This study evaluated the effects of daytime running lights (DRLs) on two-vehicle, head-on crashes of passenger vehicles during daylight, dawn, and dusk. Two control dimensions were used: type of crash (the control being single-vehicle crashes) and light condition (the control being darkness). The data analyzed were U.S. fatal crashes for 1994 (during which time fewer than 1% of passenger vehicles were equipped with DRLs), 1999, 2004, and 2009 (during which time about 40% of passenger vehicles were equipped with DRLs).

The results indicate that over the period examined (which had a large increase in the installation of DRLs), fatal, two-vehicle, head-on crashes (as percentages of single-vehicle crashes) were reduced more in daylight, dawn, and dusk than in darkness. Based on the present data, it is estimated that in 2009, DRLs reduced fatal, two-vehicle, head-on crashes by 8% in daylight and 28% in dawn and dusk.