

**IHRA Injury Breakdown (All Ages)**

**Head Injury Statistics:**

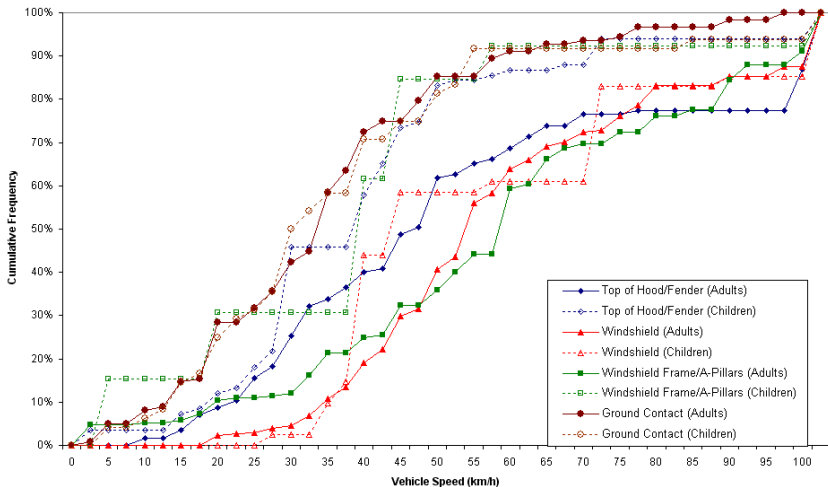
IHRA Head Injuries										
Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Windshield	45.3	21.1	507	54.1	22.1	457	2.53	1.39	504	33%
Road Surface Contact	40.2	29.0	407	30.6	17.4	393	1.68	1.01	406	26%
Top of Hood/Fender	34.4	27.4	309	35.8	15.1	265	2.33	1.34	308	20%
Windshield Frame/A-Pillars	43.5	20.4	271	51.0	25.9	270	2.94	1.50	269	17%
Front Bumper	24.6	16.6	27	47.3	18.8	26	3.11	1.31	27	2%
Leading Edge of Hood/Fender	21.9	14.3	22	38.6	13.9	21	2.27	1.28	22	1%
Front Panel	9.4	5.1	8	73.7	22.6	7	3.13	1.81	8	1%
All Known Sources	40.6	25.0	1551	43.4	22.8	1439	2.37	1.43	1550	100%

Breakdown by AIS							
Source	AIS 1	AIS 2	AIS 3	AIS 4	AIS 5	AIS 6	Avg AIS
Windshield	161	105	116	61	54	7	2.53
Road Surface Contact	236	109	34	13	14	0	1.68
Top of Hood/Fender	111	77	64	22	32	2	2.33
Windshield Frame/A-Pillars	65	40	64	54	36	10	2.94
Front Bumper	3	6	9	3	6	0	3.11
Leading Edge of Hood/Fender	8	5	6	1	2	0	2.27
Front Panel	3	0	1	1	3	0	3.13
All Known Sources	587	342	294	155	147	19	2.37
Percentage of All AIS Injuries	38%	22%	19%	10%	10%	1%	

Severe/Fatal Head Injuries (AIS 4-6)		
Source	Number	Pct
Windshield	122	38%
Road Surface Contact	27	8%
Top of Hood/Fender	56	17%
Windshield Frame/A-Pillars	100	31%
Front Bumper	9	3%
Leading Edge of Hood/Fender	3	1%
Front Panel	4	1%
All Known Sources	321	100%

Serious Head Injuries (AIS 2-6)		
Source	Number	Pct
Windshield	343	36%
Road Surface Contact	170	18%
Top of Hood/Fender	197	21%
Windshield Frame/A-Pillars	204	21%
Front Bumper	24	3%
Leading Edge of Hood/Fender	14	1%
Front Panel	5	1%
All Known Sources	957	100%

**AIS 2-6 Head Injury Distribution by Vehicle Source and Speed:**



## Pelvis/Leg Injury Statistics:

### IHRA Pelvis/Leg Injuries

Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Front Bumper	43.0	24.4	830	41.7	22.0	795	2.01	0.77	827	51%
Leading Edge of Hood/Fender	46.3	25.0	303	43.6	25.8	291	1.95	0.94	301	19%
Road Surface Contact	35.2	26.6	299	32.2	16.5	295	1.09	0.33	299	19%
Front Panel	42.4	24.7	100	49.0	22.5	94	1.81	0.84	99	6%
Top of Hood/Fender	45.1	25.5	71	52.7	26.1	69	1.94	0.92	71	4%
Windshield Frame/A-Pillars	37.4	24.3	10	75.6	20.8	10	3.70	1.89	10	1%
Windshield	37.6	18.3	7	50.3	25.7	7	1.86	0.90	7	0%
All Known Sources	42.2	25.2	1620	41.4	22.8	1561	1.82	0.86	1614	100%

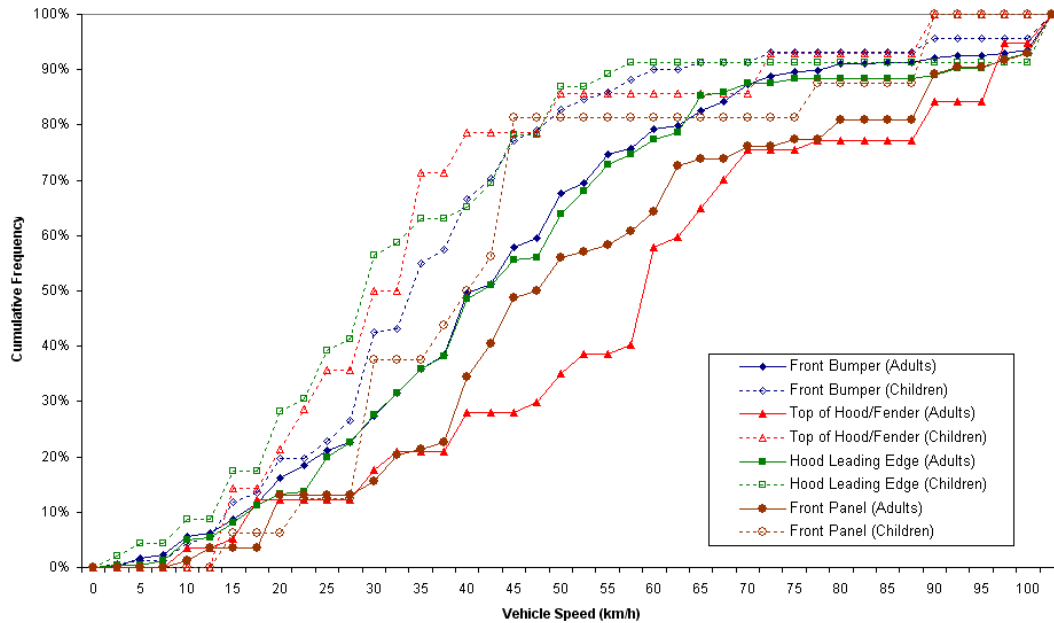
### Breakdown by Body Region and Avg AIS

Source	Pelvis	Avg AIS	Femur	Avg AIS	Knee	Avg AIS	Lower Leg	Avg AIS
Front Bumper	15	1.27	79	2.29	179	1.56	557	2.13
Leading Edge of Hood/Fender	179	2.13	83	1.88	22	1.32	19	2.00
Road Surface Contact	62	1.24	26	1.19	180	1.02	31	1.16
Front Panel	17	2.13	19	2.53	30	1.30	34	1.71
Top of Hood/Fender	53	2.13	13	1.31	4	1.50	1	2.00
Windshield Frame/A-Pillars	9	3.78	1	3.00	0	---	0	---
Windshield	5	1.80	1	1.00	0	---	1	3.00
All Known Sources	340	1.97	222	1.97	415	1.29	643	2.06
Percentage of All Injuries	21%		14%		26%		40%	

### Non-Minor (AIS 2-6) Leg Injuries

Source	Pelvis	Femur	Knee	Lower Leg	Total	Pct
Front Bumper	3	58	71	456	588	65%
Leading Edge of Hood/Fender	121	37	4	16	178	20%
Front Panel	12	15	8	21	56	6%
Top of Hood/Fender	38	3	1	1	43	5%
Road Surface Contact	12	4	3	5	24	3%
Windshield Frame/A-Pillars	8	1	0	0	9	1%
Windshield	3	0	0	1	4	0%
All Known Sources	197	118	87	500	902	100%
Percentage of All Injuries	19%	11%	8%	48%		

## AIS 2-6 Pelvis/Leg Injury Distribution by Vehicle Source and Speed:



# IHRA Child (Age 15 and Younger) Injury Breakdown

## Child Head Injury Statistics:

IHRA Head Injuries (Children age 15 and under)										
Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Road Surface Contact	7.3	3.3	132	30.2	14.7	126	1.47	0.74	132	36%
Top of Hood/Fender	8.5	3.2	129	34.5	15.4	119	2.36	1.40	129	35%
Windshield	12.9	1.4	59	46.4	15.7	47	2.64	1.47	59	16%
Windshield Frame/A-Pillars	11.5	3.7	22	30.5	23.5	22	2.23	1.45	22	6%
Leading Edge of Hood/Fender	10.3	2.8	12	46.3	11.4	12	2.17	1.27	12	3%
Front Panel	7.7	2.2	7	75.0	24.5	6	3.43	1.00	7	2%
Front Bumper	5.3	2.6	6	33.7	17.1	6	1.83	0.75	6	2%
All Known Sources	8.9	3.7	367	35.4	17.6	338	2.08	1.31	367	100%

### Breakdown by AIS

Source	AIS 1	AIS 2	AIS 3	AIS 4	AIS 5	AIS 6	Avg AIS
Road Surface Contact	84	38	7	2	1	0	1.47
Top of Hood/Fender	46	35	22	8	17	1	2.36
Windshield	18	12	12	8	8	1	2.64
Windshield Frame/A-Pillars	9	6	3	2	1	1	2.23
Leading Edge of Hood/Fender	5	2	4	0	1	0	2.17
Front Panel	2	0	1	1	3	0	3.43
Front Bumper	2	3	1	0	0	0	1.83
All Known Sources	166	96	50	21	31	3	2.08
Percentage of All AIS Injuries	49%	26%	14%	6%	8%	1%	

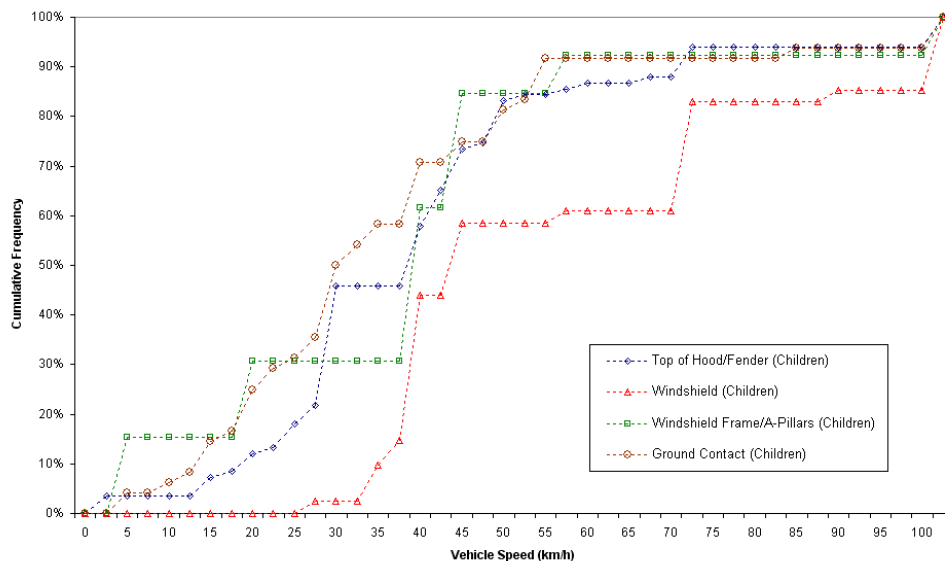
### Severe/Fatal Head Injuries (AIS 4-6)

Source	Number	Pct
Road Surface Contact	3	5%
Top of Hood/Fender	26	47%
Windshield	17	31%
Windshield Frame/A-Pillars	4	7%
Leading Edge of Hood/Fender	1	2%
Front Panel	4	7%
Front Bumper	0	0%
All Known Sources	55	100%

### Serious Head Injuries (AIS 2-6)

Source	Number	Pct
Top of Hood/Fender	83	41%
Road Surface Contact	48	24%
Windshield	41	20%
Windshield Frame/A-Pillars	13	6%
Leading Edge of Hood/Fender	7	3%
Front Panel	5	2%
Front Bumper	4	2%
All Known Sources	201	100%

## AIS 2-6 Child Head Injury Distribution by Vehicle Source and Speed:



## Child Pelvis/Leg Injury Statistics:

IHRA Pelvis/Leg Injuries (Children age 15 and younger)

Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Front Bumper	8.6	3.6	162	36.2	18.2	157	1.74	0.82	162	46%
Road Surface Contact	8.6	3.2	109	31.5	14.9	108	1.01	0.10	109	31%
Leading Edge of Hood/Fender	10.0	2.9	46	29.7	13.9	42	1.61	1.02	46	13%
Front Panel	11.8	4.0	16	44.0	22.4	16	1.81	0.91	16	5%
Top of Hood/Fender	9.1	3.0	14	36.1	21.4	14	1.43	0.65	14	4%
Windshield	10.0	---	1	35.0	---	1	2.00	---	1	0%
Windshield Frame/A-Pillars	15.0	---	1	38.0	---	1	2.00	---	1	0%
All Known Sources	9.0	3.5	349	34.2	17.2	339	1.49	0.78	349	100%

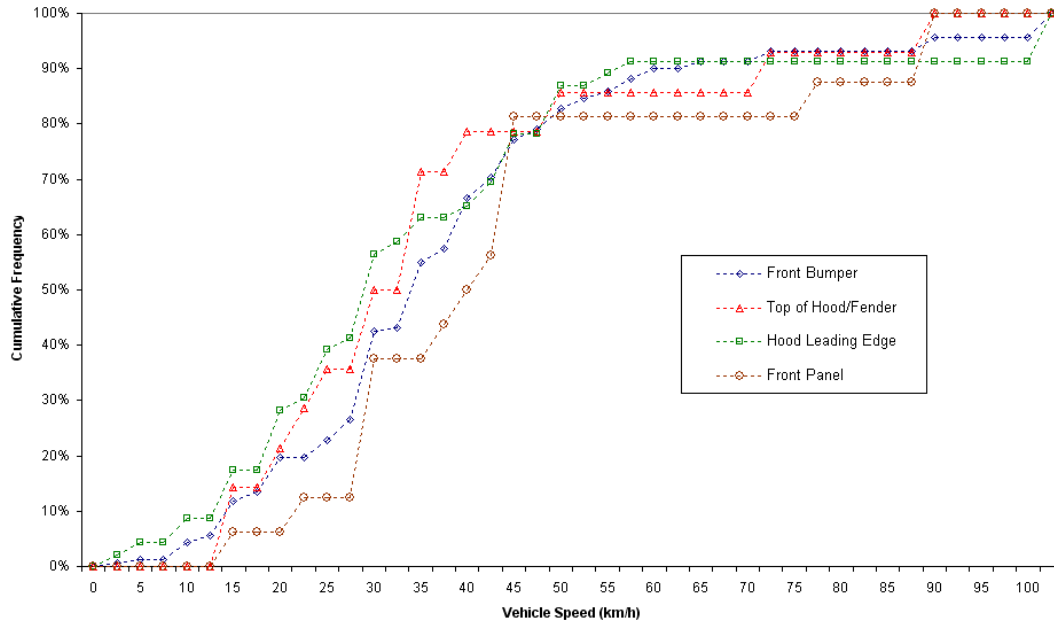
Breakdown by Body Region and Avg AIS

Source	Pelvis	Avg AIS	Femur	Avg AIS	Knee	Avg AIS	Lower Leg	Avg AIS	Pct
Front Bumper	10	1.00	44	2.11	45	1.13	63	2.03	46%
Road Surface Contact	19	1.05	8	1.00	76	1.00	6	1.00	31%
Leading Edge of Hood/Fender	26	1.46	15	1.93	3	1.00	2	2.00	13%
Front Panel	2	1.50	7	2.43	3	1.33	4	1.25	5%
Top of Hood/Fender	11	1.55	3	1.00	0	---	0	---	4%
Windshield	1	2.00	0	---	0	---	0	---	0%
Windshield Frame/A-Pillars	1	2.00	0	---	0	---	0	---	0%
All Known Sources	70	1.31	77	1.95	127	1.06	75	1.91	349
Percentage of All Injuries	20%		22%		36%		21%		100%

Non-Minor (AIS 2-6) Leg Injuries

Source	Pelvis	Femur	Knee	Lower Leg	Pet
Front Bumper	0	30	5	47	72%
Leading Edge of Hood/Fender	7	7	0	2	14%
Front Panel	1	5	1	1	7%
Top of Hood/Fender	5	0	0	0	4%
Windshield	1	0	0	0	1%
Road Surface Contact	1	0	0	0	1%
Windshield Frame/A-Pillars	1	0	0	0	1%
All Known Sources	16	42	6	50	114
Percentage of All Injuries	14%	37%	5%	44%	100%

## AIS 2-6 Child Pelvis/Leg Injury Distribution by Vehicle Source and Speed:



# IHRA Adult (Age 16 and Older) Injury Breakdown

## Adult Head Injury Statistics:

IHRA Head Injuries (Adults age 16 and over)

Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Windshield	49.5	18.7	448	55.0	22.6	410	2.53	1.42	446	38%
Road Surface Contact	56.0	21.6	275	30.8	18.6	267	1.77	1.09	274	23%
Windshield Frame/A-Pillars	46.4	18.8	249	52.9	25.3	229	3.02	1.47	246	21%
Top of Hood/Fender	53.0	21.3	180	41.8	22.0	159	2.33	1.34	180	15%
Front Bumper	30.1	14.6	21	51.5	17.7	20	3.48	1.21	21	2%
Leading Edge of Hood/Fender	35.8	8.4	10	28.3	10.0	9	2.40	1.35	10	1%
Front Panel	21.0	0.0	1	66.0	0.0	1	1.00	0.00	1	0%
All Known Sources	50.4	20.2	1184	46.5	24.2	1095	2.44	1.41	1178	100%

### Breakdown by AIS

Source	AIS 1	AIS 2	AIS 3	AIS 4	AIS 5	AIS 6	Avg AIS
Windshield	143	93	104	53	46	6	2.53
Road Surface Contact	152	71	27	11	13	0	1.77
Windshield Frame/A-Pillars	56	34	61	52	35	9	3.02
Top of Hood/Fender	65	42	42	14	15	2	2.33
Front Bumper	1	3	8	3	6	0	3.48
Leading Edge of Hood/Fender	3	3	2	1	1	0	2.40
Front Panel	1	0	0	0	0	0	1.00
All Known Sources	421	246	244	134	116	17	2.44
Percentage of All AIS Injuries	27%	16%	16%	9%	8%	1%	

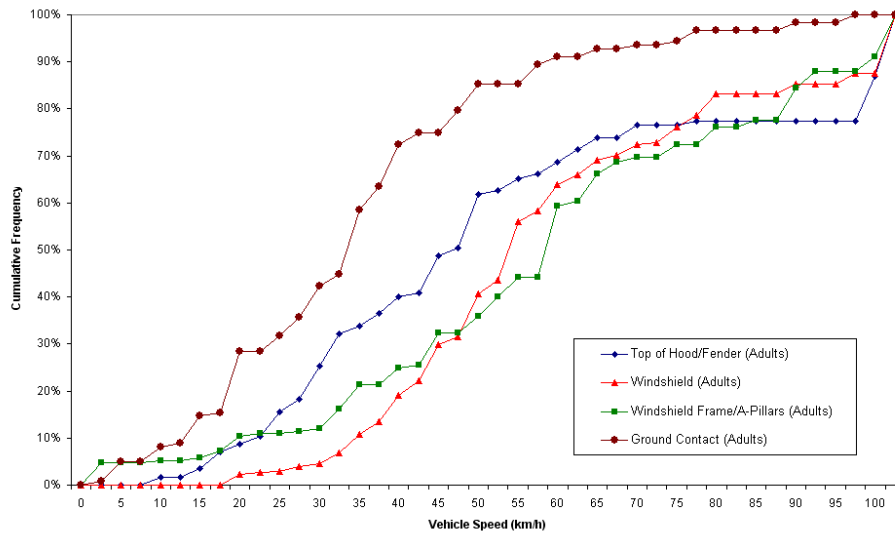
### Severe/Fatal Head Injuries (AIS 4-6)

Source	Number	Pct
Windshield	105	39%
Road Surface Contact	24	9%
Windshield Frame/A-Pillars	96	36%
Top of Hood/Fender	31	12%
Front Bumper	9	3%
Leading Edge of Hood/Fender	2	1%
Front Panel	0	0%
All Known Sources	267	100%

### Serious Head Injuries (AIS 2-6)

Source	Number	Pct
Windshield	302	40%
Road Surface Contact	122	16%
Top of Hood/Fender	115	15%
Windshield Frame/A-Pillars	191	25%
Front Bumper	20	3%
Leading Edge of Hood/Fender	7	1%
Front Panel	0	0%
All Known Sources	757	100%

## AIS 2-6 Adult Head Injury Distribution by Vehicle Source and Speed:



## Adult Pelvis/Leg Injury Statistics:

### IHRA Pelvis/Leg Injuries (Adults age 16 and over)

Source	Avg Age	STD Age	N	Avg Speed	STD Speed	N	Avg AIS	STD AIS	N	% Known
Front Bumper	51.3	19.5	668	43.0	22.6	638	2.08	0.75	665	53%
Leading Edge of Hood/Fender	52.8	21.3	257	45.9	26.6	249	2.01	0.92	255	20%
Road Surface Contact	50.4	21.7	190	32.6	17.4	187	1.14	0.41	190	15%
Front Panel	48.3	22.6	84	50.0	22.6	78	1.81	0.83	83	7%
Top of Hood/Fender	53.9	20.2	57	56.9	25.6	55	2.07	0.94	57	5%
Windshield Frame/A-Pillars	39.9	24.4	9	79.8	17.0	9	3.89	1.90	9	1%
Windshield	42.2	15.0	6	52.8	27.2	6	1.83	0.98	6	0%
All Known Sources	51.3	20.5	1271	43.4	23.7	1222	1.92	0.86	1265	100%

### Breakdown by Body Region and Avg AIS

Source	Pelvis	Avg AIS	Femur	Avg AIS	Knee	Avg AIS	Lower Leg	Avg AIS	Pct
Front Bumper	5	1.80	35	2.51	134	1.71	491	2.15	53%
Leading Edge of Hood/Fender	151	2.15	68	1.87	19	1.37	17	2.00	20%
Road Surface Contact	43	1.33	18	1.28	104	1.03	25	1.20	15%
Front Panel	14	2.21	12	2.58	27	1.30	30	1.77	7%
Top of Hood/Fender	42	2.29	10	1.40	4	1.50	1	2.00	5%
Windshield Frame/A-Pillars	8	4.00	1	3.00	0	---	0	---	1%
Windshield	4	1.75	1	1.00	0	---	1	3.00	0%
All Known Sources	267	2.09	145	1.98	288	1.40	565	2.08	1265
Percentage of All Injuries	21%		11%		23%		45%		100%

### Non-Minor (AIS 2-6) Leg Injuries

Source	Pelvis	Femur	Knee	Lower Leg	Pet
Front Bumper	3	28	66	406	64%
Leading Edge of Hood/Fender	112	30	4	14	20%
Front Panel	11	10	7	20	6%
Top of Hood/Fender	33	3	1	1	5%
Road Surface Contact	11	4	3	5	3%
Windshield Frame/A-Pillars	7	1	0	0	1%
Windshield	2	0	0	1	0%
All Known Sources	179	76	81	447	783
Percentage of All Injuries	23%	10%	10%	57%	100%

## AIS 2-6 Adult Pelvis/Leg Injury Distribution by Vehicle Source and Speed:

