

## **Access to vehicle and risk of crash in novice drivers: Results from the DRIVE study**

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### **Abstract**

While previous studies showed that teenagers with access to their own vehicle versus a shared family vehicle had significantly higher risk of self-reported crashes, some findings suggest that greater driving exposure and frequent risky driving behaviours may explain the increased risks. This study investigated the relationship between vehicle access and crash risk among young Australian drivers and the effect of driving exposure and risky driving on the relationship. The DRIVE study collected information on crash risk factors from 20,822 newly-licensed drivers aged 17-24 years in New South Wales, Australia between 2003-2004 and prospectively linked responses to police-recorded crashes, licensing, traffic offences and health records. Based on self report, young driver access to a vehicle was categorised as: family vehicle, own vehicle, other vehicle and no access. Poisson regression was used to model crash risk (average follow-up = 2 years) by type of vehicle access, controlling for confounders including driving exposure and risky driving behaviours.

Drivers with their own vehicle were more likely to report high weekly driving hours, more risky driving behaviours and hazardous drinking. The results of the univariate analysis showed that drivers with their own vehicle had 40% (RR: 1.4, 95% CI: 1.2-1.5) higher risk of crash compared to those with access to a family vehicle. This increased risk remained when controlling for demographic and other confounders, including risky driver behaviours. After controlling for driving exposure, the increased risk dropped to 20% (RR: 1.2, 95% CI: 1.1-1.4). This study affirms that, compared with those who have access to a shared family vehicle, young drivers with access to their own vehicle have an increased risk of a crash, regardless of their greater driving exposure and more frequent risky driving behaviours. Further research is required to understand whether restricting car ownership is an effective intervention to reduce young driver crashes.

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