

DRIVEN TO DESTRUCTION

Dummies who don't wear seat belts can experience accelerations of several thousand g's before hitting the windshield. Ouch.

How do you know that the car sitting in your driveway right now isn't a deathtrap on four wheels? Thank some dummies in the government ... crash-test dummies. Since 1978, the National Highway Traffic Safety Administration (NHTSA) has bashed and crashed car after car in order to provide consumers with comprehensive crash test information.* All of this is made possible by the Hybrid III family of dummies and their relatives. So the next time your passengers complain that you drive like a dummy, just say you're doing your part for safety. They'll understand.

Reporting and graphics by Bob Britten and Cara DeMichele

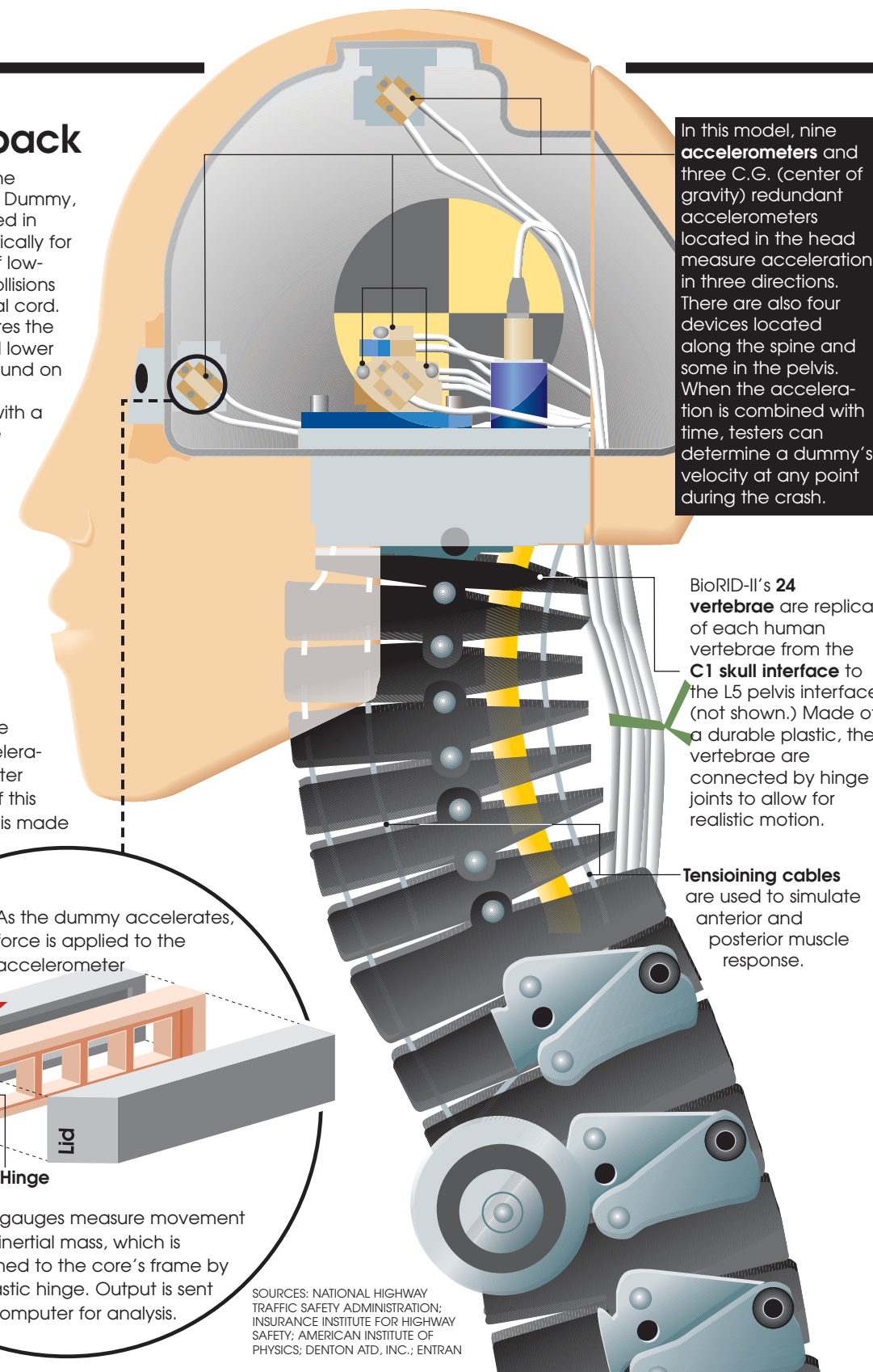
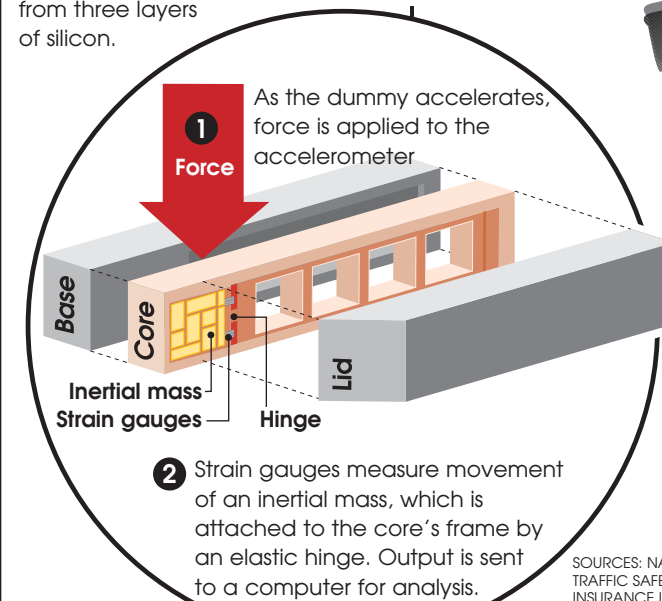
*Get your vehicle's crash test rating at: www.nhtsa.dot.gov/cars/testing/ncap

Got your back

Otherwise known as the Biofidelic Rear Impact Dummy, BioRID-II was developed in Sweden in 1999 specifically for studying the effects of low-speed, rear-impact collisions on the neck and spinal cord. Although BioRID-II shares the same head, arms and lower extremities as those found on the Hybrid III dummy, BioRID-II is equipped with a thoracic/lumbar spine that is designed to mimic the movement of a human spine.

A need for speed

Microaccelerometers located throughout the dummy measure acceleration. The protective outer layer and inner core of this triaxial accelerometer is made from three layers of silicon.

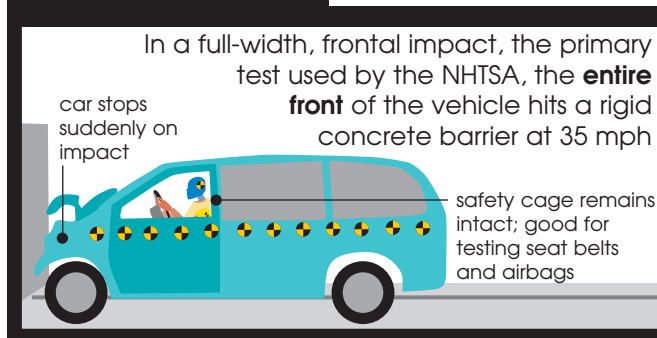


SOURCES: NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION; INSURANCE INSTITUTE FOR HIGHWAY SAFETY; AMERICAN INSTITUTE OF PHYSICS; DENTON AID, INC.; ENTRAN

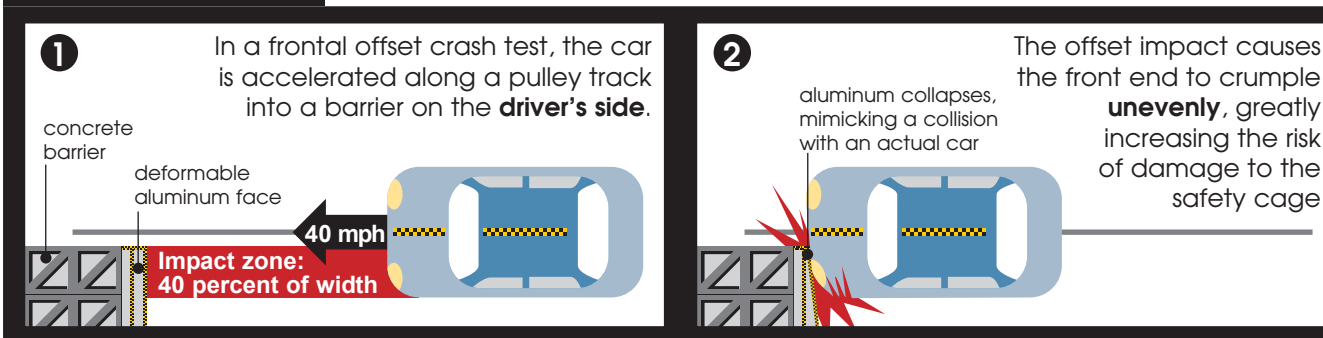
Crash into me

There are two kinds of frontal-crash tests: full-width, frontal-impact and frontal offset. **Full-width** tests are great for testing the effectiveness of safety restraints because the occupant compartment or **safety cage** is not breached. In **frontal-offset** tests, the safety cage is often smashed open, testing the strength of a car's structure. Right now, the NHTSA only uses full-width, frontal-impact testing.

Full-width



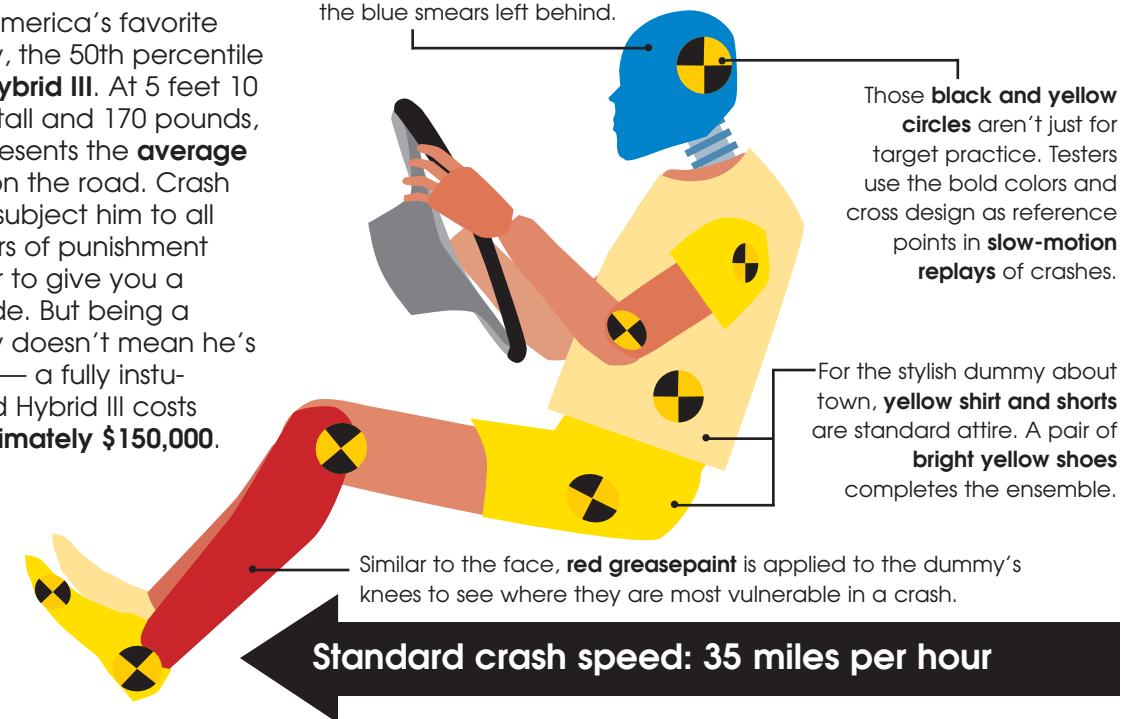
Frontal offset



You big dummy

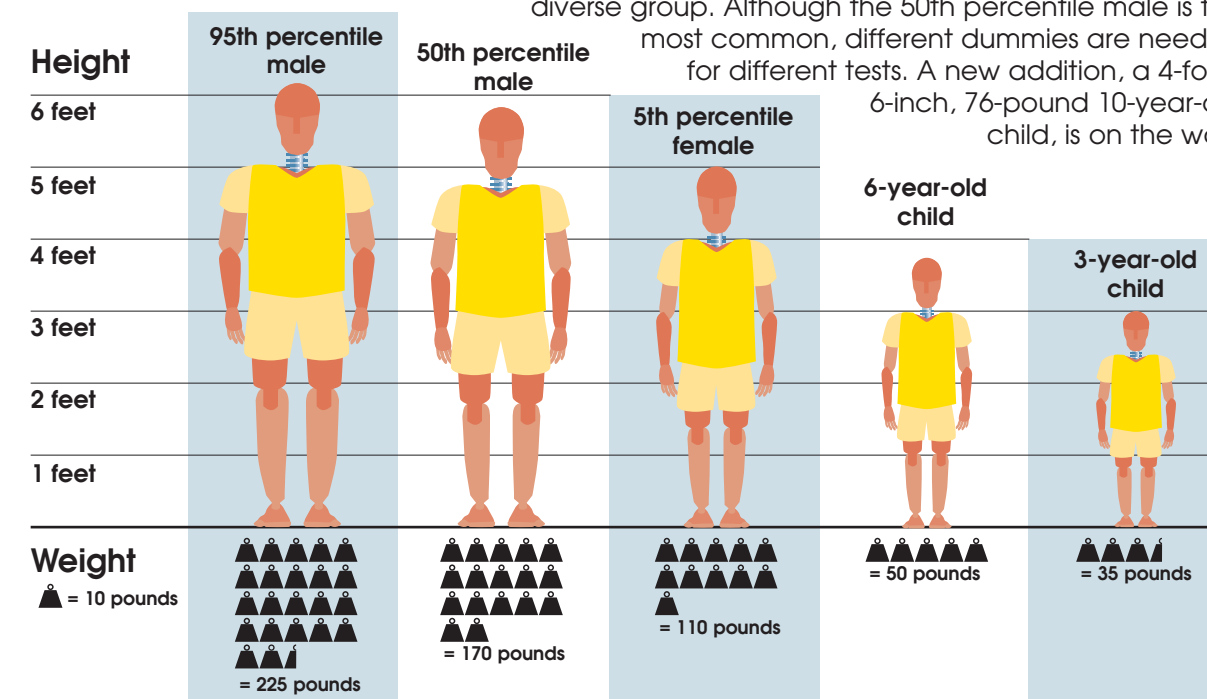
Meet America's favorite dummy, the 50th percentile male Hybrid III. At 5 feet 10 inches tall and 170 pounds, he represents the **average driver** on the road. Crash testers subject him to all manners of punishment in order to give you a safer ride. But being a dummy doesn't mean he's cheap — a fully instrumented Hybrid III costs **approximately \$150,000**.

Blue greasepaint is used to mark the dummy's face. After the crash, testers can see where the face hit the airbag or the dashboard by the blue smears left behind.



Meet the family

Just like the families they protect, the Hybrids are a diverse group. Although the 50th percentile male is the most common, different dummies are needed for different tests. A new addition, a 4-foot-6-inch, 76-pound 10-year-old child, is on the way.



Car maintenance	
The make and model of your car, along with how you drive it and the climate are all factors that affect basic car maintenance. For maintenance needs specific to your car, consult your owner's manual.	
car part	when to check
tire pressure and lights	monthly
oil filter, oil change and chassis lubrication	3,000 to 5,000 miles or every 3 to 4 months
underhood belt and hose inspection	3,000 to 5,000 miles or every 3 to 4 months (every oil change)
tire rotation and wheel balancing	6,000 miles or every other oil change
brake inspection	6,000 miles or every other oil change
air filter replacement	12,000 to 24,000 miles (or as needed per inspection)
fuel filter replacement	24,000 to 100,000 miles
automatic transmission service	24,000 to 100,000 miles
wheel alignment check	12,000 to 24,000 miles (or as indicated by tire wear)
cooling system flush and refill	40,000 to 100,000 miles
belt and hose replacement	60,000 to 100,000 miles or 5 to 8 years
engine timing belt replacement	60,000 to 100,000 miles (when equipped) or 5 to 8 years
air conditioning performance check	annually, usually in the spring

COURTESY AAA