This quasi-experiment investigated the effects on lane change crashes of nonplanar (spherical convex and multiradius) driver-side mirrors compared to planar mirrors. The analysis was based on 1,062 crashes reported from 1987 to 1998 to Finnish insurance companies, for vehicles with passenger-side spherical convex mirrors and one of three types of driver-side mirror (planar, spherical convex, or multiradius).

The results showed that the mean effect of nonplanar mirrors compared to planar mirrors was a statistically significant decrease of 22.9% in lane change crashes to the driver side. The effects of spherical convex and multiradius mirrors were not statistically different from each other. The nonplanar mirrors were beneficial especially for the high risk driver groups, as well as for the lane change situations and environmental conditions in which most lane change crashes take place in the U.S.

The present findings support the use of nonplanar driver-side mirrors. If drivers have problems with judgements of the speed and distance of approaching vehicles using nonplanar mirrors, the magnitude of this concern seems to be minimal compared to apparent benefits with regard to other mechanisms of lane change crashes.