Traffic-related injuries in children are a serious problem in many countries. In Singapore, road safety education for schoolchildren, combined with other programmes aimed at motorists, cyclists and motorcyclists, is helping to diminish their incidence.

Injuries are the leading cause of childhood death and disability after the first year of life. In Singapore they account for 6% of deaths in children aged under 15 years (1).

Much attention has been focused on the protection of occupants of motor vehicles by restraint systems. The prevention of injuries to pedestrians, however, depends primarily on educational programmes directed at schoolchildren. Perhaps the single most important barrier to progress in the control of injuries is the perception that they are chance occurrences that cannot be predicted or prevented. The reality is different. Children are clearly at risk for particular types of injury and can be targeted for prevention strategies.

There are several possible kinds of intervention: teaching young children to become safer pedestrians, modifying drivers’ behaviour, and keeping children away from vehicles. A study in Alabama, USA, in which 18,000 children aged six and seven years took part, indicated that an educational programme on basic safety was responsible for a substantial decline in injuries to pedestrians caused by motor vehicles (2).

Education programmes on road safety for children aged four to eight years should contain the following elements (3).

- They should focus on frequently occurring dangerous situations, for instance that of a person emerging on to a road from between parked cars.
- They should aim at skill acquisition rather than knowledge acquisition. It is not until the age of nine or ten years that skills and knowledge can effectively complement one another.
- They should achieve realism; classroom models, for example, are relatively ineffective.
- They should teach children to behave correctly even if their attention is distracted, for example by friends or an ice-cream van.
- Positive reinforcement should be used.
- Parental participation is vital.

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Singapore’s programme

In Singapore a road safety education programme for schoolchildren aged 7–12 years is conducted in a road safety park on a permanent four-hectare site. There is a miniature road circuit with traffic signs simulating conditions on normal roads.

The traffic police, with the support of the Ministry of Education, organize training sessions. About 500 schoolchildren, accompanied by teachers, are trained daily. At the beginning of each session the children are reminded about the basic principles of road safety, preliminary instruction having been given at school. They are then tested to determine whether they understand what they have been taught.

A traffic game is played in which the students take on the roles of pedestrian, motorists and cyclists. As motorists they are given go-karts, as cyclists they are given bicycles, and as pedestrians they walk around the park and apply the road safety advice that has been given. Marshals record errors on cards carried by the students. At the end of the game each student’s overall performance is graded and mistakes are pointed out.

The traffic game makes it possible to impart road safety drill. The aim is to enable children to identify traffic hazards under simulated conditions. The children are taught to raise their hands at pedestrian crossings so that they are readily visible to motorists, and to cross only when vehicles have stopped.

Since 1981 more than 600,000 children have been trained in this way. When they go to secondary schools they are invited to act as marshals in the road safety park. Some 11–12-year-old are selected to be school-crossing monitors, who are further trained by the traffic police. In each of the 193 primary schools in this scheme about 50 children are monitors. The monitors report the names of students who violate traffic regulations to the school principals or the teachers, who, in most cases, talk to the students concerned in the presence of their parents about ways of improving their road safety practices.

The traffic police also train senior citizens in the park and give talks there on road safety to cyclists, some of whom have committed traffic offences. On Sundays the park is open to the public, including private organizations, and parents can use the facilities to train their children.

Other safety measures in Singapore include drink-driving checks, speed checks, campaigns against drunken driving, education programmes for motorists, cyclists and motorcyclists, advertisements in the mass media and on posters, and road safety exhibitions. All of these measures have undoubtedly helped to reduce injuries in children.

Strategies for the prevention of injury in children can be categorized as active or passive, depending on the level of ongoing participation of the children and their
parents. In the case of motor vehicle accidents, the installation of safety seats and safety locks is in the former category, while the redesigning of motor cars and roads is in the latter. With regard to accidents to pedestrians, active strategy means, for example, teaching children about road safety and the wearing of reflectors. Children aged under eight years now have to be strapped in with seat belts or harnesses when riding in the front or rear passenger seats of cars.

Two schemes were introduced by the traffic police in September 1991 and July 1992. In the former, motorists were made aware that they were entering a school zone (200–350 m stretch of road) with road humps to reduce speeds and improved pedestrian crossings. In the latter, the pupil safety scheme, police officers guided the children on how to cross roads safely and, while ensuring that traffic was orderly, took action against motorists who obstructed or failed to give way to pedestrians.

Casualties decline

Since 1980, the year before education for children began in the road safety park, casualty rates in the slightly injured and seriously injured categories have fallen dramatically among child pedestrians (4) (see figure). The rates in 1980 were 95 per 100,000 child pedestrians and 18 per 100,000 respectively; in 1989 the corresponding values were 45 and 6 per 100,000. The fatal casualty rate remained fairly constant at a very low level. Clearly, the measures adopted in Singapore, and particularly the programme of education in road safety, are significantly reducing the numbers of injuries sustained by children.

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