

# Traffic Safety Facts

## Crash • Stats

# Comparison of Crash Fatalities by Gender and Year From 1996 to 2005

## Major Findings

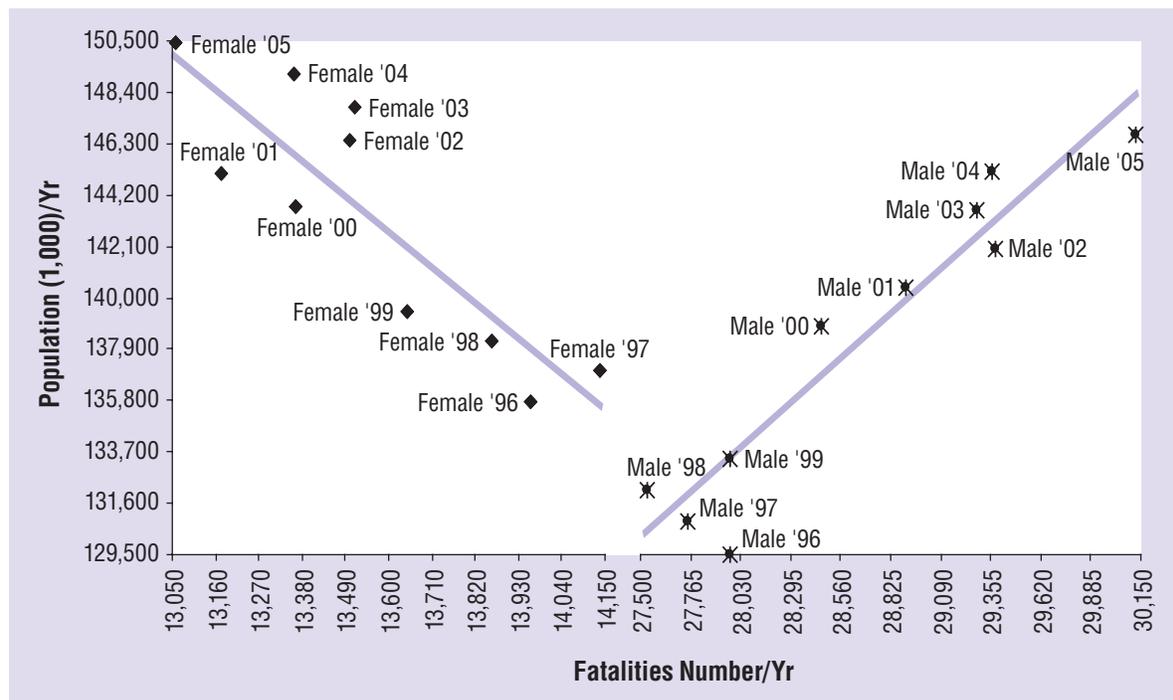
- The female fatalities in motor vehicle crashes accounted for about one-third (32%) of total fatalities from 1996 to 2005. The number of females killed declined by an average 0.7 percent per year compared to an average 1.1 percent increase per year in female population.
- The fatalities among males from motor vehicle crashes accounted for about two-thirds (68%) of the total fatalities from 1996 to 2005. The number of males killed increased by an average 0.8 percent per year compared to an average 1.3 percent rise per year in the male population.
- Overall, the data indicates fatalities among males in motor vehicle crashes and male population moved in the

same direction from 1996 through 2005, while female fatalities and female population moved in the opposite direction during the same period of time.

## Data and Analysis

The purpose of this Crash Stats is to examine the trends among female and male fatalities in motor vehicle crashes from 1996 through 2005. The fatality data used in this report are from the Fatality Analysis Reporting System (FARS) and the population data from the Census Bureau. Figure 1 below displays the trend data side by side allowing one to observe the contrasting relationship between female and male fatalities and the population.

**Figure 1 Scatter. Compares 10 pairs of fatality and population for females and males**



The plot on the right hand side of Figure 1 indicates a positive relationship between the number of male fatalities and population. The lower male population is associated with a

lower number of male fatalities in the earlier years. However, in latter years a higher male population is associated with a higher number of male fatalities. The general pattern of the

points suggests that the overall relationship for male fatality and male population has a troubling positive trend from 1996 to 2005 (correlation coefficient  $r$  is -0.87 for females and 0.95 for males).

The plot on the left portion of Figure 1 depicts a negative relationship in which female fatality decreases as the female population increases. A smaller female population is associated with a larger number of female fatalities during the earlier years. The larger female population is associated with a smaller number of female fatalities during the latter years. Although all points are not on a straight line, the general pattern of the points suggests the overall relationship for female fatality and female population has a negative trend over the past 10 years.

The straight lines for the scatter diagrams on all figures are trend lines. They are the graph of the simple linear regression equations generated by the least squares method with data on Table 1. The trend line not only highlights the association between fatalities and population, but also presents the moving direction of fatalities and population.

The overall population increased by an average 1.2 percent per year during the 10-year time period whereas the fatalities increased by an average 0.4 percent per year to 43,443 in 2005 from 42,065 in 1996. This increase of total fatalities since 1996 is mainly because of an average 0.8 percent increase in male fatalities per year. The relationship between total fatalities and population is shown below in Figure 2 ( $r$  is 0.84).

**Figure 2 Scatter. Compares 10 pairs of fatality and population for total**

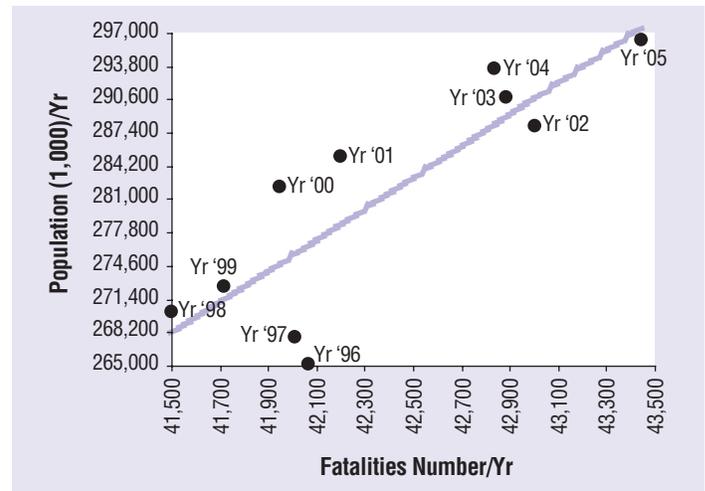


Table 1 below has the distribution of fatalities and population from 1996 through 2005 by gender. It shows female fatalities have decreased an average 0.7 percent per year. The fatalities among males increased an average 0.8 percent per year. Overall, the number of people killed has increased an average 0.4 percent per year. This table also shows female population increased an average 1.1 percent per year, and male population increased an average 1.3 percent per year. The total population has increased an average 1.2 percent per year. Thus, we see the association of fatalities with the population as a trend.

**Table 1: Distribution of Crash Fatalities and Population by Gender and Year**

Gender	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% Change per Yr
Female Fatality Rate	10.3	10.3	10.0	9.8	9.3	9.1	9.2	9.1	9.0	8.7	-1.9
Male Fatality Rate	21.6	21.2	20.9	21.0	20.6	20.7	20.8	20.5	20.3	20.6	-0.5
<b>Total Fatality Rate*</b>	<b>15.86</b>	<b>15.69</b>	<b>15.36</b>	<b>15.30</b>	<b>14.86</b>	<b>14.80</b>	<b>14.93</b>	<b>14.74</b>	<b>14.58</b>	<b>14.66</b>	<b>-0.9</b>
Female Fatalities	13,962	14,139	13,863	13,647	13,363	13,174	13,502	13,512	13,358	13,058	-0.7
Male Fatalities	27,976	27,752	27,540	27,976	28,461	28,904	29,376	29,280	29,362	30,125	0.8
<b>Total Fatalities*</b>	<b>42,065</b>	<b>42,013</b>	<b>41,501</b>	<b>41,717</b>	<b>41,945</b>	<b>42,196</b>	<b>43,005</b>	<b>42,884</b>	<b>42,836</b>	<b>43,443</b>	<b>0.4</b>
Female Population	135,724	137,001	138,218	139,414	143,724	145,092	146,442	147,792	149,121	150,411	1.1
Male Population	129,504	130,783	132,030	133,277	138,470	140,016	141,542	143,058	144,535	146,000	1.3
<b>Total Population</b>	<b>265,229</b>	<b>267,784</b>	<b>270,248</b>	<b>272,691</b>	<b>282,193</b>	<b>285,108</b>	<b>287,985</b>	<b>290,850</b>	<b>293,657</b>	<b>296,411</b>	<b>1.2</b>

Source: FARS 1996-2004 (Final), 2005 (ARF); Population Census Bureau  
 Population unit is per thousand people, Fatality rate (per 100,000) is Fatality Row divided by Population Row then multiply by 100

\* Includes fatalities with gender unknown



For questions regarding the data reported in this publication, contact Dow Chang at 202-366-4128 or e-mail to [dow.chang@dot.gov](mailto:dow.chang@dot.gov). For additional copies of this publication, Internet users may access this publication and other general information on highway traffic safety at [www-nrd.nhtsa.dot.gov/CATS](http://www-nrd.nhtsa.dot.gov/CATS)