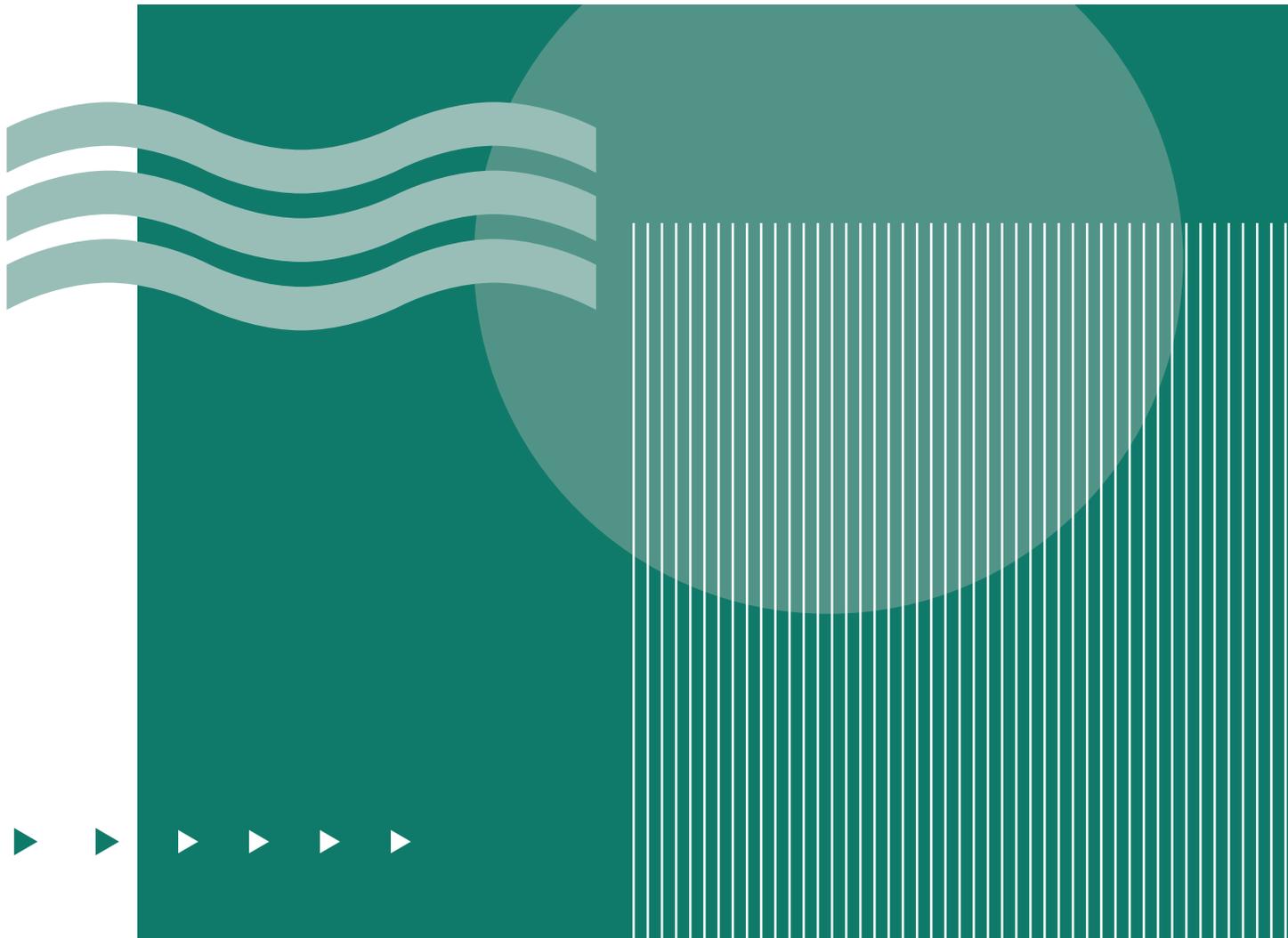


# *Understanding Brain Injury*

## *A Guide for the Family*



# Introduction

Brain injury is a life-altering event which affects virtually every area of a person's life — including his or her relationship with family members and others close to him or her. The effects of brain injury often cause roles and responsibilities within the family to change. Family members and others close to the person with brain injury may find themselves struggling to cope with changes in the behavior of the person with brain injury. The person with brain injury also may struggle to adjust. Family members and others close to the person may find themselves feeling stressed, burdened, and even depressed by the major changes in activities, responsibilities, daily schedules, leisure and support that are required by the adjustment to brain injury.

Often large adjustments are best made in small steps. Simple changes in a particular situation may help the person with brain injury and those close to him or her to begin enjoying their relationships and activities more. Taking each stressful situation one by one, the person with brain injury and his or her family may gradually find life beginning to feel a little more “normal” again.

This booklet contains information on the following topics:

- The structure and function of the human brain
- The causes of brain injury
- The recovery process
- Behavior and communication changes after brain injury

This booklet also outlines a number of stressful behaviors and situations that may occur for people with brain injury. Possible solutions follow each possible stress-creating behavior or situation. A solution that works well for one person may not work at all for another. For this reason, the best way to use this booklet is to try one of the solutions for two or three weeks. If the solution does not work, try another solution. Sometimes the ideas in this booklet stimulate families to develop their own unique solutions to problems. If, after trying several solutions to a problem, nothing seems to be working, involving a professional may be helpful. A brain injury psychologist, clinical social worker or other behavior specialist can help analyze and develop an approach that considers the special features of your unique situation.

The brain injury family specialist (clinical social worker) employed by the Brain Rehabilitation Program can assist you in identifying ways to make the adjustment to brain injury. Do not hesitate to contact the brain injury family specialist at 507-255-3116 for help.

# *Structure and Function of the Human Brain*

The human brain is composed of billions of nerve cells. These are arranged in patterns that work together to control thought, emotion, behavior, movement and sensation. In order to understand this more clearly, it is useful to know something about the brain's structure and function.

The brain is divided into two halves that look nearly the same but differ in many functions. These are the **cerebral hemispheres** (figure 1). The cerebral hemispheres are further divided into four separate areas called **lobes**.

For most people, the left half of the brain controls verbal functions including language, thought and memory involving words. The right half controls nonverbal functions. These include such things as recognizing the differences in visual patterns and designs, reading maps and enjoying music. The right hemisphere also is involved in the expression and understanding of emotions.

Although each half of the brain has distinct functions, the two parts actually work closely together in a very special way to control the activity of the body. The left side of the brain controls movement and sensation in the right side of the body, and the right side of the brain controls movement and sensation in the left side of the body. Thus, damage to the right side of the brain may cause movement problems or weakness on the left side of the body.

Specific parts of the brain control specific functions. The effect of a brain injury is partially determined by the location of the injury (figure 2).

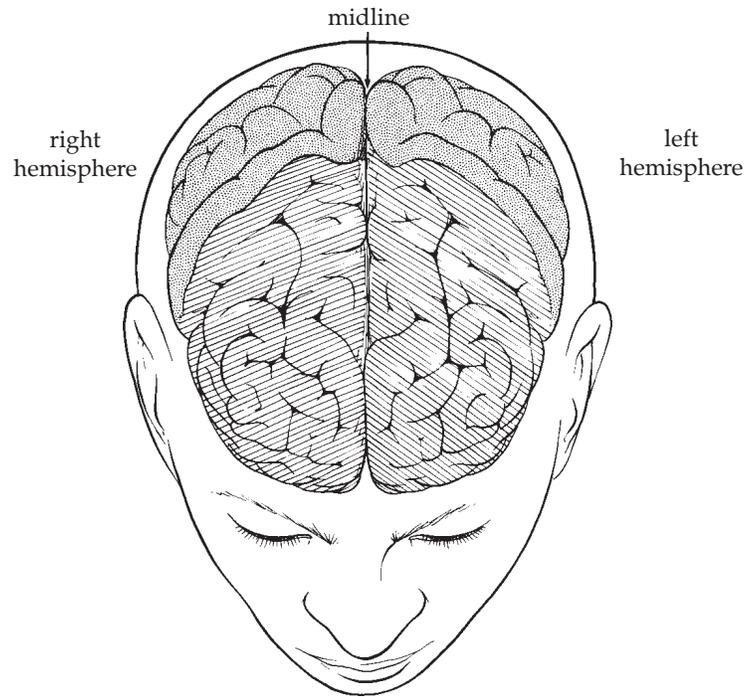


Figure 1. Cerebral hemispheres

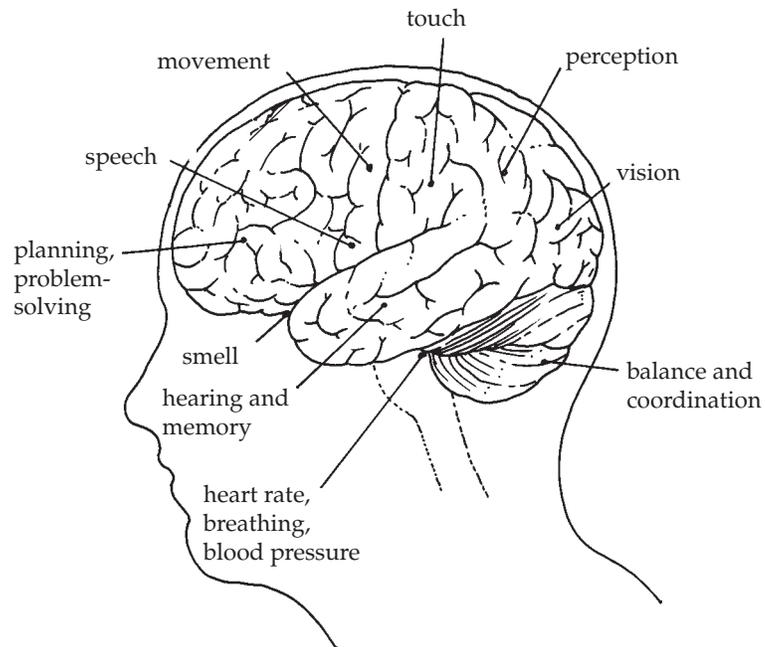


Figure 2

# Types and Causes of Brain Injury

## What causes a traumatic brain injury?

When an outside force strikes the head, there may be damage to the brain and to the skull that protects it. This outside force could be a blow to the head caused by an automobile accident or a fall. The initial response to this trauma may vary. The injured person may feel slightly dazed or may lose consciousness for several minutes, hours or even days. The strength of the outside force is important in determining how serious the injury to the skull and brain is.

The direction of the outside force is also important in determining the extent of brain injury. When the head is struck from the front, back, or sides, the brain is quickly thrust forward and then again backward against the inside of the skull. This can cause localized brain damage in the area of the initial impact, on the opposite side of the skull, or in both places. There may be bleeding at both sites. This type of injury is called a **coup-contrecoup** injury (figure 3).

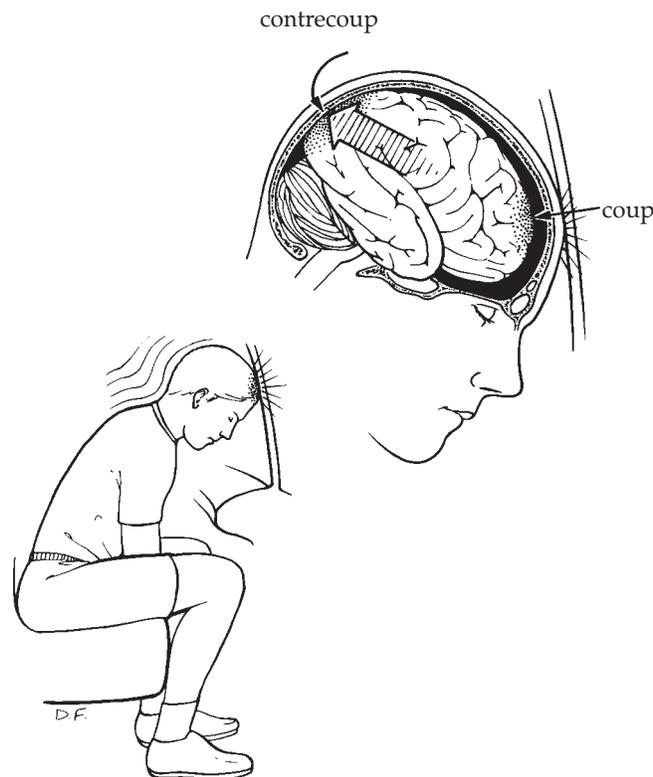


Figure 3

Localized brain injury can also be caused by a fracture of the skull, or when an object enters the head and damages brain tissue in its path.

When the head is struck at an angle and rotates, nerve cells in many areas of the brain can be stretched simultaneously, leading to damage that is much more widespread. This is known as **diffuse axonal injury**. Diffuse axonal injury can occur without fracture or penetration of the skull.

Traumatic brain injury can result in a combination of both localized and diffuse damage to the brain.

**What causes an atraumatic brain injury?**

Not all brain injuries are a result of outside forces. Sometimes a change in flow of blood within the brain can cause brain damage. A blocked or burst blood vessel or lack of oxygen to the brain can damage brain cells. Swelling of brain tissue after such an occurrence can result in further damage. Strokes, aneurysms and tumors are examples of atraumatic brain injury.

# *Process of Brain Injury Recovery*

Recovery may be measured in weeks, months, and years and slows with the passage of time. The effects of brain injury are often long-lasting and recovery may be incomplete. Although some people with severe brain injuries experience only mild long-term difficulties, other people may require care or special services for the rest of their lives.

In the days and weeks immediately following brain injury, the function of surviving brain tissue is often affected by swelling, bleeding and/or changes in the complex chemistry of the brain. Sometimes blood accumulation must be removed surgically to reduce swelling and pressure within the brain. Controlling swelling and giving the blood flow and chemical systems of the brain time to recover usually leads to improvement in function.

It is not yet clear exactly what happens in the brain during the later stages of recovery, but some parts of it are slowly beginning to be understood. Recovery from brain injury does not mean replacement of destroyed brain tissue. There is no known way for the brain to create new cells. However, many things can occur that help restore surviving brain tissue to its best possible function. For example, though the total number of brain cells does not change, it is thought that surviving brain tissue has the capacity gradually to learn how to carry on some of the functions of destroyed cells.

In cases of brain injury, there is often trauma to other parts of the body with associated bleeding, swelling and changes in function. The effects of these other injuries can further damage the brain. For instance, excessive bleeding may deprive the brain of needed blood and oxygen. Prompt treatment for associated injuries may help limit damage to the brain.

The medical community has just begun to appreciate the mechanisms by which a damaged brain recovers. Current treatment methods are based on a growing understanding of these mechanisms.

# *Role Changes and Support for the Caregiver*

Illness or injury to a family member affects the whole family and all those close to them. If the illness is chronic, the usual family roles, routines and responsibilities may be interrupted or changed. One of the changes is that someone becomes a caregiver.

A caregiver is anyone who takes primary care of someone else, either permanently or temporarily. Providing companionship and emotional support for the person with a brain injury may be necessary, in addition to physically caring for him or her. Caregivers also may have many other responsibilities, including employment outside the home and caring for the home and children. Being a caregiver can be overwhelming, and adapting to these changes is challenging.

Take a few minutes to identify how the roles in your family have changed. What new responsibilities have you added to your daily routine? How have the changes affected your life?

When you are a caregiver, it is important to take care of yourself so that you have something to give others. The following suggestions may help.

- Ask for help when you need it. Caregivers frequently try to handle everything alone. Expecting too much of yourself may add to the stress. Do not be afraid to ask for help. Find options for assistance like home healthcare or respite care.
- Set limits. There are only so many hours in the day and only so many things you can do. Some things can wait.
- Plan something to look forward to each day. Reward yourself for caring.
- Take time away from the person you are caring for. Taking an hour, a day, a weekend or a week away can do wonders to restore your emotional well being.
- Maintain contact with friends and family with whom you can discuss concerns or have fun.
- Take care of yourself. Caregivers are vulnerable to stress-related illnesses. If you have questions or concerns about your health, make an appointment with your physician. Tell your physician about your situation.
- Take time for exercise. Exercise increases stamina, lessens anxiety and depression, improves or maintains muscle tone and strength, and increases self confidence. These benefits make exercise a worthwhile use of your limited time.
- Learn relaxation techniques such as breathing exercises, meditation or progressive muscle relaxation.
- Join a support group. Support groups provide an opportunity to share problems and concerns. People with similar issues understand what you are feeling.
- Keep your sense of humor. Laughter is a great stress reducer because, for a moment, you are not thinking about your problems.

# *A Partnership Approach*

Problems in thinking and behavior can emerge as a result of a brain injury. It is important to recognize and understand that the source of these problems is the injury to specific parts of the brain. The following information outlines thinking and behavioral management strategies that may help you and the person with brain injury compensate for the loss of certain skills.

After a person has experienced a brain injury, he or she may feel a loss of control in many aspects of his or her life. The person may feel inferior or unequal as a partner in a personal or working relationship. A partnership approach can be effective in negotiating the thinking and behavior problems of a person with brain injury. After brain injury, it is important for families, those close to the family and the person with brain injury to work together as partners to develop solutions to thinking and behavior problems through the following steps.

1. Prepare a plan of action.
  - Involve the person with brain injury in the planning.
  - Define responsibilities.
  - Use compensation tools such as calendars and notebooks as memory aids through the planning phase.
2. Keep it simple.
  - Break tasks into small steps.
  - Keep the environment free of distractions.
3. Use a problem-solving format.
  - Recognize that there is a problem.
  - Define the problem.
  - Decide on possible solutions to the problem.
  - Weigh the advantages and disadvantages of each possible solution.
  - Pick a solution.
  - Try the solution.
  - Evaluate the success of the solution.
  - Try another solution if the first one is not working.
4. Provide feedback and reassurance.
  - Evaluate performance and provide gentle, realistic comments about behavior. Identify successes and be matter-of-fact about mistakes.
  - Be honest, supportive and respectful.

# Problem-Solving Format

1. Define the problem. \_\_\_\_\_
2. Come up with possible solutions.
3. Weigh the advantages and disadvantages of each possible solution.

Possible solutions	Advantages	Disadvantages

4. Pick a solution to try.
5. Evaluate the success of the solution.
6. Try another solution if the first one is not working.

# *Behavior, Memory and Thinking Problems After Brain Injury*

Brain injury can disturb:

- Alertness and concentration
- Self-awareness
- Perception
- Memory and learning
- Reasoning, planning and problem-solving
- Speech and language
- Motor control
- Emotions

The following information will help familiarize you with behavior, memory and thinking problems that a person with brain injury may experience. Also included are specific techniques you can use to help the person participate more effectively and comfortably in the family. Consistent and frequent repetition of the specific techniques listed will increase the chance of success.

Do not hesitate to contact the brain injury family specialist, 507-255-3116, if you have questions or need assistance and suggestions.

## **Confusion**

### *Signs*

- Confuses times/tasks in schedule of activities
- Confuses past and present events
- Confabulates (makes up convincing stories to fill memory gaps; this is not intentional lying)

### *What to do*

- Encourage the use of a notebook to log events and encourage the person to refer to it for details of daily events.
- Gently remind the person of correct details of past and present events.
- Confirm accurate information with other people.
- Arrange for consistency in routine tasks (use calendar and notebook).
- Limit changes in daily routine.
- Provide detailed explanations of even the most basic changes in daily routines.

## **Difficulty remembering**

### *Signs*

- Unable to remember tasks from day to day
- Unable to remember new information

*What to do*

- Establish a structured routine of daily tasks.
- Encourage the consistent use of memory aids such as calendars and notebooks to plan, record and check off tasks as completed.
- Encourage the person to write new information in the memory notebook.
- Encourage other family members also to write any information they may need to provide the person.
- Encourage review and rehearsal of this information frequently throughout the day.
- Provide opportunities for repeated practice of new information.
- Try to pair new information with things the person is able to recall.
- Provide spoken cues as needed for recall and, if necessary, help fill in memory gaps.

**Attention problems***Signs*

- Short attention span
- Distractibility
- Difficulty in attending to one or more things at one time

*What to do*

- Focus on one task at a time.
- Be sure you have the person's attention before beginning a discussion or task.
- Decrease distractions when working or talking with the person. (Eliminate or reduce noises.)
- Praise any improvement in length of attention to activity.
- Gently refocus the person's attention to the details of the activity as needed.
- Keep abrupt changes to a minimum.
- Ask the person to repeat information he or she just heard to be sure he or she followed the conversation.
- Schedule brief rest periods between short periods of work or activity (for example, 20 to 30 minutes of work, five-minute break; 20 to 30 minutes of work, etc.).

**Difficulty with decision making — poor judgment***Signs*

- Hesitation with decisions
- Inappropriate decisions and potentially harmful decisions
- Difficulty reasoning
- Ineffective problem solving

*What to do*

- Encourage the person to “stop and think.” Many people with brain injury benefit from a note or a stop sign on the front of their notebook reminding them to “stop and think.”
- Use the Problem-Solving Format on page 9.
- Help the person explore various options to problems.
- Have the person write possible options in his or her notebook.
- Discuss advantages and disadvantages of each option.
- Role play to prepare the person for various situations.

**Difficulty with initiation***Signs*

- Has trouble getting started
- Appears disinterested or unmotivated

*What to do*

- Help the person develop a structured daily routine.
- Provide specific choices for daily tasks. For example, ask, “Would you like to do A or B?”
- Simplify tasks. Break down tasks into simple steps and complete one step at a time.
- Encourage the use of a notebook or calendar and set specific deadlines for tasks to be completed.
- Praise the individual when he or she gets started without assistance.
- Establish a time frame in which to accomplish tasks.

**Difficulty carrying out a plan of action***Signs*

- Lack of follow-through with a task
- Difficulty in planning a sequence of tasks
- Appears disorganized

*What to do*

- Begin with small, realistic projects.
- Include the person in planning the activity.
- Provide a clear and detailed explanation of an activity before starting.
- Break down new or complex tasks into several easier steps.
- Have the person write the sequence of steps for the task.
- Ask the person to repeat to you the steps to be done to ensure understanding.
- Encourage the person to refer to his or her plan, and check off each task as it is completed.
- Repeat and explain the sequence of activities as needed.
- Allow extra time for the person to complete tasks.

**Difficulty with self-control: impulsiveness, lack of inhibition, perseveration**

*Signs*

- Acts or speaks without all the information or without considering the consequences
- Impulsiveness or poor judgement
- Inappropriate comments to or about others
- Gets stuck on one idea or activity (perseveration)

*What to do*

- Limit options from which the person can choose.
- Suggest alternatives for behavior.
- Explain the reasons for tasks.
- Be fair in your expectations.
- Respond immediately to inappropriate ideas but maintain the original focus of the discussion.
- Encourage the person to slow down and think through tasks or responses.
- Provide verbal and non-verbal feedback in a supportive way for reassurance.
- If undesired behavior occurs, discuss the consequences privately in a calm and confident manner.
- Praise and reward desired behavior.

**Impaired self-awareness**

*Signs*

- Lack of awareness of deficits and limitations
- Inaccurate self-image/self-perception

*What to do*

- Anticipate lack of insight.
- Prompt accurate self-statements.
- Use feedback generously in a supportive way.
- Give realistic feedback as you observe behavior.

**Difficulty with social situations**

*Signs*

- Acting or speaking without all the information or without considering the consequences
- Difficulty taking turns
- Socially inappropriate behavior or comments
- Disrespectful of social boundaries

*What to do*

- Provide clear expectations for desirable behavior.
- Treat the person appropriately for his or her age.
- Plan and rehearse social interactions so that they will be familiar, predictable and consistent.
- Establish verbal and non-verbal cues to signal the person to “stop and think.”
- Encourage the person to slow down and think through responses.
- Prompt the person to consider the consequence of his or her behavior.
- Provide positive feedback for appropriate behavior.
- Encourage a break in activity when frustration is evident.
- Respond immediately to inappropriate ideas but maintain the original focus of the discussion.
- If undesired behavior occurs, address the behavior and consequences privately in a calm and confident manner. Be objective and explain that the behavior, not the person, is inappropriate
- Reassure and be fair in your expectations.

**Difficulty controlling emotions***Signs*

- Mood swings ranging from anxious to sad to angry
- Inappropriate laughing or crying
- Lower tolerance for frustrating situations

*What to do*

- Expect the unexpected.
- Remain a model of calm assurance and confidence if an emotional outburst occurs.
- Take the person to a quiet room or area to give him or her time to calm down and regain control.
- Provide feedback in a gentle, supportive manner after the person regains control.
- Avoid comparing past behaviors to present.
- Gently redirect behavior to a different topic or activity.
- Use humor in a positive and supportive manner.
- Recognize that the person may use negative comments or refusal as a means of control.
- Understand that brain injury often prevents the individual from feeling guilt or empathy.
- Recognize your own emotional reactions to the person with brain injury.

# Communication Changes After Brain Injury

A brain injury can affect the way a person communicates. Difficulties with communication can be caused by many different factors including changes in behavior and thinking skills, problem-solving, judgment, reasoning, awareness, memory loss and lack of self-awareness.

Language ability and speech also may be affected by brain injury. Through language, a person receives and expresses ideas. Language is linked to cognition (thinking ability) and involves understanding, talking, reading and writing.

People with a brain injury may have changes in one or many of these areas. These changes will affect the way the person with a brain injury communicates. The severity and combination of problems vary from one person to the next.

## Initiating conversation

### *Signs*

- Does not respond to another person's conversation, questions or comments
- Does not start, or is slow to start conversations, ask questions, or make comments
- Leaves long pauses
- Has difficulty explaining what he or she means

### *What to do*

- Encourage the individual to participate. For example ask, "What do you think about that?"
- Ask open-ended questions such as, "Tell me about \_\_\_\_\_."
- Give the person time to organize his or her thoughts. He or she may need extra time in order to respond to any request or question.
- Give the individual your full attention and allow time for him or her to complete the thought.
- Rephrase what he or she has said such as, "Do you mean \_\_\_\_\_?"

## Following conversation

### *Signs*

- Has difficulty paying attention to what is said
- Misinterprets what is said

### *What to do*

- Get his or her attention before speaking.
- Be clear and concise.
- Reduce distractions.

- Emphasize important information.
- Offer to repeat what was said.
- Ask him or her to look at you when speaking.
- Invite the person to ask questions if he or she does not understand.

### **Taking turns in conversation**

#### *Signs*

- Talks non-stop, does not give the listener a turn to speak
- Does not appear to adjust communication style or behavior for the situation

#### *What to do*

- Politely interrupt and ask him or her for a chance to speak.
- Ask the person to, "Please make it brief," or tell him or her you would like to say something.

### **Dealing with topics**

#### *Signs*

- Has a hard time selecting topics for conversation
- Has a hard time keeping up when topics change
- Introduces a new topic abruptly
- Does not always stay on topic

#### *What to do*

- Ask about his or her interests and opinions.
- Clarify new topics as they come up.
- Ask how his or her comment relates to the topic such as "Do you mean \_\_\_\_\_?"
- Tell the person you are confused or "getting lost" in the conversation.

### **Intelligibility**

#### *Signs*

- Slurred speech
- Speaks too loudly or softly, making it hard to understand his or her message
- Speaks too rapidly

#### *What to do*

- Tell the person you did not understand and ask him or her to repeat.
- Establish and use consistent gestures or cues (for example, cup your hand to your ear as a reminder to speak louder).

**Nonverbal  
communication**

*Signs*

- Does not seem to understand common non-verbal cues
- Stands too close or too far from conversational partner(s)
- Uncomfortable number/type of physical contacts
- Body language that does not seem to “match” what is said
- Facial expressions that do not seem to “match” what is said
- Distracting, repetitive or excessive body movements
- Poor eye contact
- Staring at others during conversation

*What to do*

- Ask the person to maintain a comfortable distance.
- Politely ask the person to modify his or her physical contacts; explain that his or her behavior is making you feel uncomfortable.
- Tell the person you are confused by the difference in body language and spoken message.
- Ask the person what he or she is feeling.
- Politely ask the individual to stop his or her distracting movements.

# Seizures After Brain Injury

A medical condition that may occur after brain injury is post-traumatic epilepsy (seizures). Seizures can be caused by a sudden, excessive, disorderly electrical discharge of brain cell activity. This risk of ongoing seizures is related to the severity and characteristics of the injury.

The risk seems to be greatest in the first two years after injury, then gradually declines. Up to 10 percent of people with brain injury have ongoing seizures.

There are two types of seizures that may occur after brain injury. These are **generalized (grand mal, tonic/clonic)** and partial (**partial complex and simple partial**) seizures.

## Generalized seizures

**Grand mal, tonic/clonic seizures** usually involve involuntary jerking or shaking of most or all four limbs, unresponsiveness and loss of bladder control.

Most seizures are self-limited and last only a few minutes. The person may cry out, stiffen and fall, have jerking movements, turn flushed or blue and have some difficulty breathing. Try to remain calm and take the following steps.

1. Make sure the person is in a safe area and put something soft under the head if the person has fallen down.
2. Loosen tight clothing such as a necktie or belt and remove eyeglasses.
3. Clear away hazardous objects that may be nearby.
4. Place the person on his or her side keeping the chin away from the chest. This will allow drainage of saliva from the mouth.
5. Do not force your fingers or any object into the person's mouth.
6. **Do not restrain the person. You cannot stop the seizure.**

After the seizure, the person usually will be temporarily confused and drowsy. Do not offer any food, drink or medication until he or she is fully awake. Someone should stay with the person until he or she has fully recovered. Check for a medical identification tag on a bracelet or necklace.

### Dial 911 for emergency assistance in the following situations:

- Breathing does not resume after the seizure and mouth-to-mouth resuscitation is necessary.
- The recovery after the first seizure is not complete and another seizure begins.
- The person has been injured during the seizure.

- The person has awakened and requests an ambulance for emergency medical attention.
- The seizure continues for more than five minutes without stopping.

Prompt medical care is also recommended if this is the person's first known seizure.

Until a set seizure-free interval has been maintained (often six months to one year), driving privileges are restricted by state law. During this time, extreme caution should be taken if the person will be working around heavy or dangerous equipment.

## **Partial seizures**

**Partial complex seizures** may involve loss of awareness, inappropriate verbal response, purposeless movement, staring or repetitive chewing, swallowing or lip-smacking motions.

**Simple partial seizures** are involuntary jerking or shaking of one part of the body without loss of consciousness. These may spread to other body parts and become generalized.

Take the following steps in this situation:

- Do not try to restrain the person unless his or her safety is in jeopardy.
- Try to remove hazardous or harmful objects that may be nearby.
- Arrange for someone to watch the person until he or she is fully aware again.

Medical assistance generally is not necessary when partial seizures occur except when one seizure follows another in a continuous series, or when a partial seizure develops into a generalized seizure and the person is not recovering.

# *Impact of Fatigue After Brain Injury*

An often-overlooked element of recovery from brain injury is fatigue. Fatigue may result from brain injury itself or associated injuries. Because activities that once were performed with little or no effort may now require great amounts of energy, a person with brain injury may experience an overwhelming sense of tiredness. This fatigue may directly impact many activities by making physical functioning, attention and concentration, memory and communication more difficult.

When a person with brain injury returns home, it is difficult to know how much he or she should do and for how long. Many people have little understanding of how brain injury will affect their performance. They may try to take on too much too quickly. When this happens, despite dedicated effort, the attempts of the individuals with brain injury may prove frustrating and unsuccessful. Family members can help by encouraging the person with brain injury to work at a slow but consistent pace and to establish a regular schedule with consistent rest breaks or naps.

In time, it is likely that a person's stamina and energy level will improve, and responsibilities may be increased. However, often during this transitional time, people with brain injury and family members become frustrated with the gradual pace and shifts in responsibility. It is important to remember that this is just one step in the recovery process for a person with brain injury. A supportive environment with open communication will go a long way to promote healthy gains in performance and reduce setbacks.

# *Use of Alcohol and Drugs After Brain Injury*

A brain injury can affect the way people think and manage their emotions. If a person with brain injury drinks alcohol, uses illicit drugs or uses prescribed drugs in excess, it can further interfere with thought processes and can result in serious damage to the cells and nerves in the brain. This will worsen the effects of brain injury. Alcohol and drugs can disturb:

- Alertness and concentration
- Self-awareness
- Perception
- Memory and learning
- Reasoning, planning and problem-solving
- Speech and language
- Motor control
- Emotions

Family members play an important role in helping the person with a brain injury abstain from using alcohol and drugs. To provide support, family members must take substance abuse seriously and avoid thinking of it as being a “phase.” Although it is difficult to change someone’s drug or alcohol habits, family members, spouses, and others close to the person can motivate him or her to lead an alcohol and drug-free lifestyle. One way to do this is to help the person develop plans to cope with situations that have resulted in alcohol and illicit drug use in the past. Rehearse ways to avoid such situations or ways to react differently to situations so that future use and abuse can be prevented.

Rehabilitation professionals strongly recommend that a person with brain injury not take any drugs or medications that have not been recommended by a physician, including alcohol and cigarettes. A rehabilitation psychologist or a chemical dependency specialist can help assess whether or not a drug or alcohol problem exists. Chemical abuse programs are available to help a person with brain injury recover from abuse. Talk to any rehabilitation team member or physician if you have concerns about your relative or questions about this serious problem.

# *Driving After Brain Injury*

A person with a brain injury may have physical, thinking or vision impairments, or seizures that make driving unsafe. For this reason, the privilege of driving may be denied. Some states require that physicians notify the Department of Public Safety if it is unsafe for the person to drive. Other states rely on the physician to help people with brain injury come to their own decisions about driving.

If the person with brain injury is cleared by his or her physician to drive, the driver's license that was held before the injury continues to be valid and no special applications need to be made. If the driver's license is revoked, the person must pass the written and on-the-road driving tests, and a physician must grant a medical clearance before a new license is issued.

People with brain injury are responsible for their decision to drive and for any consequences that may result.

In addition, the same problems that make driving unsafe can also make other activities, such as operating power equipment, unsafe.

# Returning to Work

Can a person return to work after a brain injury? The answer depends on the person and the extent of the injury. A brain injury can cause many changes in behavior, emotions and thinking skills. This can make it difficult to keep a job, even if it was the same job held before the injury. Regardless of whether or not the person with the brain injury returns to work, discovering how to use his or her talents to the best of his or her ability will make his or her life more rewarding. This may be done through paid employment or volunteer leisure activities. It will depend on each person's situation.

Work is defined as productive activity. It plays a major role in the lives of most people. Work may provide many benefits such as a sense of achievement, recognition, responsibility, financial independence, social interaction and structure. Those who return to work after brain injury are generally healthier and have a higher self-esteem than those who do not work.

Returning to work after a brain injury depends on a number of factors:

- Availability of jobs
- Health
- Desire to work
- Physical abilities
- Ability to adjust to changes
- Social and behavioral abilities (for example, ability to control behaviors and get along with co-workers)
- Thinking and problem-solving abilities
- Self-awareness of deficits and limitations
- Vocational interests and capabilities
- Willingness to receive further training
- The willingness of an employer to adapt the job or workplace

There are state agencies designed to help people with disabilities reach their vocational goals. The agencies provide services such as physical and vocational evaluations and training and sometimes help with assistive devices, transportation and finding jobs. They will work with the rehabilitation team to determine what type of employment is best for the person with the brain injury.

Returning to work after a brain injury can be challenging and rewarding. Interests, aptitudes and financial options of the person with the brain injury must be considered. The rehabilitation team will make every effort to help regain or develop job skills so that the person with brain injury can get a rewarding job and keep it.

The vocational case coordinator employed by the Brain Rehabilitation Program can assist you with possible concerns or questions you may have about brain injury and return to work. Contact the vocational case coordinator at 507-255-3116 for assistance.

# Returning to School

For children and teenagers, returning to school is important for both social and educational growth. At school, young people find friends and peer support, develop social skills, and increase their knowledge. School also provides a place to monitor young children's intellectual and social growth. Sometimes the effects of a brain injury are not apparent in young children but become more apparent in later years when the thinking and social demands at school increase.

School systems have special programs to assist people with disabilities to return to school. Most schools have staff who are trained as special educators. Not all special educators are familiar with the specific needs of people with brain injury. In some states, a brain injury educational consultant is available through the office of special education. Such a consultant will help special educators in local schools to assess and provide services to students with brain injuries. If a specialist in education after brain injury is not available through the school system, members of the rehabilitation team often consult to schools and help local educators develop an educational plan to assist the person with brain injury.

For those returning to high school and college, developing specific accommodations can help the person with brain injury to be successful in school. In most colleges, an office for students with disabilities assists in assuring that individual teachers provide such accommodations. Some common accommodations that may assist a person with brain injury to learn in school are:

- Extra time for tests to compensate for thinking or information processing that may be slower
- Taking tests privately in a distraction-free environment to accommodate for difficulties with attention, concentration and increased distractibility
- Placement in classrooms with less noise and distractions
- Tape recording lectures to compensate for attention, concentration and memory problems
- Access to teachers' or peers' class notes to compensate for difficulty in dividing attention between listening to a lecture and taking notes
- Tutoring with a peer or professional tutor

In many cases, parents and family members find themselves in the role of advocate to assure that the person with brain injury receives the services he or she needs to successfully return to school. Parents and family members also may find themselves serving as the go-between to make sure that rehabilitation professionals and school personnel meet to develop a plan for successful return to school. The brain injury family specialist is prepared to assist parents and families in these efforts and to acquaint them with resources available through the school system and state government.

# *Sexuality After Brain Injury*

Love, affection and sexual feelings are healthy human desires. If these desires are not understood or expressed, confusion, distress and feelings of inadequacy may result.

Addressing your relationship with your family member with brain injury should be done early in the rehabilitation process. You may find yourself in a parent role with an adult person or spouse. You may be perplexed by the changes in your partner. He or she may not act the same as before the injury. Feelings of confusion, anger, fear, frustration and helplessness are understandable. Talking about your feelings with a member of the rehabilitation team or someone you trust may help.

Sexuality involves the ways in which we express our identities as males or females through sexual actions, attitudes and behavior in relationships. From childhood on, we become aware of sexual differences. We are taught directly and indirectly how to behave with the opposite sex. The ability to appropriately express these learned behaviors may be lost after a brain injury. The adult with brain injury may not understand when it is appropriate to kiss, hug and touch you or other people.

Addressing sexuality issues that you may have identified during the rehabilitation process is important. Although at first you may feel uncomfortable discussing sexual matters, rehabilitation team members understand your feelings. The goals of rehabilitation for the person with brain injury include independence, self reliance and healthy personal relationships. The ability to develop and maintain social relationships may be the most important measure of successful rehabilitation. Therefore, recognizing and discussing concerns about love and sex are important.

Most people find it difficult to talk about sex. The closest family member of a person with brain injury is usually the most effective person to become directly involved in helping him or her relearn how to express sexual feelings appropriately. This close family member may benefit from professional support and guidance in addressing sexual issues.

The brain injury family specialist, rehabilitation nurse and rehabilitation psychologist are resources for support in addressing sexual issues and concerns.

# *Mayo Clinic Traumatic Brain Injury Model System*

The Mayo Clinic Traumatic Brain Injury (TBI) Model System provides rehabilitation services to help people rebuild their lives after a brain injury. The National Institute on Disability and Rehabilitation Research funds the Mayo TBI Model System. Through its model system, Mayo conducts physical medicine and rehabilitation research in areas such as the effectiveness of various rehabilitation treatment techniques and outcomes associated with brain injury. Patients and their families often are asked to participate in these research programs. Such research inspires new ideas and new methods that help improve patient care. Mayo shares the results of its research with other traumatic brain injury programs worldwide.

If you have any questions about the Mayo Clinic TBI Model System or traumatic brain injury, call 507-255-5109 or visit the following Web site: [www.mayo.edu/model-system](http://www.mayo.edu/model-system). Mayo TBI Model System staff welcome your interest and encourage your questions.

# Available Resources

Mayo Clinic is closely linked to the Rochester community and the region. Mayo also is affiliated with a growing network of regional care facilities called the Mayo Health System. Mayo Health System practices are located in 58 other communities in southern Minnesota, western Wisconsin and northern Iowa.

When a person with brain injury is discharged from Saint Marys Hospital, a variety of community-based services provide ongoing support to encourage independent living. People with brain injuries and their families often access community resources for the following types of support:

- Residential housing assistance
- Vocational assistance and training
- Chemical health services
- Mental health services and counseling
- Legal help
- Leisure and recreation groups
- Support groups
- County and state social and human services

Because Mayo maintains strong relationships with these community services throughout the region, staff can provide information about groups and organizations that may offer further assistance.

The Brain Injury Association, Inc. is an important resource available for people with brain injuries. This national, non-profit organization, dedicated to brain injury prevention, research, education and advocacy, can be reached by calling 800-444-6443, or by visiting the following Web site: [www.biausa.org](http://www.biausa.org).

Minnesota, Iowa and Wisconsin have state affiliates of the Brain Injury Association. These affiliate organizations operate programs and services that connect brain injury survivors, their families and friends, healthcare professionals and communities. The following organizations welcome your inquiries for program and support group information.

## **Brain Injury Association of Minnesota**

Telephone: 612-378-2742  
800-669-6442

Web site: [www.braininjurymn.org](http://www.braininjurymn.org)

**Brain Injury Association of Iowa**

Telephone: 319-272-2312  
800-475-4442

Web site: [www.biaia.org](http://www.biaia.org)

**Brain Injury Association of Wisconsin**

Telephone: 414-790-6901  
800-882-9282 (in state)

Web site: [www.tbilaw.com/BIAW.html](http://www.tbilaw.com/BIAW.html)

# Summary

When a family member has a brain injury, it affects the whole family. Family roles, routines and responsibilities may be interrupted or changed. This often requires an adjustment in the lifestyle and interpersonal relationships of the injured person and his or her family.

This booklet provides some possible solutions or options which may stimulate families to further develop their own unique solutions. Sometimes a brain injury psychologist, clinical social worker or other behavior specialist can help analyze and develop an approach that considers the special features of your unique situation.

The brain injury family specialist employed by the Brain Rehabilitation program can assist you in identifying ways to make the adjustment to brain injury. Call 507-255-3116 for assistance.

# Notes





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