons are at higher risk for injury or death in a traffic crash. Specifically, residents of lower income areas are at two to three times the risk, compared to more affluent areas. However, there has been little examination of the specific nature of this risk, which is critical to reducing crash risks for these populations. However, lower income, minority, and less educated people are often treated as monolithic groups, rather than identifying which segments of these populations are at greater risk.

### Research Objectives

Florida Atlantic University researchers conducted an epidemiological investigation of crash risk in lower income areas within Broward and Palm Beach counties and identified specific at-risk subpopulations and their associated risk factors. The researchers made recommendations for integrating these findings into Florida Department of Transportation (FDOT) policies and practices.

### Project Activities

Definitions of lower income and higher income areas were taken from state and federal sources. Thus, low-income areas in Broward and Palm Beach counties were identified: 434 census blocks in Broward County and 342 census blocks in Palm Beach County.

For these lower-income census blocks, the researchers identified specific at-risk cohorts. Crashes involving these groups within each census block were stratified by gender, age, time of day, and day of week to develop a profile of the unique characteristics of crashes experienced by pedestrians and bicyclists. The available data did not include information on the race of the parties involved in the incidents. Relative risk ratios based on the available data demonstrated the disproportionate risk of pedestrians and bicyclists in lower income areas, compared to similar cohorts in more affluent areas. Environmental factors for each census block were examined to determine changes in the built environment that could mitigate crashes.

Results showed that very few of the pedestrians and bicyclists struck, injured, or killed in lower income areas were under the influence of drugs or alcohol. The majority of crashes appeared to involve individuals engaged in ordinary activities, often in late afternoon and early evening. Four pedestrian and two bicycle demographic cohorts were at disproportionate risk, with increased risk near restaurants, shopping centers, and streets with five or more lanes. The risk decreased in the presence of raised medians and higher levels of intersection density.

The researchers further detailed the nature of the risk, notably conflicts between vehicles and bicycles and driver errors related to new bicycle-friendly roadway features. They also outlined potential engineering, education, and enforcement countermeasures that may best address it.

### Project Benefits

The results of this project can result in policies and practices that will make Florida roads safer for pedestrians and bicyclists.

*For more information, please see [www.fdot.gov/research/](http://www.fdot.gov/research/).*



*Increasing bicycle and pedestrian traffic brings more of these road users into conflicts with vehicles.*