

Bicycle Accidents: The Dangers of Unsafe Bicycle Use

Background:

- Over 600,000 persons suffered bicycle-related injuries serious enough to require hospital emergency room treatment. (CPSC, 2007)
- The first automobile crash in the United States was a result of a bicycle – it occurred in New York City in 1896, when a motor vehicle collided with a person riding one. (CPSC, 2007)
- More than 49,000 people have died in bicycle accidents in the United States since 1932. (CPSC, 2007)
- Collision with a car or another bicycle is a leading factor in bicycle accidents. (CPSC, 2007)
- Loss of Control is one major cause of bicycle accidents. It is defined as: difficulty in braking; riding too large a bike; riding too fast; riding double; stunting; striking a rut, bump, or obstacle; and riding on slippery surfaces. (CPSC, 2007)
- Mechanical and Structural Problems cause accidents. This is defined brake failure; wobbling or disengagement of the wheel or steering mechanism; difficulty in shifting gears; chain slippage; pedals falling off, or spoke breakage. (CPSC, 2007)
- Entanglement of a person's feet, hands, or clothing in the bicycle or foot spillage from the pedal is another leading cause of bicycle accidents. (CPSC, 2007)

- Regular maintenance is essential for safe riding. Refer to the owner's manual for the manufacturer's maintenance recommendations. An experienced repair technician should do complicated work. (CPSC, 2007)

Statement of the Problem:

- Because bicycle riding is a healthy activity, Healthy People 2010 has set objectives to increase bicycle safety in the following years. (Healthy People, 2007)
- Healthy People 2010 aims to increase the number of States and the District of Columbia with laws requiring bicycle helmets for bicycle riders. (Healthy People, 2007)
- 10 States had laws requiring bicycle helmets for bicycle riders under age 15 years in 1999. (Healthy People, 2007)

Epidemiological Picture of the Problem:

- Bicycle deaths account for 1 percent of all traffic fatalities.
- In 2003, 622 bicyclists were killed and an additional 46,000 were injured in traffic crashes.
- The number of bicycle fatalities has lowered 24 percent over the last ten years.
- Bicycle fatalities occur mostly in urban areas (69 percent) and at nonintersecting locations (71 percent).
- 31 percent of accidents occur between the hours of 5:00 PM and 9:00 PM and during the months of June, July, and August (35 percent).

- The average age of those killed in bicycle accidents is 35.8 years, and the average age of those injured is 26.5 years.
- People under age 16 account for 23 percent of all bicycle deaths and 37 percent of those injured in traffic crashes.
- Bicyclists 25 years of age and older have made up an increasing proportion of all bicycle deaths since 1993.
- More than one-fifth (23 percent) of the bicyclists killed in traffic crashes are between 5 and 15 years old.
- Alcohol involvement is reported in more than one-third of the traffic crashes that resulted in bicycle fatalities. In 32 percent of the crashes, the cyclist was reported to have a blood alcohol concentration (BAC) of 0.08 or higher. Lower alcohol levels (BAC 0.01 to 0.07 g/dl) were reported in an additional 7 percent.
- More than one-fourth (28 percent) of the pedalcyclists killed had a BAC of 0.01 g/dl or higher, and almost one-fourth (24 percent) had a BAC of 0.08 g/dl or higher.
- Most of the pedalcyclists killed or injured in 2003 were males (88 percent and 78 percent, respectively), and most were between the ages of 5 and 44 years (62 percent and 84 percent, respectively).
- If you're riding a bike after a few drinks and are legally drunk, your chances of being seriously or fatally injured while on two wheels increases by 2,000%. (AMA, 2001)
- The bicycle fatality rate is almost 8 times as high for males as for females, and the injury rate is 3 times as high for males than for females.

Solutions to the Problem:

U.S. Department of Transportation

(www.fhwa.dot.gov)

Bicycles play an increasingly important role in our Nation's overall transportation system. Yet, in many communities, bicyclists feel squeezed out of the traffic mix, and many bike riders complain of high stress levels as they travel along the roadway. The source of this stress is well documented. U.S. Department of Transportation statistics show that more than 8,000 bicyclists died and 700,000 were injured in motor vehicle-related crashes in the past decade. More than one-third of all bicycle fatalities involve riders 5 to 20 years old, and 41 percent of nonfatal injuries occur to children under the age of 15. The need for safe, convenient, and attractive facilities to encourage safe biking is essential. And now there are resources designed to make it easier for the bicycle safety practitioner and advocate to locate and acquire the most appropriate resource to meet their particular planning, design, and operation need for bicycle facilities.

Consumer Product Safety Commission

(www.cpsc.gov)

The Consumer Product Safety Commission has released bicycle safety tips, entitled "10 Smart Routes to Bicycle Safety." It says to wear a helmet, make sure the bicycle is adjusted properly with wheels fastened correctly, and always check the bicycle brakes before riding. Make sure you can see clearly and can be clearly seen, especially at night. In fact, the CPSC suggests not bicycling at night. They also recommend learning the rules of the road, checking traffic, and staying on the right side of the road.

NYC Bicycle Safety Coalition (Department of Transportation)

(www.nyc.gov)

The DOT has increased the rate of installation of new bike lanes. The DOT has also introduced new shared lane signs and markings on the road. They've distributed over 5,000 at fitting events throughout their city. The DOT also supported bicycle safety legislation that went into effect in July that requires commercial cyclists to wear helmets. The law also requires businesses that employ commercial cyclists to provide helmets free of charge and to post signs that inform bicycle workers of their rights and responsibilities. The DOT has also launched campaigns like the LOOK cyclist safety campaign.

Internet Resources

National Center for Statistics and Analysis

(<http://www.nhtsa.dot.gov/people/ncsa>)

Information on bicycle traffic fatalities is available from the National Center for Statistics and Analysis, NPO-101, 400 Seventh Street, S.W., Washington, D.C. 20590. General information on highway traffic safety can be accessed by Internet users at the website above. Detailed data on traffic crashes are published annually in Traffic Safety Facts: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System.

Washington State Department of Transportation

(www.wsdot.wa.gov/bike/Safety_Tips.htm)

The State Department of Washington provides a wonderful, detailed list of safety tips for bicycle use. It applies to all bicycle use, not just in Washington. It explains that the best way to avoid accidents is to be prepared and be aware of other vehicles around you. Avoid common bicyclist errors and common motorist errors committed around bicyclists.

Kid's Health: Bicycle Safety

(www.kidshealth.org)

Every year, about 300,000 kids go to the emergency department because of bike injuries. Some of these injuries are so serious that children die, usually from head injuries. This website contains information and photos displaying bicycle safety. It includes tips such as wearing a helmet, bright clothing, and how to use bicycle signals when in traffic.

Bibliography

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Kid's Health, www.kidshealth.org.

National Center for Statistics and Analysis, www.nhtsa.dot.gov.

New York City Department of Transportation, www.nyc.gov.

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Class Handout: Bicycle Safety

Overview:

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Problems:

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- Entanglement of a person's feet, hands, or clothing in the bicycle or foot spillage from the pedal is another leading cause of bicycle accidents. (CPSC)

Solutions (from the CPSC):

- Wear a helmet
- Make sure the bicycle is adjusted properly with wheels fastened correctly.
- Always check the bicycle brakes before riding.
- Make sure you can see clearly and can be clearly seen, especially at night. In fact, the CPSC suggests not bicycling at night.
- Learn the rules of the road and hand signals.
- Check traffic and stay on the right side of the road.
- Regular maintenance is essential for safe riding. Refer to the owner's manual for the manufacturer's maintenance recommendations. An experienced repair technician should do complicated work.