


















Rear impact (whiplash)








Whiplash injuries are common in rear impacts. While the mechanisms by which the injuries are caused are not fully understood, it is known that seat and head restraint design can influence the risk of injury. Euro NCAP assesses the geometry of the restraint in re-

lation to the head and tests the seats in three severities of impact – high, medium and low – using a dummy specially designed for rear impacts. Seats at the top of the table are likely to offer better protection than those at the bottom.

■ GOOD
■ MARGINAL
■ POOR

Make and model	Seat description	Head restraint type	Geometric Assessment	Crash Severity			Score
				high	medium	low	
 Volvo XC60 (2008)	Single control manual, continuous adjustment	Passive	0,96	1,91	3,00	2,88	3,5
 Alfa Romeo MiTo (2008)	Single control manual, continuous adjustment	Reactive	0,88	2,50	2,36	2,47	3,3
 VW Golf (2008)	Single control manual, continuous adjustment	Passive	1,00	2,51	2,05	2,53	3,3
 Audi A4 (2008)	Single control manual, continuous adjustment	Passive	0,60	2,35	2,59	2,13	3,2
 Opel Insignia (2008)	Single control electric, continuous adjustment	Passive	1,00	2,34	1,94	2,15	3,1
 Renault Koleos (2008)	Single control manual, continuous adjustment	Passive	0,59	2,40	2,64	2,44	2,9
 Lancia Delta (2008)	Single control manual, continuous adjustment	Reactive	0,76	1,98	1,82	1,64	2,6

Make and model	Seat description	Head restraint type	Geometric Assessment	Crash Severity high medium low			Score
 BMW X3 (2008)	Single control manual, continuous adjustment	Proactive	-0,15	2,48	2,26	2,11	2,4
 Renault Kangoo (2008)	Single control manual, continuous adjustment	Passive	0,53	1,75	2,24	2,02	2,4
 Renault Megane (2008)	Single control manual, continuous adjustment	Passive	1,00	1,45	0,89	2,19	2,4
 Honda Accord (2008)	Single control manual, continuous adjustment	Reactive	0,44	1,90	2,20	1,67	2,3
 Skoda Superb (2008)	Single control manual, continuous adjustment	Passive	0,68	2,43	1,33	1,66	2,2
 Hyundai i30 (2008)	Single control manual, continuous adjustment	Reactive	0,67	0,94	2,01	2,47	2,2
 Ford Fiesta (2008)	Single control manual, continuous adjustment	Passive	0,47	1,75	1,87	1,97	2,2
 Seat Ibiza (2008)	Single control manual, continuous adjustment	Passive	0,32	2,19	1,24	1,64	2,0
 Dacia Sandero (2008)	Single control manual, notched adjustment	Passive	0,19	1,06	1,79	1,30	1,6
 Daihatsu Cuore (2008)	No height adjustment	Passive	0,00	2,21	2,09	1,73	1,1

Make and model	Seat description	Head restraint type	Geometric Assessment	Crash Severity high medium low	Score
 Citroen Berlingo (2008)	Single control manual, notched adjustment	Passive	0,13	0,53 1,24 0,98	1,0
 Hyundai i10 (2008)	No height adjustment	Passive	-0,41	1,17 0,00 1,81	0,9
 Citroen C5 (2008)	Single control manual, continuous adjustment	Passive	0,14	0,47 0,44 0,51	0,6
 Ford Kuga (2008)	Single control manual, continuous adjustment	Passive	-0,09	0,24 0,71 0,36	0,4
 Suzuki Splash (2008)	Single control manual, continuous adjustment	Passive	-0,34	0,00 0,00 0,00	0,0
 Peugeot 308CC (2008)	Single control manual, continuous adjustment	Passive	-0,23	0,00 0,00 0,00	0,0
 Daihatsu Terios (2008)	Single control manual, continuous adjustment	Passive	-0,14	0,00 1,46 1,63	0,0