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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2013-0072]

Technical Report on the Injury Vulnerability of Older Occupants and Women

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

ACTION: Request for comments on technical report.

SUMMARY:

This notice announces NHTSA's publication of a technical report comparing the injury and fatality risk in crashes of older and younger vehicle occupants and of male and female occupants. The report's title is: *Injury Vulnerability and Effectiveness of Occupant Protection Technologies for Older Occupants and Women*.

DATES: Comments must be received no later than September 25, 2013.

ADDRESSES:

Report: The technical report is available on the Internet for viewing in PDF format at <http://www-nrd.nhtsa.dot.gov/Pubs/811766.pdf>. You may obtain a copy of the report free of charge by sending a self-addressed mailing label to Charles J. Kahane (NVS-431), National Highway Traffic Safety Administration, Room W53-312, 1200 New Jersey Avenue, SE, Washington, DC 20590.

Comments: You may submit comments [identified by Docket Number NHTSA-2013-0072] by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Fax: 1-202-493-2251.

- Mail: Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., between 9 am and 5 pm Eastern Time, Monday through Friday, except Federal holidays.

You may call Docket Management at 202-366-9826.

Instructions: For detailed instructions on submitting comments, see the Procedural Matters section of this document. Note that all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided.

FOR FURTHER INFORMATION CONTACT:

Charles J. Kahane, Chief, Evaluation Division, NVS-431, National Center for Statistics and Analysis, National Highway Traffic Safety Administration, Room W53-312, 1200 New Jersey Avenue, SE, Washington, DC 20590. Telephone: 202-366-2560. E-mail: chuck.kahane@dot.gov.

SUPPLEMENTARY INFORMATION:

Aging increases a person's fragility (likelihood of injury given a physical insult) and frailty (chance of dying from a specific injury). Young adult females are more fragile than males of the same age, but later in life women are less frail than their male contemporaries. Double-pair-comparison and logistic-regression analyses of 1975-2010 FARS, 1987-2007 MCOB, and 1988-2010 NASS-CDS data allow quantifying the effects of aging and gender on fatality and injury risk and studying how trends have changed as vehicle-safety technologies developed.

In crashes of cars and LTVs of the past 50 model years, fatality risk increases as occupants age, given similar physical insults, by an average of $3.11 \pm .08$ percent per year that they age. Fatality risk is, on average, 17.0 ± 1.5 percent higher for a female than for a male of the same age (but more so for young adults and much less so for elderly occupants). The relative risk increases for aging and females may have both intensified slightly from vehicles of the 1960s up

to about 1990 (even while safety improvements greatly reduced the absolute risk for men and women of all age groups); since then, the added risk for females has substantially diminished, probably to less than half, while the increase for aging may also have diminished, but by a much smaller amount. AIS ≥ 2 nonfatal-injury risk increases only by $1.58 \pm .35$ percent per year of aging, but it is 28.8 ± 6.0 percent higher for a female than for a male.

Older occupants are susceptible to thoracic injuries, especially multiple rib fractures. Females are susceptible to neck and abdominal injuries and, at lower severity levels, highly susceptible to arm and leg fractures. Female drivers are especially vulnerable to leg fractures from toe-pan intrusion. All of the major occupant protection technologies in vehicles of recent model years have at least some benefit for adults of all age groups and of either gender; none of them are harmful for a particular age group or gender. Nevertheless, seat belts have been historically somewhat less effective for older occupants and female passengers, but more effective for female drivers. Frontal air bags are about equally effective across all ages; side air bags may be even more effective for older occupants than for young adults. Air bags and other non-belt protection technologies are helping females just as much and quite possibly even more than they protect males; this may have contributed to shrinking the historical risk increase for females relative to males of the same age.

PROCEDURAL MATTERS:

How can I influence NHTSA's thinking on this subject?

NHTSA welcomes public review of the technical report. NHTSA will submit to the Docket a response to the comments and, if appropriate, will supplement or revise the report.

How do I prepare and submit comments?

Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the Docket number of this document (NHTSA-2013-0072) in your comments.

Your primary comments must not be more than 15 pages long (49 CFR 553.21). However, you may attach additional documents to your primary comments. There is no limit on the length of the attachments.

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477) or you may visit <http://www.regulations.gov>.

Please send two paper copies of your comments to Docket Management, fax them, or use the Federal eRulemaking Portal. The mailing address is U. S. Department of Transportation, Docket Management Facility, M-30, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. The fax number is 1-202-493-2251. To use the Federal eRulemaking Portal, go to <http://www.regulations.gov> and follow the online instructions for submitting comments.

We also request, but do not require you to send a copy to Charles J. Kahane, Chief, Evaluation Division, NVS-431, National Highway Traffic Safety Administration, Room W53-312, 1200 New Jersey Avenue, SE, Washington, DC 20590 (or e-mail them to chuck.kahane@dot.gov). He can check if your comments have been received at the Docket and he can expedite their review by NHTSA.

How can I be sure that my comments were received?

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail. You may also periodically access <http://www.regulations.gov> and enter the number for this docket (NHTSA-2013-0072) to see if your comments are on line.

How do I submit confidential business information?

If you wish to submit any information under a claim of confidentiality, send three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590. Include a cover letter supplying the information specified in our confidential business information regulation (49 CFR Part 512).

In addition, send two copies from which you have deleted the claimed confidential business information to U. S. Department of Transportation, Docket Management Facility, M-30, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590, or submit them via the Federal eRulemaking Portal.

Will the agency consider late comments?

In our response, we will consider all comments that Docket Management receives before the close of business on the comment closing date indicated above under DATES. To the extent possible, we will also consider comments that Docket Management receives after that date.

Please note that even after the comment closing date, we will continue to file relevant information in the Docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material.

How can I read the comments submitted by other people?

You may read the materials placed in the docket for this document (e.g., the comments submitted in response to this document by other interested persons) at any time by going to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets. You may also read the materials at the Docket Management Facility by going to the street address given above under ADDRESSES. The Docket Management Facility is open between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.

AUTHORITY: 49 U.S.C. 30111, 30168; delegation of authority at 49 CFR 1.50 and 501.8.

James F. Simons
Director, Office of Regulatory Analysis
and Evaluation

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