Traumatic Brain Injury (TBI) occurs when trauma causes damage to the brain. TBI may happen from a direct blow to the head or as a result of the head hitting a hard surface, such as a windshield or the ground. It can also occur when a projectile, such as a bullet or piece of the skull, breaks into the brain.
COMPLICATIONS OF TBI

After a TBI, people can have physical problems, trouble thinking and communicating, and/or behavioral and emotional problems. These difficulties depend on many factors including the parts of the brain that were injured, and the type and severity of injury. Sometimes these problems arise right away, but other times it takes a while for them to be noticed. For example, problems may appear upon return to home, work, or other demanding situations. Medical treatment or therapy can help. Listed on page 3 are some difficulties a person with TBI may experience.

Therapists make up a multidisciplinary team that can help a person with TBI. Therapy will likely start in the hospital and can continue after the person is discharged to a rehabilitation facility or home.
Research has shown that people demonstrate a predictable pattern of behaviors and abilities when recovering from TBI. The Rancho Los Amigos Scale, or Rancho Levels of Cognitive Functioning, is used to identify, document, and communicate patient progress. By understanding these levels, you will also have a better understanding of what the person with TBI is experiencing and what to expect.

The predictable pattern of behaviors and abilities is a guide and although the pattern is the same, there can be much variation among individuals. Therapy and rehabilitation can help patients move to the next stage when they are ready.

Cognition is the ability to think, process information, remember and recall events, pay attention, solve problems, demonstrate awareness of surroundings and self, as well as plan and organize. Following TBI, some or all of these skills may have changed as a result of the person’s injury.

*This information has been adapted from the “Family Guide to The Rancho Levels of Cognitive Functioning” from the Rancho Los Amigos National Rehabilitation Center.*
**FAMILY GUIDE TO THE RANCHO SCALE**

**LEVEL IV**
**CONFUSED & AGITATED RESPONSE**
- Becomes more alert and active
- Shows unusual and inappropriate behavior
- Focus becomes basic, physical needs
- May scream out, be verbally abusive, behave aggressively, or attempt to remove restraints
- Speech is often confused and/or the content may be inappropriate
- Attention span is very short
- Memory and the ability to process information are impaired

**What can family and friends do to help at Level IV?**

- Frequently remind the individual of the day and time
- Explain what is happening to the person
- Expect the person to be forgetful and you may need to repeat answers several times
- Demonstrate patience
- Limit distractions and stimulation
- Remain calm and provide a safe environment
- Limit the number of visitors to 2–3 people at a time
- Allow the individual to move to the extent that is physically safe
- Keep the room quiet and calm (close doors, keep TV off, do not have secondary conversations in the room)
- Simplify words you use when talking, decrease rate of speech, speak naturally

**LEVEL V**
**CONFUSED & INAPPROPRIATE**
- Appears more alert
- Follows simple commands
- May become agitated with too much external stimulation
- Some long-term memory is beginning to return (information about events before the accident)
- Short-term memory is severely impaired
- May try to fill gaps in memory by making things up
- May have difficulty starting or completing everyday tasks
- Will likely have difficulty meeting basic needs without significant assistance

**What can family and friends do to help at Levels V?**

- Repeat information as needed
- Remind the individual of basic information (day, date, and time)
- Use memory aids to help the person remember information
- Keep instructions short and simple
- Provide structure to help complete basic tasks
- Limit the number of visitors to 2–3 people at a time
- Give the individual frequent rest breaks
- Correct tactfully, do not argue
- Encourage independence

**LEVEL VI**
**CONFUSED & APPROPRIATE**
- Follows simple directions but may become confused by changes in routine
- Can complete basic activities such as eating, dressing, and bathing with help
- Should be able to remember who they are, where they are, and the date
- Attention span has increased
- There is some understanding of the rehabilitation program
- May show impulsive behavior and unrealistic thinking and expectations
- May have trouble organizing thoughts and activities

**What can family and friends do to help at Levels VI?**

- Allow the individual to do daily activities as much as possible
- Provide instruction and encouragement
- Encourage problem solving and independence by talking the person through it step by step
- Bring photos and items from home to help with memory
- Continue to remind of the time, day, and current events
- Provide close supervision with activities (safety issues continue to be a concern)
**FAMILY GUIDE TO THE RANCHO SCALE**

**LEVEL VII**
**AUTOMATIC & APPROPRIATE**

- Behavior is more appropriate
- Remembers time and place
- Performs daily routines with little or no confusion but may have limited memory of what occurred
- Performs routine self-care without help
- May still have problems with judgment, safety, and planning
- Verbalizes needing to do a particular activity; however, will have trouble initiating the steps to carry out the plan
- Able to learn new information, but at a slower rate than before the injury

**LEVEL VIII**
**PURPOSEFUL & APPROPRIATE**

- Responds correctly and learns, though slower than prior to the injury
- Memory has improved, but may still be slightly impaired
- No longer requires supervision, can be independent at home, and can possibly relearn higher level tasks such as driving and job training
- May have a decreased capacity to fully reason, tolerate stress, and use good judgment in emergency situations
- Some physical, language, or cognitive problems may still exist; however, they will likely not be noticeable to people who did not know the person prior to their injury

**LEVEL VIII+**
**PURPOSEFUL & APPROPRIATE**

- Can use memory devices to recall daily events, personal schedules and “to do” lists with some assistance
- Awareness of the impairment is present and the person can acknowledge how it interferes with completing a task
- May be irritable and easily frustrated
- Can act appropriately with minimal assistance in social situations
- Manages multiple tasks in a variety of environments, but may require breaks to recover
- Can perform personal and work goals
- Can avoid problems by being aware of limitations
- Able to consider the consequences of personal decisions, but may require more time to determine appropriate courses of action

**What can family and friends do to help at Levels VII and VIII?**

- Encourage independence with self-care and simple activities
- Talk to the individual as an adult, using normal (not simplified) language
- Respect the person’s independence
- Use humor appropriately—the individual may not understand and take the joke literally
- Provide support to the person when they are making decisions—reasoning and judgment may still be impaired
- Encourage continued treatment
- Check with the person’s physician prior to returning to tasks such as driving and working
- Talk about their feelings and ways you can provide support
- Seek additional counseling and services as needed—living with brain injury is a lifelong process

**What can family and friends do to help at Levels VIII+?**

- Provide emotional support and encouragement
- Give freedom to make choices; however, be prepared to give assistance
- Continue to encourage asking for help when needed
**WHAT IS THE DIVISION OF MENTAL HEALTH AND HOW CAN IT HELP ME?**

In North Carolina, brain injury is considered a developmental disability. The NC Division of Mental Health provides support for persons with TBI including residential services, help finding jobs, case management, and in-home support. [http://www.dhhs.state.nc.us/mhddsas/tbi/index.htm](http://www.dhhs.state.nc.us/mhddsas/tbi/index.htm)

**WHAT IS A SKILLED NURSING FACILITY?**

A skilled nursing facility, also referred to as a sub-acute rehabilitation facility, provides ongoing physical, occupational, and speech therapy emphasizing independence and self-sufficiency. This is a less intensive setting than acute rehabilitation but continues to provide structure and supervision. Patients must be past the need for intensive medical care.

**WHAT IS HOME HEALTH?**

Home health refers to medical services that are provided in the home. Services may include skilled nursing, speech therapy, occupational therapy, or physical therapy. Home health services are provided for persons who are homebound or who have significant difficulty leaving home.

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**IDEAS FOR HOME**

Tips to creating a safe environment:
- Place a no-skid mat in the shower
- Install a railing in the shower
- Lower the temperature of your water heater to prevent burns
- Keep your house well lit (put nightlights throughout)
- Arrange furniture to allow easier walking
- Remove throw rugs or tape down loose carpet
- Keep unnecessary clutter out of the way
- Keep the person’s room organized

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**GENERAL IDEAS**

- Use memory aids such as reminder notes, labels, and alarms
- Discuss the day’s activities and create a schedule together
- Review daily scheduled activities frequently
- Use calendars and wall charts
- Do not over-stimulate; use as many visual aids as possible
- Encourage frequent breaks or rest periods whenever frustration or fatigue appear
- Limit “welcome home parties” and visitors
- Allow as much independence as possible

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**CAREGIVER FREQUENTLY ASKED QUESTIONS**

Changing your surroundings at home to help the person with TBI
**WHAT IS ACUTE REHABILITATION?**

Acute rehabilitation is one option for patients leaving the hospital. Patients receive intensive physical, occupational, and speech therapy in addition to ongoing nursing and medical care. Individuals must be able to tolerate at least three hours of therapy a day. In general, therapy schedules are highly structured, with rest periods built in to prevent fatigue. Therapists work together to assess strengths and weaknesses then develop comprehensive goals based on individual needs.

To find out more about rehabilitation facilities and programs in North Carolina, visit our website at www.dukehealth.org and search keyword: *speech pathology*.

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**WHAT IS VOCATIONAL REHABILITATION?**

Through vocational rehabilitation, an individual receives training in a specific field with the aim of regaining employment and independence. It is an option for someone who is unable to return to his or her previous job due to a disability.  

**NC Division of Vocational Rehabilitation:** [http://dvr.dhhs.state.nc.us/](http://dvr.dhhs.state.nc.us/)

**Local Vocational Rehabilitation Offices:**

- Chapel Hill: (919) 969-7350
- Durham: (919) 560-6810
- Lumberton: (910) 618-5513
- Raleigh: (919) 733-7807

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**WHAT IS A TBI SUPPORT GROUP?**

A TBI support group is a group of individuals (patients, family, and friends) who meet regularly to exchange mutual support, often focusing on issues surrounding TBI.

For a more complete list, please refer to the following website: [http://www.bianc.net/support_groups.htm](http://www.bianc.net/support_groups.htm)

**Local North Carolina Support Groups:**

- Chapel Hill, UNC Rehab Brain Injury Support Group  
  (919) 966-8813
- Fayetteville, Fayetteville Brain Injury Support Group  
  (910) 486-1101
- Durham, Durham Brain Injury Support Group  
  (919) 419-9955 ext 19
- Raleigh, Triangle Brain Injury Support Group  
  (800) 377-1464

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For more information on brain injury and caregiver support, visit our website at [www.dukehealth.org](http://www.dukehealth.org) and search keyword: *speech pathology*. 