

Bicycles in 2004 Collisions

SECTION 14

A bicycle collision is reportable in British Columbia if it results in injury or death and involves at least one motor vehicle.

There were 1,009 bicycle collisions reported in 2004, an increase of 8.1% over 2003 collisions (933). These collisions resulted in 1,025 casualties (including occupants of motor vehicles). Of these 1,025 victims, 986 were injured bicycle drivers, and 6 were bicycle drivers killed. The number of bicycle drivers killed was the same number as in 2003.

Two of the 6 bicycle drivers killed during 2004 were not wearing a bicycle helmet. All 6 bicycle drivers killed were male. Males represented approximately 75.7% of the bicycle drivers injured. One of the 6 fatalities was aged 7. There were 187 (18.9%) bicycle drivers injured or killed under age 16, and 38 (3.8%) over 60.

Of all injured bicycle drivers, about 47.4% (467) of them were wearing helmets, 40.1% (395) were not wearing helmets and 12.6% (124) were unknown as to helmet use. BC requires cyclists of all ages to wear a helmet.

Among non-helmeted injury victims, 24.0% suffered head injuries or injuries to the entire body, while 14.5% of the helmeted injury victims had head injuries or injuries to entire body.

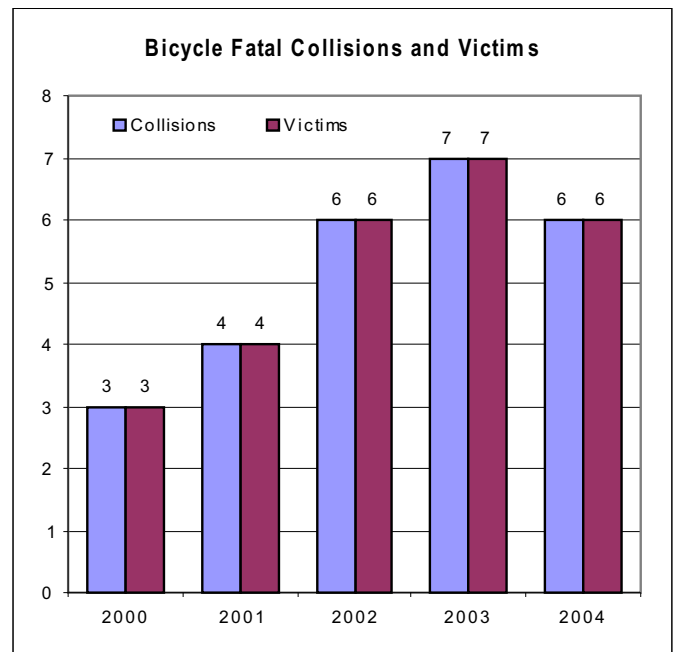
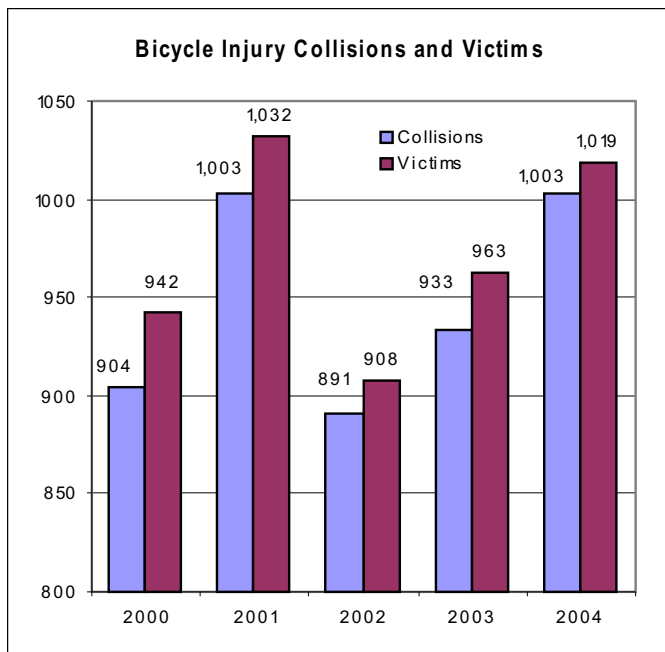
The five top contributing factors assigned to bicycle drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Driver inattentive (14.9%);
2. Driving on the wrong side of the road (12.5%);
3. Failing to yield to right of way (11.2%);
4. Driver error/confusion (8.2%);
5. Ignoring traffic control device (5.8%).

The five top contributing factors assigned to other drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Failing to yield to right of way and driver inattentive (18.1% each);
2. Driver error/confusion (5.2%);
3. Weather condition (4.3%);
4. Improper turning (3.0%);
5. Avoiding Veh/Ped/Cycle (3.0%).

More than half (56.4%) of all bicycle collisions took place at intersections. The most common configuration was intersection – right angle, which accounted for 33.0% of bicycle collisions. The road surface condition was dry for 79.4% of bicycle collisions and 75.3% occurred in daylight. The highest frequency collision time period for bicycle collisions is 3:00pm to 6:00pm. Close to 30% (303) of bicycle collisions took place between these hours.



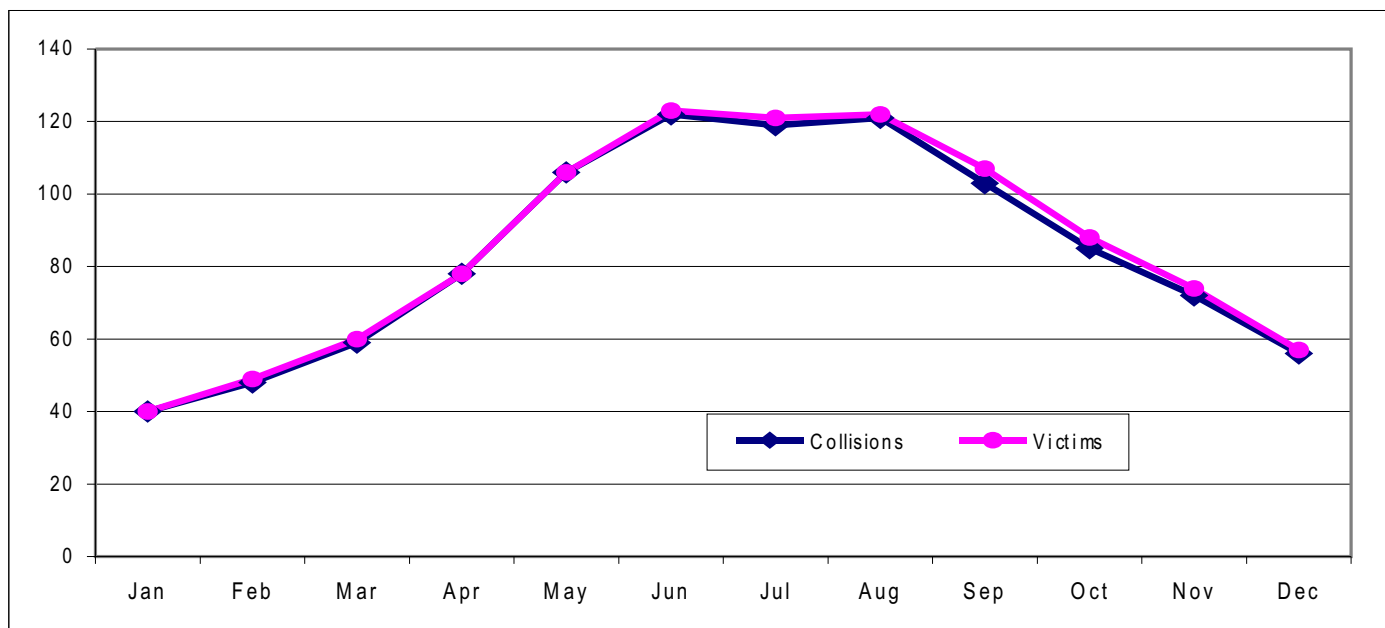
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Table 14.01 – Bicycle collisions and victims by month

Month	Collisions			Victims		
	Injury	Fatal	Total	Injured	Killed	Total
January	39	1	40	39	1	40
February	48	0	48	49	0	49
March	59	0	59	60	0	60
April	78	0	78	78	0	78
May	106	0	106	106	0	106
June	121	1	122	122	1	123
July	118	1	119	120	1	121
August	120	1	121	121	1	122
September	102	1	103	106	1	107
October	85	0	85	88	0	88
November	71	1	72	73	1	74
December	56	0	56	57	0	57
Total	1,003	6	1,009	1,019	6	1,025

Note: Victims include both cyclists and occupants of involved motor vehicles.

Figure 14.01 – Bicycle Collisions and victims by month



**Table 14.02 – Contributing factors in bicycle collisions
– Bicycle driver factors only**

Contributing Factors	Injury	Fatal	Total	% of Total Bicycle Collisions	
Driver Inattentive	148	2	150	14.87	
Driving on Wrong Side of Road	126	0	126	12.49	
Failing to Yield Right of Way	113	0	113	11.20	
Driver Error/Confusion	80	3	83	8.23	
Ignoring Traffic Control Device	57	1	58	5.75	
Defective Headlights	25	0	25	2.48	
Alcohol	Alcohol Suspected	23	1	24	2.38
	Ability Impaired by Alcohol	16	1	17	1.68
	Alcohol Involvement	3	0	3	0.30
Improper Turning	23	1	24	2.38	
Pedestrian Error/Confusion	23	0	23	2.28	
Cutting In	21	1	22	2.18	
Improper Passing	22	0	22	2.18	
Defective Brakes	21	0	21	2.08	
Weather(Fog/Sleet/Rain/Snow)	19	1	20	1.98	
Speeding	Exceeding Speed Limit	1	0	1	0.10
	Driving too Fast for Conditions	16	0	16	1.59
	Unsafe Speed	2	0	2	0.20
Avoiding Veh/Ped/Cycle	18	0	18	1.78	
Site Line Obstruction	16	0	16	1.59	
Driving Without Due Care	12	0	12	1.19	
Other	201	2	203	20.12	
Unknown	72	0	72	7.14	

Note:

- 1) The table shown above represents the contributing factors assigned to the bicycle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions will occur in the data presented in this table. For example, a collision attributed to both alcohol involvement and weather condition will be counted twice above, once under "alcohol involvement" and again under "weather condition". "Percent of Total" represents the occurrence of the collisions as a percentage of total bicycle casualty collisions recorded in British Columbia in 2004.
- 2) "Other" includes specified factors with less than 10 occurrences plus unspecified other.
- 3) For new and retired contributing factors in 2004, see Section 3.

**Table 14.03 – Contributing factors in bicycle collisions
– Other driver factors only**

Contributing Factors	Injury	Fatal	Total	% of Total Bicycle Collisions	
Failing to Yield Right of Way	182	1	183	18.14	
Driver Inattentive	181	2	183	18.14	
Driver Error/Confusion	51	1	52	5.15	
Weather(Fog/Sleet/Rain/Snow)	42	1	43	4.26	
Improper Turning	31	0	31	3.07	
Avoiding Veh/Ped/Cycle	30	0	30	2.97	
Site Line Obstruction	29	0	29	2.87	
Sunlight Glare	27	0	27	2.68	
Ignoring Traffic Control Device	21	1	22	2.18	
Driving Without Due Care	15	1	16	1.59	
Improper Passing	14	0	14	1.39	
Road/Intersection Design	11	0	11	1.09	
Alcohol	Alcohol Suspected	6	0	6	0.59
	Ability Impaired by Alcohol	7	0	7	0.69
	Alcohol Involvement	1	0	1	0.10
Speeding	Exceeding Speed Limit	4	0	4	0.40
	Driving too Fast for Conditions	5	0	5	0.50
	Unsafe Speed	1	1	2	0.20
Road Condition (Ice/Snow/Slush/Water)	10	0	10	0.99	
Other	171	2	173	17.15	
Unknown	68	0	68	6.74	

Note:

- 1) The table shown above represents the contributing factors assigned to drivers, other than bicycle drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions will occur in the data presented in this table. For example, a collision attributed to both alcohol involvement and weather condition will be counted twice above, once under "alcohol involvement" and again under "weather condition". "Percent of Total" represents the occurrence of the collisions as a percentage of total bicycle casualty collisions recorded in British Columbia in 2004.
- 2) "Other" includes specified factors with less than 10 occurrences plus unspecified other.
- 3) For new and retired contributing factors in 2004, see Section 3.

SECTION 14 – Bicycles in 2004 Collisions

Table 14.04 – Bicycle collisions by primary collision occurrence

Primary Collision Occurrence	Injury	Fatal	Total	% of Total
Intersection - Right Angle	331	2	333	33.00
Left Turn-Across Oncoming Traffic	106	0	106	10.51
Rear End	54	3	57	5.65
Right Turn - Head On	53	0	53	5.25
Overtaking	51	0	51	5.05
Side Swipe-Opposite Direction	28	0	28	2.78
Right Turn - Rear End	27	0	27	2.68
Head On	24	0	24	2.38
Right Turn - Same Direction	18	0	18	1.78
Left Turn - Head On	16	0	16	1.59
Left Turn - One Way	14	0	14	1.39
Backing Up	11	0	11	1.09
Right Turn-Opposite Direction	4	0	4	0.40
One Way Street	4	0	4	0.40
Off Road Left	3	0	3	0.30
Off Road Right	2	0	2	0.20
Other	224	1	225	22.30
Unknown	33	0	33	3.27
Total	1,003	6	1,009	100%

Table 14.05 – Pre-collision action in bicycle collisions – Bicycles only

Pre-Collision Action	Injury	Fatal	Total	% of Total
Going Straight Ahead	748	4	752	74.02
Making Left Turn	55	0	55	5.41
Making Right Turn	29	0	29	2.85
Changing Lanes	9	1	10	0.98
Overtaking	9	0	9	0.89
Slowing or Stopping	5	0	5	0.49
Making U Turn	3	1	4	0.39
Starting from Parked position	4	0	4	0.39
Starting in Traffic	4	0	4	0.39
Stopped in Traffic	4	0	4	0.39
Swerving	4	0	4	0.39
Merging	2	0	2	0.20
Parked legally	1	0	1	0.10
Backing	1	0	1	0.10
Skidding	1	0	1	0.10
Other	37	0	37	3.64
Unknown	94	0	94	9.25
Total	1,010	6	1,016	100%

**Table 14.06 – Pre-collision action in bicycle collisions
– Other Vehicles**

Pre-Collision Action	Injury	Fatal	Total	% of Total
Going Straight Ahead	371	5	376	36.65
Making Right Turn	253	0	253	24.66
Making Left Turn	189	1	190	18.52
Parked legally	50	0	50	4.87
Stopped in Traffic	22	0	22	2.14
Starting from Parked position	16	0	16	1.56
Overtaking	12	0	12	1.17
Starting in Traffic	11	0	11	1.07
Slowing or Stopping	11	0	11	1.07
Backing	11	0	11	1.07
Changing Lanes	9	0	9	0.88
Merging	7	0	7	0.68
Making U Turn	5	0	5	0.49
Swerving	5	0	5	0.49
Skidding	3	0	3	0.29
Entering Parked Position	1	0	1	0.10
Parked Illegally	1	0	1	0.10
Other	6	0	6	0.58
Unknown	37	0	37	3.61
Total	1,020	6	1,026	100%

Table 14.07 – Collision location of bicycle collisions

Collision Location	Injury	Fatal	Total	% of Total
At intersection	567	2	569	56.39
Between Intersection:Exchanges	241	4	245	24.28
Intersection of Road & Driveway or Alley	137	0	137	13.58
Parking Lot:Single/Multilevel	19	0	19	1.88
Entrance Intersection	6	0	6	0.59
Bridge	4	0	4	0.40
Entrance Acceleration Lane	3	0	3	0.30
Entrance Ramp	3	0	3	0.30
Exit Ramp	2	0	2	0.20
Exit Intersection	2	0	2	0.20
Exit Deceleration lane	1	0	1	0.10
Off Highway	1	0	1	0.10
Railroad crossing	1	0	1	0.10
Industrial Road	1	0	1	0.10
Other	6	0	6	0.59
Unknown	9	0	9	0.89
Total	1,003	6	1,009	100%

Table 14.08 – Bicycle collisions by roadway surface condition

Roadway Surface Condition	Injury	Fatal	Total	% of Total
Dry	796	5	801	79.39
Wet	199	1	200	19.82
Ice	2	0	2	0.20
Snow	1	0	1	0.10
Unknown	5	0	5	0.50
Total	1,003	6	1,009	100%

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Table 14.09 – Bicycle collisions by lighting condition

Lighting Condition	Injury	Fatal	Total	% of Total
Daylight	757	3	760	75.32
Dark/Some Illumination	110	2	112	11.10
Dark/Full Illumination	68	0	68	6.74
Dusk	38	0	38	3.77
Dawn	14	0	14	1.39
Dark/No Illumination	12	1	13	1.29
Unknown	4	0	4	0.40
Total	1,003	6	1,009	100%

Table 14.11 – Bicycle collisions by collision hour

Time	Injury	Fatal	Total	% of Total
0000-0059	9	0	9	0.89
0100-0159	8	1	9	0.89
0200-0259	7	0	7	0.69
0300-0359	1	0	1	0.10
0400-0459	3	0	3	0.30
0500-0559	3	0	3	0.30
0600-0659	23	0	23	2.28
0700-0759	28	0	28	2.78
0800-0859	64	0	64	6.34
0900-0959	38	0	38	3.77
1000-1059	39	0	39	3.87
1100-1159	52	0	52	5.15
1200-1259	55	0	55	5.45
1300-1359	61	1	62	6.14
1400-1459	68	0	68	6.74
1500-1559	89	1	90	8.92
1600-1659	104	1	105	10.41
1700-1759	108	0	108	10.70
1800-1859	64	0	64	6.34
1900-1959	59	0	59	5.85
2000-2059	35	1	36	3.57
2100-2159	28	0	28	2.78
2200-2259	25	1	26	2.58
2300-2359	14	0	14	1.39
Unknown	18	0	18	1.78
Total	1,003	6	1,009	100%

Table 14.10 – Bicycle collisions by weather condition

Weather Condition	Injury	Fatal	Total	% of Total
Clear	606	4	610	60.46
Cloudy	255	1	256	25.37
Raining	127	1	128	12.69
Fog	6	0	6	0.59
Snowing	2	0	2	0.20
Smog/Smoke	1	0	1	0.10
Strong Wind	1	0	1	0.10
Unknown	5	0	5	0.50
Total	1,003	6	1,009	100%

Table 14.12 – Bicycle drivers involved in collision by age

Age	Injury	Fatal	Total	% of Total
4	1	0	1	0.10
5	3	0	3	0.30
6	3	0	3	0.30
7	4	1	5	0.50
8	9	0	9	0.90
9	11	0	11	1.10
10	20	0	20	2.00
11	22	1	23	2.30
12	27	0	27	2.71
13	33	0	33	3.31
14	28	0	28	2.81
15	25	0	25	2.51
16	17	0	17	1.70
17	29	0	29	2.91
18	22	0	22	2.20
19	23	2	25	2.51
20	32	0	32	3.21
21	17	0	17	1.70
22	19	0	19	1.90
23	22	0	22	2.20
24	18	0	18	1.80
25	14	0	14	1.40
26-30	102	0	102	10.22
31-35	80	0	80	8.02
36-40	95	1	96	9.62
41-45	105	0	105	10.52
46-50	80	1	81	8.12
51-55	42	0	42	4.21
56-60	38	0	38	3.81
61-65	15	0	15	1.50
66-70	5	0	5	0.50
71-75	9	0	9	0.90
76-80	7	0	7	0.70
81-85	1	0	1	0.10
91-95	1	0	1	0.10
Unknown	13	0	13	1.30
Total	992	6	998	100%

Note: Includes all bicycle drivers involved in collisions, regardless of injury status.

Table 14.13 – Bicycle drivers injured in bicycle collisions by age and gender

Age	Male	Female	Total
4	1	0	1
5	3	0	3
6	3	0	3
7	4	0	4
8	6	2	8
9	9	2	11
10	13	7	20
11	16	6	22
12	21	6	27
13	28	5	33
14	24	4	28
15	18	7	25
16	17	0	17
17	21	8	29
18	17	5	22
19	15	8	23
20	26	6	32
21	13	4	17
22	10	9	19
23	14	8	22
24	10	8	18
25	11	3	14
26-30	74	28	102
31-35	57	21	78
36-40	68	26	94
41-45	77	28	105
46-50	64	16	80
51-55	32	10	42
56-60	35	3	38
61-65	13	2	15
66-70	4	1	5
71-75	7	2	9
76-80	6	1	7
81-85	1	0	1
91-95	1	0	1
Unknown	7	4	11
Total	746	240	986

Note: Excludes those whose gender was unknown.

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Figure 14.02 – Bicycle drivers injured in bicycle collisions by age and gender

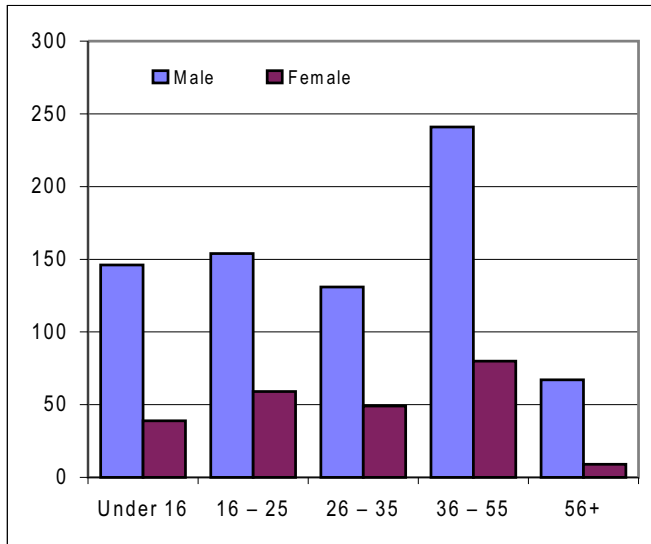
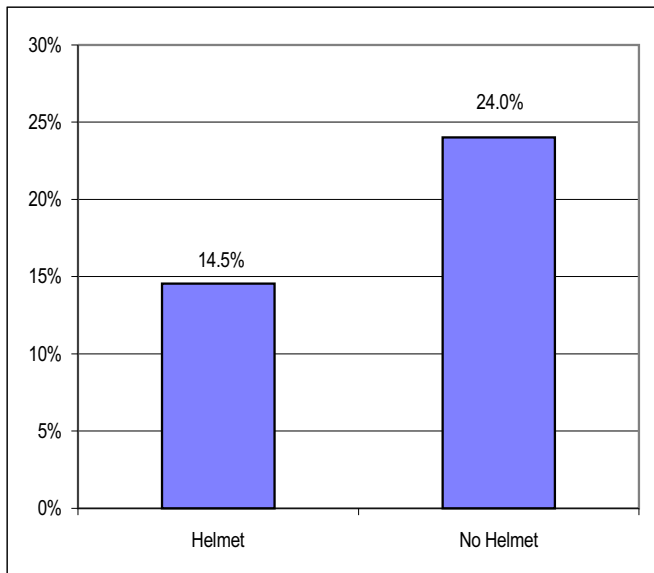


Table 14.14 – Bicycle drivers killed in bicycle collisions by age and gender

Age	Male	Female	Total
7	1	0	1
11	1	0	1
19	2	0	2
36-40	1	0	1
46-50	1	0	1
Total	6	0	6

Figure 14.03 – Percent of victims with head injury among helmeted and nonhelmeted bicycle drivers in collisions



Note: Location of injury includes both head and entire body.

Table 14.15 – Bicycle drivers injured and killed by helmet use and location of injury

Helmet	Injured	Killed
Helmet		
Head	46	1
Face/Nose	26	0
Eye	2	0
Neck	25	0
Chest	14	0
Back	30	0
Shoulder/Upper Arm	69	0
Elbow/Lower Arm/Hand	73	0
Abdomen/Pelvis	6	0
Hip/Upper Leg	39	1
Knee/Lower Leg/Foot	97	0
Entire Body	18	0
Unknown	22	0
Total Helmet	467	2
No Helmet		
Head	77	0
Face/Nose	18	0
Eye	1	0
Neck	8	0
Chest	10	0
Back	24	0
Shoulder/Upper Arm	32	0
Elbow/Lower Arm/Hand	44	0
Abdomen/Pelvis	4	0
Hip/Upper Leg	27	0
Knee/Lower Leg/Foot	123	0
Entire Body	13	2
Unknown	14	0
Total No Helmet	395	2
Unknown		
Head	11	1
Face/Nose	9	0
Neck	6	0
Chest	2	0
Back	5	0
Shoulder/Upper Arm	9	0
Elbow/Lower Arm/Hand	20	0
Abdomen/Pelvis	1	0
Hip/Upper Leg	10	0
Knee/Lower Leg/Foot	28	0
Entire Body	3	1
Unknown	20	0
Total Unknown	124	2
Grand Total	986	6