

## Maryland Department of Transportation Death to Accident Ratio 1985 - Nov 2000

One of the better ways to analyze helmet effectiveness is to compare the number of deaths to the number of related accidents. Theoretically, if helmets have significant safety benefits, then the ratio of deaths to accidents should decline as the use of helmets increases, such as after a helmet law is enacted.

In most states the Death to Accident Ratio (DAR) averages between 2% to 3% **before and after** helmet law have been enacted.

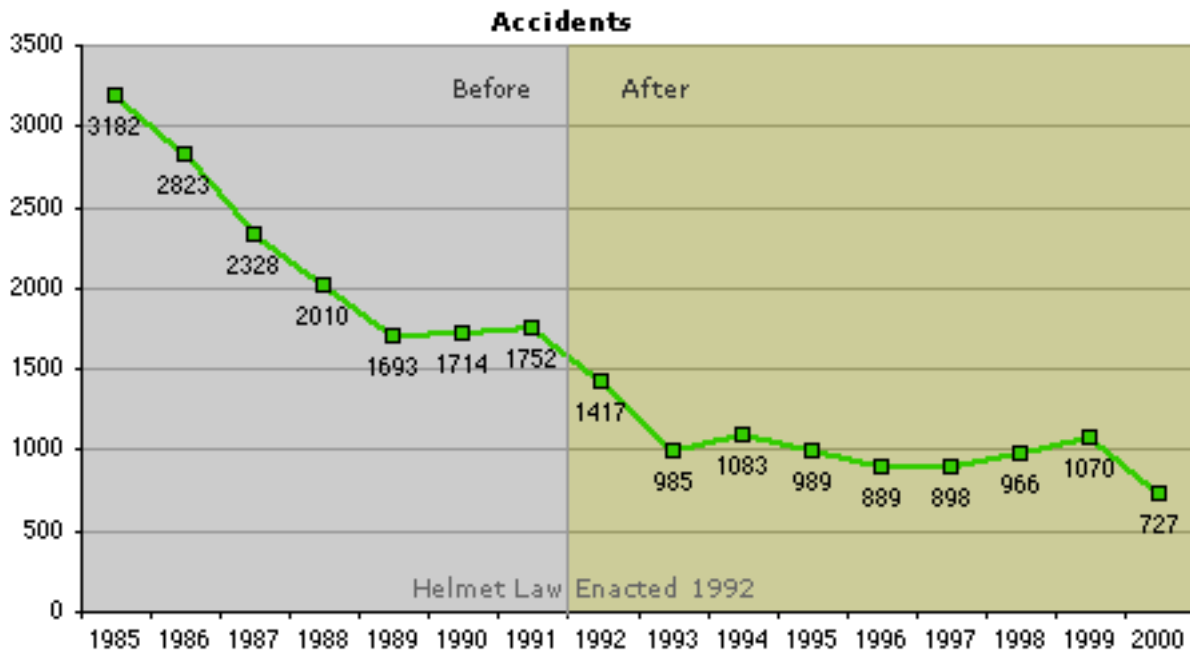
And in some cases the DAR actually increases as it has in Maryland. Keep in mind that the change up or down is small and statistically insignificant. But this finding is anything but insignificant as it means that helmet laws cannot be lauded as having the benefits that helmet law proponents claim.

One thing is dramatically clear however and that is while helmets do not seem to reduce injury and death, helmet laws do. How? When a helmet law is enacted, motorcycle registrations decline and those that ride, ride less often which means fewer accidents.

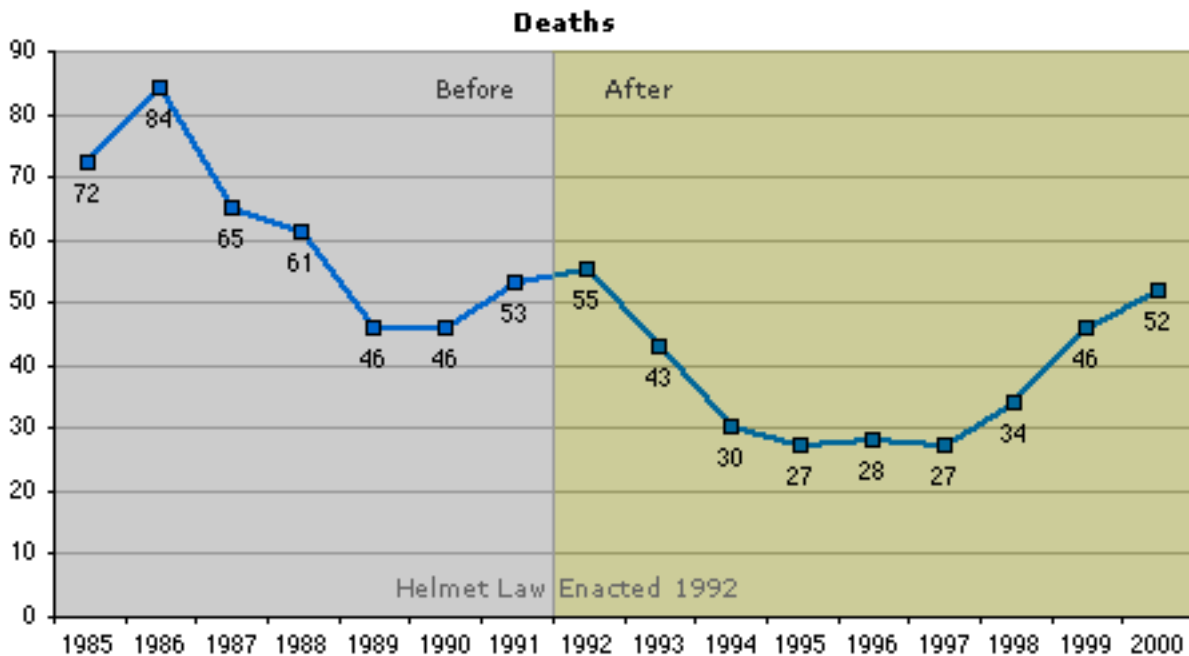
Keep in mind when quoting these statistics that not all accidents are reported, but what we do have generally comes from Motor Vehicles, police statistics. Even though you can assume that there are

more accidents than actually get reported, the same circumstances of how these statistics were compiled are the same for both pre and post helmet law, so there we can assume some consistency of how the numbers were derived and what they represent.

	Year	Accidents	Deaths	DAR
<b>Before Helmet Law</b>	1985	3,182	72	2.26%
	1986	2,823	84	2.98%
	1987	2,328	65	2.79%
	1988	2,010	61	3.03%
	1989	1,693	46	2.72%
	1990	1,714	46	2.68%
	1991	1,752	53	3.03%
Total Accidents		15,502		
Total Deaths			427	
<b>Death Accident Ratio <u>before</u> Helmet Law</b>				<b>2.75%</b>
	Year	Accidents	Deaths	DAR
<b>After Helmet Law (1992)</b>	1992	1,417	55	3.88%
	1993	985	43	4.37%
	1994	1,083	30	2.77%
	1995	989	27	2.73%
	1996	889	28	3.15%
	1997	898	27	3.01%
	1998	966	34	3.52%
	1999	1,070	46	4.30%
	2000	727	52	7.15%
Total Accidents		9,024		
Total Deaths			342	
<b>Death Accident Ratio <u>after</u> Helmet Law</b>				<b>3.79%</b>

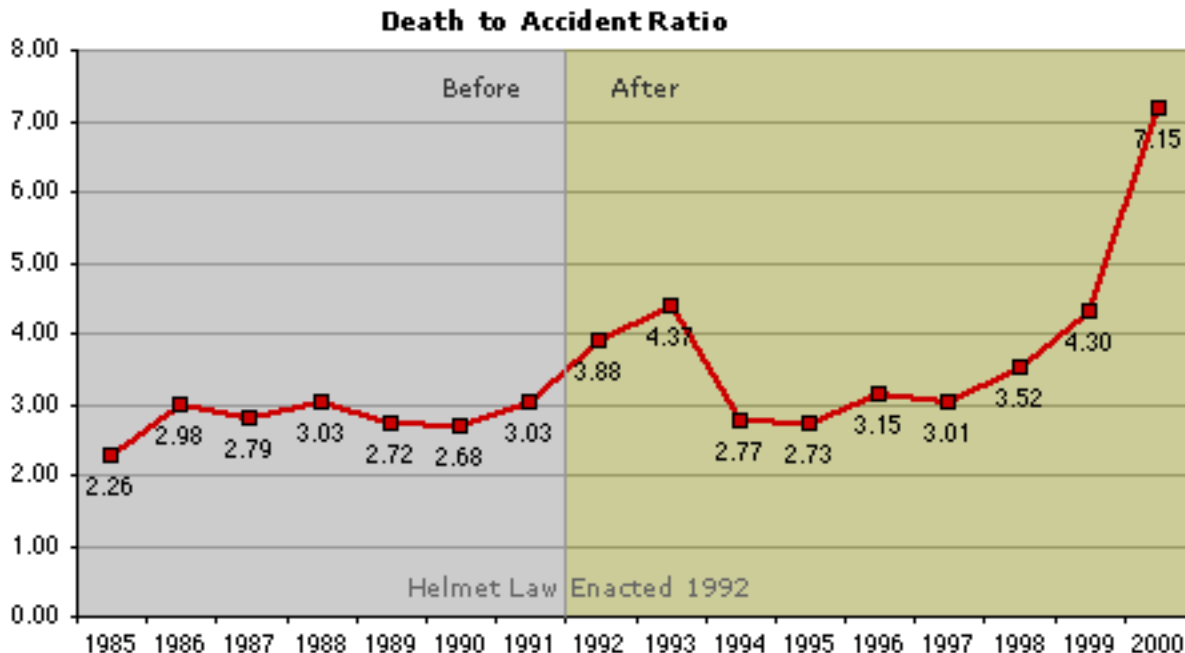


The reduction in overall accidents is a result of improved traffic engineering, driver safety education programs and motorcycle safety programs. But as you can see from the chart below, deaths have risen even while accidents have declined!



**Under Maryland's Helmet Law, while accidents have declined (which helmets have no effect on) the Death to Accident Ratio from 2.7 to has increased by 1.04%.**

This is not to imply that helmets don't provide some safety benefits, but it clearly implies that they are not a panacea and sadly for all the value people ascribe to them, they also provide safety risks.



The sustained high death rate is anticipated in the Goldstein Study: *The Effect of Motorcycle Helmet Use on the Probability of Fatality and the Severity of Head and Neck Injuries.*

*If Airbags And Seat Belts  
Are Getting A Second Look For Killing People,  
Why Not Helmets?*

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- 1985 and 1986 figures come from "Statewide Motorcycle Accidents", Maryland State Highway Administration, Office of Traffic and Safety, Traffic Safety Division, 24 July 1995.
  - 1987 thru 1996 figures come from "Maryland Motorcycle Traffic Accident Trends", Maryland State Highway Administration, Office of Traffic and Safety, Traffic Safety Division, 11 Feb. 1999
  - 1996 thru 2000 figures from "Motorcycle / Statewide Accident Profile Sheet", Maryland State Highway Administration, Office of Traffic and Safety, 28 Nov. 2000.