Special Thanks

All Film Participants

Members of “The Other Breakfast Club”
A group of adults who meet monthly at an intensive rehabilitation clinic for therapy and moral support after suffering from a traumatic brain injury in a car crash.
Many thanks for sharing your stories in order to help someone else.

Spectrum Health Continuing Care
Cindy Barrus—Program Director

Hope Network Rehabilitation

Mary Free Bed Rehabilitation Hospital

Pace Training Associates
JoAnn Pace

The Brain Injury Association of America

Center for Disease Control Prevention Center

National Institute for Driver Behavior
Fred Mottola—Executive Director

Vermont TBI Survivor of the Year (2003)
Ms. Leigh Clark

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# Resources

- **Brain Injury Association of America**
  - www.biausa.org
  - 800-444-6443

- **Center for Disease Control and Prevention**
  - www.cdc.gov
  - 800-311-9244

- **Health Resources and Services Administration**
  - www.dvbic.gov
  - 301-443-3376

- **National Association of State Head Injury Administrators**
  - www.nashia.org
  - 301-656-3500

- **National Center for Medical Rehabilitation Research**
  - www.nichd.nih.gov/about/nemrr
  - 800-370-2943

- **National Institute on Disability and Rehabilitation Research**
  - www.ed.gov/about/offices/list/osers/nidrr
  - 202-245-7640

- **National Institute of Neurological Disorders and Stroke**
  - www.ninds.nih.gov
  - 800-352-9424

- **North American Brain Injury Society**
  - www.nabis.org
  - 703-960-6500

- **Social Security Administration**
  - www.ssa.gov
  - 800-772-1213
Driving Ability

Driving takes skills and it is one of the most dangerous and complex tasks we do in our everyday lives. Brain injury can affect the many physical, cognitive, and behavioral skills needed to drive well. The driver's physical ability to steer the vehicle, control speed and braking may be altered by a brain injury. Many people with brain injury may have to limit their driving or stop altogether.

**REMEMBER…**

**DRIVING IS A PRIVILEGE!**

**DRIVER SKILLS AND THE ABILITY TO DRIVE SHOULD NOT BE TAKEN FOR GRANTED.**

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Preface

*By JoAnn Pace*

The brain, with its intricate connections to every part of your body, enables you to direct your life toward a future of choices; what you do for fun, who your friends are, and what you will become. But in a micro-flash, less than one second, the forces encountered in an automobile crash have the potential to dramatically change or erase all of your choices and everything you defined for your future.

What is this “entity,” the brain? First and foremost, the mechanisms of the brain link and coordinate the major systems, their organs and cells in an intelligently orchestrated symphony of life.* So, an injury to this system, particularly the brain, can interfere and disrupt our worlds as we know it. But before we talk about traumatic brain injury (TBI), let’s talk briefly about what our brains control.

In short, different parts of the brain, the “master switch,” serve different purposes. The most primitive part of the brain controls the functions we need to survive. This autonomic nervous system controls the ability to make your heart beat, your lungs to take in air, and your intestines digest without conscious awareness.

Other regions of the brain within the cerebral cortex help us navigate the world around us through our senses. These very sophisticated areas receive information that enable us to respond safely in our environment:

- We hear our school band play, and we feel pride…
- We eat a hamburger and fries and we feel happy…
- We see an angry mob; we run…
- We hear railroad signals, and know to stop.

And yet another area of the brain, the most evolved system of any species, is the frontal cortex which gives us the ability to decide and plan for the future, to make changes, and to exert control over our lives. (i.e. friends, colleagues)

If you are involved in an automobile crash and incur a severe injury to your brain, there is a high likelihood that you could lose control of your life and the future you had planned. In a car crash, extreme forces exerted on your body and brain can have many outcomes, as you will learn from the stories you are about to hear. These four young people who experienced and survived auto crashes now live with the consequences of a traumatic brain injury. Now let’s watch “No Way Back…”

*Reference: Candace Pert, “Molecules of Emotion,” p. 185
**What is Traumatic Brain Injury?**

A traumatic brain injury (TBI) is defined as a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain. Brain injury is unpredictable and its consequences affects who we are, the way we think, act, and feel. It can change everything about us in a matter of seconds. The most important things to remember are:

- No two brain injuries are exactly the same.
- The effects of a brain injury are complex and vary greatly from person to person.
- The effects of a brain injury depend on such factors as cause, location, and severity.

When a brain injury occurs, the functions of the neurons, nerve tracts, or sections of the brain can be affected. If the neurons and nerve tracts are affected, they can have difficulty carrying the messages that tell the brain what to do. Brain injury can also change the complex internal functions of the body, such as regulating body temperature; blood pressure; bowel and bladder control. These changes can be temporary or permanent. They may cause impairment or a complete inability to perform a function.

**Tips for Safety on the Road**

Every 18 seconds someone is involved in an auto crash; every 11-minutes someone dies in one. Here are a few “tips for safety” every driver should practice:

**Buckle your seatbelt** and make sure all other passengers buckle up.

**Keep your eyes on the road.** Using a cell phone, eating, reading and any other behavior that takes your eyes off the road can distract you and lead to a crash. **Keep in mind that a distracted driver might also be near you, so drive cautiously.**

**Don't drink and drive, and don't ride with anyone who has been drinking.** Call parents or friends to take you home if you need a ride.

**Do not drive sleep-deprived.** Sleep is not a matter of willpower. It is a biological need. If you become drowsy, pull off the road at a safe spot and get some rest. Better yet, you should designate a driver!

**Do not tailgate.** Let a tailgater pass you.

**When passing another car,** get past the driver’s blind spot as quickly and safely as possible.

**In stormy weather,** leave extra space between you and the car ahead.

**Don't drive through water.** A small amount of water can disable a vehicle in seconds.

**Don't drive like you own the road.** Drive like you own the car.

**OBEY THE RULES OF THE ROAD!**
Driver Education and Obeying the Law is Important

Modern communications tools such as home video and interactive computer learning materials can supplant or augment classroom training prior to behind the wheel practice.

Training programs and materials should not focus on how to pass the test, but rather how to incorporate the appropriate skills, attitude and behavior to be a safe, successful driver. ¹

Graduated Driver Licensing (GDL) laws are one approach that’s been proven effective at reducing teen crashes. Research suggests that the most comprehensive GDL programs are associated with reductions of 38% and 40% in fatal and injury crashes, respectively, among 16-year-old drivers. ²

Driver education works better when it is coupled with GDL laws and high school driver education. Programs can be adapted to fit well within the graduated driver licensing system.

To find out what the GDL laws are in your state, visit the Insurance Institute for Highway Safety’s (IIHS) website at: http://www.iihs.org/laws/gdl_full.aspx

Causes of TBI

Motor vehicle-traffic crashes result in the greatest number of TBI related hospitalizations. The rate of motor vehicle traffic related TBI is highest among adolescents ages 16 to 19 years.

- Falls are the leading cause of TBI; rates are highest for children ages 0 to 4 years and adults ages 75 years and older.
- Struck by/against events, which include colliding with a moving or stationary object, are the third leading cause of TBI.
- Approximately 1.6 – 3.8 million brain injuries are sports and recreation-related.

Source: 1) www.nhtsa.gov 2) www.cdc.gov
Driving after TBI

Wanting to drive after a brain injury is natural, and a return to driving may be an important goal. However, do not assume that this will be a simple goal.

Make a fair assessment according to a person’s abilities. It is also important to understand that a person who has suffered TBI should have a “driver evaluation” before getting back on the road.

If doctors and therapists conclude that driving could be dangerous, it is important to accept their judgment.

Driving at night or in heavy traffic may be ruled out and other means of transportation should be considered for long trips.

THIS IS A LIFELONG CONDITION THAT WILL REQUIRE SPECIAL ATTENTION.
“Thought Process” Activity

♦ Select a partner. Time how long it takes to read the first box of words.
♦ Now using the second box, time how long it takes to read the words.
♦ The delay in your response demonstrates what a person with TBI can experience.

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Teen Drivers

Motor vehicle crashes are the leading cause of death for teens in the U.S. The risk of motor vehicle crashes is higher among 16 to 19 year olds than among any other age group. In fact, per mile driven, teen drivers ages 16 to 19 are four times more likely to crash.

Among teen drivers, those at especially high risk for motor vehicle crashes are:

- Males,
- Teens driving with teen passengers, and
- Newly licensed teens.

Even bright, mature teenagers sometimes do things that are irresponsible. But when that happens, it’s not entirely their fault. It’s because their brain’s haven’t finished developing. The undeveloped area of the brain is called the frontal lobe. It plays a critical role in decision making, problem solving and understanding future consequences of your actions.

Problem is, this area doesn’t fully mature until people are in their 20’s. This is one reason 16 year old drivers have crash rates three times higher than 17 year olds and five times higher than 18 year olds.

Special thanks to Leigh Clark 2003 Vermont TBI Survivor of the year
David

Additional Discussion Points

Kelley’s Scenario:

- “It was bad visibility and the area was known for crashes.”
- “I don't remember anything. I only remember 3 days before the crash.”
- It would take 35 minutes to walk 170 feet. She would get lost walking down the hall. She couldn't roll or move up and down in the bed.
- “It’s not like breaking a leg or arm. You’re not the same and it changes your life.”

Amy’s Scenario:

- “As I was going around a curve, I couldn't see traffic backed up.”
- “I should have paid more attention, we were talking.”
- “Teenagers usually are the ones to crash.”
- “It was an accident* that could not be prevented.
- “She had to learn to brush her teeth, comb her hair and dress herself.”

*We do not encourage the word “accident.” In most cases, it is a “crash.”

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David, addicted to speed, cranked up the music as he was driving home in a good mood, anticipating the night ahead. Driving at 90 mph, he veered off the road and, unable to recover, his car flipped over 5 times within 1/8 of a mile. He had to be airlifted to the nearest hospital. His mother had warned him three weeks earlier to slow down.

1. You are driving fast. Suddenly, you feel the vehicle start to pull off the roadway. What are your options?
2. If your vehicle goes on to the shoulder, what action should you take?
3. How do you feel about speeding?

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Answers:

1. **First, NEVER drive fast.** Steer away from the road for a clear targeting path. Brake lightly to stop.
2. Turn towards the road using the off-road recovery method. No braking until you are back on the solid pavement.
3. Discuss dangers of speeding and GDL law in your state.
**Additional Discussion Points**

Discuss the options and your choices with a parent, guardian or mentor. On a separate paper or on the board, draw a diagram of this scenario.

What can you do in the future to prevent this type of crash?

**David’s Scenario:**

- He had an “urge” to speed.

- There was a speaker box in the back of car and he had the seats folded down. (distraction)

- He had to learn how to walk, swallow and tie shoes.

- His crash had an effect on his entire family his mother, father, sisters and grandparents.

- “He finally had an epiphany and realized he can die.”

**Adora’s Scenario:**

- She did not take driver ed and had her license for one month.

- “Losing the one thing that is dear to you.” She lost her voice and had to learn how to speak all over again.

- It took years before she was able to go from the wheelchair to the walker and from the walker to walking.

- “Homework prepares you to learn, practice teaches you to drive.”

- “I didn't know how crucial it (practice) was.”

**Adora**

Adora had her driver license for one month before her crash. She never took driver education or received supervised practice. She was tailgating a truck on a two-way highway, when it suddenly braked. In an attempt to avoid crashing, she swerved to the left, where she was hit full force by an oncoming truck from the opposite direction.

1. What distance is acceptable for following space?
2. What is the best way to learn how to measure distance to the car ahead?
3. How many seconds should there be for following distance?

**Answers:**

1. You should be able to see the tires of the vehicle in front of you touching the pavement.
2. Decide how many seconds you are away. When the back of the car passes a marker, such as a pole, count 1001, 1002 etc. until the front of your vehicle reaches the marker pole.
3. Having less than 4 seconds of following distance will make an evasive action more needed and more difficult. To avoid evasive steering in reaction to the vehicle ahead, give yourself four seconds to survive!
Amy

Line of Sight/Path of Travel

Amy was injured in a rollover crash when her mother, who failed to slow down while approaching an upward curve on the freeway, had to abruptly swerve in an attempt to avoid backed up traffic from a crash ahead.

1. What do you do when approaching curves and hillcrests?
2. What steps do you take while driving around a curve?
3. What are the dangers of talking while driving?

Answers:

1. Keep 4 seconds of road visible. When you have less than 4 seconds, brake before going into the curve.
2. Slow down before the start of the curve to avoid braking in the curve. While in the curve, keep your speed steady and slow enough so that objects and people are not pushed from the force of turning on the curve. Near the end of the curve, begin accelerating to return to normal speed.
3. Talking requires attention. Your brain must monitor the topic and content, coordinate turns and so on. Talking can divert attention from a driving task which creates a form of impairment.

Kelley

Time Management/Poor Judgment

The weather was rainy and dreary as Kelley, in a rush, attempted to exit a shopping mall parking lot by making a left turn onto a two-lane highway. At the same time, a van was making a right turn to enter the parking lot. Kelley, unable to see behind the van, misjudged traffic and was hit by an oncoming truck driving alongside the turning van.

1. Where should you look before entering an intersection?
2. Where should the driver look before making a left turn?
3. You are driving out of a parking lot and turning right as you enter a street and a vehicle is approaching from your left. What do you do?

Answers:

1. Search far into the intersection to the target area. Search left, front, right and repeat before entering the intersection.
2. Always look at the farthest point into the intersection and to the target area. Wait for clearance before proceeding into the intersection.
3. Stop and wait for the vehicle to pass before turning onto the street. If you were turning left, you have to yield to vehicles from both directions and wait to see if any other vehicles are behind it.
Special Thanks

All Film Participants

Members of “The Other Breakfast Club”
A group of adults who meet monthly at an intensive rehabilitation clinic for therapy and moral support after suffering from a traumatic brain injury in a car crash.
Many thanks for sharing your stories in order to help someone else.

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