AAA: Pedestrian Detection Systems May Not Work When You Need Them Most

Study finds safety systems fail at night when the majority of pedestrian vehicle fatalities occur

Ken Grant
Public and Government Affairs Manager, AAA Mid-Atlantic
AUTOMATIC EMERGENCY BRAKING WITH PEDESTRIAN DETECTION
How do vehicles equipped with pedestrian detection systems perform when encountering an adult pedestrian crossing the roadway?

When encountering an adult pedestrian in a perpendicular crossing scenario:

a. Each test vehicle provided visual notification of an impending collision during each test run conducted at 20 mph.
   i. In aggregate, a collision with an adult pedestrian target was avoided 40% of the time
   ii. During an additional 35% of the time, collisions were mitigated by an average speed of 4.4 mph

b. At 30 mph, three out of four test vehicles failed to reduce the impact speed by at least 5 mph during the initial test run.
How do vehicles equipped with pedestrian detection systems perform when encountering challenging vehicle/pedestrian interactions?

a. Child pedestrian darting into traffic from between two parked vehicles

b. Vehicle turning right on adjacent road with adult pedestrian crossing simultaneously

c. Vehicle approaching two adult pedestrians alongside the roadway
2. Evaluated pedestrian detection systems were significantly challenged in the following scenarios:

   a. When encountering a child pedestrian at 20 mph, a collision was avoided 11% of the time in aggregate. An additional 25% of the time, collisions were mitigated by an average speed of 5.9 mph.

   b. When encountering a pedestrian immediately after a right curve, none of the test vehicles mitigated the impact speed during any of the five test runs.

   c. When encountering two pedestrians alongside the roadway at 20 mph, a collision was avoided 20% of the time in aggregate. An additional 35% of the time, collisions were mitigated by an average speed of 3.4 mph.
3. How do pedestrian detection systems function at night?

3. Evaluated pedestrian detection systems were ineffective during nighttime conditions.
AAA recommends drivers always:

- **Be alert of their immediate surroundings.** Do not rely on pedestrian detection systems to prevent a crash. This technology should only serve as a backup and not a replacement for an engaged driver.

- **Read the owner’s manual to understand what safety systems the vehicle is equipped with.** Before leaving the lot, ask the dealer to explain how these systems work, including what safety system alerts sound and look like and what triggers their activation.

- **Use extra caution when driving at night since this is the riskiest time for pedestrians and where the systems struggled the most.** Previous AAA research found that headlights, even in new condition, do not provide the amount of light needed for drivers to appropriately react to something or someone in the roadway.
Questions/comments