

# Crash Tests

## New Car Safety

### Toyota Aurion

08/2009 on 03/2012 - Frontal+Side+Head

#### Overall Evaluation



#### Overall Score

Variant: AT-X

**33.03 out of 37**

Engine: 3.5 litre V6

Category: Large Car

Front passenger seat belt reminder, which is needed for this 5-star rating, is standard from August 2009

#### Model History and Safety Features

The tested model of Toyota Aurion was introduced in Australia during 2006. This 5-star rating applies to Aurions built from August 2009, when a front passenger seat belt reminder was introduced. The Aurion has had an intelligent seat belt reminder for the driver seat since 2006.

Dual front airbags, side airbags and head-protecting side curtains are standard equipment from 2006. Antilock brakes (ABS), electronic brake distribution (EBD) and electronic stability control (ESC) are also standard from 2006.

The front seat belt buckles are mounted on the seats and the upper anchorages are adjustable. These features improve the fit of the seat belt. Pre-tensioners are fitted to the front seat belts to reduce slack in the event of a crash. A three point seat belt is fitted to the centre rear seat. This provides better protection than a two point (lap) seat belt.

#### Overall Evaluation: 5

5 Stars. The Toyota Aurion scored 13.59 out of 16 in the offset crash test. The passenger compartment held its shape well. Protection from serious leg injury was marginal for the driver.

The vehicle scored 15.44 out of 16 in the side impact crash test. There was a slight risk of serious chest injury for the driver. A further 2 points were earned in the optional pole test.

#### Frontal Offset Crash Test

Body region scores out of 4 points each: Head/neck 4 pts, chest 4 pts, upper legs 2 pts, lower legs 3.59 pts.

The passenger compartment held its shape well in the offset crash test. The park brake pedal moved rearwards by 101 mm and upwards 48 mm. The steering wheel hub moved forwards 5mm, upwards 27 mm and sideways 19 mm. The front ("A") pillar moved 17 mm rearwards. All doors remained closed during the crash. After the crash all doors could be opened with normal effort.

It was noted that the airbag deployed relatively late in the crash event. Despite this, the airbag still fully inflated, head contact was stable and injury measurements indicated a low risk of serious head injury.

Steering column components were a potential source of injury for the driver's knees. The passenger's head was cushioned by the airbag.

#### Side Impact Crash Test

Body region scores out of 4 points each: Head 4 pts, chest 3.44 pts, abdomen 4 pts, pelvis 4 pts.

The vehicle was eligible for an optional pole test and, in 2009, the manufacturer decided to go ahead with this test. This earned a further two points.

#### Pedestrian rating (v4.1)



The Aurion provided a fair to marginal level of protection for many of the adult and child head zones. However, the results for the leg tests were uniformly poor.

|                    |      |
|--------------------|------|
| Child head impacts | 1.47 |
| Adult head impacts | 6.29 |
| Upper leg impacts  | Zero |
| Lower leg impacts  | Zero |
| Total (out of 36)  | 7.76 |

Offset crash test at 64km/hr



#### Injury Measurements

| Refer to the information sheet 'How the tests are done' | Offset Crash Test at 64km/h (v4.1) |             | Side Impact Crash Test at 50km/h (v4.1) |
|---------------------------------------------------------|------------------------------------|-------------|-----------------------------------------|
|                                                         | Driver                             | Passn       | Driver                                  |
| Head                                                    |                                    |             |                                         |
| - HIC                                                   | 725                                | 388         | 47                                      |
| - Acceleration (g for 3ms)                              | 76.2                               | 48.9        | 24.4                                    |
| Neck                                                    |                                    |             |                                         |
| - Shear (kN)                                            | 0.39                               | 0.35        |                                         |
| - Tension (kN)                                          | 2.53                               | 1           |                                         |
| - Extension (Nm)                                        | 36                                 | 22          |                                         |
| Chest                                                   |                                    |             |                                         |
| - Acceleration (g for 3ms)                              | 48.8                               | 31.5        |                                         |
| - Compression (mm)                                      | 21.5                               | 20.8        | 18.9                                    |
| - Viscous Criterion (m/s)                               | 0.1                                | 0.09        | 0.14                                    |
| Abdomen                                                 |                                    |             |                                         |
| - Force (kN)                                            |                                    |             | 0.946                                   |
| Pelvis                                                  |                                    |             |                                         |
| - Force (kN)                                            |                                    |             | 2.73                                    |
| Upper Legs Force (kN)                                   |                                    |             |                                         |
| - Left                                                  | 2.18                               | 0.52        |                                         |
| - Right                                                 | 0.3                                | 4.03        |                                         |
| Knee Displacement (kN)                                  |                                    |             |                                         |
| - Left                                                  | 0.83                               | 4.41        |                                         |
| - Right                                                 | 0.38                               | 4.04        |                                         |
| Lower Legs Force (kN)                                   |                                    |             |                                         |
| - Left                                                  | 2.51                               | 1.62        |                                         |
| - Right                                                 | 1.83                               | 2.62        |                                         |
| Index (Upper   Lower)                                   |                                    |             |                                         |
| - Left                                                  | 0.48   0.39                        | 0.41   0.3  |                                         |
| - Right                                                 | 0.34   0.25                        | 0.27   0.24 |                                         |

#### Bonus points (maximum 5)

Pole Test: 2 points

Seat Belt Reminders: 2

#### Modifiers for offset test scores

|            |                                                                      |                                            |
|------------|----------------------------------------------------------------------|--------------------------------------------|
| Head       |                                                                      | No deduction                               |
| Chest      |                                                                      | No deduction                               |
| Upper leg  | Variable & Conc. loading                                             | 2 pt deduction R, 1 pt deduction L         |
| Lower leg  |                                                                      | No deduction                               |
| Foot score |                                                                      | 3.96 points                                |
| Structure  | Park brake pedal movement<br>Note: Steering column & pedal movements | are measured relative to the driver's seat |

#### Modifiers for side impact test scores

|            |                         |                   |
|------------|-------------------------|-------------------|
| Head       |                         |                   |
| Chest      | Spine & backplate loads | 0.56 pt deduction |
| Upper leg  |                         |                   |
| Lower leg  |                         |                   |
| Foot score |                         |                   |
| Structure  |                         |                   |



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