



# BICYCLE-RELATED INJURIES

# BICYCLE-RELATED INJURIES

## THE PROBLEM:

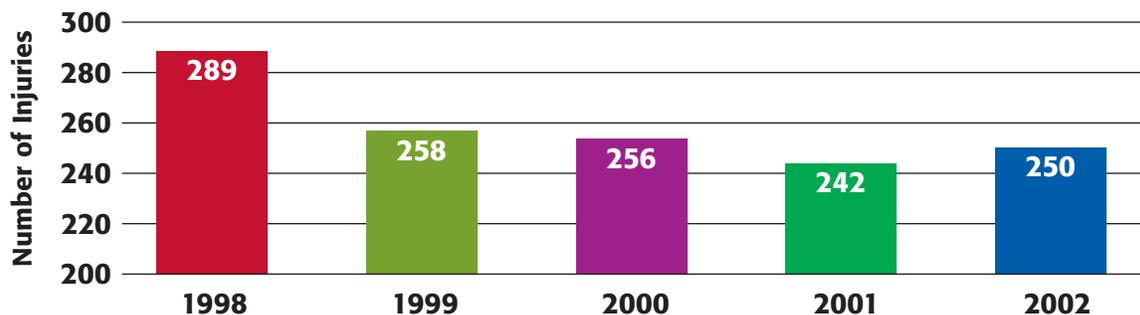
- An estimated 140,000 children are treated each year in emergency departments for head injuries sustained while bicycling.
- 70-80 percent of all fatal bicycle crashes involve head injuries.

Each year over 500,000 people in the United States are injured while riding bicycles and more than 700 people die as

a result of bicycle-related injuries. Nearly 2/3 of all bicycle-related injuries and more than 1/4 of those killed are children between the ages 5 and 15.

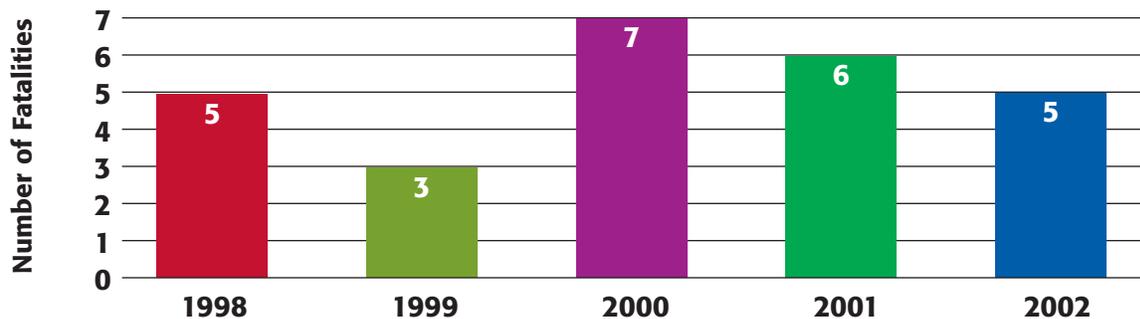
Between 1998 and 2002 in Alabama, 1,295 people were injured and 26 died in bicycle crashes. Children age 14 and under account for 52% of the bicycle crash injuries and 80% of the fatalities that occurred in 2002.

### Unintentional Bicycle-Related Injuries in Alabama (1998-2002)



(Source: CARE database)

### Unintentional Bicycle-Related Fatalities in Alabama (1998-2002)



(Source: CARE database)

Between 1998 and 2002, there were 477 traumatic spinal cord injury (TSCI) and traumatic brain injury (TBI) cases reported in Alabama attributable to bicycle injuries. Males were nearly three times more likely than females to sustain a TSCI or TBI as a result of a bicycle injury (Table 1). Eighty-five percent (402 cases) of the 477 bicycle-related TSCIs and TBIs affected Alabamians between 2 and 17 years of age.

**Table 1: Bicycle Injuries Resulting in TSCI and TBI, Alabama January 1998 - July 2002**

Race/ Ethnicity	Gender		Total
	Female	Male	
Black	45	138	183
White	84	205	289
Other	1	4	5
<b>Total</b>	<b>130</b>	<b>347</b>	<b>477</b>

(Source: Alabama Trauma Registry)

## CAUSES:

- Only 20-25 percent of all bicyclists wear bicycle helmets.

More than 95% of all bicyclists killed in the United States were not wearing helmets. Approximately 25% of children ages 5 through 14 wear bicycle helmets. Once riders enter the teenage years, helmet usage drops to nearly zero. In Alabama, 90% of 853 surveyed youths, 9th through 12th grade, who rode a bicycle in the past 12 months reported that they had never or rarely wore a bicycle helmet. In 1999 adults surveyed about their child's helmet use indicated that 31.9% of Alabama children 5-15 wore a helmet in the past 12 months when riding a bicycle. There was almost a 22% difference in what adults and teens reported on bicycle helmet usage.

## THE COSTS:

- Societal costs in the United States related to bicycle head injuries or death exceed \$8 billion annually.

The costs to society brought about by bicycle-related injuries and deaths are significant. An estimated 140,000 children are treated each year in emergency departments for head injuries sustained by bicycling. Six percent of persons who are treated for bicycle-related injuries require hospitalization. In 2002 the average length of stay in an Alabama hospital for treatment of bicycle-related TSCI and TBI was 2.2 days, though this value ranged from less than one day to 17 days.

## PREVENTION:

- Every dollar spent on bicycle helmets saves society \$30 in indirect medical costs.
- Every bicycle helmet saves \$395 in direct medical costs.

Wearing a helmet greatly reduces the risk of injury in the event of a bicycle crash. Risk for serious head injury can be lowered by as much as 85%; risk for brain injury is reduced by up to 88%; and risk of facial injury is diminished as much as 65%. One way to encourage bicyclists to protect themselves is through legislation. Alabama has a helmet law (1995) which states that anyone under the age of 16 must wear a helmet when riding a bicycle. A first offense to the state law leads to bicycle safety counseling; a second offense results in citation to the parent/guardian; and in the event of a third offense,

*Continued next page.*

## **BICYCLE-RELATED INJURIES** *continued*

the bicycle is temporarily confiscated. Other offenses result in a \$50 fine. One municipality in Alabama, Homewood, has a law requiring all cyclists of all ages to wear helmets.

Another method to reduce bicycle injuries is to provide safe environments for cyclists by recognizing connections between urban development and quality of life. A national movement to foster livable communities is known as the Smart Growth Initiative. Smart Growth was formed in 1996 by the United States Environmental Protection Agency and several non-profit and government organizations. It was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment and enhance community vitality. One of the major principles is to provide a variety of transportation choices including having bicycle paths which would create safer environments for bicyclists to ride and not be in danger. The United States Department of Transportation policy statement in March 2002 stated that bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas, with few exceptions. In response, communities are beginning to implement new approaches to transportation planning.

## **ALABAMA'S STRATEGY FOR PREVENTING INJURY:**

### **GOAL:**

**Reduce the incidence of bicycle-related injuries and fatalities.**

- 1. Increase percentage of young people between 5 and 16 years of age that wear bicycle helmets to 50% by 2010.**
- 2. Promote public awareness that bicycle helmets can help to reduce the severity or eliminate bicycle-related injuries.**
  - a. Develop public service announcements to educate the public on the effectiveness of bicycle helmets to reduce the severity and occurrence of bicycle-related injuries.
  - b. Develop public service announcements to educate the public on the consequences of not wearing a bicycle helmet.
  - c. Collaborate with local and state agencies such as local Metro Planning Organizations or other organizations (i.e. SAFE KIDS) to develop training and educational programs targeting persons 5-16 years of age on the importance of wearing bicycle helmets.
    1. Proper use of helmet and other protective devices.
    2. Helmet giveaways.
    3. Brochures for parents.

4. Educate legislators on the importance of mandating bicycle helmet wear for all cyclists.
5. Reinforce Alabama’s helmet law with public service announcements.
6. Encourage members of the Alabama Chapter of the American Pediatric Association to implement training and awareness activities relative to bicycle safety.

**3. Coordinate with the Smart Growth initiative to design more walkable and bicycle friendly neighborhoods.**

- a. Identify communities who participate in Smart Growth Initiatives.
  1. Develop a directory for the state.
  2. Coordinate efforts to expand to other communities.
- b. Educate local government entities and residential developers on the advantages of bicycle friendly neighborhoods.

**4. Provide bicycle traffic safety training.**

- a. Implement a school program to educate children on the proper way to ride a bicycle in traffic.
  1. Hand signals.
  2. Riding with the flow of traffic.

**5. Increase bicycle tolerance by motor vehicle operators.**

- a. Create a “Share the Road” public education campaign.
  1. Create tools that incorporate multiple forms of media and compelling stories to communicate the message.

2. Design outreach activities to promote bicycle safety for motorists and bicyclists.
3. Encourage local organizations and bicycle advocacy groups to sponsor the campaign in their community.
  - b. Include components on “safe bicycling” and “sharing the road” in driver education programs.

**6. Collaborate with local bicycle clubs to establish a registry of bicycle-related injuries.**

**References:**

1. Alabama Department of Public Health, Injury Prevention Division. Alabama Trauma Registry.
2. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Available from URL: <http://www.cdc.gov/brfss/index.htm>
3. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Bicycle-Related Injuries Fact Sheet. Available from URL: <http://www.cdc.gov/ncipc/bike>
4. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Injury Fact Book 2001-2002*. Atlanta, GA: 2001.
5. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance System. Available from URL: <http://www.cdc.gov/nccdphp/dash/yrbs/2001/youth01online.htm>
6. Healthy People 2010: Objectives for Improving Health, Injury and Violence Prevention. Washington, DC, November 2000.
7. MMWR. Injury Control Recommendations: Bicycle Helmets. 44(RR-1);1-18, February 17, 1995.
8. Smart Growth Initiative. Available from URL: <http://smartgrowth.org>
9. The University of Alabama College of Engineering. Critical Analysis Reporting Environment (CARE). Available from URL: <http://care.cs.ua.edu>
10. The University of Alabama College of Engineering, CARE Research and Development Laboratory. *Alabama Traffic Crash Facts 2002*. Tuscaloosa, AL.