

# Deciphering the Conversation on Female Crash Test Dummies

**CLAIM:** More research is needed to understand whether women are at an increased risk of injuries, including fatal injuries in car crashes.

**THE REALITY:** Multiple studies show that **females are injured and experience fatalities at higher rates than males in vehicle crashes.** Multiple studies in Europe and the U.S. have shown that women die and are injured at higher rates than men in comparable crashes.<sup>1,2,3,4</sup> One 2019 University of Virginia study found that women are 73% more likely than men to be severely injured and 17%-18.5% more likely than their male counterparts to be killed in comparable crashes.<sup>5</sup> Using NHTSA's own numbers, we believe this means that every year, 1,300 women die who would otherwise have lived. Research also shows that male and female bodies perform differently in crashes, but crash test safety policy is still biased towards men – and this includes using a crash test dummy based on a male body. NHTSA data from 1975-2019 shows that improvements in safety led to overall road death rates falling for men at almost twice the rate as for women during that time. The problem is well-proven.

**CLAIM:** If there is a problem, more research is needed to find the right solution.

**THE REALITY:** We already have a solution, and it comes in two parts: **1) requiring the use of female crash test dummies that actually represent female anatomy and 2) mandating the same number and nature of crash tests for females as males.**<sup>6,7</sup> A well-researched and fully vetted female crash test dummy — the THOR 5th — already exists. The THOR generation of male and female dummies is the '5G' of crash testing technology, and THOR technology has been thoroughly researched and vetted by NHTSA.<sup>8</sup> The THOR 5th was designed to represent female anatomy and passed NHTSA's biofidelity tests in 2020 and is already being sold to customers. The technology is well vetted, and every year that women are not represented correctly in crash tests, hundreds die who might otherwise have lived. This updated technology should be used in all the same crash testing positions as men. However, right now that is not the case. For instance, in NHTSA's NCAP ratings program, females are not tested in the driver's seat in frontal and side barrier crash tests.

**CLAIM:** NHTSA has adopted the use of the 5<sup>th</sup> percentile female crash test dummy in its vehicle standards and the NCAP 5-Star Safety Ratings.

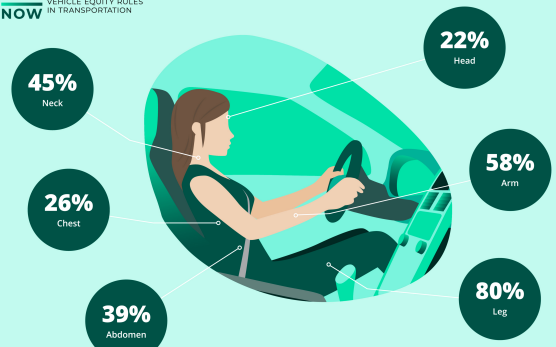
**THE REALITY:** This is misleading in two ways. First, **the government's 5-star safety rating (NCAP) program has never tested for women in the driver's seat in frontal crash tests or side barrier tests.** The government has done tests with "female" (outdated Hybrid III) dummies in the passenger seat, but not in the driver's seat for frontal and side barrier, which ignores the fact that the majority of drivers are women.

Second, what NHTSA refers to as the "5<sup>th</sup> Percentile Adult Female" is a misnomer, as it is actually a scaled-down version of an adult male crash test dummy (the HYBRID III model).<sup>9</sup> NHTSA is not taking advantage of the lifesaving THOR 5<sup>th</sup> female crash test dummy technology which the agency initiated development of many years ago. Unlike the scaled-down HYBRID III model currently in use, the THOR 5<sup>th</sup> takes into account the physiological differences of the female anatomy and incorporates dozens more sensors around the areas where women are more likely to be injured: the legs, chest, abdomen and neck. **(WATCH HOW)**

Women are **17% more likely** to be killed in an auto accident and **73% more likely** to be 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

**CLAIM:** Women benefit from recent safety advancements in cars. In fact, data has shown that using the 5th Percentile Adult Female crash test dummy (HYBRID III) in some seated positions has improved car safety for women and significantly reduces gender disparities.

**THE REALITY:** Women and men have both benefited from recent safety advancements, but the high disparity in risk remains. In fact, NHTSA's own data show that between 1975-2019, fatality risk for men fell at nearly twice the rate as that for women.<sup>10,11</sup> **In 2018 more than 8,500 women were killed in car crashes.** A majority (61%) of those fatalities included women who were in the driver's seat. There is a lost opportunity to reduce deaths and injuries because NHTSA has not mandated that the most up-to-date female crash test dummy be consistently tested in the front seat in the NCAP 5 Star Safety standards and FVMSS standards. We know that giving women the same number and nature of tests, and the same high quality of crash testing equipment, can save lives and help close this gap.

**CLAIM:** Adopting an up-to-date model of female crash test dummies into NCAP safety standards is too expensive.

**THE REALITY:** The proposed crash test dummies would increase the cost of a new vehicle for a car buyer **by less than a dollar.** According to a model on vehicle costs developed by Bain Consulting, total Research and Development is estimated to account for about 6% of the cost of a car. Of that amount, safety testing accounts for 0.73% of Research and Development, and the cost of crash test dummies accounts for about 5.3% of that R+D safety testing. The resulting cost of additional crash test equipment should be less than a dollar.

In fact, it is more costly NOT to solve this problem. In 2018 the economic impact of 466,643 preventable injuries to women in car crashes comes out to \$12.8 billion per year and the cost associated with preventable deaths comes out to \$2.25 billion per year.

**CLAIM:** Women are choosing the wrong cars. Women drive smaller vehicles and smaller vehicles are less safe.

**THE REALITY:** That claim is likely based on a study from the Insurance Institute for Highway Safety (IIHS), which shows the issue is bigger than choosing the "right" cars.<sup>12</sup> IIHS found that in frontal crashes, women were three times as likely to experience a moderate injury (such as a broken bone or concussion), and twice as likely to suffer a serious injury (such as a collapsed lung or traumatic brain injury). IIHS proposed that one explanation of the higher injury rate could be vehicle choice: Men and women crashed in minivans and SUVs in about equal proportions, but around 70% of women crashed in cars, compared with about 60% of men. And more than 20% of men crashed in pickups, compared with less than 5% of women. Within vehicle class, men also tended to crash in heavier vehicles that offer more protection in collisions. However, researchers also found that in two-vehicle front-to-rear and front-to-side crashes, men are more likely to be driving the striking vehicle. In addition, we shouldn't be surprised that women drive smaller cars that cost less, given that they earn an average of 84 cents for every dollar a man earns, and a vehicle is usually the most expensive consumer product Americans own. The bottom line is, no matter what vehicle is being driven, men and women deserve to be tested equally in it. That means the same number and nature of tests, and the same quality of crash test equipment, being used.

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