

Child Casualties Report 2010

A study into resident risk of children on roads
in Great Britain 2004-08



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Introduction

This report covers the period 2004 to 2008 inclusive and primarily uses the Department for Transport (DfT) STATS19 data, www.dft.gov.uk/pgr/statistics/datatablespublications/accidents, supplied to Road Safety Analysis Limited for use in MAST Online. For further information about MAST, please visit our website www.roadsafetyanalysis.org. If you would like to access maps (including a Google Earth layer), these are also available on the website. Existing MAST users can log on and visit the forums area where they can access the analysed data, read the methodology behind the analysis and discuss the trends shown here.

A note on under-reporting of casualty postcodes

Police Forces around the country are required to record certain information about people injured in a collisions, including their postcode. Postcode reporting rates differ around the country and only around 73% of child casualties have a recorded postcode. In order to report the true number of recorded child casualties, an adjustment has been made to the figures to reflect local postcode reporting. This adjustment has been carried out fairly, using hundreds of thousands of records and the full correction formula is available on request.

This report does not attempt to correct the larger problem of under-recording of all casualties. The DfT acknowledge this problem¹ which could mean that up to 5 times more casualties occur on the roads than are reported to the police. There is no evidence to suggest that this under-reporting has changed over time and no evidence to suggest that it varies geographically. It is worth bearing in mind however that the picture on the roads of Great Britain is surely worse than this report indicates.

Recorded Child Casualty Rates by Authority

The full table of results for recorded resident child road casualty risk is included at the end of this report. The 408 'areas' of Great Britain are ranked according to their child populations, rather than the number of casualties on their roads. This is an important distinction as previously the casualties or collisions on local highway authority roads have tended to be measured. By accessing the raw data from the national DfT records it is possible to calculate the risk associated with residents from each area. Information about populations has been obtained from www.statistics.gov.uk in order to calculate risk per head of child population.

Two areas have been excluded from the analysis due to low child populations or low child casualty numbers, making their results unreliable. These areas are the Isles of Scilly (no child casualties in 5 years), and the City of London (child population error rates too high).

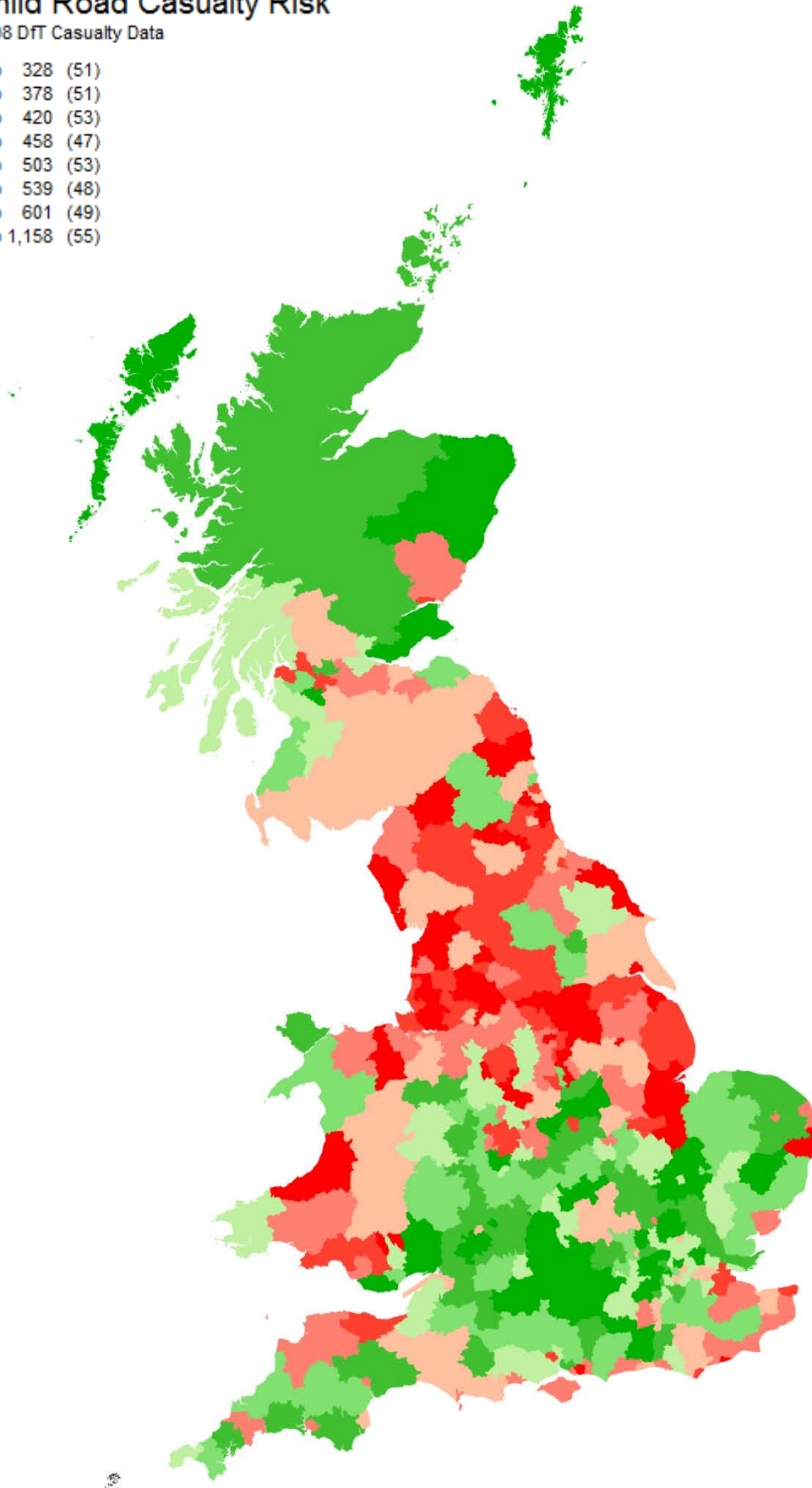
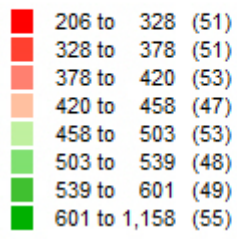
The results clearly show very large differences in recorded child casualty rates with Preston having the highest rate (1 in 206 children injured on GB roads per year) and Kensington and Chelsea having the lowest risk (1 in every 1158 children per year). The average GB rate is 427, significantly lower than the national risk for all people, 1 in 231.

A map is included on page 3 showing the areas of highest (red) and lowest risk (green) in Great Britain. It appears at first glance that there is a significant North-South divide but there are several pockets of high risk in the South-East and large areas of Scotland demonstrate lower risk levels.

¹ <http://www.dft.gov.uk/adobe/pdf/162469/221412/221549/227755/rccgb2008.pdf>

GB Child Road Casualty Risk

2004 - 2008 DfT Casualty Data



Trends in child road casualties

Through *MAST Online*, it is possible not only to look at the homes of road casualties, it is also possible to analyse many other pieces of information about the collisions in which they were involved. The following analyses are a sample of the kind of information that can be extracted nationally, or at a local level by MAST users.

Child Age and Gender

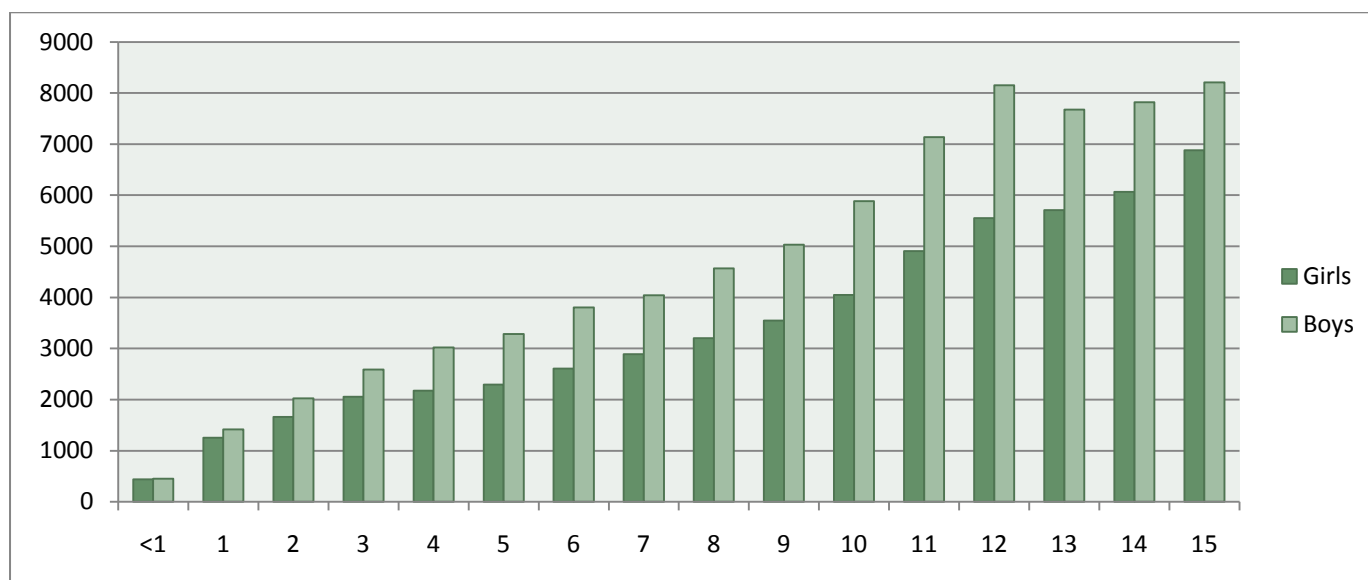


Figure 1. Casualties by age and gender

Here we see the general increasing risk of being a casualty as age increases. It is also noticeable that even from the age of one; boys are more likely to be injured on the roads than girls. This difference is highest in pre-teens with boys' risk reducing from an early peak at age 12, until the increase to their highest at age 15. Girls' risk increases every year.

Child Casualties by Day of Week and Month

In common with the rest of the population, risk is highest on Fridays. The next highest day is Saturday, unlike the rest of the populations. Sundays are the day when the fewest number of casualties are recorded.

The month with the highest number of recorded child casualties is May, although the levels are very similar (within 10%) all the way through to October. The winter months show child casualties decreasing by around 25% from the peak in the summer months. One interesting point to note is that child pedestrian casualties are actually *lowest* in August. This could be due to fewer children being in the country at this time of year and is certainly worth of further investigation.

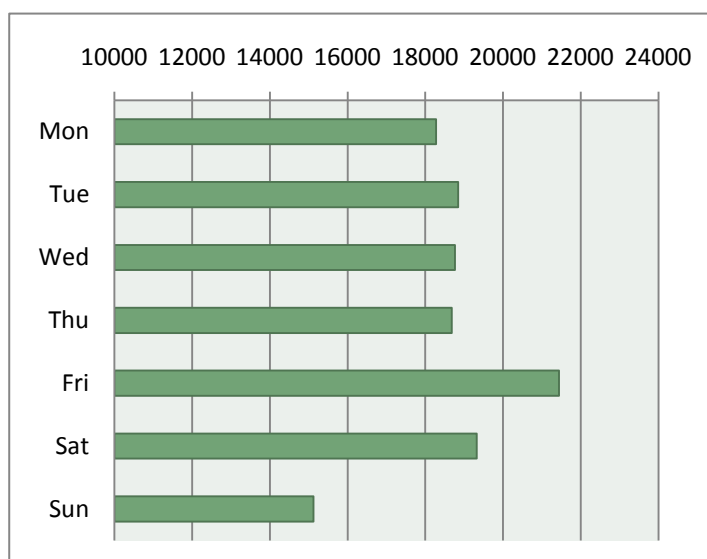


Figure 2. Casualties by day of the week

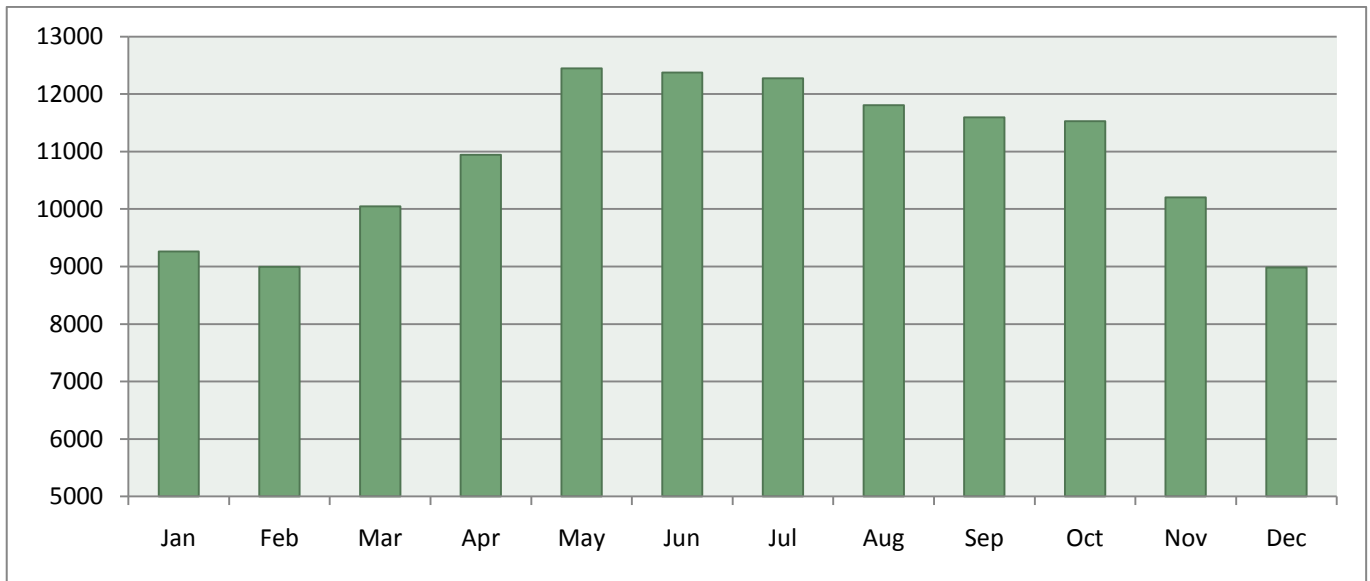


Figure 3. Casualties by month

Child Casualties by Road User Type

Now we can look at way in which children are injured on the roads. On the pie chart opposite you can clearly see that the highest risk areas are as pedestrians or passengers in a car. Riding a pedal cycle is the only other significant risk area.

It is possible to plot this information against the age of the child to show the changing trends with age. This is a particularly enlightening piece of analysis and clearly shows the ages at which road use risk changes. Between the ages of 4 and 10 (primary school age), the number of casualties gradually rises year-on-year and the recorded road user type hardly varies. Once the child is aged 11, there is a significant change with a huge jump in the number of pedestrian casualties and an growing rate of increase for cycle casualties. In-car casualties remain flat with no increase until the age of 14. Pedestrian casualties reach a peak at age 12 before decreasing until adulthood. Similarly cycle casualties level off at the age of 13 then gradually start to decrease.

The final trend seen is an increase in casualty rates on motorbikes and in cars from the age of 14 onwards. This trend increases rapidly in the late teens, peaking at age 16 for motorbikes and 18 for cars.

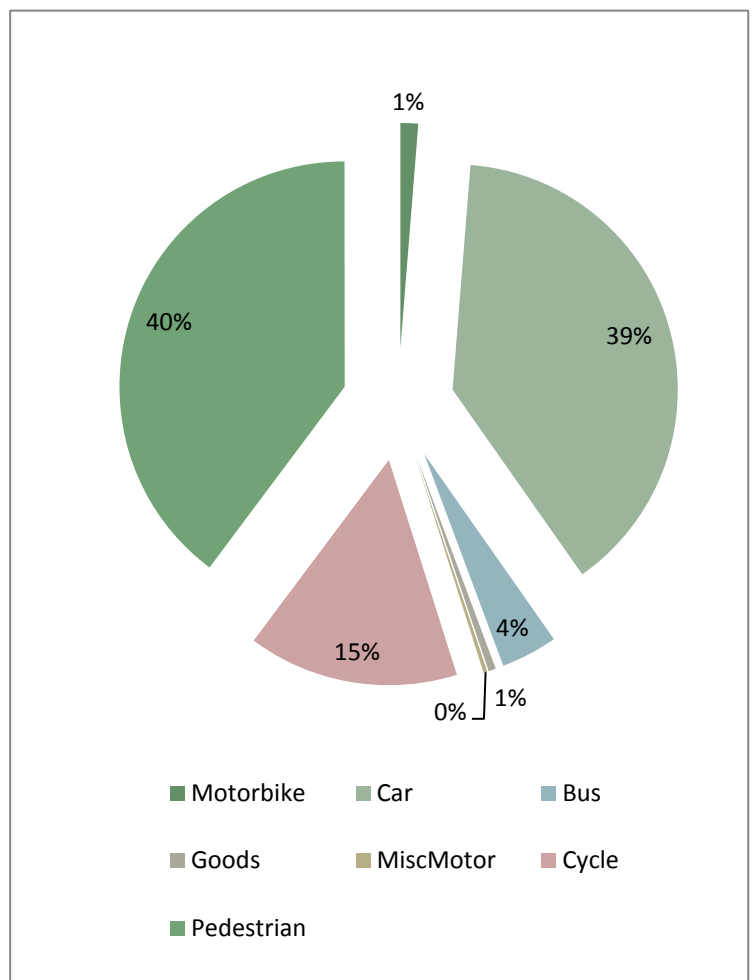


Figure 4. Casualties by road user type

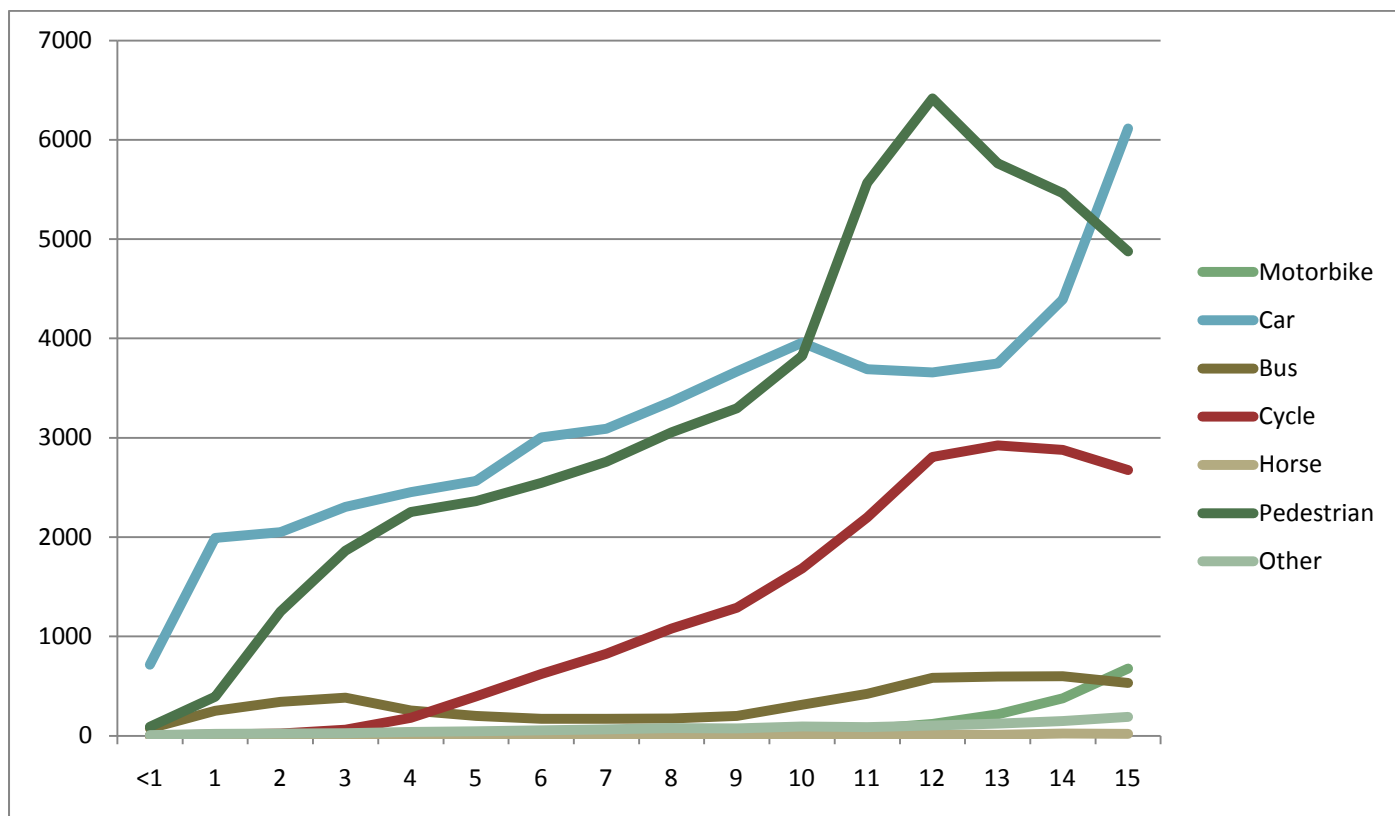


Figure 5. Casualties by age and road user type

Socio-demographic Classification of Child Casualties

MAST links recorded casualties to the *Experian MOSAIC* socio-demographic classification system using postcodes. This system covers the whole of the United Kingdom and is intended to provide an accurate and comprehensive view of citizens and their needs by describing them in terms of demographics, lifestyle, culture and behaviour. Mosaic classifies the community represented by each UK postcode into one of 11 groups and 61 types. MAST then provides indexed reports, which compare the Mosaic profiles to the underlying population.

It is therefore possible to look at the types of communities where child casualties come from, and see which of those communities are over-represented based on their populations. Figure 6 has been exported directly from MAST and show light-green bar representing the total number of casualties from each MOSAIC Group, and the thin, dark-green index bars to show over or under-representation based around and index value of 100. An index value of 100 means casualty rates are at the expected level, based on the national average. An index of 200 means double the national risk rate, and a value of 50 means half the annual risk.

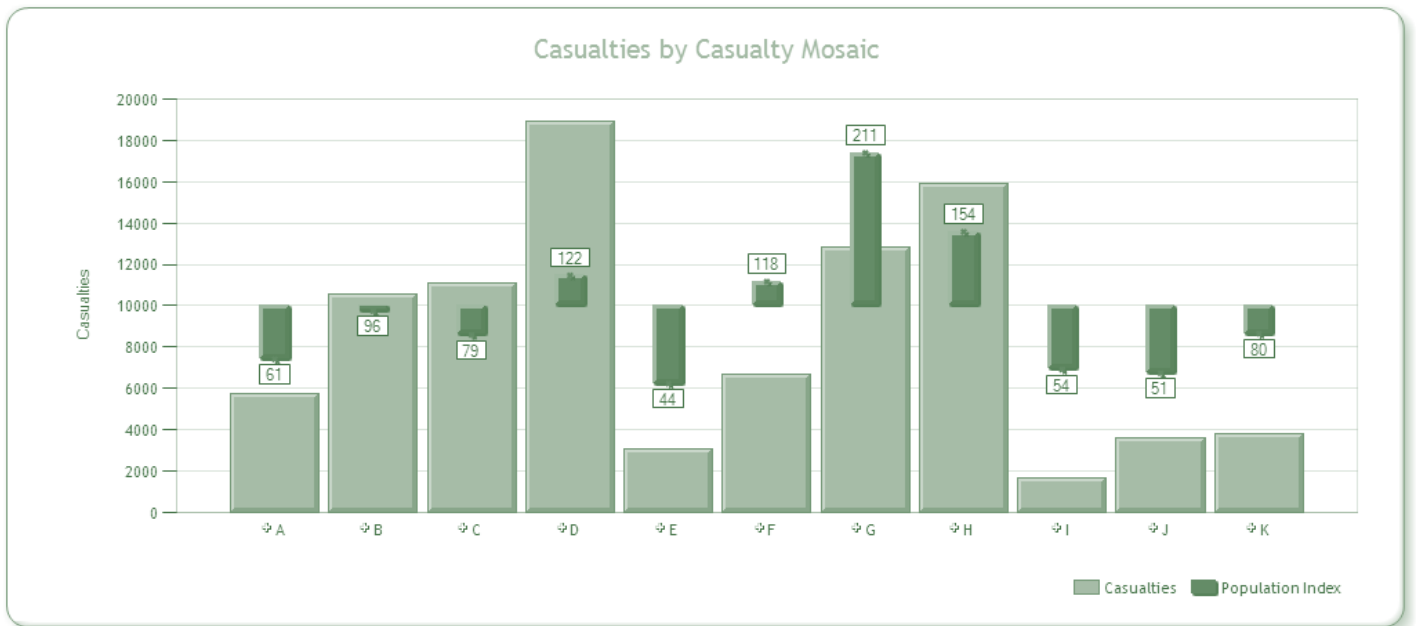


Figure 6. Casualties by MOSAIC Group

This analysis is not intended to explain which communities are represented by each group, but to highlight the over-represented groups. Although Group D has the highest number of casualties, its index value is only 122 (22% over-represented). Groups G and H however show elevated risk rates of between 54 and 111%. These risk rates increase even further when only pedestrian casualties are analysed. This clearly demonstrates where the problems lie for children in those communities. MAST Online users have full access to the classification system and can carry out more detailed analysis at a local authority level.

Group G is described by MOSAIC as, “Families on lower incomes who often live in large council estates where there is little owner-occupation”. Geographically they are found in most regions in the United Kingdom, with the exception of the South East and London. They are not inner-city communities, but are more commonly found in the outer suburbs of large provincial cities. These are some of the most deprived communities in United Kingdom and represent 6.52% of the population.

Further information about MOSAIC, the groups and types is available on the road safety analysis website.

Summary and Next Steps

Clearly this analysis provides a level of insight to the road safety profession that may not have been previously available. It also puts road risk into a community context at a national and local level to encourage local highway authorities to investigate their own local trends further and address the needs of communities that experience higher than average risk. Road Safety Analysis Limited will be publishing the raw data behind the analysis and seeking to work with professionals to find ways of addressing the areas of concern that the report raises.

There will undoubtedly be a need for further analysis to develop solutions that are right in each area; however, there are already tools available to provide further insight into local needs and also to match local authorities that might have similar presenting road safety issues and similar demographic profiles.

Table 1 - recorded resident child road casualty risk

Rank	Local Authority	Rate (one child in)
1	Preston City	206
2	Liverpool City	234
3	Barrow Borough	238
4	Blackpool	251
5	Wyre Borough	254
6	Manchester City	259
7	Blackburn with Darwen Borough	260
8	North East Lincolnshire	262
9	Knowsley Metropolitan Borough	265
10	Pendle Borough	271
11	Wansbeck District	275
12	South Tyneside	278
13	Blaenau Gwent County Borough	279
14	Bolton Metropolitan Borough	281
15	Oldham Metropolitan Borough	282
16	Hyndburn Borough	284
17	Boston Borough	290
18	Rochdale Metropolitan Borough	293
19	Kingston upon Hull City	293
20	Merthyr Tydfil County Borough	293
21	Mansfield District	295
22	Barnsley Metropolitan Borough	296
23	Copeland Borough	298
24	Hastings Borough	298
25	Denbighshire County	298
26	Wear Valley District	300
27	East Staffordshire Borough	302
28	Sunderland City	306
29	Rosendale Borough	307
30	Halton Borough	308
31	Scarborough Borough	309
32	Stoke on Trent City	310
33	Doncaster	312
34	Lincoln City	313
35	Tameside Metropolitan Borough	313
36	Lancaster City	313
37	Portsmouth City	315
38	Fenland District	315
39	Ceredigion County	317
40	Carlisle City	319
41	Bury Metropolitan Borough	319
42	Rotherham Metropolitan Borough	321
43	Ashfield District	321
44	South Holland District	322
45	Nottingham City	323
46	West Lancashire District	323

47	Chesterfield Borough	324
48	Bassetlaw District	324
49	Waveney District	325
50	St Helens Metropolitan Borough	326
51	Newcastle City	326
52	Burnley Borough	328
53	Wigan Metropolitan Borough	328
54	Dundee City	328
55	South Ribble Borough	328
56	Easington District	329
57	Gateshead	330
58	Birmingham City	332
59	Southampton City	333
60	Medway	334
61	North Lincolnshire	336
62	Sedgefield Borough	336
63	Peterborough City	339
64	West Dunbartonshire	339
65	Chorley Borough	339
66	Staffordshire Moorlands District	340
67	Darlington Borough	340
68	Sheffield City	340
69	Wirral Metropolitan Borough	340
70	Eastbourne Borough	340
71	Sefton Metropolitan Borough	340
72	Glasgow City	342
73	Derwentside District	342
74	Bradford Metropolitan Borough	344
75	Inverclyde	345
76	Berwick-upon-Tweed Borough	346
77	Wolverhampton City	347
78	Sandwell Metropolitan Borough	348
79	Erewash Borough	348
80	Kirklees	350
81	Thanet District	353
82	Leeds City	353
83	East Lindsey District	353
84	Bolsover District	354
85	Neath Port Talbot County Borough	355
86	West Somerset	357
87	Oadby and Wigston Borough	359
88	Salford City	360
89	Craven District	360
90	Rhondda Cynon Taff County Borough	361
91	Walsall	362
92	Richmondshire District	362
93	Leicester City	365
94	Tamworth Borough	367
95	Middlesbrough	367

96	Eden District	370
97	Swansea City and County	371
98	Castle Point Borough	372
99	Warrington Borough	374
100	Oswestry Borough	374
101	Wakefield	376
102	Calderdale	378
103	Bridgend County Borough	378
104	Brighton and Hove City	379
105	Shepway District	380
106	Flintshire County	381
107	Corby Borough	381
108	Torrington District	381
109	Plymouth City	383
110	North Devon	384
111	Nuneaton and Bedworth Borough	384
112	Crewe and Nantwich Borough	384
113	Fylde Borough	385
114	Redcar & Cleveland Borough	385
115	Dover District	386
116	Conwy County Borough	386
117	North East Derbyshire District	386
118	Norwich City	388
119	Ellesmere Port and Neston Borough	388
120	Amber Valley Borough	390
121	Derby City	390
122	Dudley Metropolitan Borough	392
123	Swale Borough	392
124	Exeter City	393
125	Allerdale Borough	393
126	Isle of Wight	393
127	West Lothian	394
128	Tendring District	395
129	Gosport Borough	395
130	High Peak Borough	396
131	Coventry City	397
132	Bournemouth Borough	397
133	Restormel Borough	397
134	Midlothian	398
135	Arun District	399
136	Havant Borough	399
137	Cannock Chase District	406
138	North Cornwall District	406
139	Carmarthenshire County	407
140	Angus	407
141	Great Yarmouth Borough	409
142	South Kesteven District	410
143	Stevenage Borough	410
144	North Warwickshire Borough	411

145	North Lanarkshire	411
146	Hambleton Distirct	414
147	Weymouth and Portland Borough	414
148	West Lindsey District	415
149	Vale Royal Borough	416
150	Rother District	417
151	Maidstone Borough	418
152	Christchurch Borough	419
153	Mole Valley District	419
154	Gedling Borough	419
155	Dumfries and Galloway	420
156	Stockton-on-Tees Borough	420
157	Hartlepool Borough	421
158	Bristol City	421
159	Watford Borough	422
160	Stockport Metropolitan Borough	423
161	South Bedfordshire District	423
162	Scottish Borders	424
163	South Lakeland District	427
164	Teesdale District	427
165	North Kesteven Distirct	428
166	Newark and Sherwood District	429
167	Adur District	429
168	Poole Borough	430
169	Edinburgh City	430
170	Castle Morpeth Borough	433
171	Worthing Borough	434
172	Trafford Metropolitan Borough	435
173	Rutland County	436
174	Durham City	439
175	West Dorset District	439
176	Reigate and Banstead Borough	440
177	Chester-le-Street District	440
178	South Somerset District	441
179	South Lanarkshire	441
180	Purbeck District	441
181	East Riding of Yorkshire	442
182	Greenwich London Borough	442
183	South Derbyshire Distirct	443
184	Ribble Valley Borough	443
185	Luton Borough	443
186	Barking and Dagenham London Borough	444
187	Canterbury City	445
188	Powys County	445
189	Blyth Valley Borough	446
190	Wrexham County Borough	448
191	Gloucester City	448
192	Thurrock	450
193	North Tyneside	451

194	Aylesbury Vale District	452
195	Wealden District	452
196	Harlow	453
197	Taunton Deane Borough	453
198	North West Leicestershire District	455
199	Milton Keynes	455
200	Stirling	455
201	Crawley Borough	457
202	Torbay	457
203	Gravesham Borough	458
204	Argyll and Bute	460
205	Pembrokeshire County	461
206	Surrey Heath Borough	462
207	Lewisham London Borough	462
208	Congleton Borough	464
209	Hillingdon London Borough	464
210	Southend-on-Sea Borough	464
211	Epping Forest District	464
212	Caerphilly County Borough	465
213	Newcastle-under-Lyme Borough	465
214	Basildon District	466
215	Sedgemoor District	466
216	Lichfield District	468
217	Penwith District	469
218	Slough Borough	470
219	Swindon	470
220	Waltham Forest London Borough	472
221	East Ayrshire	474
222	North Ayrshire	475
223	Eastleigh Borough	475
224	Stafford Borough	475
225	Broxbourne Borough	476
226	Derbyshire Dales District	477
227	Huntingdonshire District	477
228	North Somerset	478
229	Oxford City	480
230	Cherwell District	481
231	Shrewsbury and Atcham Borough	481
232	Rushmoor Borough	481
233	Braintree District	483
234	Woking Borough	484
235	Croydon London Borough	485
236	Cambridge City	485
237	Lewes District	485
238	Havering London Borough	486
239	Southwark London Borough	486
240	Hounslow London Borough	491
241	Spelthorne Borough	491
242	Guildford Borough	492

243	Kettering Borough	492
244	Bexley London Borough	492
245	Runnymede Borough	493
246	Redditch Borough	494
247	Clackmannanshire	495
248	East Dorset District	497
249	St. Edmundsbury Borough	497
250	Welwyn Hatfield Borough	498
251	Solihull Metropolitan Borough	500
251	Ryedale District	500
251	Falkirk	500
251	New Forest District	500
255	East Lothian	503
256	Babergh District	503
257	Three Rivers District	506
258	Breckland	507
259	Dacorum Borough	507
260	Herefordshire	508
261	Worcester City	509
262	Dartford Borough	511
263	Kerrier District	512
264	Gwynedd	512
265	Ipswich Borough	513
266	North Wiltshire District	513
267	Renfrewshire	513
268	King's Lynn & West Norfolk Borough	514
269	Colchester Borough	515
270	Tynedale	515
271	Ashford Borough	515
272	West Devon Borough	517
273	South Ayrshire	517
274	South Staffordshire	517
275	Tonbridge and Malling Borough	519
276	South Bucks District	520
277	Broxtowe Borough	520
278	East Northamptonshire	521
279	Salisbury District	522
280	Maldon District	522
281	Harrogate Borough	522
282	Telford and Wrekin	525
283	Chester City	526
284	Sevenoaks District	526
284	Tunbridge Wells Borough	526
286	Chichester District	528
287	Newham London Borough	529
288	South Shropshire District	530
288	Stratford-on-Avon District	530
290	Selby District	531
291	Suffolk Coastal District	531

292	Macclesfield Borough	531
293	Teignbridge District	532
294	Tandridge District	532
295	Wychavon District	533
296	Daventry District	534
297	Wyre Forest District	535
298	Mendip District	535
299	Cardiff	535
300	Forest Heath District	538
301	Winchester City	538
302	Northampton Borough	538
303	Test Valley Borough	538
304	Lambeth London Borough	539
305	Bedford	542
306	Bath and North East Somerset	545
307	Uttlesford District	546
308	Blaby District	547
309	Cotswold District	548
310	East Dunbartonshire	549
311	Malvern Hills District	550
312	Hertsmere Borough	550
313	Broadland District	550
314	Caradon District	550
315	East Devon District	552
316	Bridgnorth District	553
316	Wycombe District	553
318	Fareham Borough	554
319	Rugby Borough	555
320	Warwick District	555
321	Wellingborough Borough	556
322	Chelmsford Borough	557
323	Highland	559
324	Sutton London Borough	560
325	North Norfolk District	563
326	Perth and Kinross	563
327	North Shropshire District	565
328	Hackney London Borough	567
329	Bromley London Borough	569
330	Chiltern District	569
331	Forest of Dean District	570
332	Rushcliffe Borough	570
333	Mid Sussex District	571
334	Isle of Anglesey County	574
335	Harborough District	574
336	South Gloucestershire	575
337	Alnwick District	576
338	Tewkesbury Borough	577
339	Mid Beds District	579
340	West Wiltshire District	581

341	Orkney Islands	583
342	Mid Devon District	585
343	East Hampshire District	586
344	Rochford District	587
345	North Hertfordshire District	589
346	York City	589
347	Haringey London Borough	591
348	South Norfolk	591
349	North Dorset District	592
350	South Hams District	594
351	Moray	599
352	Brentwood Borough	601
353	Vale of Glamorgan	601
354	Fife	604
355	Horsham District	606
356	Cheltenham Borough	607
357	Charnwood Borough	607
358	Redbridge London Borough	607
359	Reading Borough	609
360	Carrick District	611
361	Melton Borough	616
362	Hinckley & Bosworth Borough	617
363	Aberdeen City	620
364	East Renfrewshire	622
365	Western Isles	625
366	Kennet District	628
367	South Cambridgeshire District	641
368	St. Albans District	643
369	Hammersmith and Fulham London Borough	645
370	Newport City	652
371	Mid Suffolk District	653
372	Vale of White Horse District	654
373	Wokingham Borough	658
374	Stroud District	660
375	Brent London Borough	662
376	West Oxfordshire District	664
377	Enfield London Borough	665
378	Waverley Borough	670
379	Harrow London Borough	683
380	Torfaen County Borough	685
381	Tower Hamlets London Borough	686
382	South Northamptonshire District	687
383	Bracknell Forest	688
384	Bromsgrove District	690
385	Wandsworth London Borough	691
386	Barnet London Borough	696
387	Ealing London Borough	696
388	Epsom and Ewell Borough	700
389	East Herts	702

390	Merton London Borough	706
391	Aberdeenshire	710
392	Basingstoke and Deane Borough	717
393	Windsor and Maidenhead Royal Borough	718
394	East Cambridgeshire District	727
395	Monmouthshire County	741
396	Islington London Borough	763
397	Hart District	773
398	West Berkshire	789
399	South Oxfordshire District	800
400	Kingston upon Thames London Borough	810
401	Elmbridge Borough	846
402	City of London	875
403	Westminster London Borough	892
404	Camden London Borough	914
405	Shetland Islands	1,024
406	Richmond upon Thames London Borough	1,038
407	Kensington and Chelsea London Borough	1,158
408	Isles of Scilly	99,999,999

About Road Safety Analysis

Road Safety Analysis (RSA) is a not-for-profit company that exists to provide data solutions to the public and road safety profession. Established earlier this year, it supports MAST Online a powerful yet user-friendly tool for analysing road casualty trends and examining the impact of residence, social and demographic factors on casualty rates. In June RSA also helped the Department for Transport to release an open access website that allows members of the public to look at road casualty data and carry out some analysis of their own. For more information visit www.roadsafetyanalysis.org.uk or to access publicly available road casualty reports visit www.roadcasualtiesonline.org.uk

For more information please contact info@roadsafetyanalysis.org



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