American Academy of Pediatrics
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Policy Statement—Pedestrian Safety

abstract

Each year, approximately 900 pediatric pedestrians younger than 19 years are killed. In addition, 51 000 children are injured as pedestrians, and 5300 of them are hospitalized because of their injuries. Parents should be warned that young children often do not have the cognitive, perceptual, and behavioral abilities to negotiate traffic independently. Parents should also be informed about the danger of vehicle back-over injuries to toddlers playing in driveways. Because posttraumatic stress syndrome commonly follows even minor pedestrian injury, pediatricians should screen and refer for this condition as necessary. The American Academy of Pediatrics supports community- and school-based strategies that minimize a child's exposure to traffic, especially to high-speed, high-volume traffic. Furthermore, the American Academy of Pediatrics supports governmental and industry action that would lead to improvements in vehicle design, driver manuals, driver education, and data collection for the purpose of reducing pediatric pedestrian injury. *Pediatrics* 2009;124:802–812

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KEY WORDS
pedestrian, traffic, safety, back-overs, safe routes to school

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INTRODUCTION

Morbidity and Mortality Statistics

According to the Web-Based Injury Statistics Query and Reporting System (WISQARS) of the Centers for Disease Control and Prevention,[1] approximately 6000 pedestrian deaths occurred in the United States in 2005. Of this total, 876 (14%) of the victims were 19 years or younger. In 2007, estimates from the National Electronic Injury Surveillance System (NEISS), which uses a sampling of hospital emergency department data, indicate that approximately 51 000 individuals 19 years or younger were injured as pedestrians, and 5300 of them were hospitalized for their injuries.[1] Although pedestrian fatality rates are actually higher in adults, children in the 10- to 15-year-old and 15- to 19-year-old groups have had the highest rates of nonfatal injuries in recent years (see Table 1).

According to the National Highway Traffic Safety Administration (NHTSA), in the 10-year period from 1997 to 2007, the number of pedestrian fatalities decreased by 49% in children 14 years and younger, with the greatest percent drop (57%) in the 4- to 7-year age group.[2] It is most likely that much of this decrease is attributable to less walking and lower exposure to traffic. The contribution from educational programs, increased law enforcement, and/or environmental modifications is not clear.

One of the goals of *Healthy People 2010* is to substantially increase the proportion of trips less than 1 mile being made by walking. In 1969, 42%

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TABLE 1 2005 Pedestrian Death and 2007 Injury Rates per 100 000 Population

Age, y	Deaths, *n*	Rate	Injured, *n*	Rate
0–4	284	1.40	5274	25.45
5–9	130	0.66	8595	43.30
10–14	152	0.73	13716	67.52
15–19	310	1.47	23518	109.52
20–55	3307	2.19	91850	61.79
≥56	1884	2.97	28924	40.97

The number of pedestrian fatalities and injuries that are published by the NHTSA are somewhat lower than those found in the WISQARS database. Rather than using emergency room data, NHTSA information comes primarily from police traffic reports and, therefore, may not include driveway and parking lot crashes that frequently injure and kill toddlers. The NHTSA data do, however, contain more information about the cause and nature of the crash event.[67]

Data are from Centers for Disease Control and Prevention WISQARS.

of all schoolchildren and 87% of those living within 1 mile of school walked or bicycled to and from school.[3] More recently, only approximately 16% of children walk or bike to school, and even 37% of those who live within 1 mile are driven to school.[4,5] This situation is especially problematic considering the nation's major health challenge with pediatric obesity and the need for increased physical activity.[6]

Demographics

In addition to age, several factors increase the risk of child pedestrian injury. As with adults, approximately 60% to 70% of children killed and injured as pedestrians are male. Black and American Indian/Alaska Native children have higher rates of pedestrian death and injury,[1] in great part because of the environments in which poor children live.[7] The worst time of day for child (16 years and younger) pedestrian injury is between 3 and 7 PM, during which time 36% of fatalities occur.[8] A disproportionately high number of deaths (40%) occur on the weekend, but this was not found with nonfatal injuries.[9] As would be expected, pedestrian injury is more common when children are outside playing in the spring and summer.[10] The vast majority of pedestrian crashes actually occur under optimal driving conditions in full daylight, when the road is dry, and in the absence of precipitation.[11]

Nature of Injuries Sustained

Although most pediatric pedestrian injuries are minor, approximately 20% of the injuries score in the "serious-severe" category and roughly 10% are rated "critical-unsurvivable" on the Abbreviated Injury Scale or the Injury Severity Score.[12–14] In cases in which the child sustains an injury that is at least "moderate" in severity, the head and face are most frequently involved. Except for the youngest children, when there is at least 1 "serious" injury, the lower extremity is most often hurt.[12,15] A questionnaire study designed to study long-term outcomes of pediatric pedestrian crashes found impairment of cerebral function in 1.8% and disability related to the lower extremity in 2.8% of the children.[16]

In addition to physical injuries, childhood victims of pedestrian-automobile crashes and their parents very often have psychological sequelae. Both acute stress disorder and/or posttraumatic stress disorder are seen commonly (approximately 30%) in pediatric pedestrian injury cases.[17–19] Children may develop reexperiencing, avoidance, hyperarousal, and/or dissociation (emotional numbing).[19] Unfortunately, most parents do not seek professional help for their child's psychological symptoms.[19] At 6-month follow-up, in addition to stress disorders, many children who had serious physical injuries were found to have continuing difficulties with problem solving, memory, and social interaction.[20]

THE CHILD

Development

Young children have the motor skills to access roadways, yet they do not have the cognitive, perceptual, and behavioral abilities to negotiate traffic. Children move quickly and impulsively, which places them at high risk of pedestrian injury.[7,21,22] Furthermore, children have been shown to have difficulty seeing cars in their peripheral vision, localizing sounds, comprehending traffic, and understanding the meaning of road signs.[23] Children have difficulty scanning for traffic, judging vehicle distance and speed, anticipating driver behavior, and determining whether there is adequate time to cross the street safely.[21] Observations of children walking to school showed that they often neglect to look for traffic or stop at the curb before entering the street.[24] Normal developmental characteristics, such as magical thinking, egocentricity, distractibility, and impulsivity, increase pedestrian risk for children.[21,25] A high percentage of pediatric pedestrian crashes result from the child not paying attention to the traffic and road environment.[26]

In a study designed to compare pedestrian skills of children aged 4 to 5, 7 to 8, and 10 to 11 years, there were clear improvements with increasing age.[27] Compared with the 7- to 8-year-olds, the children in the 10- to 11-year-old group were significantly better at (1) identifying safe places to cross the road, (2) detecting traffic and road dangers, and (3) coordinating information from multiple parts of the traffic environment. Development of pedestrian skills was highly variable such that a few of the 5-year-olds did better than some 11-year-olds on the overall pedestrian skills score. Subjects who scored better seemed to use more effective visual search strategies (where, how often, and how fast they checked the road before crossing). Although some of the mature search strategies were occurring by 7 to 8 years of age, "there were continuing levels of sophistication unattained by

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many of the oldest children (10–11 years of age) but present among the adult sample." In a study of attentional skills of 4- to 10-year-old children, older age was associated with better ability to appropriately switch focus to important pedestrian tasks.[28] This ability, which correlated with more awareness of traffic and better observed pedestrian behavior, continued to improve through the entire 5- to 9-year age range.

Unfortunately, many parents are not aware of these developmental limitations and overestimate their child's abilities to handle the traffic environment as a pedestrian.[29,30] In 1 study, one third of parents allowed kindergarten-aged children to cross residential streets alone and first-grade children to walk to school unsupervised.[31]

Child and Family Education

No randomized clinical trial has demonstrated that an educational intervention can decrease pediatric pedestrian injury rates. Systematic reviews of traffic skills-training programs have demonstrated improvements in attitudes, knowledge, and observed street-crossing behaviors.[32–34] A variety of educational programs aimed at school-aged children, including classroom sessions and individual instruction, use of audiovisual materials, training and practice in real and model traffic situations, behavior-modification techniques, and virtual reality computer simulations, have been shown to provide modest benefit. In a study in which an educational program was a component of a broad community campaign that included parent education, legislative changes, construction of separate pedestrian pathways, lowering of speed limits, and rigorous police enforcement measures, the rate of child pedestrian injuries dropped significantly.[35] There is evidence that involving parents as trainers or role models may add to the success of an educational program for child pedestrians.[36]

Because educational programs alone rarely result in safe pedestrian behaviors, supervision by parents or other adults is critically important. Unfortunately, in addition to overestimating childhood street-crossing abilities, parents often lack basic knowledge about pedestrian injury and do not adequately teach children about road safety.[37] Although it is reasonable for pediatricians to counsel parents regarding the risk of pedestrian injury in the context of child development and the need for supervision, no published randomized clinical trial has evaluated an office-based educational intervention.[38]

THE VEHICLE

Vehicle Speed

Vehicle speed is a strong risk factor for pedestrian injuries and is associated with greater injury severity.[13] Pedestrians who are hit by a car traveling 40 mph have a 15% chance of survival, but 85% survive when hit by a car moving at 20 mph. Because a faster-moving vehicle has a longer braking distance, impact with a pedestrian is more likely. Although several factors, such as driver reaction time, vehicle weight, brake quality, and road-surface conditions, play a role, the stopping distance for a vehicle traveling at 30 mph is considerably greater than that of a car traveling at 20 mph (197 vs 112 ft, respectively).[39] In residential neighborhoods, an average vehicle speed of 30 mph, compared with 20 mph, was associated with more than a sevenfold greater risk of children being hospitalized for pedestrian injuries.[40]

Vehicle Characteristics

Overall, the risk of pedestrian fatality is 18% to 29% higher with elevated-body vehicles (sport utility vehicles, pickup trucks, vans) than with passenger cars. Sport utility vehicles are especially dangerous for children. When children in the 4- to 7- and 8- to 15-year age groups were struck by an SUV, the relative risk of death was 87% and 46% higher respectively, than if the vehicle had been a passenger car.[41] Sport utility vehicles and pickup trucks are also more likely to cause severe injuries to children than are passenger cars.[42] When hit by an elevated vehicle, children are often thrown forward or knocked to the ground and run over instead of rolling up onto the vehicle's hood as an adult would do. This may explain why, compared with adults, children are at greater risk of death when hit by an elevated vehicle.[41,43]

Vehicle Modifications

The movements of a victim struck by a motor vehicle depend on the pedestrian's size and weight and the shape and structure of the car's front end. When a car hits a 6-year-old child, initial impact is usually with the upper leg, pelvis, and torso, followed by contact of the head with the front portion of the hood.[44] Injury severity generally is more related to these initial impacts than from contacts with the ground.[45] Modifications to automobiles, such as bumpers that are lower and more compliant, hoods that are more energy absorbent, and external windshield airbags can add to pedestrian protection.[45,46] How beneficial automobile structural modifications will be to children (who have different crash biomechanics than adults do) still requires study. Since 2005, new cars with structural modifications sold in Europe are required to pass various pedestrian safety crash tests, but no such testing is currently required in the United States.

Some automobile modifications have been developed to deal specifically with the blind spot behind the car and the problem of nontraffic back-over

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pedestrian injuries. One study showed that young children do not respond consistently to back-up warning devices.[47] Back-up sensor alarms to warn drivers of objects behind the car are now available, but their shallow, narrow detection zones make prevention of pedestrian back-overs unlikely, because drivers cannot react fast enough at the speeds involved in such collisions.[48] Similarly, rear-window wide-angle lenses and auxiliary mirrors do not provide adequate visualization of the entire blind spot.[49] The combination of a video camera and a sensor alarm provides the best blind-spot coverage, but the high cost of such a system may be problematic.[49]

THE DRIVER

Driver Characteristics

Driver characteristics also contribute to child pedestrian injuries. Male drivers, drivers younger than 40 years, and those with a record of multiple driving infractions and suspended or revoked licenses are more likely to be involved in a collision with a child pedestrian.[50,51] Two studies performed by the National Safe Kids campaign show that large numbers of drivers speed and fail to stop at stop signs in school zones.[52,53] Information from the Pedestrian and Bicycle Crash Analysis Tool database from North Carolina showed that approximately 2% of the pediatric (15 years and younger) pedestrian crashes that occurred from 2000 to 2004 involved a driver who had been drinking alcohol.[54] One 1970s study of drivers involved in fatal collisions with pedestrians showed that even the experience of hitting and killing a pedestrian did not change the frequency of speeding convictions.[55] Because children are smaller than adults, drivers often falsely perceive that children are further away than they actually are. The result is that drivers misjudge time-to-impact and make inadequate speed adjustments in the presence of children.[56,57]

Driver Education and Enforcement

Although pedestrian advocates recommend driver-education programs to remedy dangerous driving, there is little research regarding interventions aimed at improving driver knowledge, attitudes, or skills to avoid pedestrian crashes. Furthermore, a study that looked at state driver's license manuals showed that most of these publications had no information about common locations for pedestrian-vehicle conflicts, automobile movements that are most hazardous for pedestrians, safest ways to conduct turns, or requirements for yielding to pedestrians at stop signs and intersections.[58] One 4-year program that combined a media campaign with strong police enforcement of crosswalk laws did not result in drivers becoming more willing to stop for pedestrians.[59]

ENVIRONMENT

Neighborhood

Children who come from low-income families tend to live in dense, low-income, urban residential neighborhoods where they are at much higher risk of sustaining a pedestrian injury.[40,60–65] Commonly, there are inadequate play areas in these neighborhoods, with children playing in and around streets in the afternoon and evening hours. The increased traffic, faster average speed, and number of parked cars along the curb add to the risk of pedestrian injury in these neighborhoods.[60,64,66] Parked cars along a residential street obscure visibility for both drivers and pedestrians, especially children.[40,66] In contrast to the crowded inner city, studies of American Indian/Alaska Native populations living in rural areas have identified the lack of traffic-control devices, poor lighting, and alcohol (driver and pedestrian) as important risk factors in pedestrian injury.[67]

Location of Event: Street Traffic

Children are most likely to be struck by a motor vehicle in an urban area on a residential street close to their home.[68] The most common type of pediatric crash is the pedestrian "dart-out" or "dash" in which a child walks or runs into the road, either at midblock or at an intersection, often from a position out of view of the motorist. This type of crash accounts for 43% of crashes that involve 5- to 9-year-olds, 30% of crashes that involve 10- to 15-year-olds, and 26% of crashes that involve children younger than 5 years.[69] In 2005, 82% of the pediatric pedestrian deaths occurred at nonintersection locations.[2] A study of 139 urban children who were struck by automobiles found that 29% were playing in or near the street at the time of the crash, and 71% were walking to a specific destination.[70]

Nontraffic Injuries (Back-Overs)

Although only 2% of all pedestrian fatalities are attributable to impact with the rear of a backing vehicle,[71] 14% of toddler pedestrian deaths in 2002 resulted from such non–traffic-related back-overs.[9] One study found that 57% of pedestrian injuries to children 2 years and younger resulted from a vehicle in reverse.[72] The typical event involves a vehicle backing out of a driveway driven by a family member who is unaware of an unsupervised child playing behind the car. The child's short height makes it difficult for the driver to see him or her, especially from an elevated vehicle (van, sport utility vehicle, or pickup truck). Toddlers do not perceive the hazard, and frequently the car rolls over (rather than strikes) the child, resulting in severe or fatal injury. It is estimated that each year, these back-over events injure approximately 2500 children younger than 14 years and that 48% of these children are 1 to 4 years old.[73] In addition to driveways, many

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rear-impact crashes that involve pediatric pedestrians occur in parking lots.[69,72,74]

The Safe Kids Worldwide "Spot the Tot" program[75] advises parents to (1) hold children's hands in driveways, parking lots, and on sidewalks, (2) when driving, look for children at all times, and (3) walk all the way around the parked vehicle to check for kids, toys, and pets before entering the car and starting the motor. As previously mentioned, automobile modifications to prevent back-overs are available, but their efficacy has not yet been tested adequately.

Traffic Calming

Child pedestrian injury has been shown to be much less common in neighborhoods with a large number of streets with low speed limits.[76] In addition to lower speed limits, other speed-reduction street modifications include speed bumps, curved and narrow traffic lanes, traffic circles (instead of intersections), intersection curb extensions, and trees planted along curbs (to increase the driver's sense of speed). Methods designed to separate pedestrians from cars by either time or space include wide sidewalks, fences and barriers to prevent mid-block pedestrian crossing, raised medians/refuge islands (allow 2-step crossing of wide street), overpasses and underpasses, traffic signals exclusively for pedestrians (all traffic stopped simultaneously), and restrictions to keep traffic low in residential areas. These environmental changes that result in slower traffic and lower volumes of traffic (known as "traffic calming") can be effective.[77–82] A meta-analysis of 33 studies showed that injury-causing crashes decreased by approximately 15% (25% on residential streets, 10% on main roads) with the institution of various urban traffic-calming methods.[83]

Playgrounds

Keeping children off streets and away from traffic can be an effective method of reducing pediatric pedestrian injury. This was demonstrated by construction and renovation of playgrounds in Harlem, New York, where the number of pediatric pedestrian injuries decreased by 45% over a 7-year period.[84]

Walkability Checklists

The Partnership for a Walkable America (Centers for Disease Control and Prevention, National Highway Traffic Safety Administration, Federal Highway Administration, Institute of Transportation Engineers, Pedestrian and Bicycle Information Center, and the Robert Wood Johnson Foundation) advises the use of a "walkability checklist," available on the Internet,[85] to score the walkability of a community and identify the safest pedestrian routes for children. For each type of pedestrian problem, the checklist outlines specific strategies to help individuals and community groups who want to create safe walking routes for children. Formal evaluation of the ability of such checklists to decrease pediatric pedestrian injury is lacking.

School Trip Safety

It seems that the number of children struck while walking to or from school may actually be quite small (8%–15% of crashes that involve children).[70,86] Between 1994 and 2004, incidents that involved school buses were responsible for the deaths of approximately 11 school-aged pedestrians annually.[87] Surveys of parents have found that the major barriers that prevent children from walking to school are distance (62%), traffic dangers (30%), weather (19%), and crime (12%).[73]

The use of qualified, well-trained adult crossing guards is an effective method to help children cross streets safely.[88] According to Federal Highway Administration regulations, these individuals should wear high-visibility reflective apparel and should use a standard-sized, octagonal shaped "stop" paddle to control traffic.[89] Flashing speed limit signs, fluorescent school-zone signs, specially marked crosswalks, and strict police enforcement of speed limits and stop signs also are helpful.[90] It is recommended that drop-off and pick-up zones for parents driving their children to school be clearly marked and placed far from child pedestrians and school bus drop-off areas (www.walkinginfo.org).

The "Walking School Bus," a program supported by the Partnership for a Walkable America, fosters groups of children walking to school together with 1 or more adults. The "bus" may have meeting points, a timetable, and a regular rotation of trained volunteers or be as simple as 2 families taking turns walking their children to school.[91]

Many organizations and programs, such as Safe Routes to School, Kids Walk, and Walk to School Day have information available to help parents identify safe walking routes and teach their children pedestrian skills.[92] Significant federal funding has recently been allocated to Safe Routes to School to help states develop programs and infrastructure to encourage children to walk to school in a safe environment. Some concern has been voiced that low-income communities, where pedestrian rates are highest, do not always have the resources to compete for this funding.[93]

Low-Light Conditions

Although crashes that involve adult pedestrians often occur in low-light conditions, darkness is less often a factor for pediatric pedestrians who do not walk alone at night often. Reflective clothing has the ability to make pedestrians visible to drivers at considerably greater

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distances; however, there are inadequate data to show that such clothing actually decreases collisions and injuries.[94] Enhanced illumination of crosswalks[90] and extending daylight savings time throughout the year[95,96] may have some significant benefit, but pediatric-specific data are not available.

RECOMMENDATIONS

To create safe pedestrian environments for children to enable greater amounts of walking and physical activity, the American Academy of Pediatrics recommends the following:

1. Through the use of counseling and/or with anticipatory guidance handouts, pediatricians should advise parents and caregivers that:
   - Young children have developmental limitations that prevent them from being safe pedestrians. In deciding when a child can cross streets independently, parents must consider the child's age and maturity, the distance to be traveled, the amount of on-street parking, and the volume and speed of traffic. On the basis of developmental considerations and currently available research data, the American Academy of Pediatrics recommends that children should not be unsupervised pedestrians before 10 years of age, except in limited situations.
   - Parents should be good pedestrian role models, supervise children carefully around traffic, and teach children how to be safe pedestrians.
   - To avoid injuries from vehicle back-overs, driveways, alleyways, and the adjacent unfenced front yard should not be used as a play area. Parents should be reminded of the large blind spot behind the car (especially in larger, elevated vehicles) and the need to walk completely around the car before getting in and starting the engine.
   - Reflective clothing and other visibility aids should be used in low-light conditions.
2. Parents, schools, community agencies, and policy makers should work with chapters of the American Academy of Pediatrics to increase the number of children who can safely walk regularly for the purpose of exercise and weight control. Residential neighborhoods should have sidewalks and be designed to foster low traffic volume and speed.
3. Although some pedestrian education programs for children have been shown to modestly improve road-crossing behaviors, their efficacy in reducing injury rates is not clear. Close adult supervision and environmental modification are more effective strategies for preventing motor vehicle-pedestrian collisions.
4. Community groups, municipal governments, and school systems should collaborate to design safe routes for children to use to walk to school. Methods to meet this goal could include sidewalks, traffic calming, on-street parking limits, hiring adequate numbers of well-trained adult crossing guards, locating schools close to residential areas, and helping parents develop special escort programs for young children. Highly visible, strict police enforcement of traffic regulations in school zones is extremely important.
5. Federal funding of Safe Routes to School and other programs to encourage walking and make it safe to do so should continue to be supported nationally. Priority for funding and grant application technical assistance should be given to low-income communities where the risk of child pedestrian injury is highest.
6. Communities should create play areas to keep children away from traffic as much as possible.
7. State driver's manuals should include a section that informs drivers about avoiding pedestrian collisions. Drivers should be warned not to have unrealistic expectations of a child's pedestrian abilities and reminded about the need to slow down and be alert for dart-outs when children are nearby. This pedestrian section should include information, photographs, and diagrams about pedestrian-vehicle conflicts at intersections, safest ways to conduct turns to avoid pedestrian injury, and requirements for yielding to pedestrians at stop signs and when making right turns after stopping at red lights.
8. Automobile manufacturers should develop design modifications that will decrease injury from automobile-child pedestrian collisions.
9. Pediatricians should be aware of the high incidence of acute and posttraumatic stress disorder after a pedestrian injury. Pedestrian crash victims and their close family members should be carefully screened for these conditions. Patients should be given emotional support, reassured that acute and posttraumatic stress disorders are common problems, and referred for counseling as needed.
10. Governmental agencies should expand pedestrian injury surveillance systems so that detailed information regarding the pedestrian, the vehicle, the specific

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location (to allow geographic information systems mapping), the nature of the crash, the speed and volume of traffic, and the features of the road and sidewalks can be collected and analyzed. Furthermore, parameters for describing children's exposure to traffic should be defined and measured. Such information will be needed to determine the effectiveness of interventions designed to decrease pediatric pedestrian injury.

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RESOURCES FOR PEDIATRICIANS

National Highway Traffic Safety Administration (www.nhtsa.gov/portal/site/nhtsa/menuitem.dfedd570f698cabbbf30811060008a0c): contains excellent data summaries ("Traffic Safety Facts: Children" and "Traffic Safety Facts: Pedestrians"), tip sheets for parents and teachers, resource guides, major research reports, information regarding pedestrian laws, and links to programs designed to encourage safe walking. The entire NHTSA site can be "searched" for information about child pedestrians. The Fatality Analysis Reporting System (FARS) (www-fars.nhtsa.dot.gov) can be used to obtain detailed information about fatal crashes. In addition to reviewing detailed tables, users can generate custom reports through an interactive query system. NHTSA staff also accept data requests at this site.

Centers for Disease Control and Prevention (www.cdc.gov/nccdphp/dnpa/kidswalk/resources.htm and www.cdc.gov/injury/wisqars/index.html): contains extensive information about the Kids Walk-to-School program, including brochures, slide shows, fact sheets, and a sample press release. The site also has links to various Centers for Disease Control and Prevention reports about pedestrian safety. The Web-Based Injury Statistics Query and Reporting System (WISQARS) can be used to obtain data about fatal and nonfatal pedestrian injuries, categorized according to age (or age group), race, gender, state, and year.

Insurance Institute for Highway Safety (www.iihs.org/research/topics/peds.html): contains detailed statistics ("Fatality Facts: Pedestrians"), a Q&A, status reports, and a selected research bibliography.

Federal Highway Administration (www.tfhrc.gov/safety/pedbike/index.htm and http://safety.fhwa.dot.gov/local_program/pedcampaign): the Turner-Fairbank Highway Research Center site contains pedestrian-related articles, facts, issue briefs, publications, research, resources, and links. The Federal Highway Administration Pedestrian Safety Campaign site has a tool kit with videos, slide shows, brochures, posters, and other materials for individuals, organizations, or communities interested in implementing a pedestrian safety campaign.

Pedestrian and Bicycle Information Center (http://pedbikeinfo.org and www.walkinginfo.org): contains a Walkability checklist, an extensive research review ("Review of Pedestrian Research in US and Abroad"), crash facts and crash type definitions (with diagrams), and the Pedestrian and Bicycle Crash Analysis Tool, which allows access to a database of extensive pedestrian crash information.

Walking School Bus program (www.walkingschoolbus.org): contains a handout describing how a "walking school bus" works as well as guides for people who want to start a program and descriptions and evaluations of existing programs.

National Center for Safe Routes to School (www.saferoutesinfo.org): contains pedestrian safety tip handouts, applications and information about obtaining funding, state contact personnel, and an online library of materials, documents, and reports used by Safe Routes to School program administrators.

Safe Kids USA (www.usa.safekids.org; search "pedestrian"): contains facts and safety tips for parents, a checklist on how to teach children pedestrian safety, research reports, and a report to the nation that describes the pedestrian problem and offers solutions.

Harborview Injury Prevention Center (http://depts.washington.edu/hiprc/practices/topic/pedestrians/index.html): the "best practices" section on "child pedestrians" contains detailed research reviews on skills training, daylight savings time, reflective clothing, road environment changes, community campaigns, and vehicle modifications.

Kids and Cars (http://kidsandcars.org): contains statistics regarding nontraffic injuries and deaths from back-overs, hyperthermia, and power-window strangulation. The site also has fact sheets and public service announcement videos on these topics.

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