**S224J**

**Effects of Road Engineering Modifications On Child Pedestrian Skills Development**

**Funding:** National (United Kingdom)
**Duration:** Mar 2000 - Mar 2004
**Status:** Complete with results

**Background & policy context:**

It is well established that traffic calming significantly reduces casualties, particularly amongst vulnerable groups such as child pedestrians and cyclists. However, the effects of such environmental engineering measures on the development of safety skills, and their appropriate deployment are not well understood. Such measures may impact upon actual and perceived safety of an area as well as the development of road safety skills, and activity levels with perhaps children in traffic calmed areas being less attuned to hazardous road conditions than children travelling in other areas. The aim of the project was to look for any measurable differences in the skills of children travelling in different environments, which may indicate a need for additional training.

**Objectives:**

The objectives of the project were:

1. To compare the road behaviour of children who have grown up in traffic calmed areas with those who have grown up in untreated areas;
2. To assess whether the adaptations and cognitive rules developed in traffic calmed environments are sufficient to protect children in more dangerous environments;
3. To try and relate any differences in child behaviour to the differences in road design and the differences in the behaviour of other road users in these areas.

**Methodology:**

The project was conducted in two phases. The first phase of the project reviewed the relevant literature and re-examined existing data on child pedestrian exposure in calmed and un-calmed areas, and gathered information for the design and implementation of an empirical study. The empirical study, which formed the second phase, compared the pedestrian skills and exposure of children growing up in traffic calmed area to those of children growing up in a nearby-untreated area. Pupils in schools local to each area were tested and their parents/guardians interviewed.

**Parent Programmes:**

DfT Road Safety - Department for Transport: Road Safety Research Programme

**Institute type:** Public institution
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**Funding type:** Public (national/regional/local)

**Partners:**

- Department for Transport
- TRL Limited (contractor)

**Organisation:** Department for Transport
**Address:** Road Safety Research, Zone 2/09, Great Minster House, 76 Marsham Street
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Key Results:

The literature review found no direct research on the development of child pedestrian skills in traffic calmed areas. Some indirect evidence suggested that the type of road traffic environment may influence factors affecting the development of pedestrian skills, in particular the interaction between the perceived safety of an environment, the type of safety advice given to children by adults (which itself may be dependent on the environment), and the level of independent exposure afforded to children.

The literature also suggests that modified sites may not necessarily be perceived as safer than untreated sites. Following the review two tests were selected: a 'visual timing and gap selection' test and a 'safe place crossing location' test. The 'visual timing and gap selection' test was most appropriate since children travelling in calmed areas where speeds are well regulated may be less skilled in coping with fast moving traffic on un-calmed roads.

A computer (PC) version of the visual timing and gap selection test was developed for children aged 7-9 years old and validated against road side performance as part of this project. PC based tests of such skills are preferred because of the ability to standardise the tasks for the children and to make testing of children easier. For the main study all children undertook the PC test and a further sub sample undertook additional road side tests. Children aged 7-9 were selected since learning starts to increase rapidly at this age and most traffic experience has been gained close to home/school. The PC visual timing and gap selection test detected no difference in skills between those pupils from the calmed area and those from the control area. There were some small improvements in skills from Year 3 to Year 4 pupils, and those of higher rated ability scored better compared with those rated as lower ability, suggesting that the test was able to identify skills differences where they existed.

The small roadside visual and gap acceptance tests did detect some statistically significant differences in the skills of children from the calmed and control area – the children from calmed areas appeared to be more skilful. However, these differences could equally be attributable to differences (such as mean age, academic ability) in the two samples of children rather that the type of area they were largely exposed to. The safe crossing location test was scored against two factors – the safety of crossing locations

Policy implications

The study has shown little difference in the road safety skills of those living in a traffic calmed area compared to those living in an un-treated area. It is likely that individual differences in pupils' road safety skills due to, for example, the attitudes of parents towards safety, and differences between schools are greater than those resulting from living in a calmed or un-calmed environment.

STRIA Roadmaps: Other specified
Transport mode: Road transport
Transport sectors: Passenger transport, Freight transport
Decarbonisation, Societal/Economic issues,
Transport policies: Safety/Security
Geo-spatial type: Other