

Stronger teen graduated driver licensing program show mixed results for involvement in fatal crashes

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The use of stronger graduated driver licensing programs for 16- to 19-year old drivers in the U.S. that included restrictions on nighttime driving and allowed passengers were associated with a lower incidence of fatal crashes among 16-year old drivers, but a higher incidence among 18-year olds, according to a study in the September 14 issue of *JAMA*.

"[Motor vehicle crashes](#) are the leading cause of death in the United States for teenagers. From 2000-2008, more than 23,000 [drivers](#), and 14,000 passengers aged 16 to 19 years were killed," according to background information in the article. "Graduated driver licensing (GDL) systems have now been adopted in all 50 states and the District of Columbia to reduce crashes among teenaged drivers. Graduated driver licensing is structured to ensure that young novices gain extensive experience [driving](#) in low-risk conditions before they 'graduate' in steps to driving in riskier conditions."

GDL programs in the United States apply only to beginning drivers younger than 18 years. "The question remains whether the benefits of GDL among drivers to whom provisions directly apply (16- and 17-year-olds) continue, are reduced, or may even be reversed, among older teenagers for whom the effects are only secondary. Previous attempts to quantify the result of GDL for all teenaged drivers across multiple states have experienced methodological difficulties that rendered conclusions unclear," the authors write.

Scott V. Masten, Ph.D., of the California Department of Motor Vehicles, Sacramento, Calif., and colleagues conducted a study to estimate the association of GDL with driver involvement in [fatal crashes](#) for 16- to 19-year-olds. The study included an analysis of data of quarterly 1986-2007 incidence of fatal crashes involving drivers 16 to 19 years of age for all 50 states and the District of Columbia. There was a comparison of state-quarters with stronger GDL programs (restrictions on both nighttime driving and allowed passengers) or weaker GDL programs (restrictions on either nighttime driving or allowed passengers) with state-quarters without GDL.

Over the study period, fatal crash incidence among teen drivers increased with age, from 16 to 17-year-old drivers before reaching a plateau at the ages of 18 and 19. After adjusting for various factors, the researchers found that stronger GDL programs (relative to no GDL program) were statistically associated with lower fatal crash incidence only for 16-year-old drivers. "For 18-year-old drivers, the rate of fatal crashes was statistically higher for stronger GDL programs than for programs having none of the key GDL elements. Rate ratios for 17-year-old drivers, 19-year-old drivers, and 16- to 19-year-old drivers combined were not statistically different from the null," the authors write.

The authors also found that stronger GDL programs appeared to be associated with a larger reduction in fatal crashes among 16-year-old drivers than weaker GDL programs but with a similar increase in fatal crashes involving 18-year-old drivers. "This suggests that modifying weaker existing state GDL programs to include nighttime as well as passenger restrictions may result in additional crash savings among 16-year-olds as well as a larger net savings among teen drivers overall."

The researchers estimate that since enactment of the first program in 1996, GDL programs (weaker and stronger combined) have been associated with 1,348 fewer fatal crashes involving 16-year-old drivers

and with 1,086 more fatal crashes involving 18-year-old drivers.

"The net associations found in this study represent several possible crash-reducing influences of GDL, including less driving among younger teens; reduced exposure to high-risk conditions, resulting from more driving while supervised by an adult and less driving late at night or with multiple young passengers; and safer driving, resulting from improved learning," the authors write.

The researchers add that the reasons why GDL programs appear to be associated with higher incidence of fatal crashes for 18-year-old drivers are not known. "The amount learned during the GDL process may not be comparable to what was learned previously, when young drivers learned through experience alone. Mandatory periods of supervised driving clearly reduce risk while novices learn how to handle a vehicle, gain insights into the behaviors of other drivers, and develop understanding of the physical driving environment. Supervised driving, however, is co-driving, and some important lessons of experience, such as the need for self-regulation and what it means to be fully responsible for a vehicle, cannot be learned until teens begin driving alone. Under GDL this now occurs at least 6 months later, reducing the time that young drivers have to learn from driving on their own before they turn 18."

"Research is needed to determine what accounts for the increase among 18-year-old drivers and whether this increase occurs among nonfatal crashes as well. This may suggest whether, and how, changes to licensing policy might reduce this association," the authors conclude.

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