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PEDESTRIAN FATALITIES AND INJURIES, 1992-2001

This document presents pedestrian fatalities and injuries resulting from collisions with motor vehicles on a roadway. The report reviews the number of pedestrian fatalities and injuries by age group and gender, by jurisdiction, time of day and month. The report also presents tables and charts showing the fatality and injury rates per 100,000 population, the distribution of fatalities and injuries by type of vehicle, vehicle manoeuvre, pedestrian action and the number and percentage of fatally injured pedestrians who had been drinking.

In the tables relating to age group and gender, the sum of males and females do not always add to total fatalities and injuries[1]. For a relatively small number of fatalities and injuries, the gender was not specified in the collision report resulting in the gender being coded as unknown in the database. In tables showing percentage distributions, the totals may not add due to rounding.

Summary Findings

Over the 10-year period, 1992-2001:

- Pedestrian fatalities averaged 416 per year and decreased 24.1 percent over the 10-year period.
- Pedestrian injuries averaged 14,252 per year and decreased 10.2 percent from 1992 to 2001.
- Overall males represented 61 percent of pedestrian fatalities while females accounted for 39 percent of fatalities.
- The 65+ age group accounted for 27 percent and 39 percent of male and female pedestrian fatalities, respectively. Over the period, male fatalities over 64 years old decreased 12.7 percent and over 64 year old female fatalities decreased 30.4 percent.
- Pedestrian fatalities decreased 24.1 percent compared to a decrease of 20.7 percent for all road users including pedestrians. Pedestrian fatalities were down 20 percent among males and down 30 percent among females.
- Pedestrian fatalities in urban areas represented 69.5 percent of all pedestrian fatalities over the 10 years.
- For pedestrians over 64 years of age, 85 percent of the fatalities occurred in an urban area.
- Pedestrian injuries dropped 10 percent – decreases of 13 percent in male injuries and 7 percent in female injuries, while all road user injuries decreased 11.5 percent.
- An average of 95 percent of pedestrian injuries occurred in urban areas.

Canada

In 2001:

- Pedestrian fatalities (334) decreased 10 percent from 2000 and represented 12 percent of all road user fatalities, while injuries (13,475) decreased 2 percent from 2000 and accounted for 6 percent of all road user injuries.
- Fatalities in 2001 were at their lowest level during the 10-year period. On average, 1 pedestrian fatality occurred each day in Canada.
- Males accounted for 63.5 percent of pedestrian fatalities, and females accounted for 36.5 percent.
- Pedestrian injuries were more evenly distributed between the genders with males accounting for 52 percent of injuries and females at 48 percent.
- Of the 247 fatally injured pedestrians who were tested for alcohol use, 40.5 percent had been drinking. The majority of those tested and found to have been drinking had Blood Alcohol Concentrations (BAC) over the legal driving limit (80 mg%).

Detailed Findings

Tables 1 and 2 present the pedestrian fatalities and injuries by jurisdiction and include fatalities and injuries of unknown gender, if any were coded as such. From 1992 to 2001, a total of 4,162 pedestrians died from injuries suffered in collisions with motor vehicles and 142,515 were injured. As shown in the tables, pedestrian fatalities and injuries decreased in most jurisdictions over the period and, in total, fatalities were at their lowest level in the 10-year period with 334 in 2001 compared to a high of 479 in 1993. The number of injuries was at the lowest level of the 10-year period in 1998 and stayed slightly above the 1998 level in the last three years. Fatalities averaged 416 per year and decreased 24.1 percent over the 10 years. During this period, pedestrian injuries averaged 14,252 per year, and decreased 10.2 percent from 1992 to 2001.

Pedestrian fatalities in 2001 decreased 10.2 percent from the previous year and represented 12 percent of all road user fatalities, while the 13,475 injuries accounted for 6.1 percent of all road user injuries and decreased 2 percent from 2000. On average, 0.9 pedestrian fatalities (0.58 males and 0.33 females) and 36.9 injuries (19.1 males, 17.6 females and 0.2 of unknown gender) occurred each day in 2001.

Table 1. Pedestrian Fatalities by Jurisdiction, 1992-2001

Jurisdiction	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
Nfld&Lab.	6	6	4	7	16	6	6	5	6	5	**67**
P.E.I.	2	3	0	0	2	4	1	4	2	3	**21**
N.S.	12	7	10	16	19	10	11	13	8	7	**113**
N.B.	14	19	4	11	14	14	7	14	15	9	**121**
Que.	130	138	120	131	135	108	108	111	104	77	**1,162**
Ont.	140	146	127	126	144	133	121	132	112	119	**1,300**
Man.	12	17	17	14	16	20	24	21	15	10	**166**
Sask.	13	21	16	15	16	14	17	14	18	15	**159**
Alta.	34	52	55	39	36	45	45	32	38	33	**409**
B.C.	76	70	76	56	61	45	62	70	53	56	**625**
Yukon	1	0	0	0	1	0	2	1	0	0	**5**
N.W.T.	0	0	0	1	5	3	2	2	1	0	**14**
Canada	**440**	**479**	**429**	**416**	**465**	**402**	**406**	**419**	**372**	**334**	**4,162**

Table 2. Pedestrian Injuries by Jurisdiction, 1992-2001

Jurisdiction	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
Nfld&Lab.	201	191	193	171	157	112	171	158	163	126	**1,643**
P.E.I.	34	27	18	16	13	37	38	40	30	29	**282**
N.S.	326	360	355	365	344	318	304	386	359	342	**3,459**
N.B.	271	206	233	227	180	179	192	173	153	175	**1,989**
Qué.	4,271	4,049	3,996	3,878	3,902	3,806	3,654	3,731	3,767	3,588	**38,642**
Ont.	5,177	5,181	5,345	5,261	5,336	5,154	4,981	4,894	5,190	5,063	**51,582**
Man.	771	711	634	650	535	481	496	504	484	460	**5,726**
Sask.	387	371	369	365	354	365	363	356	368	362	**3,660**
Alta.	1,018	1,066	1,059	1,052	1,002	1,208	1,104	1,210	1,179	1,249	**11,147**
B.C.	2,528	2,563	2,787	2,844	2,583	2,371	2,073	2,183	2,010	2,055	**23,997**
Yukon	14	8	8	19	14	20	10	13	11	15	**132**
N.W.T.	0	0	43	40	35	39	32	24	32	11	**256**
Canada	**14,998**	**14,733**	**15,040**	**14,888**	**14,455**	**14,090**	**13,418**	**13,672**	**13,746**	**13,475**	**142,515**

As shown in Table 3, pedestrian fatalities represented 12.0 percent of all road user fatalities in 2001. As a percentage of all road user fatalities by age group, pedestrian fatalities ranked highest in the 10-14 age group (27.5 percent), followed by the 00-04 age group (25.8 percent), the 65+ age group (22.5 percent), and the 05-09 age group (20.4 percent). These percentages are significantly higher than all other age groups, which ranged from 5.6 percent in the Unknown age group to 12.6 percent in the 45-54 age group.

Table 3. Pedestrian Fatalities and Injuries as a Percentage of All Road User Fatalities and Injuries by Age Group in 2001

	Age Group											
	00-04	**05-09**	**10-14**	**15-19**	**20-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65+**	**Unknown**	**Overall**
Pedestrian Fatalities as % of all Fatalities	25.8	20.4	27.5	7.9	6.8	6.3	10.2	12.6	9.9	22.5	5.6	12.0
Pedestrian Injuries as % of all Injuries	10.0	16.1	18.3	5.6	4.0	4.2	4.6	5.1	6.3	10.2	8.3	6.1

Of all pedestrian fatalities during the 10-year period, males accounted for an average of 61 percent with females accounting for the remaining 39 percent of these deaths. Tables 4 and 5 show the number of male and female pedestrians fatally injured by age group for 1992 to 2001 and the 10-year totals. In total, male fatalities were lower in 2001 than in 1992 in all age groups except 10-14, 20-24 and 35-44. In comparison, female fatalities were lower in 2001 than in 1992 in all age groups except 15-19, 20-24, and 45-54.

Pedestrians in the 65+ age group had the greatest number of fatalities accounting for an average of 26.9 percent of male fatalities and 38.6 percent of female fatalities over the 10-year period, compared to 29.2 percent and 39.3 percent in 2001, respectively. Male pedestrian fatalities in this age group decreased 12.7 percent from 1992 to 2001, while female fatalities decreased 30.4 percent.

Table 4. Male Pedestrian Fatalities by Age Group, 1992-2001

Age Group	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
00-04	8	9	13	4	7	7	6	6	4	4	68
05-09	19	11	12	14	15	15	10	8	13	5	122
10-14	4	19	8	6	9	8	10	13	12	9	98
15-19	21	22	17	27	19	24	19	26	24	20	219
20-24	17	19	31	22	28	12	19	20	13	19	200
25-34	31	40	30	30	31	36	21	26	27	17	289
35-44	30	35	29	23	34	29	28	38	29	30	305
45-54	33	34	25	24	28	24	32	27	24	32	283
55-64	30	33	30	28	31	18	32	18	21	13	254
65+	71	64	63	56	86	68	70	79	68	62	687
Unknown	2	2	2	3	5	5	4	4	3	1	31
Total	**266**	**288**	**260**	**237**	**293**	**246**	**251**	**265**	**238**	**212**	**2,556**

Table 5. Female Pedestrian Fatalities by Age Group, 1992-2001

Age Group	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
00-04	8	8	13	6	5	0	4	8	1	4	57
05-09	9	13	6	6	13	10	8	2	2	6	75
10-14	7	10	6	8	4	12	2	4	7	5	65
15-19	6	15	14	11	11	18	15	15	11	7	123
20-24	6	10	10	6	9	10	7	3	4	6	71
25-34	12	16	20	19	9	13	8	15	8	8	128
35-44	21	19	12	18	20	9	17	10	13	12	151
45-54	12	12	12	11	22	10	12	16	15	14	136
55-64	23	22	12	13	13	19	13	19	20	12	166
65+	69	64	62	79	65	52	69	59	52	48	619
Unknown	1	2	1	2	1	3	0	3	1	0	14
Total	**174**	**191**	**168**	**179**	**172**	**156**	**155**	**154**	**134**	**122**	**1,605**

Figures 1 and 2 display the 1992 and 2001 fatalities by gender from the above tables along with the 10-year averages.

Figure 1. Male Pedestrian Fatalities by Age Group, 1992, 2001 and 10-Year Averages

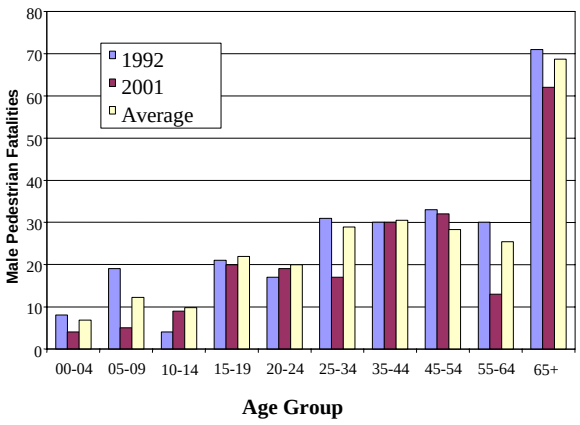
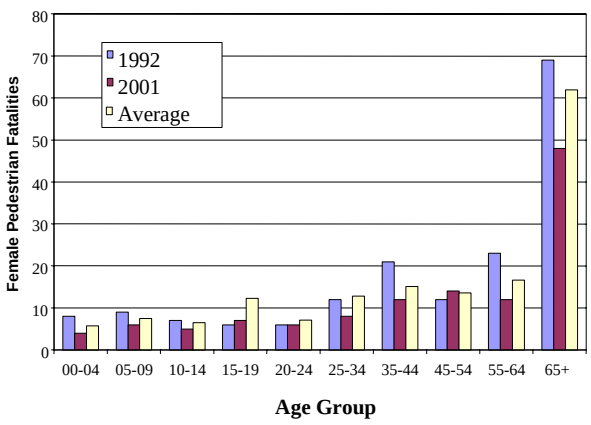


Figure 2. Female Pedestrian Fatalities by Age Group, 1992, 2001 and 10-Year Averages



Tables 6 and 7 show the number of male and female pedestrians injured by age group from 1992 to 2001 and the 10-year totals. For male pedestrians injured, the 2001 injuries were lower than 1992 in the 55-64 age group and for all age groups below the 35-44 age group. For female pedestrians injured, the 2001 injuries were lower than 1992 in the 65+ age group and for all age groups up to and including the 25-34 age group. The most significant decreases over the 10-year period were in the 00-04 and 05-09 age groups for males showing decreases of 40 and 49 percent, respectively, and females showing decreases of 36 percent and 45 percent, respectively, for the same age groups. In contrast to the male pedestrian fatalities in the 65+ age group (687 of the total 2,556) ranking the highest in the 10-year totals, the male pedestrians injured in the 65+ group ranked sixth. Female pedestrians injured in the 65+ age group ranked highest in both, the 10-year totals, and in 2001.

For male and female pedestrian injuries in the 35-44 and 45-54 age groups, the increased injuries over the period reflects increased population in those age groups as the baby boomers move into higher age groups.

Table 6. Male Pedestrians Injured by Age Group, 1992-2001

Age Group	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
00-04	305	299	339	277	274	256	233	222	197	182	2,584
05-09	1,047	962	897	808	823	720	678	645	613	539	7,732
10-14	870	844	918	889	834	870	791	799	769	728	8,312
15-19	879	910	898	891	847	819	819	851	800	869	8,583
20-24	812	732	723	669	657	630	618	602	615	583	6,641
25-34	1,282	1,237	1,251	1,135	1,163	1,051	979	903	902	933	10,836
35-44	839	882	916	950	954	934	869	919	907	945	9,115
45-54	524	579	634	679	646	653	651	688	719	719	6,492
55-64	462	493	497	488	422	462	399	440	463	444	4,570
65+	721	689	701	692	688	632	650	703	680	731	6,887
Unknown	270	316	301	357	341	335	360	341	335	301	3,257
Total	**8,011**	**7,943**	**8,075**	**7,835**	**7,649**	**7,362**	**7,047**	**7,113**	**7,000**	**6,974**	**75,009**

Table 7. Female Pedestrians Injured by Age Group, 1992-2001

Age Group	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	10-Year Total
00-04	179	188	194	177	157	197	128	133	100	115	1,568
05-09	597	523	549	522	466	438	412	368	426	329	4,630
10-14	808	764	767	785	724	721	648	625	634	617	7,093
15-19	863	901	795	826	824	775	753	785	786	758	8,066
20-24	589	582	613	585	583	614	509	560	580	577	5,792
25-34	924	851	957	944	881	897	784	829	883	779	8,729
35-44	744	765	735	814	759	794	832	819	787	833	7,882
45-54	542	533	573	640	655	629	658	688	717	724	6,359
55-64	500	455	468	502	482	448	438	512	504	524	4,833
65+	939	921	971	904	852	851	833	850	901	906	8,928
Unknown	230	239	268	274	302	263	308	289	318	246	2,737
Total	**6,915**	**6,722**	**6,890**	**6,973**	**6,685**	**6,627**	**6,303**	**6,458**	**6,636**	**6,408**	**66,617**

An average of 14,252 pedestrians were injured each year, with 1994 having the highest number of pedestrians injured at 15,040 and 1998 recording the lowest number injured at 13,418 and ending the period with 13,475 injuries in 2001. Pedestrian injuries accounted for 6 percent of all road user injuries in 2001. Of all road user injuries by age group, pedestrians accounted for 18.3 percent in the 10-14 age group, 16.1 percent in the 05-09 age group, 10.2 percent in the 65+ age group, and 10.0 percent in the

00-04 age group. All other age groups ranged from 4.0 percent in the 20-24 age group to 8.3 percent in the unknown age group. The pedestrian injuries, as a percentage of all road user injuries, are shown by age groups in Table 3 above. Figures 3 and 4 present the injuries for 1992 and 2001 along with the 10-year averages.

Figure 3. Male Pedestrians Injured by Age Group, 1992, 2001 and 10-Year Averages

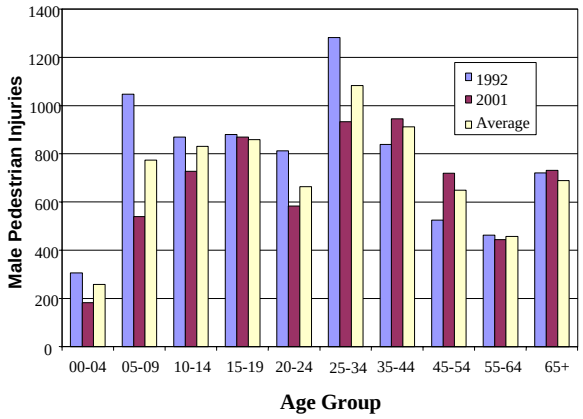
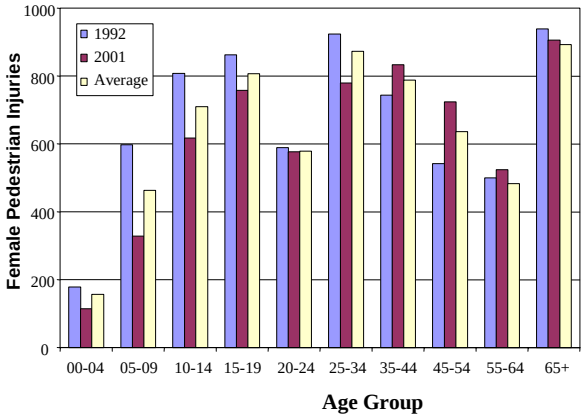


Figure 4. Female Pedestrians Injured by Age Group, 1992, 2001 and 10-Year Averages



The population of Canada rose from 28.4 million in 1992 to 31.1 million in 2001, a 9.6 percent increase. Males increased 9.5 percent to 15.4 million and females increased 9.7 percent to 15.7 million in 2001. It is interesting to note the significant increases in both males and females in the 35-44 and 45-54 age groups from 1992 to 2001, as well as in the 65+ age group. There were decreases in the 00-04 and 25-34 age groups for both males and females. The male and female populations for 1992 and 2001 are displayed by age group in Figures 5 and 6.

Figure 5. Male Population of Canada by Age Group, 1992 and 2001

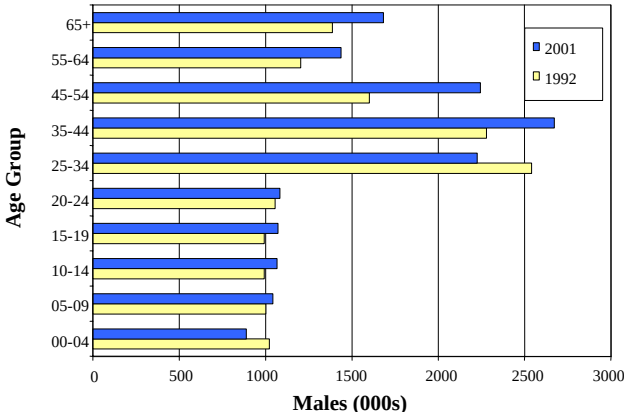
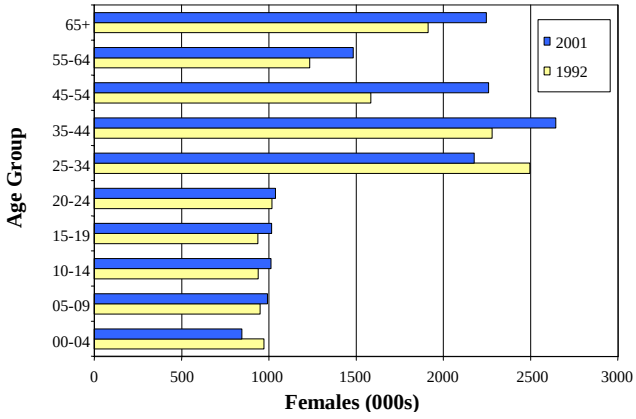


Figure 6. Female Population of Canada by Age Group, 1992 and 2001



Tables 8 and 9 show the number of pedestrian fatalities by gender and by age group per 100,000 population. For all age groups combined, the fatality rate for male pedestrians decreased from 1.9 to 1.4 per 100,000 population from 1992 to 2001. This downward trend was reflected in all individual age groups except the 10-14 and 20-24 age groups, where the fatality rate increased for both age groups per 100,000 population.

In comparing the 1992 percentage distribution of male fatalities by age groups with the corresponding distribution of population, male fatalities were over-represented in five age groups:

- 65+ years - 26.9 percent compared to 9.8 percent of the population;
- 45-54 years – 12.5 percent compared to 11.4 percent of the population;
- 55-64 years - 11.4 percent compared to 8.6 percent of the population;
- 15-19 years - 8.0 percent compared to 7.0 percent of the population; and
- 05-09 years - 7.2 percent compared to 7.1 percent of population.

In comparing the 2001 percentage distribution of male fatalities by age groups with the corresponding distribution of population, male fatalities were over-represented in four age groups:

- 65+ years - 29.4 percent compared to 10.9 percent of the population;
- 45-54 years – 15.2 percent compared to 14.6 percent of the population;
- 15-19 years - 9.5 percent compared to 7.0 percent of the population; and
- 20-24 years - 9.0 percent compared to 7.0 percent of the population.

Table 8. Male Pedestrian Fatalities by Age Group per 100,000 Population, 1992-2001 and Comparison of Percentage Distribution of Fatalities to Distribution of Population

Age Group	Total Fatalities		% Distribution of Fatalities		Population (000s)		% Distribution of Population		Fatality Rate / Population (000s)	
	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001
00-04	8	4	3.0	1.9	1,020.8	887.2	7.3	5.8	0.8	0.5
05-09	19	5	7.2	2.4	999.2	1,041.1	7.1	6.8	1.9	0.5
10-14	4	9	1.5	4.3	990.3	1,066.1	7.0	6.9	0.4	0.8
15-19	21	20	8.0	9.5	991.0	1,071.1	7.0	7.0	2.1	1.9
20-24	17	19	6.4	9.0	1,054.5	1,081.5	7.5	7.0	1.6	1.8
25-34	31	17	11.7	8.1	2,541.2	2,224.7	18.1	14.4	1.2	0.8
35-44	30	30	11.4	14.2	2,278.9	2,671.4	16.2	17.3	1.3	1.1
45-54	33	32	12.5	15.2	1,600.1	2,244.0	11.4	14.6	2.1	1.4
55-64	30	13	11.4	6.2	1,202.5	1,436.6	8.6	9.3	2.5	0.9
65+	71	62	26.9	29.4	1,384.4	1,682.1	9.8	10.9	5.1	3.7
Total	**266**	**212**	**100.0**	**100.0**	**14,062.8**	**15,405.8**	**100.0**	**100.0**	**1.9**	**1.4**

For all age groups, the fatality rate for female pedestrians decreased from 1.2 in 1992 to 0.8 per 100,000 population in 2001. This downward trend was reflected in all individual age groups except the 15-19 age group, where the fatality rate increased from 0.6 to 0.7 per 100,000 population from 1992 to 2001, and in the 20-24 age group where the fatality rate remained unchanged at 0.6 per 100,000 population.

In comparing the 1992 percentage distribution of female fatalities by age groups with corresponding population, female fatalities were over-represented in two age groups:

- 65+ years - 39.9 percent compared to 13.4 percent of the population; and
- 55-64 years - 13.3 percent compared to 8.6 percent of the population.

In comparing the 2001 percentage distribution of female fatalities by age groups with corresponding population, female fatalities were again over-represented in the same two age groups:

- 65+ years - 39.3 percent compared to 14.3 percent of the population; and
- 55-64 years - 9.8 percent compared to 9.4 percent of the population.

Table 9. Female Pedestrian Fatalities by Age Group per 100,000 Population, 1992-2001 and Comparison of Percentage Distribution of Fatalities to Distribution of Population

Age Group	Total Fatalities		% Distribution of Fatalities		Population (000s)		% Distribution of Population		Fatality Rate / Population (000s)	
	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001
00-04	8	4	4.6	3.3	971.9	844.8	6.8	5.4	0.8	0.5
05-09	9	6	5.2	4.9	949.3	991.2	6.6	6.3	0.9	0.6
10-14	7	5	4.0	4.1	938.1	1,012.5	6.6	6.4	0.7	0.5
15-19	6	7	3.5	5.7	937.2	1,015.1	6.5	6.5	0.6	0.7
20-24	6	6	3.5	4.9	1,017.1	1,036.8	7.1	6.6	0.6	0.6
25-34	12	8	6.9	6.6	2,494.7	2,174.6	17.4	13.8	0.5	0.4
35-44	21	12	12.1	9.8	2,278.2	2,643.6	15.9	16.8	0.9	0.5
45-54	12	14	6.9	11.5	1,582.5	2,258.1	11.1	14.4	0.8	0.6
55-64	23	12	13.3	9.8	1,233.3	1,482.5	8.6	9.4	1.9	0.8
65+	69	48	39.9	39.3	1,911.4	2,245.6	13.4	14.3	3.6	2.1
Total	**174**	**122**	**100.0**	**100.0**	**14,313.7**	**15,704.8**	**100.0**	**100.0**	**1.2**	**0.8**

Tables 10 and 11 show the number and percentage distribution of pedestrian fatalities, injuries and population by jurisdiction. The tables also provide a comparison by jurisdiction to determine the jurisdictions' over-/under-representation in fatalities or injuries by comparing the distribution of fatalities and injuries by jurisdiction to the percentage distribution of the population. The 1992 distribution of fatalities shows that New Brunswick, Quebec, British Columbia and Yukon were over-represented in the distribution of fatalities in comparison to the population distribution. Two of the four jurisdictions (excluding Quebec and Yukon) were over-represented again in 2001, along with Prince Edward Island, Saskatchewan, and Alberta. The fatality rate for Canada decreased from 1.6 to 1.1 per 100,000 population. This downward trend was reflected in all jurisdictions except Prince Edward Island and Saskatchewan.

Table 10. Pedestrian Fatalities by Jurisdiction per 100,000 Population, 1992-2001 and Comparison of Percentage Distribution of Fatalities to Distribution of Population

Jurisdiction	Total Fatalities		% Distribution of Fatalities		Population (000s)		% Distribution of Population		Fatality Rate / Population (000s)	
	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001
Nfld&Lab.	6	5	1.4	1.5	580.2	533.8	2.0	1.7	1.0	0.9
P.E.I.	2	3	0.5	0.9	130.9	138.9	0.5	0.4	1.5	2.2
N.S.	12	7	2.7	2.1	919.4	942.9	3.2	3.0	1.3	0.7
N.B.	14	9	3.2	2.7	748.5	756.0	2.6	2.4	1.9	1.2
Que.	130	77	29.5	23.1	7,112.8	7,417.7	25.1	23.8	1.8	1.0
Ont.	140	119	31.8	35.6	10,570.5	11,894.9	37.3	38.2	1.3	1.0
Man.	12	10	2.7	3.0	1,113.1	1,149.1	3.9	3.7	1.1	0.9
Sask.	13	15	3.0	4.5	1,004.0	1,017.1	3.5	3.3	1.3	1.5
Alta.	34	33	7.7	9.9	2,634.4	3,059.1	9.3	9.8	1.3	1.1
B.C.	76	56	17.3	16.8	3,470.3	4,101.6	12.2	13.2	2.2	1.4
Yukon	1	0	0.2	0.0	30.2	30.2	0.1	0.1	3.3	0.0
N.W.T.	0	0	0.0	0.0	62.4	69.3	0.2	0.2	0.0	0.0
Canada	**440**	**334**	**100.0**	**100.0**	**28,376.6**	**31,110.6**	**100.0**	**100.0**	**1.6**	**1.1**

In Table 11 the 1992 distribution of injuries shows that Quebec, Manitoba and British Columbia were over-represented in the distribution of injuries in comparison to the population distribution. Quebec and British Columbia were over-represented again in 2001. The injury rate for Canada decreased from 53.5 to 43.8 per 100,000 population. This downward trend was reflected in all jurisdictions except Nova Scotia, Alberta, Yukon and the Northwest Territories.

Table 11. Pedestrian Injuries by Jurisdiction per 100,000 Population, 1992-2001 and Comparison of Percentage Distribution of Injuries to Distribution of Population

Jurisdiction	Total Injuries		% Distribution of Injuries		Population (000s)		% Distribution of Population		Fatality Rate / Population (000s)	
	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001
Nfld&Lab.	201	126	1.3	0.9	579.5	537.2	2.1	1.7	34.7	23.5
P.E.I.	34	29	0.2	0.2	130.3	138.1	0.5	0.4	26.1	21.0
N.S.	326	342	2.2	2.5	915.1	941.2	3.3	3.1	35.6	36.3
N.B.	271	175	1.8	1.3	745.5	755.3	2.7	2.5	36.3	23.2
Que.	4,271	3,588	28.5	26.6	7,064.7	7,377.7	25.2	24.0	60.5	48.6
Ont.	5,177	5,063	34.5	37.6	10,427.6	11,685.3	37.2	38.0	49.6	43.3
Man.	771	460	5.1	3.4	1,109.6	1,146.0	4.0	3.7	69.5	40.1
Sask.	387	362	2.6	2.7	1,002.7	1,022.0	3.6	3.3	38.6	35.4
Alta.	1,018	1,249	6.8	9.3	2,592.6	3,009.2	9.2	9.8	39.3	41.5
B.C.	2,528	2,055	16.9	15.3	3,373.4	4,058.8	12.0	13.2	74.9	50.6
Yukon	14	15	0.1	0.1	28.9	30.6	0.1	0.1	48.4	49.0
N.W.T.	0	11	0.0	0.1	60.9	68.3	0.2	0.2	0.0	16.1
Canada	**14,998**	**13,475**	**100.0**	**100.0**	**28,030.9**	**30,769.7**	**100.0**	**100.0**	**53.5**	**43.8**

Table 12 displays the pedestrian fatalities and injuries by age group according to the traffic control device at the collision site. Of the 334 pedestrians fatally injured in 2001, 259 or 77.5 percent were struck by a motor vehicle where no traffic control was present and 68 pedestrians (20.4 percent) were killed where some form of traffic control was present. Of those 13,475 pedestrians injured, 49 percent occurred where no traffic control was in place and 46 percent occurred where some type of traffic control was present. No traffic control present means that pedestrians were crossing between intersections, walking along the side of the road either against or with the traffic, running out into or playing on the street and so on.

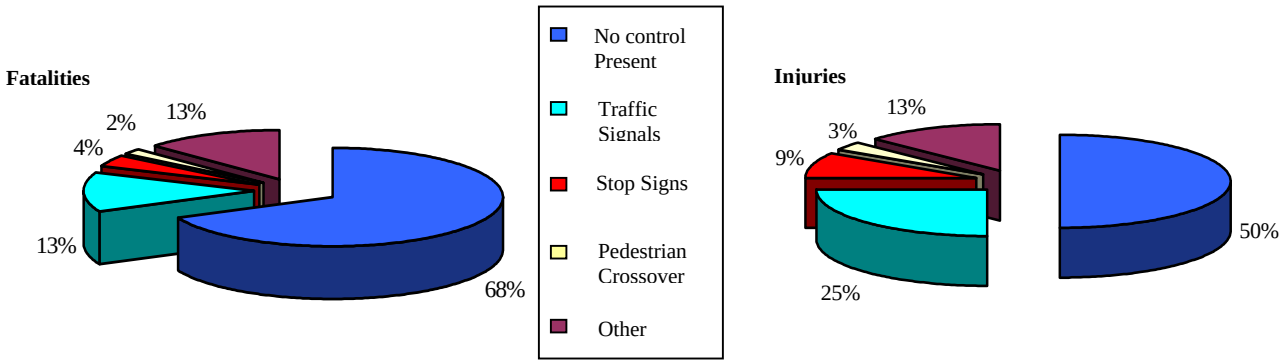
Table 12. Fatalities and Injuries by Traffic Control Presence by Age Group, 2001

Age Group	Fatalities				Injuries %			
	No Control Present	Traffic Controls Present	Unknown	Total	No Control Present	Traffic Controls Present	Unknown	Total
00-04	7	0	1	8	189	92	16	297
05-09	10	1	0	11	592	245	31	868
10-14	10	4	0	14	737	569	39	1,345
15-19	21	5	1	27	850	700	78	1,628
20-24	20	4	1	25	526	576	58	1,160
25-34	23	2	0	25	780	843	91	1,714
35-44	33	9	0	42	844	842	93	1,779
45-54	35	11	0	46	666	696	83	1,445
55-64	17	6	2	25	434	495	42	971
65+	82	26	2	110	733	808	97	1,638
Unknown	1	0	0	1	269	267	94	630
Total	**259**	**68**	**7**	**334**	**6,620**	**6,133**	**722**	**13,475**

Note: The category "Traffic Controls Present" includes traffic signals, stop signs, pedestrian crossovers and other control types.

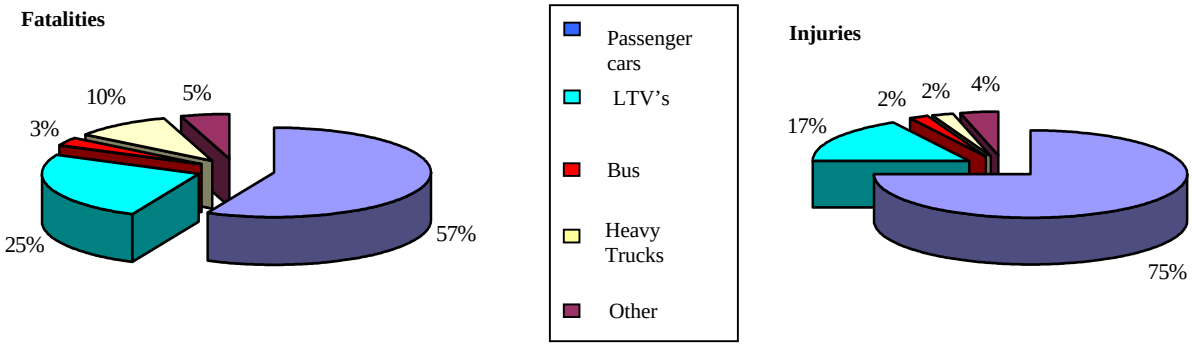
Figure 7 displays pedestrian fatalities and injuries by type of traffic control device for the 10-year period. The pie share of 13 percent shown under fatalities and injuries as 'Other' consists of all other types of traffic control not shown separately as well as those coded unknown. Fatalities coded as unknown accounted for approximately half of the 13 percent share, while injuries coded as unknown accounted for almost two-thirds of the 13 percent share.

Figure 7. Pedestrian Fatalities and Injuries by Type of Traffic Control Device 1992-2001 Average



The greatest number of pedestrians were fatally injured in collisions with automobiles (57 percent), followed by light trucks and vans (LTV's) (25 percent), heavy trucks (10 percent), and buses (3.0 percent). Among pedestrians injured, 75 percent were involved in collisions with automobiles, 17 percent with light trucks and vans, 2 percent with buses, and 2 percent with heavy trucks. These percentages are displayed in the pie charts in Figure 8, where the term 'Heavy Trucks' refers to large single unit trucks greater than 4 536 kg and tractor-trailers, subject to the National Safety Code for Motor Carriers.

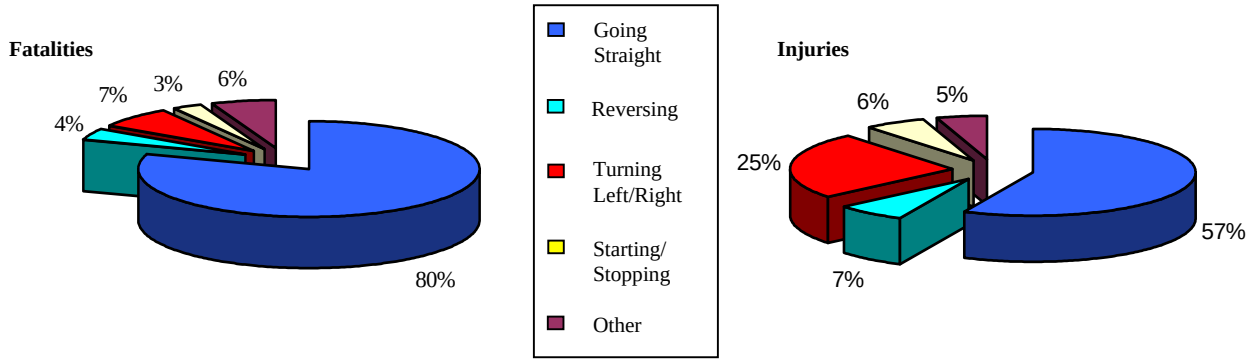
Figure 8. Pedestrian Fatalities and Injuries by Type of Vehicle 1992-2001 Average



The percentages in the above charts were derived based on TRAID collision report data showing that the particular vehicle struck the pedestrian[2].

Most pedestrian fatalities occurred while the vehicle was travelling straight ahead (80 percent), followed by turning in either direction (7 percent), reversing (4 percent), starting /stopping (3 percent) and other manoeuvres (6 percent), as shown in Figure 9[3]. The majority of pedestrian injuries occurred while the vehicle was moving straight ahead (57 percent), followed by turns in either direction (25 percent), reversing (7 percent), starting/stopping (6 percent), and other manoeuvres (5 percent). Other manoeuvres include overtaking, changing lanes, slowing/stopping, starting from parked position, entering parking position, swerving to avoid object, and other (not stated).

Figure 9. Pedestrian Fatalities and Injuries by Vehicle Manoeuvre
1992-2001 Average



The greatest number of pedestrian fatalities occurred between the hours of five p.m. and eight p.m., while the highest frequencies of pedestrian injuries occurred between three and six in the late afternoon based on the 10-year averages. Distributions of pedestrian fatalities and injuries by time of day were not prepared by age group, but obviously, the distributions would vary for different age groups.

From 1992 to 2001, pedestrian fatalities occurred most frequently in the late summer and fall months of August to December, which may be attributable to the shortening of daylight hours for the last three months of the year. Injuries occurred most frequently during the months of September to January. The months with the lowest numbers of pedestrian fatalities and injuries were April and July, respectively. These data were reviewed by age group, and the distribution of fatalities and injuries by month for certain age groups varies significantly from the distribution of the aggregate of all age groups.

Table 13 presents the percentage distribution of fatalities and injuries by urban and rural areas by age groups. In the Traffic Accident Information Database (TRAID), the variable ‘Road Classification’ (i.e., Urban/Rural) is an indicator of population density, hence traffic density, adjacent to the collision site. Urban is defined as metropolitan roads, streets and other urban areas, or a speed limit at the collision site of 60 km/h or less. Rural includes primary or secondary highways, as well as local roads, or a speed limit at the collision site exceeding 60 km/h. For example, on a multilane highway such as the 401, which passes through the city of Toronto, the classification would be rural, even though a collision might occur within the city’s geographic boundaries.

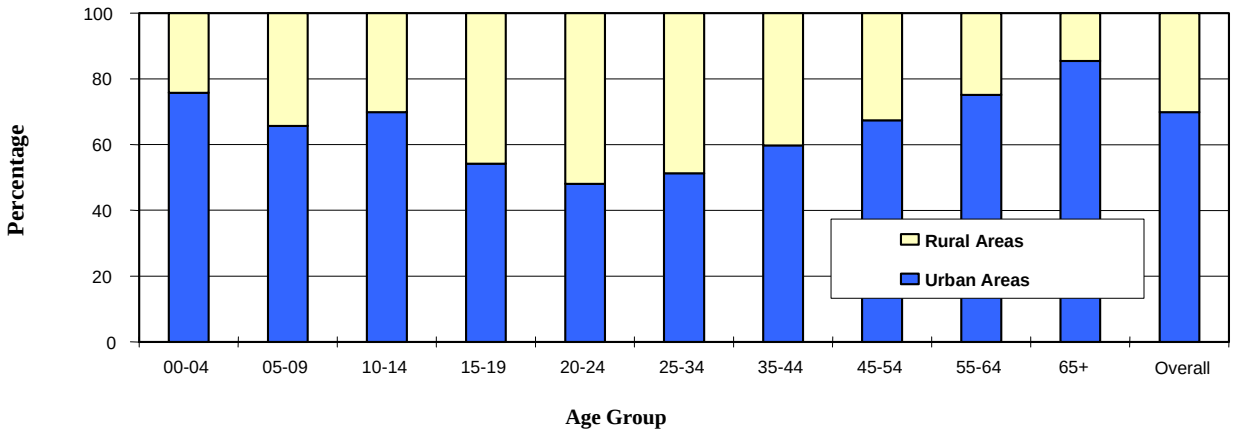
Table 13. Percentage Distribution of Fatalities and Injuries by Urban/Rural Areas by Age Group, Based on 10-Year Totals

	00-04	05-09	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	Overall
Fatalities - Urban Areas	75.0	65.0	68.6	54.4	50.7	51.4	59.5	65.6	74.7	85.0	69.5
- Rural Areas	25.0	35.0	31.4	45.6	49.3	48.6	40.5	34.4	25.3	15.0	30.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Injuries - Urban Areas	94.7	95.7	95.3	93.1	93.5	93.7	93.9	94.5	95.4	97.3	94.6
- Rural Areas	5.3	4.3	4.7	6.9	6.5	6.3	6.1	5.5	4.6	2.7	5.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The data used to prepare Table 13 and the chart requires some explanation. On a number of collision reports, the variable was left blank and was classed as unknown. The unknowns were not used in the percentage distribution, as they were deemed to be insignificant.

The majority of pedestrian fatalities and injuries occurred in urban areas, however, in the 15-19, 20-24 and 25-34 age groups, the percentage shares of fatalities in urban and rural areas were more evenly split. Figure 10 shows the percentage distribution of fatalities with the urban/rural split by age group. Injuries were not displayed in a chart showing an urban/rural split, because the distribution varies only marginally by age group.

Figure 10. Percentage Distribution of Fatalities by Urban/Rural Areas by Age Group, 10-Year Totals



Tables 14 and 15 are included for their importance in showing the numbers of pedestrian fatalities and injuries not only by age group but also by pedestrian action. The totals include data where the age of the pedestrian was unknown. The tables show that there are a number of steps that pedestrians could take to protect themselves from injury or death. Some of these precautions include wearing bright or reflective clothing, taking more care in crossing at intersections with and without traffic controls, avoiding crossing where the pedestrian has no right of way, avoiding running into the road or playing on the road, and always walking against the traffic where there are no sidewalks.

Table 14. Pedestrian Fatalities by Pedestrian Action by Age Group, 10-Year Totals 1992-2001

Pedestrian Action	00-04	05-09	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	Total
Intersection-No Control	12	25	39	38	32	53	63	67	91	371	798
Intersection: No R-O-W	7	20	20	48	23	45	52	41	66	256	586
Walk With Traffic	4	6	17	43	33	33	52	29	19	56	294
Intersection: R-O-W	0	15	6	12	5	12	19	24	31	146	270
Running into Road	19	41	23	20	13	13	19	20	9	31	208
Safety Zone	5	8	4	15	12	23	13	14	18	41	153
Play/Work on Roadway	1	5	1	3	0	7	8	11	9	73	118
Walk Against Traffic	2	1	4	16	13	16	13	20	15	11	116
From Behind Parked Cars	15	10	5	4	2	2	2	1	0	0	41
Between Intersections	0	3	9	13	4	16	12	15	10	31	116
Playing on Roadway	8	18	4	5	4	12	11	13	9	24	109
Other Actions	32	19	17	83	87	120	117	93	80	149	808
Unknown	5	11	2	10	18	21	25	24	15	19	152
Other	15	15	12	32	25	44	50	47	48	98	393
Total	125	197	163	342	271	417	456	419	420	1,306	4,162

R-O-W = Right of Way

Table 15. Pedestrian Injuries by Pedestrian Action by Age Group, 10-Year Totals 1992-2001

Pedestrian Action	00-04	05-09	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+	Total
Intersection: R-O-W	470	1,165	2,413	2,973	2,639	4,480	3,989	3,391	2,632	4,383	29,593
Intersection-No Control	433	1,925	2,508	2,361	1,595	2,572	2,430	1,978	1,711	3,464	21,849
Intersection: No R-O-W	348	1,689	2,796	2,579	1,585	2,385	2,197	1,578	1,194	2,260	19,313
Running into Road	709	2,314	1,693	946	476	624	470	221	129	179	8,061
From Behind Parked Cars	664	1,790	925	606	455	775	636	466	324	569	7,507
Safety Zone	154	254	445	762	598	973	790	595	415	728	6,019
Walk With Traffic	49	120	489	993	528	730	647	461	331	349	4,912
Play/Work on Roadway	74	285	302	307	188	236	279	253	166	334	2,628
Walk Against Traffic	45	147	208	236	302	561	422	254	134	79	2,568
Between Intersections	235	521	380	190	57	30	21	7	2	3	1,526
Playing on Roadway	25	75	271	402	240	336	295	250	172	295	2,482
Other Actions	482	932	1,407	2,220	2,032	3,277	2,674	1,874	1,223	1,677	18,612
Unknown	69	247	303	498	416	741	517	388	206	278	3,858
Other	402	911	1,273	1,588	1,328	1,859	1,638	1,142	771	1,231	13,587
Total	**4,159**	**12,375**	**15,413**	**16,661**	**12,439**	**19,579**	**17,005**	**12,858**	**9,410**	**15,829**	**142,515**

R-O-W = Right of Way

In the above tables, the following categories: ‘Other Actions’, ‘Other’, and ‘Unknown’, cannot be explained, since they appear here as they do in the TRAID database.

Figure 11 shows the trends in pedestrian fatalities compared to total road user fatalities from 1992 to 2001. Pedestrian fatalities decreased 24.1 percent over the 10-year period, while total road user fatalities decreased 20.7 percent from 1992.

Figure 11. Trends in Pedestrian and Total Road User Fatalities, 1992-2001

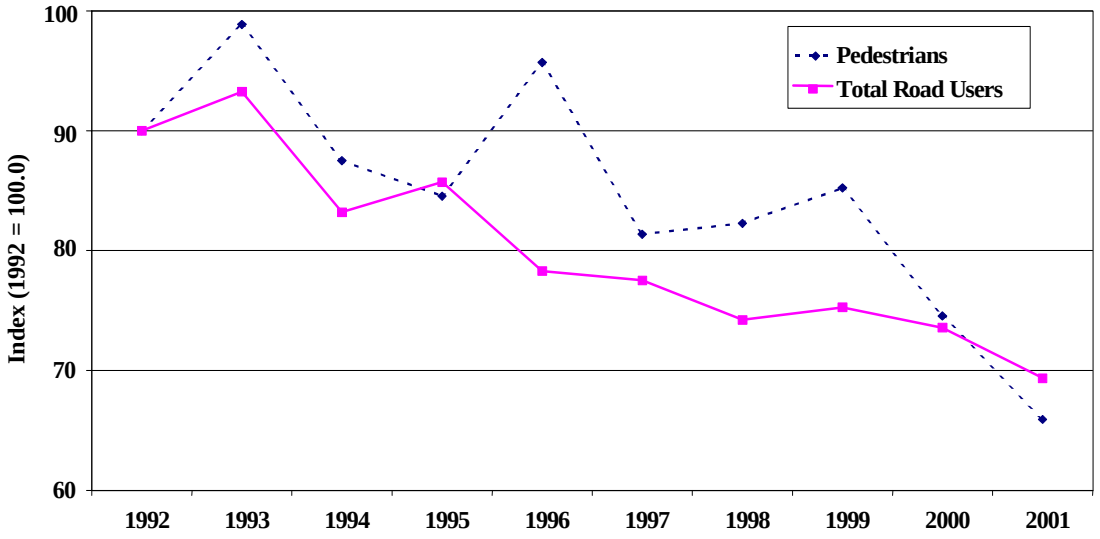


Table 16 shows the number of fatally injured pedestrians tested for alcohol consumption. A total of 247 fatally injured pedestrians were tested for alcohol use in 2001. Of those tested, 100 pedestrians (40.5 percent) had been drinking and 91 (36.9 percent) had a blood alcohol concentration[4] (BAC) greater than the 'legal limit' of 80 mg%. This 'legal limit' only applies to operators of motor vehicles. Of the 91 fatally injured pedestrians who were impaired, 17 had BACs from 81 mg% to 150 mg% and 74 had BACs greater than 150 mg%.

Of those fatally injured pedestrians tested in 2001, alcohol was most frequently detected among pedestrians age 26-35. Intoxication rates by age group for fatally injured pedestrians tested were as follows: 16 to 19 years, 41.9 percent; 20 to 25 years, 36.4 percent; 26 to 35 years, 59.4 percent; 36 to 45 years, 56.1 percent; 46 to 55 years, 39.5 percent; and over 55 years, 15.7 percent. Among fatally injured pedestrians, 46 percent of males tested had been drinking with 41 percent having a BAC above 80 mg%. In contrast, 26 percent of fatally injured female pedestrians tested showed evidence of alcohol, with all 26 percent having a BAC above 80 mg%.

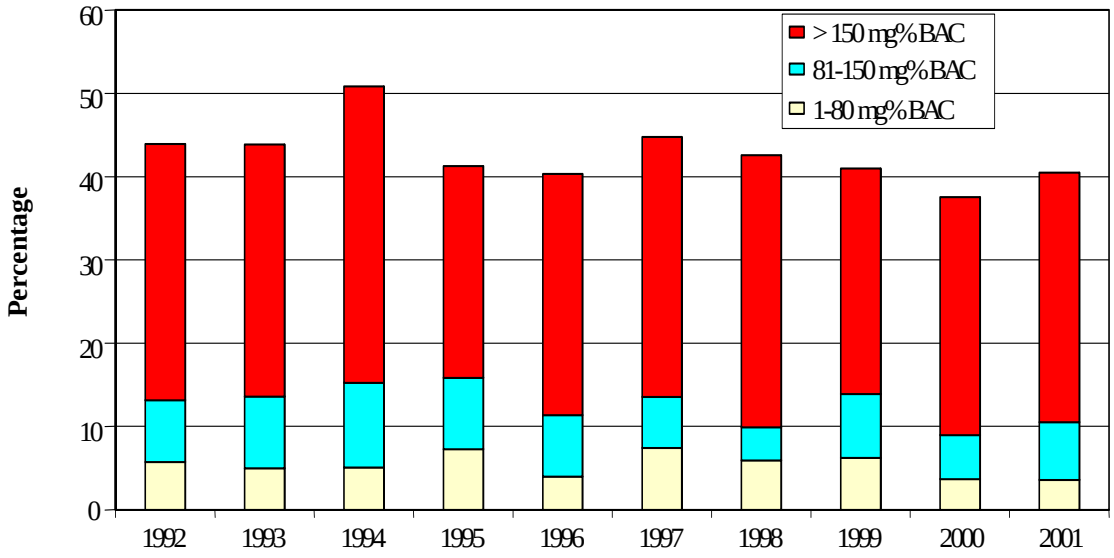
Table 16. Alcohol Use Among Fatally Injured Pedestrians, Canada 1992-2001

Year	Number Tested	Zero BAC		1-80 mg% BAC		81-150 mg% BAC		> 150 mg% BAC	
		Number	% of Tested	Number	% of Tested	Number	% of Tested	Number	% of Tested
1992	296	166	56.1	17	5.7	22	7.4	91	30.7
1993	301	169	56.1	15	5.0	26	8.6	91	30.2
1994	295	145	49.2	15	5.1	30	10.2	105	35.6
1995	303	178	58.7	22	7.3	26	8.6	77	25.4
1996	325	194	59.7	13	4.0	24	7.4	94	28.9
1997	295	163	55.3	22	7.5	18	6.1	92	31.2
1998	303	174	57.4	18	5.9	12	4.0	99	32.7
1999	288	170	59.0	18	6.3	22	7.6	78	27.1
2000	245	153	62.4	9	3.7	13	5.3	70	28.6
2001	247	147	59.5	9	3.6	17	6.9	74	30.0

Table 16 was partially reproduced from the publication "*The Alcohol-Crash Problem in Canada: 2001*" TP 11759 prepared for Transport Canada by The Traffic Injury Research Foundation of Canada.

Figure 12 shows the percentage of fatally injured pedestrians, who had been drinking or who had a blood alcohol concentration greater than 0 mg% (the sum of the percentages in the 1-80 mg%, the 81-150 mg% BAC and the >150 mg% BAC in the above table).

Figure 12. Percentages of Fatally Injured Pedestrians Who Had Been Drinking (BAC > 0 mg%)



As stated on the previous page, of the fatally injured pedestrians tested for alcohol in 2001, 40.5 percent had been drinking or had a BAC reading greater than 0 mg%. That percentage was up from 37.6 percent in 2000 and only 3.4 percentage points lower than in 1991 at 43.9 percent. This is one area that has not shown much improvement over the 10-year period.

Conclusions

Pedestrian fatalities decreased 24 percent over the 10-year period, while total road user fatalities decreased 20.7 percent from 1992. The decrease in pedestrian fatalities reflects the overall reduction in road user fatalities over the period, and was attributable to a greater awareness of road safety in general.

Even though pedestrian fatalities and injuries have decreased over the 10-year period, the 65+ age group still accounts for the greatest number of pedestrian fatalities – 27 percent of males and 39 percent of females based on the 10-year averages. Considering that in 1992, 9.8 percent of the male population were in the 65+ age group rising to 10.9 percent in 2001, and 13.4 percent of the female population were in the same age group in 1992 increasing to 14.3 percent by 2001, the fatalities in this age group were significantly over-represented for both genders. Among road safety professionals, this is cause for concern, which will increase in the future as Canada's population ages.

Most pedestrian fatalities in the 65+ age group occurred in urban areas (85 percent) and most occurred at intersections, either controlled or uncontrolled (59 percent). The safety of seniors crossing the street could easily be addressed through the medical community, discussed in a doctor/patient relationship, or seniors groups. City planners and traffic engineers/specialists could also be more aware of the duration of walk signals in areas populated by seniors.

Footnotes:

[1] Pedestrians of unknown gender were included in total fatalities and injuries, unless otherwise stated.
[2] The province of Alberta began reporting this data in 1999 so the charts are based on data from eleven jurisdictions. It was assumed that the missing province would reflect approximately the same percentages as the national picture.
[3] The province of Alberta does not report the variable 'Vehicle Manoeuvre'.
[4] Blood alcohol concentration, expressed as mg%, is the weight of alcohol in the bloodstream stated as milligrams in 100 millilitres of blood.

Sources:

Transport Canada, Road Safety and Motor Vehicle Regulation, TRaffic Accident Information Database (TRAID).
Transport Canada and The Traffic Injury Research Foundation of Canada, "The Alcohol-Crash Problem In Canada: 2001", TP 11759.
Statistics Canada, 91-002-XIB Quarterly Demographic Statistics.

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