



# Traffic Safety Basic Facts 2005

## Motorcycles and Mopeds

Motorcycle and moped fatalities make 17,9% of the total number of road accident fatalities in 2003<sup>1</sup>.

In 2003<sup>1</sup> 5.325<sup>2</sup> users (riders and passengers) of motorcycles and mopeds were killed in traffic accidents in 14 European Union countries, 3,7% fewer than the 5.528 motorcycle and moped user fatalities reported in 2002<sup>1</sup> in the same countries. There was a significant reduction of 13,7% during the decade for the same countries.

**Table 1: Motorcycle and Moped fatalities per country, 1994-2003**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
BE	234	187	174	193	199	198	184	210	-	-
DK	76	63	49	46	60	67	71	55	62	68
EL	572	628	541	506	569	561	496	503	396	363
ES	860	865	844	899	928	902	866	831	784	758
FR	1.387	1.341	1.310	1.416	1.428	1.473	1.420	1.543	1.450	1.277
IE	55	57	58	68	37	43	40	50	44	55
IT	1.329	1.187	1.192	1.221	1.191	-	-	-	-	-
LU	5	4	6	3	7	5	8	6	0	-
NL	210	208	198	180	165	182	196	154	191	189
AT	159	152	131	169	120	151	156	144	135	156
PT	758	793	733	680	554	494	425	399	359	345
FI	32	33	33	24	25	21	19	23	29	35
SE	41	41	54	49	52	48	49	47	49	-
UK	454	454	447	525	509	556	612	594	628	-
EU-14	6.172	6.013	5.770	5.979	5.844	5.892 <sup>3</sup>	5.733 <sup>3</sup>	5.751 <sup>3</sup>	5.528 <sup>3</sup>	5.325 <sup>3</sup>
Yearly change	-	-2,6%	-4,0%	3,6%	-2,3%	0,8%	-2,7%	0,3%	-3,9%	-3,7%

Source: CARE Database / EC  
Date of query: August 2005

In order to understand these numbers and to see where differences may have come from, we first rate them to population size, and compare to 1994. Then we examine the share among other road users and continue with several splits, such as Age & Gender, Rider & Passenger, Road type, Junction and Month.

In Ireland mopeds and motorcycles are counted together. Therefore the data cannot always be analysed separately. In Spain the split by gender was not possible for 2003.

Fortunately Luxemburg did not have any motorcycle or moped fatality in 2002.

<sup>1</sup> Using latest available data, i.e. 2003 for all countries except IT (1998), BE (2001), LU, SE and UK (2002).

<sup>2</sup> This is likely to be an over-estimate due to the use of less recent figures for IT, BE, LU, SE and UK.

<sup>3</sup> Where the data for a particular country was not available for a particular year, the data for the most recent year for which it was available was used instead when calculating totals: IT (1998), BE (2001), LU, SE and UK (2002).

A reduction of 13,7% in the motorcycle and moped occupant fatalities is observed during the last decade in the EU-14 countries



The fatality rates per 1.000.000 inhabitants of motorcycle and moped users in Portugal and Greece are much higher than the respective rates in the other 12 European countries.

**Table 2: Motorcycle and Moped fatalities per million inhabitants, 1994-2003**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
BE	23,2	18,5	17,2	19,0	19,5	19,4	18,0	20,5	-	-
DK	14,6	12,1	9,3	8,7	11,3	12,6	13,3	10,3	11,5	12,6
EL	54,4	59,3	50,7	47,1	52,6	51,7	45,5	46,0	36,1	33,0
ES	21,9	22,0	21,4	22,7	23,4	22,7	21,6	20,5	19,1	18,2
FR	24,1	23,2	22,6	24,4	24,5	25,2	24,2	26,1	24,4	21,4
IE	15,3	15,8	16,0	18,6	10,0	11,5	10,6	13,0	11,3	13,9
IT	23,4	20,9	21,0	21,5	20,9	-	-	-	-	-
LU	12,5	9,9	14,6	7,2	16,6	11,7	18,5	13,7	0,0	-
NL	13,7	13,5	12,8	11,6	10,5	11,5	12,4	9,6	11,9	11,7
AT	20,1	19,1	16,5	21,2	15,1	18,9	19,5	18,0	16,7	19,3
PT	75,9	79,2	73,0	67,5	54,8	48,6	41,7	38,9	34,8	33,2
FI	6,3	6,5	6,4	4,7	4,9	4,1	3,7	4,4	5,6	6,7
SE	4,7	4,7	6,1	5,5	5,9	5,4	5,5	5,3	5,5	-
UK	7,8	7,8	7,6	8,9	8,6	9,4	10,3	9,9	10,5	-
EU-14	21,4	20,8	19,9	20,5	20,0	20,1 <sup>3</sup>	19,5 <sup>3</sup>	19,5 <sup>3</sup>	18,6 <sup>3</sup>	17,9 <sup>3</sup>

Source: CARE Database / EC, Eurostat  
Date of query: August 2005

**Figure 1: Motorcycle and Moped fatalities per 1.000.000 inhabitants: comparison 1994 – 2003<sup>1</sup>**

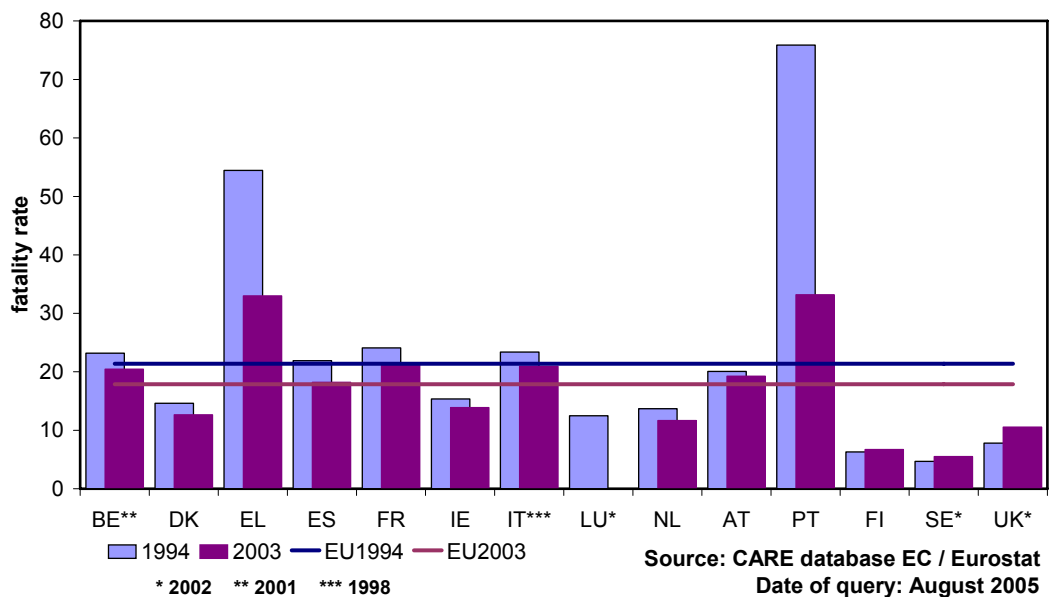


Figure 1 indicates that between 1994 and 2003 the fatality rate of motorcycle and moped users declined by 16% (from 21,4 in 1994 to 17,9 in 2003), compared with a 19% decrease (from 68,7 to 55,9 fatalities per million inhabitants) for car occupants. Portugal is the country, which shows the most remarkable improvement during this last decade (56% decrease), whereas in Finland, Sweden and the United Kingdom the fatality rates have increased but are still lower than the average rate of all EU-14 countries.

Portugal is the country where the most significant reduction in motorcycle and moped fatalities is observed since 1994



**Table 3: Percentages of Motorcycle and Moped occupant fatalities by the total number of road accident fatalities**

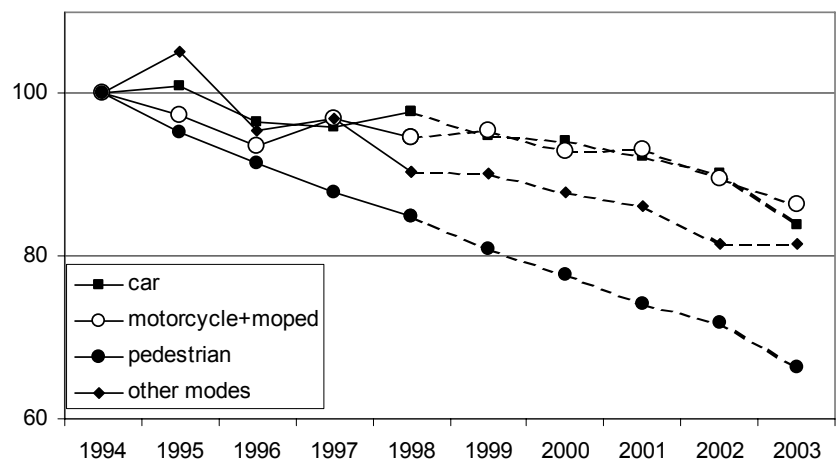
%	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
BE	13,8	12,9	12,8	14,1	13,3	14,2	12,5	14,1	-	-
DK	13,9	10,8	9,5	9,4	12,0	13,0	14,3	12,8	13,4	15,7
EL	25,4	26,0	25,1	24,0	26,1	26,5	24,3	26,8	24,2	22,6
ES	15,3	15,0	15,4	16,0	15,6	15,7	15,0	15,1	14,7	14,0
FR	15,4	15,1	15,3	16,8	16,0	17,4	17,6	18,9	18,9	21,1
IE	13,6	13,0	12,8	14,4	8,1	10,4	9,6	12,1	11,6	16,2
IT	18,7	16,9	17,9	18,2	18,9	-	-	-	-	-
LU	7,7	5,7	8,5	5,0	12,3	8,6	10,5	8,6	0,0	-
NL	16,2	15,6	16,8	15,5	15,5	16,7	18,1	15,5	19,4	18,4
AT	11,9	12,6	12,8	15,3	12,5	14,0	16,0	15,0	14,1	16,8
PT	30,3	29,3	26,9	27,0	26,1	24,7	22,9	23,9	21,5	22,4
FI	6,7	7,5	8,2	5,5	6,3	4,9	4,8	5,3	7,0	9,2
SE	7,0	7,2	10,1	9,1	9,8	8,3	8,3	8,1	8,8	-
UK	11,9	12,1	12,0	14,0	14,2	15,6	17,1	16,5	17,5	-
EU-14	16,8	16,4	16,5	17,2	16,9	17,4 <sup>3</sup>	17,3 <sup>3</sup>	17,7 <sup>3</sup>	17,5 <sup>3</sup>	17,9 <sup>3</sup>

Source: CARE Database / EC, Eurostat  
Date of query: August 2005

In Greece, Portugal and France, more than 20% of the total number of road accident fatalities in 2003<sup>1</sup> refers to motorcycle and moped users, as is indicated in table 3. On the contrary, in Luxemburg, Finland and Sweden motorcycle and moped fatalities constitute only a small part (<10%) of the road accident fatalities.

A decreasing number of moped and motorcycle fatalities combined with an increasing share in the total number of fatalities, implicates that the decrease of fatalities in other modes is stronger for the other modes, as can be seen in figure 2.

**Figure 2: Index (1994=100) of Motorcycle and Moped fatalities compared with other modes EU-14, 1994-2003<sup>3</sup>**



### Age and gender

During 2003<sup>1</sup>, more than 32% of the total motorcycle and moped user fatalities (1.729 people) referred to people younger than 25 years old, comparing to the respective percentage (29%) for car

The share of moped and motorcycle fatalities within the total road fatalities is slightly increasing.

This means that the decrease of fatalities is more rapid for other modes of transport



occupants. It is a common ascertainment in all 14 European Union countries that young people are prone to fatal motorcycle and moped accidents.

As can be calculated from table 4, more than 90% of the moped and motorcycle user fatalities in all countries is male.

**Table 4: Motorcycle and Moped occupants, fatality distribution % by age & gender – 2003<sup>1</sup>**

age	0-14		15-24		25-44		45-64		65+		Unknown
	female	male	female	male	female	male	female	male	female	male	
BE**	0,0	0,5	5,7	26,7	3,3	49,0	0,5	10,5	0,0	3,3	0,5
DK	0,0	2,9	1,5	26,5	0,0	41,2	4,4	14,7	1,5	7,4	0,0
EL	0,0	0,0	2,2	35,5	2,2	41,0	0,8	9,1	0,3	6,9	1,9
ES	1,2		34,2		44,9		11,6		5,2		3,0
FR	0,5	1,0	2,6	31,4	2,9	42,8	1,0	12,0	1,2	3,1	1,6
IE	0,0	0,0	0,0	25,5	0,0	65,5	0,0	5,5	0,0	0,0	3,6
IT***	0,4	1,4	4,9	28,1	2,6	35,0	1,5	10,5	0,8	12,2	2,5
LU*	0	0	0	0	0	0	0	0	0	0	0
NL	0,0	1,1	5,8	20,6	2,1	37,6	1,6	16,9	1,6	12,7	0,0
AT	0,0	0,6	1,3	23,1	3,8	37,2	1,3	23,1	0,0	9,6	0,0
PT	0,0	0,0	1,7	22,1	1,3	45,2	0,7	15,2	0,0	12,9	1,0
FI	0,0	8,6	0,0	34,3	2,9	31,4	0,0	14,3	2,9	5,7	0,0
SE*	0,0	0,0	2,0	38,8	0,0	30,6	4,1	18,4	0,0	6,1	0,0
UK*	0,0	0,2	1,3	21,5	2,9	56,5	1,1	12,7	0,0	1,9	1,9
EU-14	1,1		31,4		45,1		13,2		7,4		1,9

\* Data 2002

\*\* Data 2001

\*\*\* Data 1998

Source: CARE Database / EC

Date of query: August 2005

The majority of car occupant fatalities also mainly concern the male gender, however the proportion is much lower (almost 73%) than for motorcyclists and moped users.

**Table 5: Car occupants, fatality distribution % by age & gender – 2003<sup>1</sup>**

age	0-14		15-24		25-44		45-64		65+		Unknown
	female	male	female	male	female	male	female	male	female	male	
BE**	1,7	1,8	5,2	19,2	9,9	29,3	6,0	11,8	4,7	10,1	0,3
DK	3,4	2,5	6,8	13,1	9,7	27,1	7,6	10,2	6,4	13,1	0,0
EL	1,2	2,1	3,9	20,4	6,4	30,5	4,1	18,8	4,1	8,0	0,5
ES	3,0		23,9		38,9		20,0		12,3		1,9
FR	1,1	1,9	5,6	21,0	7,3	24,1	6,5	12,7	6,6	11,7	1,5
IE	2,3	1,1	9,2	24,7	6,3	25,3	4,0	9,8	6,9	5,2	5,2
IT***	1,1	0,9	5,6	16,9	8,5	27,1	5,6	15,6	4,0	10,6	4,0
LU*	0,0	3,8	5,8	19,2	9,6	46,2	1,9	9,6	1,9	1,9	0,0
NL	1,4	2,3	8,1	22,6	5,4	29,0	4,1	12,0	5,4	8,7	1,0
AT	1,1	2,7	9,2	21,6	8,8	20,0	5,7	15,6	5,7	9,4	0,2
PT	1,9	1,9	4,0	18,5	8,7	28,8	4,9	16,4	4,7	8,7	1,4
FI	1,8	2,3	6,9	16,6	8,3	19,4	5,5	18,4	9,2	11,5	0,0
SE*	0,3	2,1	5,0	17,9	8,2	21,6	3,4	19,5	7,1	14,8	0,0
UK*	2,0	1,3	8,1	25,8	7,0	23,0	5,1	10,2	7,8	9,0	0,7
EU-14	3,0		25,7		34,6		19,5		15,3		1,8

\* Data 2002

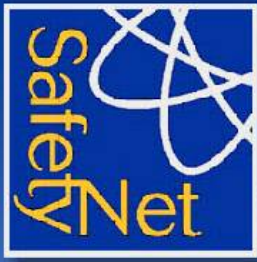
\*\* Data 2001

\*\*\* Data 1998

Source: CARE Database / EC

Date of query: August 2005

During 2003<sup>1</sup>, more than 31% of the total motorcycle and moped fatalities concerned people between 15 and 24 years old



## Drivers and passengers

Most fatalities among motorcycle and moped users ride the vehicle themselves. In Spain and Sweden relatively often a passenger was killed. This may be caused by not using helmets or that more often a passenger is taken on the back seat. In Denmark hardly any passenger was killed.

**Table 6: Rider and passenger fatalities on motorcycle and mopeds – 2003<sup>1</sup>**

	riders	passenger	Sum	%rider	%passenger
BE**	194	16	210	92%	8%
DK	67	1	68	99%	1%
EL	331	32	363	91%	9%
ES	675	83	758	89%	11%
FR	1.199	78	1.277	94%	6%
IE	52	3	55	95%	5%
IT***	1.081	110	1.191	91%	9%
LU*	0	0	0	-	-
NL	180	9	189	95%	5%
AT	146	10	156	94%	6%
PT	320	25	345	93%	7%
FI	33	2	35	94%	6%
SE*	43	6	49	88%	12%
UK*	599	29	628	95%	5%
EU-14	4.920	404	5.325	92,4%	7,6%

\* Data 2002  
 \*\* Data 2001  
 \*\*\* Data 1998

Source: CARE Database / EC  
 Date of query: August 2005

Most motorcycle and moped fatalities concerned riders, only 8% are passengers



## Road network: Motorways and area type

From table 7 it is obvious that the majority of fatalities in all countries do not occur on motorways but on the non-motorway network. This can be explained by the fact that mopeds are not allowed on motorways in most European countries. Furthermore, motorways have controlled access and their connection to the other road network is via grade-separated junctions. The existence of medians, separating opposite traffic flows on motorways, also results in a reduction in the number of fatal motorcycle and moped accidents. Fatal accidents with mopeds more often occur in urban area, where the number of motorcycle fatalities is higher in rural area.

**Table 7: Motorcycle and Moped occupants, fatalities by Road network – 2003<sup>1</sup>**

	Fatalities Moped			Fatalities Motorcycle			% MC+Mped of all fatalities by road type		
	Inside urban area	Outside urban area		Inside urban area	Outside urban area		Inside urban area	Outside urban area	
		motor-way	non motorway		motor-way	non motorway		motor-way	non motorway
BE**	26	0	37	46	8	93	15,9%	4,2%	15,5%
DK	16	0	27	8	1	16	21,1%	4,8%	14,5%
EL	34	0	19	212	11	87	34,4%	19,0%	12,8%
ES	171	2	218	101	14	253	29,6%	4,3%	11,4%
FR	169	1	223	339	42	503	30,5%	9,9%	18,4%
IE	-	-	-	17	1	37	19,1%	12,5%	15,4%
IT***	453	2	220	249	26	241	25,1%	3,9%	16,4%
LU*	0	0	0	0	0	0	0,0%	0,0%	0,0%
NL	55	1	38	22	21	52	22,3%	14,6%	16,9%
AT	21	0	26	19	4	86	17,9%	3,8%	18,6%
PT	95	0	68	99	6	78	29,4%	4,5%	19,3%
FI	3	0	9	5	0	18	7,9%	0,0%	9,7%
SE*	4	0	8	10	0	27	9,6%	0,0%	9,0%
UK*	10	0	11	238	20	349	17,5%	8,8%	18,6%
EU-14	1.056	6	904	1.365	153	1.840	25,1%	6,5%	15,6%
%	53,7%	0,3%	46,0%	40,6%	4,6%	54,8%			

\* Data 2002

\*\* Data 2001

\*\*\* Data 1998

Source: CARE Database / EC

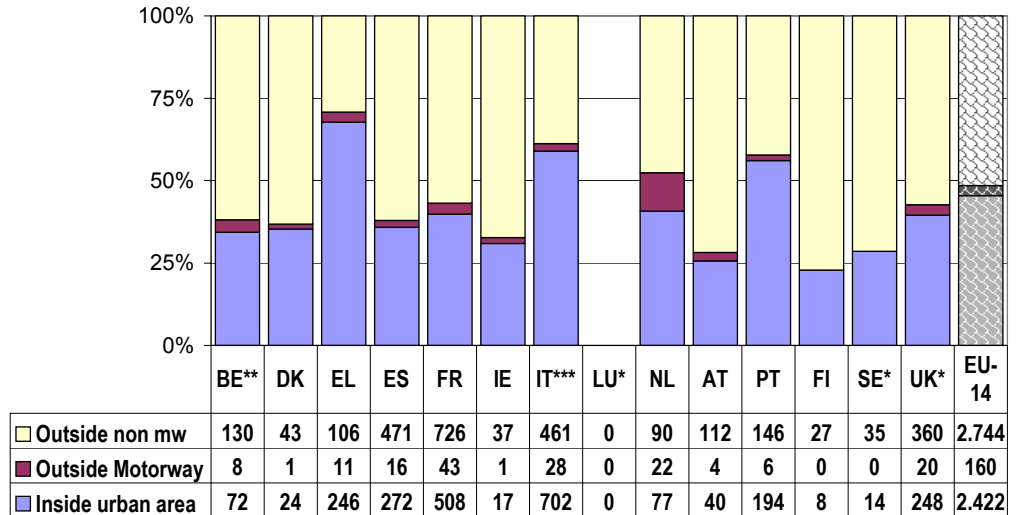
Date of query: August 2005



### Rural and urban area

The data in figure 3 show that in 2003<sup>1</sup>, 2,422 motorcycle and moped users were killed inside urban areas; this is 45% of the total motorcycle/moped user fatalities. Compared to 3,357 car occupants (20%), this is a large proportion.

Figure 3: Motorcycle and Moped occupants, fatalities by road and area type



\* LU, SE, UK 2002  
 \*\* BE 2001  
 \*\*\* IT 1998

Source: CARE database / EC  
 Date of Query: Sep-2005

Greece, Italy and Portugal, are the only countries, where more fatalities are recorded inside than outside urban areas

Furthermore, 11,548 car drivers and passengers were killed outside urban areas (69%), compared to 2,744 motorcyclists/ mopedists (52%).

On motorways relatively small proportions of motorcyclist/moped are found (3% respectively 10% for cars).

A note-worthy conclusion deriving from figure 3 is that in 2003<sup>1</sup> Greece, Italy and Portugal are the only European Union countries where more motorcycle and moped user fatalities are recorded inside urban areas (68%, 59% and 56% respectively) than outside urban area / on motorway together.



## Junction type

Table 8 indicates that almost one third of all motorcycle and moped user fatalities (1.693 persons) occur at a junction. For car occupants only 16% occur at junctions, see table 9.

Within fatal junction accidents with motorcycle or moped users, crossroad is the junction type where the highest number is observed, as is shown in table 8. Nearly 37% of the total number of motorcycle/moped occupant fatalities recorded at a junction occurred at crossroads.

**Table 8: Motorcycle and Moped occupants, Fatalities by Junction type – 2003<sup>1</sup>**

	Not at junction	At junction					Not defined	Total
		crossroad	t or y junction	level crossing	roundabout	other junction type / unknown		
BE**	136	0	0	1	2	71	0	210
DK	37	13	14	0	0	4	0	68
EL	263	-	-	-	-	100	0	363
ES	526	92	103	0	21	17	0	758
FR	932	148	161	0	11	26	0	1.278
IE	0	6	6	0	0	1	42	55
IT***	770	232	0	0	14	176	0	1.191
LU*	0	0	0	0	0	0	0	0
NL	112	41	34	0	1	1	0	189
AT	94	22	11	2	0	0	27	156
PT	277	25	36	1	6	0	0	345
FI	21	0	0	0	0	14	0	35
SE*	28	7	13	0	1	0	0	49
UK*	368	36	154	0	20	50	0	628
EU-14	3.564	1.693					69	5.326
%	66,9%	31,8%					1,3%	100%
		622	532	4	75	460		
% junction type		36,7%	31,4%	0,2%	4,4%	27,2%		100%

\* Data 2002  
\*\* Data 2001  
\*\*\* Data 1998

Source: CARE Database / EC  
Date of query: September 2005

Table 9 indicates that fatalities among pedestrians and (motorized) two wheelers frequently occur at junctions, where motor vehicle occupant fatalities are mostly not at junctions.

**Table 9: Fatalities by Junction type and Mode of transport – EU-14 2003<sup>1</sup>**

	Not at junction	At junction	Not defined
pedestrian	74,3%	23,9%	1,8%
pedal cycle	57,7%	40,7%	1,6%
moped	64,4%	35,3%	0,3%
motor cycle	68,4%	29,7%	1,9%
Car	82,5%	15,6%	1,8%
lorry	85,6%	12,2%	2,2%
other/unknown	82,6%	16,1%	1,3%

\* LU, SE, UK 2002  
BE 2001, IT 1998

Source: CARE Database / EC  
Date of query: September 2005

In 15% of the cases  
Car and taxi  
occupant fatalities  
are at junctions

Fatalities among  
(motorized) two-  
wheelers are  
relatively more often  
at junctions



## Seasonal distribution

The problem of motorized two wheelers shows a seasonal dependence. In winter, when it is not so comfortable to ride a motorcycle there are less fatalities.

**Table 10: Motorcycle and Moped occupants, fatalities by month – 2003<sup>1</sup>**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
BE**	10	9	6	21	28	27	29	23	19	21	11	6	210
DK	3	1	2	8	14	6	8	9	4	5	7	1	68
EL	16	17	29	24	35	42	41	44	46	26	29	14	363
ES	51	41	61	45	70	75	86	93	64	52	74	47	758
FR	55	59	124	92	137	160	151	136	109	100	87	67	1,277
IE	3	4	6	4	5	9	9	4	2	8	1	0	55
IT***	49	52	72	80	136	151	184	160	141	84	40	43	1,191
LU	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	6	8	29	13	17	31	17	21	22	14	6	5	189
AT	1	2	3	18	19	31	33	22	18	3	4	2	156
PT	19	15	29	35	52	31	38	27	32	22	25	21	345
FI	0	0	1	3	6	6	4	9	5	0	0	1	35
SE*	0	1	2	6	11	3	9	10	7	0	0	0	49
UK*	17	29	39	54	78	46	92	70	99	51	24	29	628
Moped	116	88	145	145	228	219	229	195	185	159	139	118	1,967
Motor-cycle	114	149	257	258	380	399	472	434	384	226	168	117	3,357
EU-14	230	237	402	403	608	618	701	629	568	386	308	235	5,325
%	4,3%	4,5%	7,6%	7,6%	11,4%	11,6%	13,2%	11,8%	10,7%	7,2%	5,8%	4,4%	100%

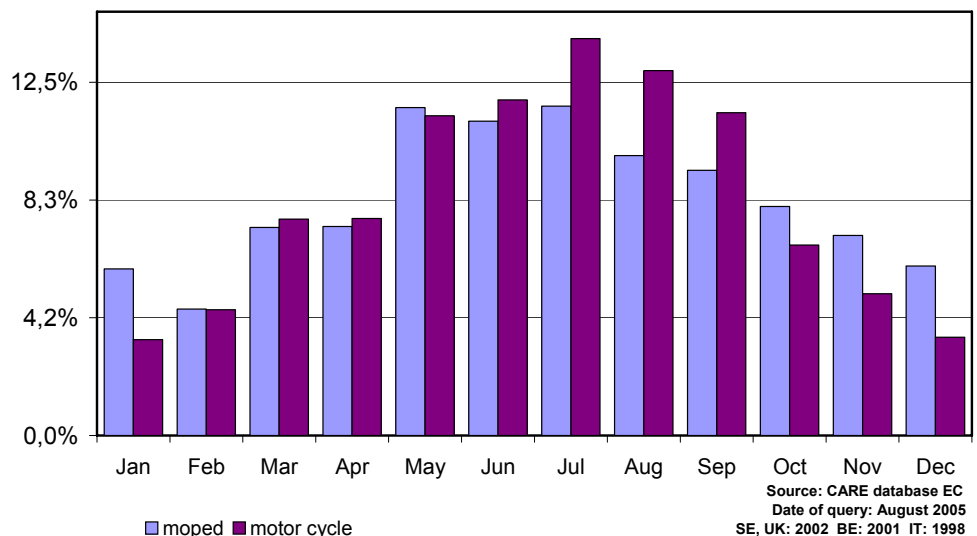
\* Data 2002  
 \*\* Data 2001  
 \*\*\* Data 1998

Source: CARE Database / EC  
 Date of query: August 2005

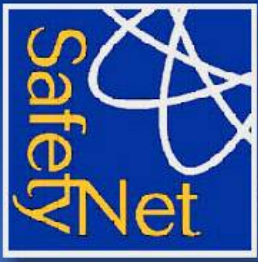
More motorcycle and moped fatalities are observed in the summer months

From May to September a relatively large number of fatalities is observed.

**Figure 4: Motorcycle and Moped occupants, % of fatalities by month – EU-14 2003<sup>1</sup>**



In Ireland moped fatalities are counted within Motorcycles



## Disclaimer

The information in this document is provided as it is and no guarantee or warranty is given that the information is fit for any particular purpose. Therefore, the reader uses the information at their own risk and liability.

## For more information:

Further statistical information on motorcycle or moped fatalities is available from the CARE database at the Directorate General for Energy and Transport of the European Commission, 28 Rue de Mot, B -1040 Brussels.

Traffic Safety Basic Fact Sheets available from the European Commission concern:

- Children (Aged <16)
- Young People (Aged 16-24)
- The Elderly
- Pedestrians
- Motorcycles and Mopeds
- Car-Occupants
- Motorways

Detailed data on traffic accidents are published annually by the European Commission in the Annual Statistical Report. This includes a glossary of definitions on all variables used.

For more information about the project "SafetyNet" which is co-financed by the European Commission, Directorate-General Energy and Transport please contact [safetynet.swov.nl](http://safetynet.swov.nl).

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