

June 6, 2022

U.S. Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Ave, SE
Washington, DC 20590

Re: Request for Comment, New Car Assessment Program

Docket: NHTSA-2021-0002

To Whom It May Concern:

[VERITY Now](#), a coalition striving to achieve equity in vehicle safety, appreciates the opportunity to comment on this proposed rulemaking. NHTSA-2021-0002 contains many important potential improvements to road safety, and VERITY applauds the National Highway Traffic Safety Administration's (NHTSA) general orientation toward making road users safer. However, the discussion of one solution – elimination of gender bias in crash testing – is absent from the proposed rulemaking. Resolution of this issue alone could save approximately 1300 women every year who are now needlessly dying in vehicle crashes.

1. The NCAP Crash Testing Protocol is Biased

VERITY was disappointed when NHTSA failed to use this proposed rulemaking as an opportunity to fix deadly biases in its crash testing protocol. There are two elements to this bias. First, the New Car Assessment Program (NCAP) has never tested for women in the driver's seat in frontal and side barrier crash tests, while average-sized males are used in the driver's seating position in both tests. Second, in the seating positions where the protocol does test for women at all, it uses outdated technology that treats women like scaled-down versions of men.¹ When government ratings are based on this government protocol, ratings are biased results that may mislead the public into believing that 5-star safety ratings apply to them when they may not.

This proposed rulemaking would be an ideal place for the government to rid its program of gender bias, and commit to the same number of tests, the same nature of tests, and the same advanced quality of crash test equipment for women as is used to protect men all over the world.

¹ *Ratings*. NHTSA. <https://www.nhtsa.gov/ratings>

2. Biases in NCAP Crash Testing and Equipment Cost Lives and Cause Severe Injuries

Women are not just smaller versions of men. Today's average American female is 5.4 inches shorter and 27 pounds lighter than the average male.² Among other effects, this means women sit closer to the steering wheel in order to reach the pedals. With shorter legs, women reaching for pedals are also 80% more likely than men to suffer severe leg injuries.³

Male necks are more muscular and have greater spinal column strength; female necks use less muscle mass to support heads that are nearly as large and heavy. This means women are significantly more prone to whiplash in an accident. A 2013 NHTSA study found that, relative to males of the same age, females in deadly crashes were 9.4% more likely to die as a result of neck injury⁴. Pregnant women are also very vulnerable in a crash. Standard seatbelts do not fit more than sixty percent of third-trimester pregnant women.⁵

The gender bias in road safety is costing many women their health. Just over one million injuries were sustained by women in 2018 (76% in the driver's seat).⁶ A 2019 study from the University of Virginia found that women are 73% more likely to be severely injured or die in a frontal crash than men.⁷ This tracks with other studies that confirm that females suffer more severe, and different than males.⁸

²Fryar, Cheryl D., Deanna Kruszon-Moran, Qiuping Gu, and Cynthia L. Ogden. (2018) *Mean body weight, height, waist circumference, and body mass index among adults: United States, 1999–2000 through 2015–2016*. National Health Statistics Reports; no 122. Hyattsville, MD: National Center for Health Statistics, 2018. <https://www.cdc.gov/nchs/data/nhsr/nhsr122-508.pdf>.

³ (2015) *Cost of auto crashes & statistics*. Rocky Mountain Insurance Information Association (RMIIA) www.rmiiia.org/auto/traffic_safety/Cost_of_crashes.asp.

⁴ Kahane, Charles J. (2013) *Injury vulnerability and effectiveness of occupant protection technologies for older occupants and women*. Report No. DOT HS 811 766. Washington, DC: National Highway Traffic Safety Administration. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811766>.

⁵ Criado-Perez, Caroline. (2019, February 23) *The deadly truth about a world built for men - from stab vests to car crashes*. The Guardian, Excerpted from *Invisible Women: Exposing Data Bias in a World Designed for Men*, by Caroline Criado Perez (Chatto & Windus). <https://www.theguardian.com/lifeandstyle/2019/feb/23/truth-world-built-for-men-carcrashes>.

⁶ *Crash Report Sampling System (CRSS)*. National Highway Transportation Safety Administration. <https://www.nhtsa.gov/crashdata-systems/crash-report-sampling-system>.

⁷ Forman, J., Poplin, G. S., Shaw, C. G., McMurry, T. L., Sunnevang, C., Ash, J., & Schmidt, K. (2019). *Automobile injury trends in the contemporary fleet: Belted occupants in frontal collisions*. Taylor & Francis Online. <https://www.tandfonline.com/doi/full/10.1080/15389588.2019.1630825>

⁸ Geddes, L. (2022, May 17). *Women almost twice as likely to be trapped in crashed vehicle, study finds*. The Guardian. <https://www.theguardian.com/world/2022/may/17/women-almost-twice-likely-trapped-crashed-vehicle-study>

Women are **17% more likely** to be killed in an auto accident
and **73% more likely** to be seriously injured than a male.

Estimated increase of risk for moderate injuries in a car crash compared to a male driver and front passenger of the same age.

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Current NCAP 5-Star Safety Tests **do not require a female dummy** in the driver seat

Source: NHTSA Injury Vulnerability and Effectiveness of Occupant Protection Technologies for Older Occupants and Women, 2013

3. How We Got Here

The familiar crash dummy that readers may remember from a 1980s NHTSA television ad campaign— “You could learn a lot from a dummy. Buckle your safety belt.”—is the Hybrid III. Released in 1976, this 172-pound, 5-foot-9 male dummy remains the most widely used automotive crash test dummy in the world and is currently in the driver’s seat position for both NCAP and FMVSS testing.⁹

In 1979, soon after the Hybrid III was released, NHTSA inaugurated the NCAP. NCAP was revolutionary; for the first time, a government agency was crash-testing cars, rating their safety, and releasing those ratings to the public. In 1980 NHTSA published a booklet of crash test information called *The Car Book*, which received 450,000 orders in one day when it was offered to the public free of charge on a popular television talk show. It remains a record number of one-day orders for a U.S. government publication.

Automakers quickly realized their vehicles needed to perform well on NCAP crash test to sell, and a consumer market for vehicle safety performance was born. Brimming with ambition after the overwhelmingly positive public response to NCAP and *The Car Book*, NHTSA explored developing a “family” of crash test dummies to better represent American drivers. Those ambitions soon hit a wall when the Reagan administration slashed the agency’s budget.

But vehicle safety experts both inside and outside of the agency persisted in pushing crash test technology forward. The THOR generation of crash test technology – Test Device for Human

⁹ See footnote 3

Occupant Restraint – began study and development in the 1990s.¹⁰ The THOR 50th – the male version of this generation of technology – was delivered in 2013, and NHTSA was reportedly primed to adopt the 50th in 2015. Then, when the Trump Administration came into office, regulation on all matters at DOT paused. In the meantime, Europe’s NCAP, China’s NCAP, and ANCAP adopted THOR 50th, and over 200 of these advanced male versions are now in operation outside the U.S.¹¹¹²

Beginning in 2003, the THOR 5th – the female version of the new, more anthropomorphically designed dummies – began development. Prototypes were delivered in 2015, and the THOR 5th passed NHTSA’s biofidelity tests in 2020.¹³ It is currently available to customers. The THOR 5th represents women far more accurately than past technology; design and materials better mimic women’s physiology in places like the abdomen, hips and breasts, and up to 150 data channels can detect impact where females are more likely to suffer injuries. Europe’s NCAP has announced its intention to adopt the THOR 5th.

4. NHTSA Has a Duty to Rid NCAP of Bias and Save Lives

VERITY estimates that over 1300 women die every year because of biases in crash testing.¹⁴ Thousands more have their lives altered by severe injuries, including brain trauma, internal injuries, whiplash, and more. Every day NHTSA refuses to intervene, 3-4 women die who might have lived. Economic costs from these deaths and injuries are staggering. But despite administering a program that openly tests men – but not women – in the driver’s seat, and despite knowing -- from its own research – the impact of crash test bias on women, NHTSA still chooses not to fix this deadly problem.

NHTSA initiated the solution to this problem decades ago. THOR technology has been researched and tested for over thirty years. THOR 5th has been researched and tested since the early 2000s. It takes three to four years to design and produce an entire motor vehicle.¹⁵ It took eight years to create a space program to land U.S. astronauts on the moon. NHTSA requires no more legal authority to change NCAP to require testing females in the driver’s seat in frontal and side barrier tests, and to use dummies that truly represent females in all tests. THOR technology is available and in use all over the world today.

¹⁰"NHTSA Thor Update" Powerpoint, Thor. NHTSA. <https://www.nhtsa.gov/biomechanics-trauma/thor>

¹¹ Laris, M. (2022, May 18). *Deaths on U.S. roads soared to 16-year high in 2021*. The Washington Post. <https://www.washingtonpost.com/transportation/2022/05/17/road-deaths-fatalities/>

¹² (2022, March 28). *Preliminary 2021 EU Road Safety Statistics*. Mobility and Transport. https://transport.ec.europa.eu/news/preliminary-2021-eu-road-safety-statistics-2022-03-28_en

¹³ FAQs. Verity NOW.

¹⁴ *Updating crash testing can help save lives*. VERITY NOW. <https://www.veritynow.org/>

¹⁵ Sherman, D. (2021, November 29). *How a car is made: Every step from invention to launch*. Car and Driver. <https://www.caranddriver.com/news/a15350381/how-a-car-is-made-every-step-from-invention-to-launch/#:~:text=On%20average%2C%20the%20entire%20process%20takes%2072%20months.>

Yet to this day, NHTSA spends hundreds of thousands of U.S. taxpayer dollars on contracts with universities and vendors to study the issue. NHTSA’s mission is to reduce deaths, injuries, and economic losses resulting from motor vehicle crashes.¹⁶ Research is only one method by which it can achieve its mission – along with enforcement, education, and other methods. Research is supposed to support the mission, not supplant it. When we have reached the point where crash test research itself is allowed to engender delay and death, it is time to rethink the agency’s approach to research.

5. NHTSA Should Take This Opportunity to Make Testing Equal in NCAP by Mandating THOR 5th in the Driver’s Seat Frontal and Side Barrier Tests by 2024, and Adopting THOR5th and THOR 50th in other tests by 2024.

In a recent *NBC News* story on this issue, the U.S. Department of Transportation (DOT) said “gender disparities are unacceptable and the approval process has taken too long.”¹⁷ This wasn’t the first time DOT identified the problem. The department cited correction of gender bias as one of its “Opportunities to Simultaneously Address Safety, Equity and Climate” in its own National Roadway Safety Strategy, where DOT noted that “Although men consistently represent more than 70 percent of drivers involved in fatal crashes, when comparable crashes are analyzed and risk taking differences are accounted for, studies have shown that motor vehicle fatality risk is, on average, 17 percent higher for a female than for a male of the same age.”¹⁸

Like DOT, the U.S. House of Representatives Committee on Appropriations believes NHTSA has taken too long to fix its crash testing program. House Appropriations placed this language in its FY2022 Appropriations report: “...Within eighteen months of enactment of this Act, the Committee directs NHTSA to issue the long overdue New Car Assessment Program (NCAP) proposed rule that adopts the most technologically advanced safety equipment, including the most advanced anthropomorphic test dummies...”.¹⁹ Adopting the THOR 50th (male) and THOR 5th (female) dummies by 2024 and using the THOR 5th in the driver’s seat for frontal and side barrier tests by 2024 would fulfill the direction of the report language.

Members of the House Appropriations aren’t the only Congresspeople concerned about gender bias in crash testing. On February 15th, 66 Members of Congress signed a [letter](#) asking DOT to resolve gender bias in crash testing.²⁰ In an April House Transportation and Infrastructure Committee

¹⁶*Verity now - About.* VERITY NOW. <https://www.veritynow.org/about>

¹⁷NBCUniversal News Group. (2022, May 11). *High-tech female crash test dummies could improve car safety. why aren't they in use?* NBCNews.com. <https://www.nbcnews.com/nightly-news/video/high-tech-female-crash-test-dummies-could-improve-car-safety-why-aren-t-they-in-use-139818053702>

¹⁸*USDOT National Roadway Safety Strategy.* U.S. Department of Transportation, 11. <https://www.transportation.gov/nrssl/usdot-national-roadway-safety-strategy>

¹⁹(2022, March 31). *Fiscal Year 2022.* House Committee on Appropriations. <https://appropriations.house.gov/transparency/fiscal-year-2022>

²⁰(2022, February 15). *U.S. reps. Lawrence, castor, Delauro, Norton, and Schakowsky lead 61 House members in letter urging Dot to use up-to-date female crash test dummies in vehicle safety testing.* Congresswoman Brenda

[hearing](#), National Transportation Safety Board Chair Jennifer Homendy said NHTSA “should address” the gender inequity in crash testing and said the issue “is something that we are looking at.”²¹ And dozens of former Members of Congress, gender equity advocates, and transportation safety leaders [have said](#) they want the issue fixed.²² Hundreds of petition signers and [others](#) who have submitted comments to his proposed rulemaking feel the same.

We hope NHTSA takes this opportunity address the concerns voiced by the Department of Transportation, its Appropriators in the U.S. House of Representatives, dozens of former and current Members of the U.S. House of Representatives, women’s issue advocates, transportation safety organizations, members of the general public, and most of all, crash victims, and implement equal testing and technology for women.

Thank you for your consideration,

The Hon. Susan Molinari, Co-Chair, VERITY Now
Beth Brooke, Co-Chair, VERITY Now

Lawrence. <https://lawrence.house.gov/media-center/press-releases/us-reps-lawrence-castor-delauro-norton-and-schakowksy-lead-61-house>

²¹2022. *National Transportation Safety Board Reauthorization: The House Committee on Transportation and Infrastructure*. Hearing | The House Committee on Transportation and Infrastructure. <https://transportation.house.gov/committee-activity/hearings/national-transportation-safety-board-reauthorization>

²²(2022, May 18). *Press room*. VERITY NOW. <https://www.veritynow.org/press>