

even three times as high (see tables), while the rates in other vehicles were much lower.

Large cars and minivans dominate among vehicle models with very low death rates. The models with the highest rates are mostly small cars and small and midsize SUVs, many of which also have high rates of death in single-vehicle rollover crashes. The model with the highest death rate of all — the two-door, two-wheel-drive Chevrolet Blazer with 308 driver deaths per million registered years — also had the highest rollover death rate (251 per million).

"Many of these general patterns of death rates have been consistent since the Institute began computing the rates by vehicle make and model in the late 1980s," says Institute chief operating officer Adrian Lund (see *Status Report*, Nov. 25, 1989). "Since then there also has been a pattern of improvement. In the late 1980s the overall driver death rate was higher than 100. The latest overall rate was 87."



Vehicle body style, size, and fatality risk: Important characteristics of vehicles that influence their driver death rates are type, body style, size, and weight. Within virtually every group of vehicles, the smaller and lighter models have the higher rates (see table, facing page).

Among cars, for example, the smallest twodoor models had the highest death rate at 190 per million vehicle years. This rate is more than twice as high as the average for all vehicles included in the study.

Midsize sports cars also had a high rate at 133 driver deaths per million vehicle years.

This was higher than for either small or mini sports cars, so this type of vehicle was an exception to the general rule that bigger means lower death rates.

The vehicle group with the lowest driver death rate was large luxury cars with 37 deaths per million vehicle years. The next lowest rate was in large minivans and station wagons with 42 deaths per million.

Vehicle weight and the risk of death: Because vehicle size and weight are so closely related, it shouldn't be surprising that their effects on driver death rates are similar. In each group (cars, SUVs, pickups) the heavier

vehicles, like bigger ones, generally had lower death rates (see table, p.7). The rate in the lightest SUVs, for example, was more than twice as high as in the heaviest SUVs.

"Pound for pound across the vehicle types, cars almost always have lower death rates than either pickups or SUVs. This generally is because the SUVs and pickups have much higher rates of death in single-vehicle rollover crashes," Lund explains.

In some weight groups, the death rates in cars were dramatically lower. For example, the rate in cars weighing 3,501 to 4,000 pounds was about half of the rates in pickups or SUVs of

#### **LOWEST RATES OF DRIVER DEATH**

overell my / ov / roll

Fewer than 30 driver deaths per million registered years, 1999-2002 models during calendar years 2000-03



			overali	m۷	/ roii		
Mercedes E class	luxury car	large	10	7	3	0	
Toyota 4Runner	4WD SUV	midsize	12	6	6	6	
Volkswagen Passat	4dr car	midsize	16	0	18	13	
Lexus RX 300	4WD SUV	midsize	17	11	5	0	
Toyota RAV4	4WD SUV	small	18	12	6	0	
Honda Odyssey	minivan	large	19	16	2	1	
Mercury Villager	minivan	large	21	7	15	7	
Mercedes S class	luxury car	very large	25	15	10	0	
Nissan Pathfinder	4WD SUV	midsize	25	8	17	4	
Cadillac DeVille	luxury car	large	26	12	14	4	
Nissan Quest	minivan	large	26	23	0	0	
Toyota Camry Solara	2dr car	midsize	27	10	16	11	
Cadillac Eldorado	luxury car	large	29	12	17	6	

#### HIGHEST RATES OF DRIVER DEATH

More than 160 driver deaths per million registered years, 1999-2002 models during calendar years 2000-03

			overall	mv	/ sv	/ roll
Chevrolet Blazer 2dr	2WD SUV	midsize	308	54	274	251
Mitsubishi Mirage	2dr car	small	209	142	69	37
Pontiac Firebird	sports car	midsize	205	42	167	71
Kia Rio	4dr car	mini	200	95	109	64
Kia Sportage 4dr	2WD SUV	small	197	65	138	88
Chevrolet Blazer 4dr	2WD SUV	midsize	190	78	113	79
Ford Explorer 2dr	2WD SUV	midsize	187	52	145	122
Chevrolet Camaro	sports car	midsize	186	62	123	63
Mazda B series	2WD pickup	small	185	67	124	88
Chevrolet Tracker	4WD SUV	small	183	86	98	80
Chevrolet S10	2WD pickup	small	182	81	101	61
Chevrolet Cavalier	2dr car	small	168	90	76	49
Chevrolet Cavalier	4dr car	small	162	83	81	44
Kia Sportage 4dr	4WD SUV	small	162	51	119	100

similar weight. The exception was light pick-

ups, which had relatively low rates compared

with cars or SUVs weighing about the same.

"There's no ready explanation for this exception," Lund says. "It probably has something to do with how light pickups are driven and their use patterns compared with larger and heavier pickups."

Rates differ among similar vehicles: Besides these broad death rate differences across vehicle groups, the rates varied within body style and size groups. In almost every size group of two-door and four-door cars, for example, the death rate for the worst vehicle

was at least twice as high as the rate for the best vehicle (see tables, pp. 4-5).

Consider the Infiniti G20's rate of 46 deaths per million registered years, which was much lower than rates for other small four-door cars. The Chevrolet Cavalier's rate was 162 per million, and the Pontiac Sunfire's was 160. The upper confidence bound for the G20's death rate is well below the lower confidence bounds for the other two cars.

"This means that the lower death rate for the G20 wasn't due to chance," Lund says. A more extreme example involves midsize fourwheel-drive SUVs. The *(continues on p. 6)* 

#### **BODY STYLE AND SIZE**

Driver death rates by size and body style group

overall	mv	/ sv /	roll	CARS
148 110 76 79 71	94 65 43 48 43	53 43 32 29 30	26 22 15 12	FOUR-DOOR mini small midsize large very large
190 130 94 75	116 62 42 37	75 67 52 38	40 39 30 19	TWO-DOOR mini small midsize large
86 61 133	46 25 48	38 35 85	19 14 42	SPORTS mini small midsize
41 37 47	20 19 26	20 19 20	11 7 7	LUXURY midsize large very large
115	60	54	28	SPECIALTY small
65 47 42	49 11 26	15 40 15	2 27 9	MINIVANS AND STATION WAGONS small midsize large
102 67 52 103	39 22 14 19	65 48 40 92	51 34 31 75	SUVS 4 WHEEL DRIVE small midsize large very large
121 114 70	60 38 31	61 80 39	43 63 31	2 WHEEL DRIVE small midsize large
109 97 95	32 29 27	77 69 68	53 49 51	PICKUPS 4 WHEEL DRIVE small large very large
124 107 69	56 38 31	68 70 38	39 42 22	2 WHEEL DRIVE small large very large
93	34	64	62	SPECIALTY midsize

#### KEY TO TABLES:

overall: driver death rate per million registered vehicle years mv: driver death rate in multiple-vehicle crashes sv: driver death rate in single-vehicle crashes roll: driver death rate in single-vehicle rollovers

# DRIVER DEATHS



PER MILLION REGISTERED VEHICLE YEARS

	MODELS	EXPOSURE	— DRIVER	DEATH	v ROLL	
ALL PASSENGER VEHICLES	WODELO	113,607,805	87 (85-89)	41	SV S'	28
			, ,			
FOUR-DOOR CARS		000 170				
MINI Toyota Echo	2000-02	660,173 184,554	<b>75</b> (32-119)	65	8	4
Hyundai Accent Kia Rio	2000-02 2001-02	237,380 154,069	<b>150</b> (93-208) <b>200</b> (107-294)	97 95	51 109	28 64
SMALL	2001-02	11,622,917	200 (107-234)	55	103	04
Infiniti G20	1999-2002	144,854	<b>46</b> (15-77)	21	25	15
Honda Civic Nissan Sentra	2001-02 2000-02	632,071 511,642	<b>67</b> (43-91) <b>71</b> (44-98)	34 39	33 34	13 16
Volkswagen Jetta Volvo S40	2001-02 2000-02	420,084 156,137	<b>76</b> (44-108) <b>88</b> (33-144)	30 58	48 30	30 24
Hyundai Elantra	2001-02	318,801	<b>88</b> (46-130)	39	53	33
Toyota Corolla Ford Focus	1999-2002 2000-02	2,111,339 1,172,299	<b>93</b> (77-109) <b>94</b> (73-115)	61 49	28 43	12 21
Mazda Protege	1999-2002	636,882	99 (70-129)	66	29	16
Saturn SL Chevrolet Prizm	1999-2002 1999-2002	1,472,461 429,540	<b>108</b> (87-128) <b>128</b> (87-170)	73 83	32 43	15 21
Dodge Neon	2000-02	800,589	<b>154</b> (124-185)	82	71	32
Ford Escort Pontiac Sunfire	1999-2002 1999-2002	860,038 277,940	<b>158</b> (125-190) <b>160</b> (104-215)	112 81	41 76	15 49
Chevrolet Cavalier	1999-2002	1,196,559	<b>162</b> (135-190)	83	81	44
MIDSIZE Volkswagen Passat	2001-02	12,606,067 181,637	<b>16</b> (0-41)	0	18	13
Toyota Avalon	2000-02	536,303	<b>45</b> (23-66)	25	20	17
Nissan Maxima Toyota Camry	2000-02 2002	795,842 429,506	<b>52</b> (35-70) <b>56</b> (28-83)	23 44	28 8	14 5
Hyundai Sonata	2001-02	167,051	<b>57</b> (14-99)	25	32	14
Honda Accord Nissan Altima	1999-2002 2002	3,256,030 191,305	<b>58</b> (47-69) <b>72</b> (27-118)	36 22	19 52	7 24
Mitsubishi Galant Mazda 626	1999-2002 1999-2002	800,235 705,237	<b>79</b> (57-100) <b>82</b> (55-109)	44 43	35 39	11 17
Chevrolet Malibu	1999-2002	1,941,422	94 (77-111)	55	37	17
Pontiac Grand Am Dodge Stratus	1999-2002 2001-02	1,679,596 181,716	<b>100</b> (82-117) <b>112</b> (52-172)	48 60	51 51	28 8
Oldsmobile Alero	1999-2002	816,072	<b>114</b> (85-142)	75	34	14
Daewoo Leganza Chrysler Sebring	1999-2002 2001-02	173,524 124,532	<b>125</b> (58-192) <b>126</b> (39-213)	73 74	50 43	26 30
LARGE		13,067,650				
Buick LeSabre Chrysler Concorde	2000-02 1999-2002	970,423 517,406	<b>60</b> (44-76) <b>68</b> (42-93)	45 43	14 23	5 3
Dodge Intrepid	1999-2002	1,380,371	<b>70</b> (53-86)	40	29	12
Pontiac Grand Prix Chevrolet Impala	1999-2002 2000-02	1,118,291 1,142,216	<b>73</b> (54-92) <b>79</b> (60-97)	30 47	42 29	30 14
Ford Taurus	1999-2002	3,346,778	<b>82</b> (70-94)	51	30	12
Mercury Sable Chrysler 300M	1999-2002 1999-2002	938,145 568,146	<b>82</b> (60-104) <b>82</b> (52-113)	51 51	31 29	11 17
Buick Century Buick Regal	1999-2002 1999-2002	1,396,883 607,865	<b>84</b> (68-100) <b>88</b> (60-117)	65 48	18 41	5 11
Oldsmobile Intrigue	1999-2002	651,884	<b>93</b> (65-120)	54	39	15
Pontiac Bonneville VERY LARGE	2000-02	302,542	<b>97</b> (52-143)	52	44	17
Ford Crown Victoria	1999-2002	1,897,467 756,458	<b>53</b> (36-71)	29	25	10
Mercury Grand Marquis	1999-2002	1,141,009	<b>83</b> (66-100)	52	32	14
TWO-DOOR CARS						
MINI Hyundai Accent	2000-02	411,329 161,017	<b>148</b> (75-222)	82	69	32
Mitsubishi Mirage	1999-2002	98,812	<b>209</b> (115-302)	142	69	37
SMALL	1000 0000	5,203,147	<b>52</b> (0.00)	10	40	20
Volkswagen Golf convertible Honda Civic coupe	1999-2002 2001-02	127,219 351,791	<b>52</b> (8-96) <b>76</b> (49-103)	12 40	42 35	30 15
Volkswagen New Beetle Saturn SC	1999-2002 1999-2002	722,944 311,756	<b>94</b> (64-124) <b>100</b> (58-142)	48 55	45 45	28 27
Mitsubishi Eclipse	2000-02	323,220	<b>114</b> (77-151)	31	86	34
Ford Focus Toyota Celica	2000-02 2000-02	265,645 265,393	<b>118</b> (72-165) <b>128</b> (84-172)	50 44	68 84	45 42
Ford Escort	1999-2002	667,128	<b>141</b> (108-174)	68	72	46
Mercury Cougar Pontiac Sunfire	1999-2002 1999-2002	545,712 457,562	<b>155</b> (116-194) <b>157</b> (117-197)	71 80	82 78	50 36
Chevrolet Cavalier	1999-2002	1,046,388	<b>168</b> (138-197)	90	76	49

	******	EVECOURE	-	DRIVER			
	MODELS	EXPOSURE	OV	ERALL	MV	SV	SVROLL
MIDSIZE		2,955,220					
Toyota Camry Solara	1999-2002	466,268		(10-43)	10	16	11
Honda Accord	1999-2002	689,365	59		34	23	13
Chrysler Sebring convertible Chevrolet Monte Carlo	2001-02 2000-02	125,126 381,398	127	(25-170) (83-171)	42 49	57 79	24 49
Oldsmobile Alero	1999-2002	285,278	128	(79-176)	63	64	40
Pontiac Grand Am	1999-2002	639,825	150	(116-185)	65	86	48
LARGE		269,204		(/			
Pontiac Grand Prix	1999-2002	266,338	75	(46-104)	37	38	19
CDODTC CADC				` '			
SPORTS CARS		074 005					
MINI Mazda Miata	1999-2002	271,635 237,281	ยก	(37-122)	39	38	22
SMALL	1333-2002		00	(01-122)	00	00	22
BMW Z3 Roadster convertible	1999-2002	424,062 127,005	58	(12-103)	21	34	12
	1999-2002		30	(12-103)	۷1	04	12
MIDSIZE Ford Mustang convertible	1999-2002	2,432,984 433,046	01	(60-123)	35	58	35
Ford Mustang	1999-2002	1,072,873		(115-165)	61	78	41
Chevrolet Camaro	1999-2002	317,403		(139-233)	62	123	63
Pontiac Firebird	1999-2002	261,563	205	(147-263)	42	167	71
I HANDA CVD6							
LUXURY CARS		0.000.000					
MIDSIZE BMW 3 series	1999-2002	2,000,683 518.714	3/	(16-52)	14	19	8
Saab 9-5	1999-2002	157,905		(3-88)	28	14	14
Acura TL	1999-2002	545,450		(24-69)	18	30	15
LARGE		3,405,485		,			
Mercedes E class	2000-02	223.625	10	(0-22)	7	3	0
Cadillac DeVille	2000-02	533,430		(13-40)	12	14	4
Cadillac Eldorado	1999-2002	130,388		(3-54)	12	17	6
BMW 5 series	1999-2002	326,719		(12-64)	15	24	4
Volvo S80	1999-2002	274,320		(14-76)	11 24	38	14
Lincoln Continental Lincoln LS	1999-2002 2000-02	238,937 334,834		(14-77) (21-75)	24 11	23 40	6 20
Buick Park Avenue	1999-2002	487,306	60	(38-83)	46	13	9
Jaguar S-type	2000-02	147,932	68	(14-123)	40	27	5
VERY LARGE		1,157,664		,			
Mercedes S class	2000-02	208,198	25	(6-44)	15	10	0
Lincoln Town Car	1999-2002	776,692	62	(45-79)	35	27	10
SPECIALTY CARS							
SMALL		528,077					
Chrysler PT Cruiser	2001-02	474,982	117	(79-156)	57	60	31
MINIVANS & STATION WAGON	ıç						
SMALL	ıo	368,411					
Ford Focus	2000-02	211,870	62	(25-99)	48	15	0
	2000-02		UL	(20-33)	70	10	U
MIDSIZE Subaru Legacy	2000-02	535,808 472,842	54	(28-79)	13	45	31
	2000-02		04	(20-13)	10	70	UI
LARGE Honda Odyssey	1999-2002	7,113,651 887,482	19	(8-31)	16	2	1
Mercury Villager	1999-2002	314,518	21	(3-39)	7	15	7
Nissan Quest	1999-2002	350,899	26	(2-51)	23	0	0
GMC Safari 2WD	1999-2002	140,163	31	(0-66)	24	5	5
Toyota Sienna	1999-2002	854,589	32	(17-47)	20	12	6
Chevrolet Astro 2WD	1999-2002	393,809	37	(14-59)	12	28	19
Chrysler Town & Country 2WD	2001-02	346,462	38	(13-62)	24	13	11
Ford Windstar Chevrolet Venture 2WD	1999-2002 2001-02	1,809,442 178,526	41 52	(30-53) (8-97)	23 38	18 14	13 13
Dodge Grand Caravan 2WD	2001-02	425,350	52	(24-81)	38	13	11
Mazda MPV	2000-02	221,282	53	(18-87)	34	16	10
Chevrolet Astro 4WD	1999-2002	121,320	66	(9-122)	43	18	6
Ford Taurus	1999-2002	282,091	82	(40-124)	72	5	3
Dodge Caravan	2001-02	184,584	83	(34-131)	45	37	16
SUVS: FOUR WHEEL DRIVE							
SMALL		2,428,952					
Toyota RAV4	2001-02	123,339	18	(0-39)	12	6	0
Subaru Forester	1999-2002	406,795	70	(35-105)	37	33	21
Jeep Wrangler	1999-2002	704,099	99	(71-127)	26	77	67
Ford Escape Suzuki Grand Vitara	2001-02	236,632	115 127	(58-173)	38 60	80 65	38 58
Kia Sportage 4dr	1999-2002 1999-2002	180,713 221,640	162	(56-197) (91-233)	60 51	65 119	58 100
Chevrolet Tracker 4dr	1999-2002	208,394	183	(109-258)	86	98	80
		,		,			

	MODELS	EXPOSURE	0\/5	<b>DRIVER</b>	DEAT MV	H RAT SV	-
	MODELS		UVE	HALL	IVIV	SV	5V HULL
MIDSIZE Toyota 4Runner	2001-02	8,139,278 125,229	12	(0-29)	6	6	6
Lexus RX 300	2001-02	135,105	17	(0-29)	11	5	0
Nissan Pathfinder	1999-2002	381,018	25	(11-39)	8	17	4
BMW X5	2000-02	151,107		(0-74)	17	16	15
Acura MDX Isuzu Trooper	2001-02 1999-2002	125,105 143,360		(7-65) (16-78)	30 32	6 15	6 15
Nissan Xterra	2000-02	274,133		(16-79)	26	23	11
Dodge Durango	1999-2002	1,171,194	49	(34-65)	18	32	19
Jeep Grand Cherokee	1999-2002	1,816,350		(42-68)	18 11	38	24
Ford Explorer 4dr Isuzu Rodeo	2002 1999-2002	294,934 192,701		(19-93) (17-103)	19	49 39	26 11
Chevrolet Trailblazer	2002	149,277			17	76	56
Jeep Liberty	2002	142,870		(27-145)	42	43	31
Mitsubishi Montero Sport GMC Jimmy	1999-2002 1999-2002	209,394 385,710		(36-143) (56-134)	12 34	84 66	50 43
Chevrolet Blazer 2dr	1999-2002	203,541	111	(53-142)	24	73	65
Chevrolet Blazer 4dr	1999-2002	1,077,063	101	(77-125)	35	70	61
Land Rover Discovery Series II		153,126		(53-184)	29	89	53
Ford Explorer 2dr	1999-2002	336,605	134	(87-181)	22	117	94
LARGE Chevrolet Suburban 1/2 ton	2000-02	2,491,022 326,300	47	(22-73)	10	36	27
Ford Expedition	1999-2002	945,092		(33-67)	12	40	32
GMC Yukon XL	2000-02	172,266	51	(10-91)	15	35	35
GMC Yukon	2000-02	180,112	52	(8-96)	4	53	26
Chevrolet Tahoe	2000-02	417,693	75	(43-106)	28	48	38
VERY LARGE Ford Excursion	2000-02	174,000 167,874	107	(41-173)	20	96	77
TOTA EXCUISION	2000 02	101,014	107	(41 170)	20	50	,,
SUVS: TWO WHEEL DRIVE							
SMALL Ford Escape	2001-02	809,416	86	(28-143)	59	22	21
Kia Sportage 4dr	1999-2002	175,853 181,208		(106-287)	65	138	88
MIDSIZE		3,769,759		(,			
Nissan Pathfinder	1999-2002	183,400	40	(8-72)	12	29	29
Dodge Durango	1999-2002	382,584		( /	19	24	14
Ford Explorer 4dr Jeep Grand Cherokee	2002 1999-2002	140,127 551,833		(8-106) (57-121)	11 27	51 64	49 55
Nissan Xterra	2000-02	243,200		(50-152)	22	84	55
Mitsubishi Montero Sport	1999-2002	274,667	121	(69-173)	60	59	46
Isuzu Rodeo	1999-2002	323,757		(84-180)	56	80	63
Ford Explorer 2dr Chevrolet Blazer 4dr	1999-2002 1999-2002	427,935 303,155	187 190	(136-239) (127-254)	52 78	145 113	122 79
Chevrolet Blazer 2dr	1999-2002	138,214	308	(190-426)	54	274	251
LARGE		1,765,992					
Ford Expedition	1999-2002	909,196	66	(46-86)	34	32	24
Chevrolet Suburban 1/2 ton Chevrolet Tahoe	2000-02 2000-02	235,796 276,878	73 84	(26-120) (45-123)	29 30	48 55	45 46
Oneviolet lande	2000-02	210,010	04	(40-120)	00	00	40
PICKUPS: FOUR WHEEL DRIVE							
SMALL Dodge Dakota club cab	1999-2002	2,660,735	49	(25-73)	10	40	18
Dodge Dakota crew cab	2000-02	316,512 172,381		(36-119)	42	34	17
Toyota Tacoma ext cab	1999-2002	458,272	83	(56-111)	26	59	40
Chevrolet S10 ext cab	1999-2002	244,211	109	(70-148)	42	65	45
Ford Ranger super cab	1999-2002	813,529	154	(127-181)	36	118	91
LARGE GMC Sierra 1500 ext cab	1999-2002	4,638,938 514,238	71	(49-92)	22	48	30
Toyota Tundra access cab	2000-02	271,296		(42-124)	34	48	35
Chevrolet Silverado 1500 ext cab	1999-2002	1,592,743	90	(75-105)	23	69	46
Ford F-150 Ford F-150 super cab	1999-2002	231,747	108	(65-151)	28	79	48 60
Ford F-150 super cab	1999-2002 2001-02	1,033,314 293,513	114 120	(92-136) (76-163)	34 31	83 94	60 82
Chevrolet Silverado 1500	1999-2002	435,201	125	(91-159)	40	85	61
VERY LARGE		3,402,199					
Chevrolet Silverado 2500 Ford F-250 crew cab	1999-2002	123,725	66 80	(26-106)	25 24	41 58	35 47
Chevrolet Silverado 2500 ext cab	1999-2002 1999-2002	392,066 343,414		(50-111) (54-110)	23	56 57	36
Ford F-350 super cab	1999-2002	194,449	94	(49-140)	23	74	53
Ford F-250 super cab	1999-2002	683,397		(73-119)	28	68	50
Ford F-350 crew cab Ford F-250	1999-2002 1999-2002	436,185 176,005	112 114	(80-143) (70-158)	20 30	92 82	66 66
Dodge Ram 2500 club cab	1999-2002	470,489	119	(88-150)	36	84	72

	MODELS	EXPOSURE	0//	<b>— DRIVER</b>	DEAT MV	SV ROLL	
DIOVUDO, TWO WHEEL DRIVE	02220	2711 000112	011			SV	0111025
PICKUPS: TWO WHEEL DRIVE							
SMALL		5,776,529					
Dodge Dakota club cab	1999-2002	420,166	58	(36-80)	30	28	10
Nissan Frontier crew cab	2000-02	164,565	72	(30-113)	32	41	32
Nissan Frontier king cab	1999-2002	324,247	77	(47-108)	44	31	11
Toyota Tacoma ext cab	1999-2002	442,792	81	(51-111)	31	52	29
Toyota Tacoma	1999-2002	246,369	108	(67-149)	61	44	27
Ford Ranger super cab	1999-2002	981,240	110	(86-133)	47	64	35
Dodge Dakota crew cab	2000-02	165,444	118	(53-183)	41	80	14
GMC Sonoma	1999-2002	128,519	126	(60-191)	76	45	23
Chevrolet S10 ext cab	1999-2002	626,521	137	(108-165)	67	70	41
Ford Ranger	1999-2002	891,186	146	(120-172)	57	91	56
Dodge Dakota	1999-2002	216,101	153	(97-209)	77	77	44
GMC Sonoma ext cab	1999-2002	185,426	154	(92-216)	59	91	56
Chevrolet S10	1999-2002	678,036	182	(148-216)	81	101	61
Mazda B series	1999-2002	118,351	185	(95-274)	67	124	88
LARGE		5,610,361					
Tovota Tundra access cab	2000-02	252,014	62	(31-92)	21	41	17
Chevrolet Silverado 1500 ext cab	1999-2002	1,192,708	84	(67-102)	34	51	27
GMC Sierra 1500	1999-2002	220,603	97	(58-137)	26	69	40
GMC Sierra 1500 ext cab	1999-2002	366.748	98	(66-131)	45	52	26
Ford F-150 super cab	1999-2002	1,641,186	105	(88-123)	39	68	47
Ford F-150 crew cab	2001-02	288,611	111	(68-154)	30	85	54
Ford F-150	1999-2002	786.195	131	(106-156)	36	95	59
Chevrolet Silverado 1500	1999-2002	652,379	153	(122-185)	52	103	60
VERY LARGE		1,449,621					
Ford F-250 crew cab	1999-2002	128,814	40	(10-71)	12	28	17
Ford F-250	1999-2002	182,388	45	(18-72)	33	12	8
Ford F-250 super cab	1999-2002	323,230	58	(35-81)	31	27	18
Ford F-350 crew cab	1999-2002	178,461	58	(21-94)	21	38	29
Dodge Ram 2500 club cab	1999-2002	147,473	96	(52-140)	46	49	35
SPECIALTY PICKUPS		, -		,			
MIDSIZE		122 040					
Ford Explorer Sport Trac 2WD	2001-02	133,940 133,940	93	(35-151)	34	64	62
TOTA EXPIDITE SPOTE HAG ZWD	2001-02	133,340	30	(33-131)	34	04	UZ
ALL PASSENGER VEHICLES		113,607,805	87	(85-89)	41	46	28

#### **ABOUT THESE TABLES**

Rates are for 1999-2002 model year cars, minivans, SUVs, and pickup trucks during 2000-03. However, every model year isn't included for every vehicle. If a vehicle was substantially redesigned during the 1999-2002 model years, only the most recent design is included.

Rates are driver deaths per million registered vehicle years. Two vehicles registered for 12 months each yield 2 vehicle years.

> Sources of data are the National Highway Traffic Safety Administration's Fatality Analysis Reporting System and The Polk Company's National Vehicle Population Profile.

#### (EY

overall: driver death rate per million registered vehicle years mv: driver death rate in multiple-vehicle crashes sv: driver death rate in single-vehicle crashes roll: driver death rate in single-vehicle rollover crashes



(continued from p.3) Toyota 4Runner had only 12 driver deaths per million registered years during 2000-03. This compares with 134 deaths per million for the two-door Ford Explorer and 119 per million for the Land Rover Discovery Series II.

Single- versus multiple-vehicle crashes: In many vehicle groups, driver death rates are split fairly evenly between single- and multiple-vehicle crashes. But there are exceptions. Most driver deaths in large four-door cars and minivans occurred in crashes involving other vehicles. In contrast, in pickup trucks and SUVs of almost every size more deaths occurred in single-vehicle crashes. In large four-wheel-drive SUVs, for example, the death rate was almost three times as high in single-vehicle crashes as it was in collisions involving two or more vehicles (14 deaths per million compared with 40).

Rollover crashes: Eleven vehicles, all pickups or SUVs, had more than 75 driver deaths per million in single-vehicle rollover crashes. This is in large part because pickup trucks and SUVs have relatively high centers of gravity compared with cars. The Ford Excursion is a very large SUV with a high rollover death rate. This is at least in part because its occupancy rate tends to be high, which raises its center of gravity even higher.

The vehicle with the very highest driver death rate in single-vehicle rollover crashes was the two-door, two-wheel-drive Chevrolet Blazer. The 251 deaths per million for this SUV compare with an average of 63 for all midsize two-wheel-drive SUVs, 34 for four-wheel-drive versions, and 28 for all vehicles in the study.

Not all midsize SUVs had high death rates in single-vehicle rollovers. The Lexus Region Woycea 4Runner, Nissan Pathfinder, and Acure MDX had 6 or fewer rollover deaths per million vehicle years. Bold the RX 300 and the 4Runner are equipment of electronic stability control, which has been shown to significantly reduce the risk of fatal single vehicle crashes including rollovers (see Status Report and 3, 2005; on the web at www.iihs.org).

Not one driver death occurred in a rolly 25% of RX 300 or four-wheel-drive Toyota RAV4, a small Sov. This experience doesn't mean the rates for these vehicles will be zero every year, but it does mean very low rates can be expected.

"Small SUVs have had high rollover death rates in the vears, but as the RAV4 indicates this may be changing. Que transfer son may be that the drivers are changing," Lund points out "I





#### INFLUENCE OF VEHICLE WEIGHT Driver deaths per million registered vehicle years, 1999-2002 models during 2000-03

	CARS				suvs				PICKUP TRUCKS					
vehicle weight:	overall	mv	/ sv	/roll	overall	mν	/ sv	/roll	overall	mv	sv ,	roll		
2,500 lbs. or less	115	71	42	20	_	_	_	_	_	_		_		
2,501-3,000 lbs.	102	54	46	25	128	63	66	47	90	42	49	28		
3,001-3,500 lbs.	84	44	39	19	98	38	61	47	131	57	74	45		
3,501-4,000 lbs.	56	33	23	10	98	32	69	53	115	33	82	56		
4,001-4,500 lbs.	47	27	20	7	73	23	53	39	107	38	70	44		
4,501-5,000 lbs.	_	_	_	_	66	27	40	28	93	30	64	41		
more than 5,000 lbs.	_	_	_	_	55	15	42	33	87	28	60	44		

overall driver death rate per million registered vehicle years

my driver death rate in multiple-vehicle crashes

sv driver death rate in single-vehicle crashes

driver death rate in single-vehicle rollover crashes

no exposure or insufficient exposure

used to be that younger people, especially young men, drove small SUVs, but now many women drive them, including older women. In addition, as vehicle manufacturers redesign their small SUVs they're addressing the rollover problem in the designs, making these vehicles more stable and less likely to roll over."

How the death rates were computed: Rates of driver death in all crashes plus rates in multiple-vehicle, single-vehicle, and single-vehicle rollover crashes were computed for 199 passenger vehicle models (1999-2002) with at least 120,000 registered vehicle years or 20 driver deaths during the study years.

Each model's rate represents the reported number of driver deaths divided by the model's number of registered years. Data are from the federal government's Fatality Analysis Reporting System and registration counts from The Polk Company.

Among the vehicles, exposure varies considerably. For example, the number of registered vehicle years for midsize two-door cars is nearly 3 million. This compares with fewer than 300,000 registered years for large two-door cars. Because of this variability, 95 percent confidence intervals were computed with upper and lower bounds indicating the precision of the computed rates for all crash types.

The rates reflect primarily the influence of a vehicle's design and patterns of use. Because driver demographics can be a major influence, the death rate for each vehicle was adjusted according to the proportion of deaths of women 25-64 years old. These drivers are involved in fewer fatal crashes per licensed driver. For most vehicles the rates were adjusted by less than 20 percent.

"This is the first year we've adjusted the rates to account for some driver characteristics," Lund says. "The adjustment takes away some of the differences among vehicles caused by differences in driver gender. Other demographic factors still influence the death rates, but more of the differences in the rates reflect the vehicles."

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1005 N. Glebe Rd., Arlington, VA 22201 Phone 703/247-1500 Fax 247-1588 Internet: www.iihs.org Vol. 40, No. 3, March 19, 2005

### **Special issue**

This special issue focuses on driver death rates. Recent special issues have focused on:

39:10 (2004) Rear crash protection 39:5 (2004) Side impact crash tests Speeding 38:10 (2003) 38:7 (2003) Side impact crash tests Vehicle incompatibility 38:5 (2003) Safety as a priority 37:10 (20002) 37:5 (2002) Automated enforcement Motorcycle deaths 37:1 (2002) Elderly drivers 36:8 (2001) What works and doesn't work 36:5 (2001) Vehicle improvements 36:3 (2001)



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