

Brad's Last Ride¹

This is a story about Brad, a 14-year old boy and the mishap that changed his life.

Instructions

Get together with two or three of your friends. Then read the story and answer the questions that appear in the story. Don't jump ahead in the story, but you may look back at any time.

Mark your answers on the answer sheet. Please don't write in the problem booklet. After you have selected your answers to a question, discuss your choices with your friends, but please don't change your answers or mark more answers. Continue reading the story while answering and discussing the questions.

When you finish the story, ask the instructor for a copy of the answer key. Compare your answers to those in the key, but don't change your answers. Discuss the story and answers with your friends and the instructor. When you finish, complete the questionnaire attached to the answer sheet. Give the booklet and the completed answer sheet to the instructor. Your answers will be used to improve the exercise. Thanks!



Figure 1: Brad rides his ATV

¹ Developed by Henry Cole, Kathryn Heinz, Katrina Raymond, and Melvin Myers, University of Kentucky, Southeast Center for Agricultural Health and Injury Prevention. Illustrations by Matt Hazzard, University of Kentucky, Teaching and Academic Support Center, prepared from photographs by Henry Cole of static staged ATV riding events by grandsons Michael Cole and Justin Cole. This work was supported by CDC/NIOSH Cooperative Agreement 2 U500H 007547-06. The views expressed in this document are those of the authors and not necessarily those of CDC/NIOSH or the US Government.

Brad and Zack

Brad lives with his mom and dad on their 350 acre beef cattle farm. Brad's best friend is his cousin Zack, age 15 who lives just across the road on a 400 acre beef cattle farm owned by his mom and dad. Both boys work on their dads' farms. Both the dads and their boys have ATVs that they use for farm chores and that they sometimes ride for fun. The boys have been riding their ATVs for about 3 years. Neither has completed an ATV safety course.

A Planned ATV Ride is Delayed

This early March Saturday morning the boys and their dads had planned to ride their ATVs at a recreational area. But, the dads learned that a neighbor intended to lease 300 acres of farm land. They want to arrange a lease before someone else beats them to it. As they leave to talk with the neighbor, the dads tell the two boys to stay home and replace the broken hinges on a gate to a pasture so the cattle won't get out. The boys' moms are going to town to shop for groceries.

Turn the page and begin.

Work a page at a time.

Don't jump ahead, but you can look back anytime.

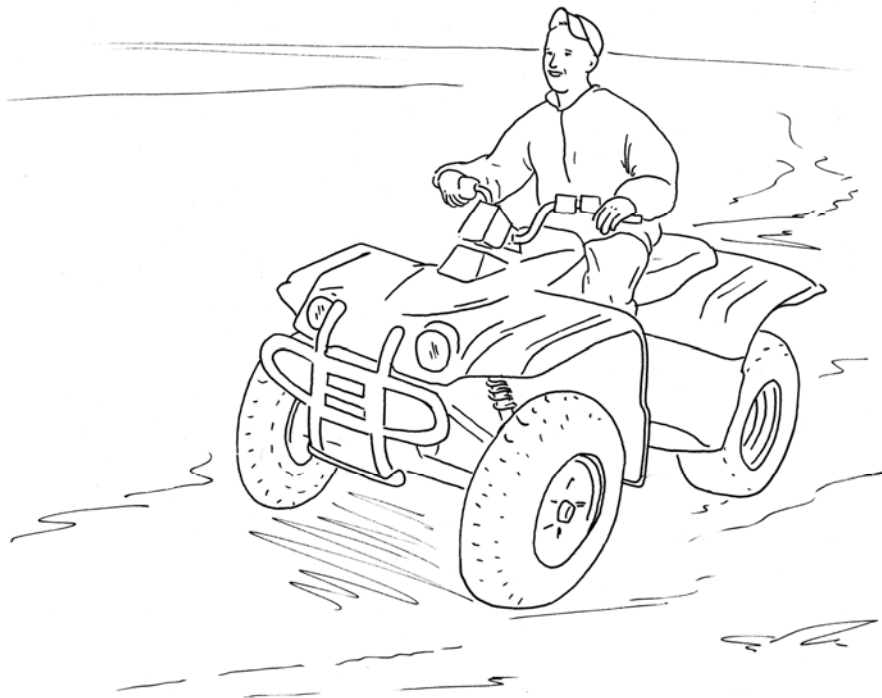


Figure 2: Zack and his ATV

As their moms leave to go shopping and their dads leave to arrange the lease, the two boys are disappointed and angry. They were looking forward to the planned ATV riding adventure with their dads. They strap the new hinges, a hammer, a drill and drill bits, a couple of channel lock pliers, a pry bar, and two wrenches on the back of their ATVs. They don't bother to take or wear their helmets. Then they ride their ATVs wildly across the pasture's rough ground going much faster than is safe (see Figures 3 & 4). A short time later they arrive at the gate and begin replacing the hinges.

Question A

What do you think is going on here? (For each item, circle T or F on the answer sheet.)

- T F 1. The boys are upset that their dads canceled the planned ATV recreational ride.
- T F 2. The boys don't think they need to wear their helmets.
- T F 3. They often don't wear their helmets when using the ATVs for similar farm chores.
- T F 4. They think that their moms and dads won't know about their fast and wild riding.
- T F 5. This is probably not the first time they have ridden fast and wild while not wearing their helmets.
- T F 6. They think that their riding skills and experience will prevent them from being hurt.
- T F 7. The boys dislike and don't respect their dads.

[After you have marked your answers, please continue with the story.]

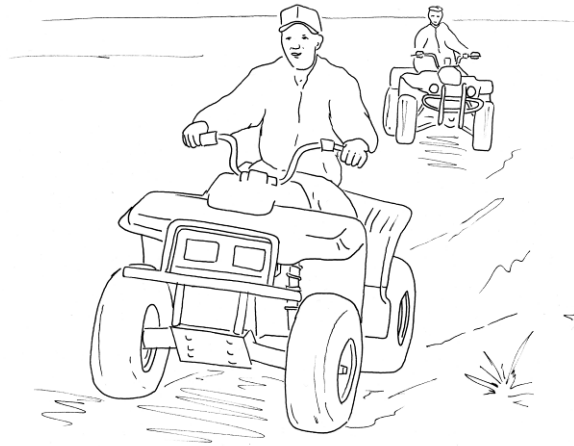


Figure 3: Brad and Zack race through the pasture

Question B

What are some things that could happen to Brad or Zack as they race through the pasture? (For each item, circle T or F on the answer sheet.)

- T F 8. Either one of the boys could be thrown off if his ATV hits a hole, stump, or rock.
- T F 9. Their ATVs could flip over sideways if they turned too fast to avoid a rock, hole, or stump.
- T F 10. They could flip over backward while going up a steep bank or hill if a rear wheel got caught in a rut.
- T F 11. They could lose control while coming down a steep bank or hill on a turn and run into a something like a tree or rock.
- T F 12. One of them could lose control and crash into the other one while attempting to pass and cut ahead of the lead rider.
- T F 13. They might have an exciting and fast ride with no problems.
- T F 14. Their pant legs could get entangled in an ATV wheel and their legs severely injured.

[After you have marked your answers, please continue with the story.]

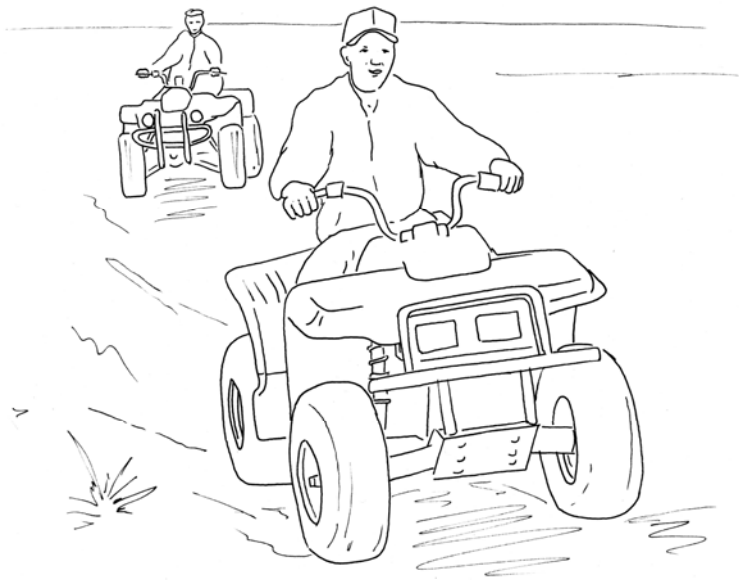


Figure 4: Brad and Zack continue to race toward the pasture gate

The boys arrive at the gate and begin replacing the hinges on the gate post. Their work is done in about an hour. Then they drop their tools at the gate and decide to have a race around the pasture (see Figure 5).

On the second lap Zack is catching up with Brad who is traveling at 35 mph. As Brad looks back over his right shoulder to see where Zack is, he unintentionally turns the handlebars to the right. Zack sees Brad's ATV heading directly toward a plank fence about 50 feet ahead (see Figure 6 on the next page).

Question C

What can Zack and Brad do to prevent Brad from crashing into the fence? (For each item, circle T or F on the answer sheet.)

- T F 15. Zack can yell "Watch out!" and point to the fence.
- T F 16. Zack can accelerate and pass Brad on the left so Brad will look ahead and see the fence in time to stop or to swerve to the left of the fence.
- T F 17. If Brad looks ahead and sees the fence he can steer his ATV around it.
- T F 18. If Brad looks ahead and sees the fence he can jump off the ATV to prevent his body from hitting the fence.
- T F 19. At this point in time there is nothing that either Zack or Brad can do to prevent Brad from crashing into the fence.

[After you have marked your answers, please continue with the story.]

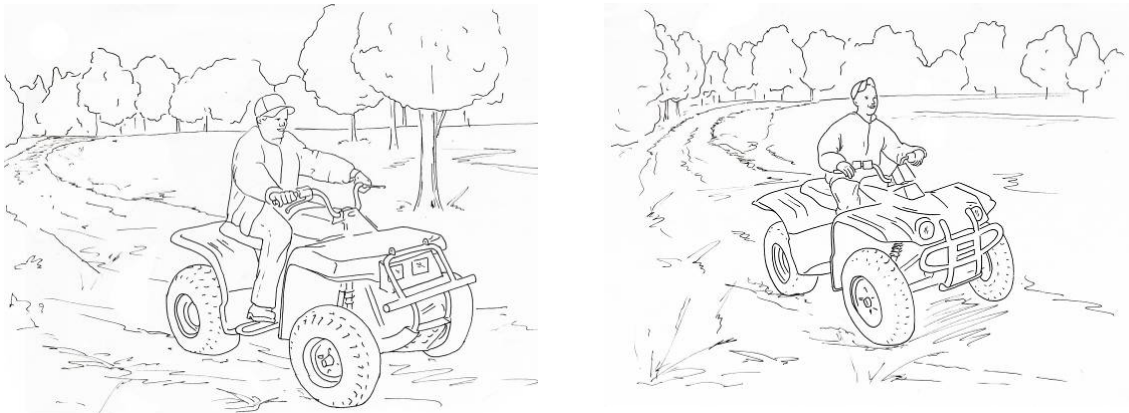


Figure 5: Brad and Zack begin their race around the pasture



Figure 6: As Zack catches up with Brad, Brad looks back and without realizing it steers toward a fence just ahead.

Brad's ATV's right front tire hits the fence and flips sideways and overturns. Brad is thrown off and slams into the fence head first. He falls to his knees, grabs at the fence, and tries to get up. Then he moans and falls to the ground unconscious (see Figure 7 on the next page).

Zack calls 911 on his cell phone. The local EMS arrives at the scene in 10 minutes. Twelve minutes later a Life Flight helicopter rushes Brad to a trauma hospital emergency department. Brad has a severe and life threatening brain injury.

Question D

Think about this story. What are some things Zack, Brad and their parents could have done to keep Brad from being injured? (For each item, circle T or F on the answer sheet.)

- T F 20. Brad and Zack could have taken and worn their helmets.
- T F 21. The two boys could have ridden back home to get their helmets before racing around the pasture.
- T F 22. The boys' parents could have stressed and enforced a rule that the boys were not to ride without a helmet, especially when riding recreationally and at high speeds.
- T F 23. The parents could have required the boys to complete an ATV riding safety course.
- T F 24. Brad and Zack could have installed seat belts on their ATVs and worn the belts.

[After you have marked your answers, please continue with the story.]

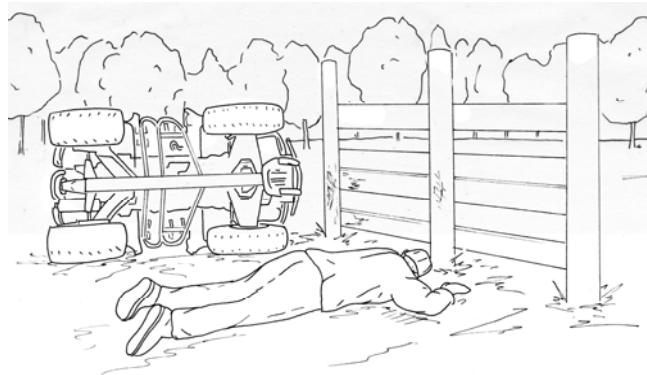
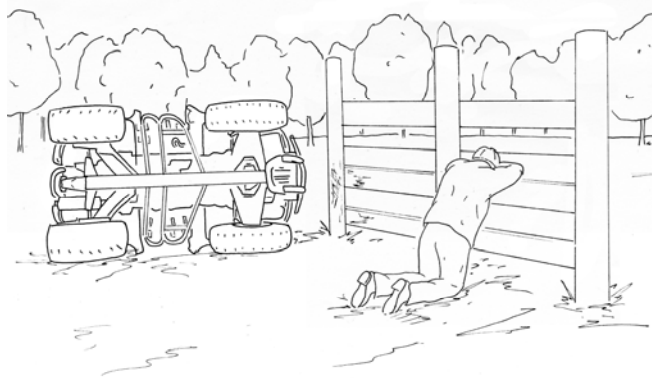


Figure 7: Brad crashes into the fence head first

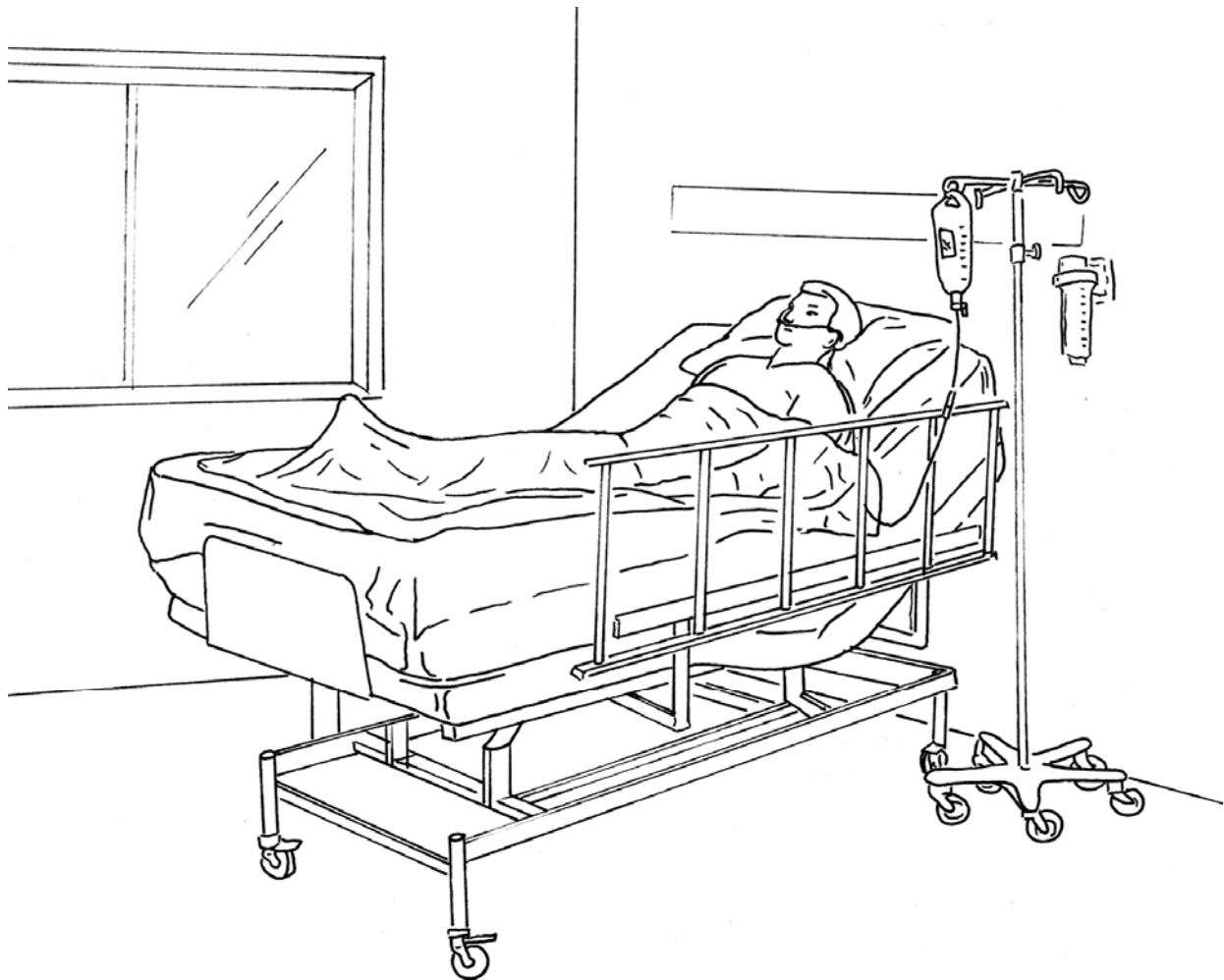


Figure 8: Brad in a coma in the hospital weeks after his crash and head injury.

Brad was in a coma for five weeks. (See Figure 8 on the previous page). He had severe brain damage. A year later his doctors think he has healed about as much as can be expected. He has no control of his legs and cannot walk. He has great difficulty speaking and cannot write. He has limited use of his arms but can roll his wheel chair on smooth level surfaces. While he can still read a little, he usually can't understand or remember what he has read. He lost much of his memory, including his personal and family history. He often fails to recognize his parents and Zack or other family members and friends. Look at Figure 9 on the next page.

Question E

What activities can Brad do after his injury? (For each item, circle T or F on the answer sheet.)

- T F 25. Go down the driveway from his farm house to the mailbox in his wheel chair by himself, pick up the mail, and come back up the hill to the house.
- T F 26. Play wheel chair basketball at his high school gym.
- T F 27. Interact with Zack and other friends.
- T F 28. Ride his ATV again by himself without assistance.
- T F 29. Ride on the back of Zack's ATV while Zack drives.
- T F 30. Watch television and listen to music.
- T F 31. Go to farm equipment auctions and farm machinery shows with his father and Zack.
- T F 32. Return to his high school, complete his studies, and graduate with a regular academic diploma.
- T F 33. Find a girlfriend and begin dating.
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After you have marked your answer sheet, ask the instructor for a copy of the answer key. Check the answers and discuss any differences of opinions with your friends. Then read and discuss the short articles about ATV injuries found on the following pages.

When you have finished your discussion, please complete the questionnaire attached to your answer sheet. Give your completed answer sheet and questionnaire to the person who is conducting the class session or meeting.

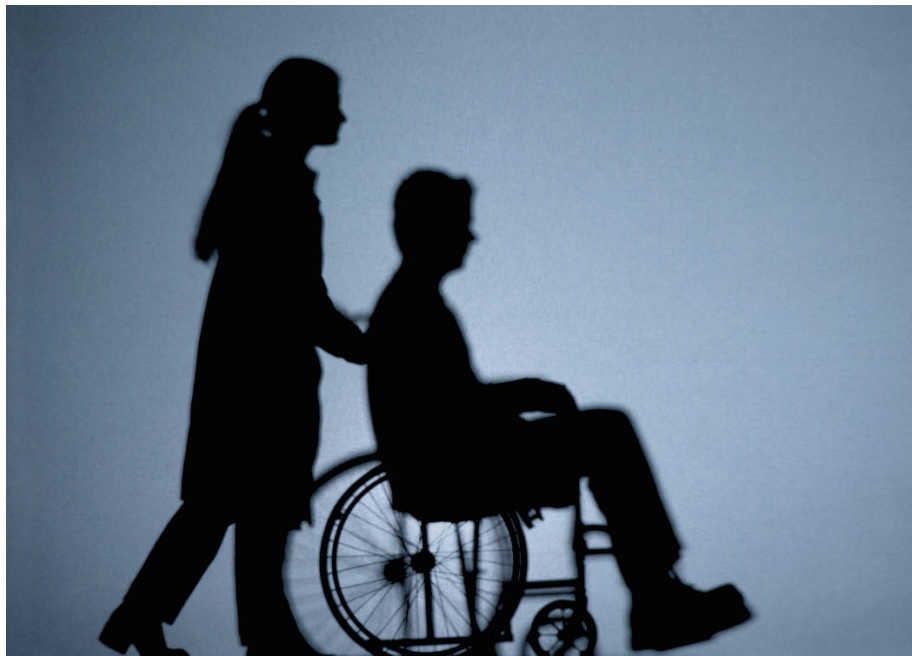
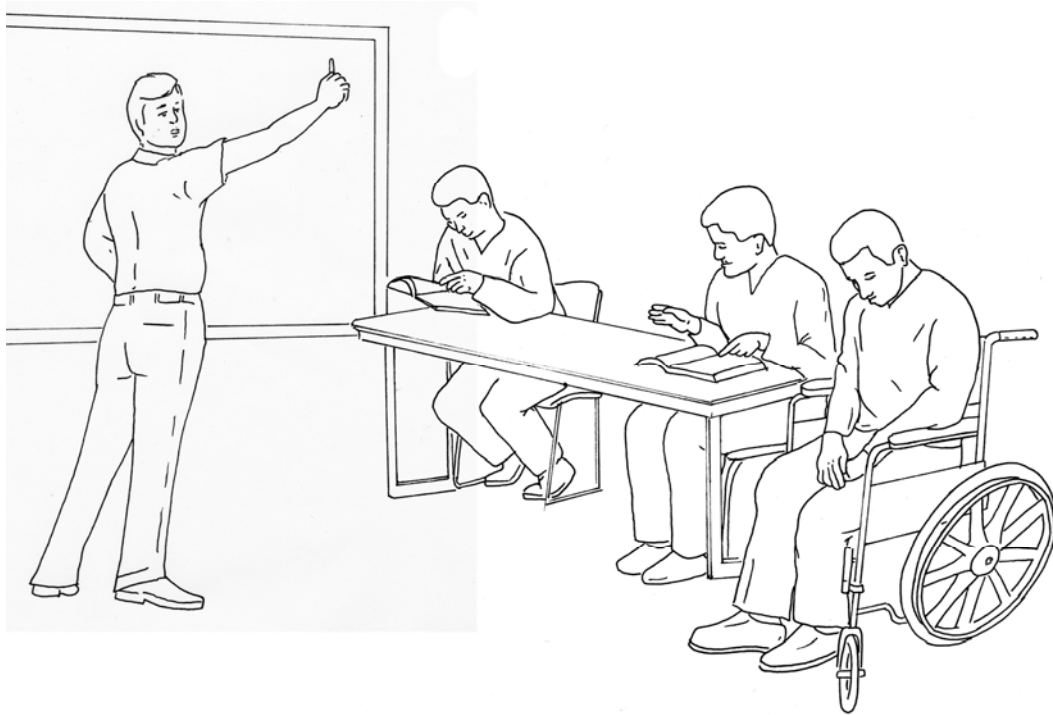


Figure 9: After months of rehabilitation therapy Brad's doctors think he has recovered as much as can be expected

Head Injuries to Un-helmeted ATV and Horseback Riders

The following newspaper articles are about head injuries to un-helmeted riders and riders whose head injuries were prevented or less serious because they were wearing a helmet. The first story is about James, an 11-year old boy who was not wearing a helmet when he was thrown from a horse, head first into a tree. James' story is included here because his injury was similar to Brad's injury. (For more information about horse riding head injuries go to the following web page.)

http://www.law.utexas.edu/dawson/theme/injur_97.htm

As you read these articles, how many cases can you identify where a helmet saved an ATV rider's life or lessened the injuries? How many cases can you identify that involved a serious head injury or died because the ATV rider was not wearing a helmet?

Florida

11-Year-Old Boy in Coma From a Head Injury

Florida Today carried a story by Cheryl Bartoszek on April 25, 1997 about James Salmon, an eleven year old boy who was recovering from severe head injuries sustained April 6 while riding a horse in Gainesville. He was taken to a nearby hospital after being thrown into a tree. A neurosurgeon removed a blood clot from his swollen brain. He was comatose at the time.

Coma patients are rated on a 3 to 15 scale.* Initially rated a 5, James is now a 10, and in a depressed mental state. Unable to speak, James sits in a chair and makes faces at therapists. He sleeps a lot, yet continues to improve. James is off the ventilator and has been moved from the pediatric intensive care unit to a pediatric ward. Within the next few weeks, he will leave the hospital for a rehabilitation facility closer to home. Several months of intensive rehabilitation will include relearning how to speak, eat and perform simple tasks.

Two Teens in Deadly ATV Wreck

Florida – NBC in Lehigh Acres, FL reported on October 16, 2006 that two 16-year-old boys were in a deadly head-on collision while riding their ATVs. Kyle Flint, who was riding without a helmet, was killed. Aaron Sullivan, who was wearing a helmet, was hospitalized with critical injuries.

* The Glasgow Coma Scale ranges from a low of 3 to a high of 15. To learn about the scale and how it is used, see the following web site: <http://www.ahs.uwaterloo.ca/~cahr/headfall.html>. This will take you to an article entitled "The Anatomy of a Head Injury," by Dr. Eric A. Roy, which explains the damage caused by head injuries. It also describes how emergency medicine professionals use the scale to assess the severity of the injury.

Kentucky

12-Year-Old Boy Suffers Severe Head Injury After ATV Crash

Kentucky – The *Lexington Herald-Leader* carried a story on July 30, 2007 about Jaiden Willoughby, age 12, who crashed his ATV going at least 60 mph. He was not wearing a helmet. Just earlier that day, he had helped his father start some tobacco seeds. The surgeons at the Kentucky Children’s Hospital in Lexington had to remove the front part of his skull to save his life. He survived, but now has six small titanium plates and twelve screws in his skull.

Brothers’ Miraculous Recovery After Head-On Crash

Kentucky – The *Lexington Herald-Leader* carried a story on February 15, 2006 about Ethan and Austin Hale, brothers, age 15 and 10, who accidentally crashed into each other head on. Ethan was speeding around a curve in the road on an ATV, and there was no time to swerve around his brother, who was riding a dirt bike. It is believed that their helmets saved both of their lives. Ethan broke nearly every bone in his face, has had a series of surgeries to repair the structure of his head, and he lost his left eye. Austin suffered a traumatic brain injury and spent two months in the hospital and rehabilitation facility.

12-Year-Old Boy Nearly Dies From ATV Crash

Kentucky – *The Courier-Journal* carried a story on January 20, 2006 about John Stillwell, age 12, who crashed his ATV into a church signpost. He was not wearing a helmet, and suffered a fractured skull, a brain injury, a broken leg, and three crushed vertebrae. He was not expected to live, but did survive. He has had to re-learn how to walk, talk, and feed and dress himself.

Helmet Saves 12-Year-Old-Girl in Flipped ATV

Kentucky – The *News-Democrat & Leader* carried a story on June 20, 2006 about Taylor Monroe, a 12-year-old girl, who flipped her 4-wheeler in July of 2005. Three friends went riding on the Monroe’s 70-acre farm to look for deer. Fortunately, the youth carried a walkie-talkie, so they were able to get help from Taylor’s parents quickly. Taylor suffered multiple skull fractures and broken cheekbones. The ER physician who treated Taylor stated that in his medical opinion, her helmet saved her life. In a year’s time, she recovered completely.

Maine

High School Sophomore Dies in ATV Crash

Maine – NBC in Portland, Maine reported on September 12, 2006 that Thomas Boyd, age 15, died from injuries sustained while being thrown from his ATV after hitting a utility pole on the Estes Road in West Paris. He was not wearing a helmet. He died at Central Maine Medical Center with his family by his side. Oxford Hills Comprehensive High School has provided counseling for students and staff.

Mississippi

11-Year Old Boy Dies in ATV Overturn

Mississippi – *The Clarion-Ledger* reported on January 15, 2006 that Michael Chade McCardle, age 11, died from massive head trauma when the ATV he was riding on rolled over. Neither he nor the driver was wearing a helmet. They were staying at a duck-hunting campground in rural Humphreys County. Chade's family described him as a boy who loved sports, the outdoors, and video games.

Missouri

14-Year-Old Boy Still Recovering Two Years after ATV Turnover

Missouri – The Southeast Missouri Hospital highlighted one of their patients, Zach Dover, as a special Summer 2003 Story. In April 2001, at age 14, Zach took a ride on a full-sized ATV that his friends were testing out. He drove into a ditch and flipped on the way back up. The ATV landed on top of him. He was not wearing a helmet. It broke almost every bone in his face. During surgery, the doctor stopped counting at 156 fractures. He had eight reconstructive surgeries, and has another one scheduled. After the accident, he was on a ventilator, unconscious, for five days. His medical expenses have exceeded \$300,000. After two years, his scars are hardly noticeable, and he only has minor short-term memory loss, but he is now a strong advocate for ATV safety and the importance of using helmets.

New Jersey

12-Year-Old Honor Student Pinned Under ATV, Killed

New Jersey – *The Times* reported on August 19, 2007 that 12 year old Emily Marshall was pronounced dead at Helene Fuld Trauma Center in Trenton, NJ. She had been riding her ATV near Route 579 around 5 PM, when it flipped over and fell on top of her. She was an honor student in her school's gifted and talented program, had attended the gifted and talented program at The College of New Jersey, was active in soccer and horseback riding, and had dreams of becoming a veterinarian.

New York

16-Year-Old Boy Killed After Losing Control of ATV

New York – *The Times Herald-Record* reported on August 15, 2007 that a 16 year old boy from Wurtsboro, NY lost control of his ATV while trying to make a right turn. He had been riding on Meadowlark Trail, a narrow, winding, paved road close to a subdivision. When he lost control, his ATV slammed into a telephone pole, and he died at the scene. He was not wearing a helmet. The teen's name was not released to the press, because police had not yet notified his parents.

North Carolina

13-Year-Old Boy Dies in ATV Accident

North Carolina - *The Charlotte Observer* carried a story on August 14, 2007 about Jordan Killian, age 13, who was killed in an ATV accident. He was on the ATV with another teen, jumping terraces in a field, when the ATV flipped, and they were thrown off. It was unknown at the time of press whether they were wearing helmets, but authorities believe Killian died of head injuries. The other teen was taken to the hospital for treatment of injuries. Four months earlier, in the same county, Diego Alfaro, age 14, died when his ATV crashed into a tree.

Ohio

Ohio State Trooper, Age 24, Killed in ATV Crash

Ohio – On March 15, 2007, *The Register-Herald* reported that Jonathan Paul Seabolt, age 24, who had dedicated his life to highway safety as a state trooper, had been killed in an ATV crash. He lost control while driving and hit a tree. Everyone in the community was shocked by the news. He left behind his wife, Brittany, who had been his high school sweetheart. His nickname at his post was “Country.” An honor guard with several state troopers and highway patrol civilian workers would be at his funeral.

Tennessee

12-Year-Old Boy Dies After 40 Foot Plunge on ATV

Tennessee – NBC news in Nashville and Associated Press reported on August 9, 2007 that Cody Choate, a 12 year-old, experienced ATV rider, had died while riding his ATV. Choate and his 21 year old brother were riding ATVs along a railroad construction area when Choate drove over the edge of the railroad bed, falling 40 feet and hitting a concrete pillar. Both riders were wearing helmets, but the boy died from force of impact.

Additional ATV Safety Resources and Activities

Additional information about ATV safety is available from the following sources and web sites.

ATV Safety Institute

<http://www.atvsafety.org/>

Watch the 8-minute video *Ride Safe, Ride Smart*. You will like it and learn from it! Check out the other resources available from this web site including the golden rules for ATV riding, and how to enroll in an ATV safety class in your area.

ATV Safety Messages from the U.S. Consumer Product Safety Commission

<http://www.atvsafety.gov/safetytips.html>

This site includes safety tips and the number of ATV fatal and non-fatal injuries in the U.S. by year and for individual states. Just go to the U.S. map and click on your state. The site also lists ATV safety courses that are offered in your area.

National Safety Council – All-Terrain Vehicle (ATV) Safety

<http://www.nsc.org/library/facts/agriatv.htm>

Resources are listed for ATV safety inspections, safe operation, ATV size compatible with operator age and responsibility. Links to other sites provide additional information.

4-H ATV Safety

<http://www.atv-youth.org/>

This is a place where you can have fun with games and quizzes as you learn about how much you know and don't know about ATV safety. You can also sign up for an ATV safety class.

Mississippi Farm Bureau Federation – ATV Safety

This is an exceptional well designed 50-minute program that provides instruction on proper use and handling of ATVs across many types of riding conditions and terrain. The program includes an excellent videotape.

<http://www.msfb.com/programs/safety.aspx>

National Agricultural Safety Database (NASD) ATV Safety Packet

<http://www.cdc.gov/nasd/docs/d000901-d001000/d000976/d000976.html>

This site includes ATV Fact Sheets, safety programs and best practices, frequently asked questions about ATV operation, and using ATVs for farm work.

ATV Safety Crisis: America's Children at Risk

http://www.consumerfed.org/pdfs/Final_ATVReportLinks.pdf

This 23 page report describes the serious threats ATVs pose to public health, especially to children too young to drive a car; analyzes the 15-year history of an industry-dominated approach to safety; and offers a series of recommendations that, if implemented, would provide

real protection for America's children — and every operator of an ATV. The report has a table of contents with 21 headings listed so it is easy to find and read sections of interest. Sample sections include:

- ATVs are bigger, faster, and more dangerous than ever
- Injuries and deaths keep rising
- Four-wheelers are just as dangerous as three-wheelers
- America's children pay the price
- Minimum age standards
- Training and testing

Brain Injury Association of Utah

http://www.biau.org/facts/facts_prevention.html

This site describes brain injuries and how to prevent them when riding ATVs, and bicycles, skateboarding, snowboarding, swimming and boating. One section is devoted to ATV injuries. The site describes why child and adult brains need to be protected by approved riding helmets.