

# Rancho Los Amigos Levels of Cognitive Functioning Scale

A Guide for Family and Friends



**Sunnybrook**

TRAUMA, EMERGENCY & CRITICAL CARE



# INTRODUCTION

This guide will give you and your family helpful information about brain injury recovery. It explains how people with a brain injury recover from a cognitive and behavioural point of view.

**COGNITION** is the word we use to describe the brain's thinking skills, such as memory, attention, problem solving, judgment, and someone's awareness of what has happened to them.

**BEHAVIOUR** is the word that describes how the patient with a brain injury is acting in daily situations. Some behaviours may be safe and appropriate, and other behaviours may present a danger to the patient/others.

At Sunnybrook, we use a scale to describe these patterns of recovery, called **the Rancho Los Amigos Levels of Cognitive Functioning Scale**.

## A FEW FACTS...

- The Rancho scale was developed by a very well-known brain injury rehabilitation hospital in California.
- It is used to rate how people with brain injury are recovering.
- There are eight levels of recovery.
- This handout will go through each level and tell you what you might expect to see as your loved one recovers.
- It will give you examples of what you can do to help your family member or friend when you visit.
- We also use this scale to help decide when the patient is ready for rehabilitation. Your health care team will give you more information about rehabilitation when the time is right.

Every patient's brain works differently. Even when the exact same injury happens to two different brains, people may show different symptoms, behaviors, and speeds of recovery. The Rancho Scale is used as a guide only, not everyone fits perfectly into one particular level. Some patients may demonstrate aspects and behaviours of more than one level at a time.

Often patients will show signs of recovery first to loved ones and family. This is normal. The goal of recovery is for the patient with the brain injury to have the same responses at different times of the day, consistent with all the people involved in their care. You, as a loved one, are an important part of the care team. Please help us by telling us anything you notice about your loved one's responses to the environment.

There is space at the end of this handout for you to write down your observations and any questions you may want to ask your healthcare team.

## **INFORMATION ABOUT TRAUMATIC BRAIN INJURY (TBI):**

- A TBI is when the brain is hurt by an external force, such as a fall or a knock to the head. The injury may be mild, moderate or severe.
- The amount of harm to the brain can be small, such as a headache. If the injury is severe, the patient may not be able to move, eat or take care of themselves without a lot of help.
- Understanding the patterns and levels of recovery can help you to understand what to expect while your loved one is in the hospital.
- It is important to remember that everyone does not recover in the same way.
- Medications to calm the head-injured patient are used as little as possible. This is because medication can slow the thinking process and in some cases can make confusion worse.

## **LEVELS OF RECOVERY**

As the patient with a head injury starts to "wake up" they usually go through different levels of recovery on the Rancho Scale.

How long can it take for the patient to "wake up" and recover?  
This will depend on:

1. How serious the patient's head was injured
2. How long it took to get medical help
3. How serious the patient's other injuries and complications are
4. The age and general health of the patient before the injury
5. The involvement of family/friends

These levels describe a general pattern of recovery. The levels of recovery are:

<b>LEVEL 1</b>	NO RESPONSE	<b>LEVEL 5</b>	CONFUSED – INAPPROPRIATE – NON-AGITATED
<b>LEVEL 2</b>	GENERALIZED RESPONSE	<b>LEVEL 6</b>	CONFUSED – APPROPRIATE
<b>LEVEL 3</b>	LOCALIZED RESPONSE	<b>LEVEL 7</b>	AUTOMATIC – APPROPRIATE
<b>LEVEL 4</b>	CONFUSED – AGITATED	<b>LEVEL 8</b>	PURPOSEFUL – APPROPRIATE



## LEVELS 1, 2 and 3

### **LEVEL 1: NO RESPONSE**

The brain injured patient looks as if they are in a very deep sleep and does not wake up even when you talk to them or stimulate them. Your loved one may be in the Intensive Care Unit and may be attached to a machine to help with breathing.

### **LEVEL 2: GENERALIZED RESPONSE**

The patient seems to be asleep most of the time. They may wake up slowly to noises, movement or touch. The patient may make a face or groan when touched, such as when a nurse gives a needle, or takes blood pressure.

The patient may start to do simple things spontaneously or when you ask of them, such as “close your eyes”, “stick out your tongue” or “squeeze my hand”. These are good signs, but you should ask the nurse or therapists about better ways to judge if the patient is consistently following commands.

### **LEVEL 3: LOCALIZED RESPONSE**

The patient is more awake for longer periods during the day. The ability to respond to stimuli and to move the limbs and body are happening more often. For example, this might mean moving an arm or leg in response to pain, following a command when asked, or reacting to a sound or patient.

At this level, responses may not be the same every day, so the important thing to look for is consistency.

# SUGGESTIONS FOR THE FAMILY FOR LEVEL 1, 2 or 3

1. Each time you see the patient, say who you are. Tell them the day, date and time. Tell them in a basic way how they were hurt, and that they are now getting better.
2. Speak to the patient in a calm, slow, normal voice. The patient is usually able to hear you, even if they cannot speak to you. Talk about things that are familiar and important to them, even if you are not sure if they understand what is being said.
3. Show the patient pictures of whom and what you are talking about. Take some “ordinary” pictures such as photos of their house, friends and family, special events or memories. These photos will help the patient to think about ordinary life and familiar things.
4. Play music the patient would enjoy, for short periods of time (Maximum 5-10 minutes at a time).
5. Turn off or lower the lights for short periods so that the patient may respond better by noticing a difference when the lights are on.
6. Ask the patient to follow simple instructions such as: “raise your arm”, “close your eyes”, “stick out your tongue”, “show me your teeth”, etc. Give one direction at a time and **allow plenty of time for the response**. This is because the brain will be processing instructions very slowly at this level.
7. Avoid too much stimulation at once by having only two visitors at a time. Explain to the visitors how to talk calmly with your family member. Ask for visitors to take turns and rotate so that there is the right amount of stimulation for the patient every day. Making a visitor’s schedule in the hospital is very helpful.
8. As the patient gradually becomes more alert and awake, start a simple routine. For example, try to get your loved one to wash their face every day with a washcloth.
9. If the patient is alert enough, you can ask them questions about something that happened in the past that has a “yes” or “no” answer. An example of this is saying the date of their birthday and asking if this is correct. Allow them time to respond, as their reaction time will be slow.
10. Go slowly, as giving too much stimulation will not help the patient and their brain heal faster.
11. Be careful not to yell as if they cannot hear you. The communication problem is in the brain’s ability to process information, not with the hearing. Speaking loudly will not help get the message through.
12. A diary or notebook can be used by visitors to record events of the patient’s day. Later, this diary can be helpful in improving memory. The diary can also be a way in which the family and the health care team communicate with each other.
13. Look after yourself and the family by accepting help from friends and relatives – no matter how small the offer of help is. Getting help will reduce some of your stress and allow friends and family to feel useful. When the patient is more awake, they will need you more, so pace yourself at this stage by getting enough sleep, going home to have a shower, doing some physical exercise and eating healthy food.
14. Meet with the hospital staff and ask questions about the brain injury, and take notes to help you remember. They may not have all the answers about recovery time, especially when it is soon after the injury. Tell the hospital staff about your loved one’s job, hobbies, and the things that make them unique. This will help the staff see your loved one as the patient they were before the injury.



## LEVEL 4 - CONFUSED – AGITATED

As the brain improves, it begins to “wake up” and may have difficulty controlling the level of response to the environment. This is called “**agitation.**” You will see the patient will have poor memory and be confused most of the day. At this level, the safety of the patient is the biggest priority. The team may suggest certain ways to decrease the risk of falls and pulling at medical tubes.

The patient may cry, yell or scream, wave their arms around, or move about in bed as they react to their environment- even after the stimulus is removed. They may hit out at others or may try to remove tubes or try to climb out of bed. Either they are awake and active or asleep. This can be scary for you and the patient. At this time, the patient would benefit from a routine to help to manage the behaviour.

The patient cannot focus on tasks for a long time. If there is too much happening, such as many visitors, the patient may become more confused or agitated. The only memories they have are for things that happened before the head injury.

If the patient is able to speak, they may use the wrong words, mix up the order of words or tell stories that do not make sense. They are not able to find the right words as they are not yet able to think before they act.

## SUGGESTIONS FOR THE FAMILY FOR LEVEL 4

1. This stage is a sign of improvement and part of getting better.
2. When the patient is relaxed, use this time to help them improve their ability to respond correctly. Work in a quiet environment so that the patient does not become distracted.
3. Ask them to try simple tasks like brushing their teeth or washing their face. Place the objects they need within reach. Do not expect them to do the task but be pleased if they do.
4. Do not startle the patient, especially when you wake them up from sleep.
5. If you visit the patient during a meal, give them only one choice of food at a time and let them do as much for themselves as possible.
6. There should be no more than two visitors at any time. Do not talk to the head-injured patient, play the radio, feed them, stroke their arm and have many visitors **all at the same time**. All this noise will make them more agitated. They do best with one “focus” at a time.
7. If the patient is not talking, use other ways of communication such as head movements or finger tapping to show “yes” or “no”. The Speech Language Pathologist and/ or Occupational Therapist will be able to help to direct you with this.
8. If the patient says things that are not correct, remind them of the true facts. If they say: “I am at work right now”, do not agree, but gently and clearly tell them how they were injured and that they are in Sunnybrook Hospital. Repeat this once if necessary. If they continue to insist that they are at work, do not argue. Change the topic to distract them. For example, comment on the weather or tell them what they are having for lunch.
9. If the patient becomes agitated, stay with them until they calm down. Visiting by family members can be a good thing. Touch them, speak in a soft voice, help wash their face or body with warm water, or play soft music. If they are allowed to eat, try giving drink or food to calm them down.
10. At this level, patients are often not able to cooperate. If they shout or cry it does not always mean that the patient is in pain. Anger, swearing or crying is the way the patient acts to stimuli. They are not aware of how they are behaving.
11. If there are swallowing issues, follow the directions of the speech pathologist who will recommend the safest food textures for eating.



## LEVELS 5 and 6

### **LEVEL 5: CONFUSED – INAPPROPRIATE – NON-AGITATED**

The patient may be more awake and can respond to simple commands. They are able to focus longer, but will need to be told what to do several times. The patient is easily distracted so may need to be asked several times to finish a task. They have memories of events in the past but they will not have clear memories of events since the injury. For example, they may not recall what you told them five minutes ago. They may be able to do simple tasks that they have done in the past, like eating and dressing. They are not able to learn new information, and may seem to have lost their manners. They may show inappropriate behaviour, such as sexual comments or actions, or may eat their meals with poor manners.

### **LEVEL 6: CONFUSED - APPROPRIATE**

The patient follows simple directions most times they are asked. Your loved one is able to recall how to do things like feeding, dressing and bathing. Memory for events since their injury is still poor, so learning new information is hard. The patient is more aware of time and place. Their attention can sometimes be held for as long as 30 minutes. During that time they will talk and behave more appropriately, although they may act like a machine and give the same answers every time. They may still be confused at times. They are not safe to leave the unit alone as they do not remember the way back to their room. They may seem selfish and care only about themselves.



## SUGGESTIONS FOR THE FAMILY FOR LEVELS 5 AND 6

1. Go over information about family and friends. Use the photo albums as a way to help their memory.
2. Poor memory means that the patient will not remember the injury or how it was caused. If you and the care team feel that your family member is ready, tell them any painful information related to the incident that brought them to hospital. This information could be that someone was killed or badly injured. Being upset may be temporary. While he or she can understand facts, the ability to grieve returns much later.
3. Help your family member recall information that is not easy to remember. Ask them questions and if the correct answer is not given, provide some clues. If clues do not work, then give the missing information.
4. Ball games and simple card games are all good for learning. If your family member's performance is good some days but not so good other days- be patient.
5. Your family member may sometimes confuse kissing, hugging or stroking as sexual messages. If they do this, gently tell them that this is not appropriate. If you want to show affection and encouragement, tell them they did well and limit physical contact to pats on the shoulder or pecks on the cheek.
6. Praise everything that your family member is able to do. Allow them to do only one task at a time.
7. Help them with "homework" that is given by the team. Either help the patient write in a journal or write about your own experience being with your loved one-in the journal.
8. Your family member may need to rest during the day, but they may not know it. Do not ask if they are tired but allow for rest periods.
9. Ask the patient to tell you about things as soon as they have done a task. Ask what he or she watched on television and have the patient write this down if possible.
10. Your family member may not be able to sort out time or events that have happened after they came to hospital. Calmly and gently tell them the truth. The patient may have false ideas about the time just before they came to hospital. Do not argue about false ideas with the patient. Talk about other things instead.
11. Some tasks may still be difficult. Ask the patient to describe the steps they would perform when doing a task, such as cleaning their teeth, and then have them do it.
12. Slowly increase independence and make a routine to help the patient remember.

# LEVEL 7: AUTOMATIC – APPROPRIATE

The person can now do daily routines with little or no confusion, but may not know what they have been doing. They usually have poor judgment, find it hard to find solutions to problems and make poor decisions about the future. They often do not realize they are having these problems (poor insight).

They can now learn new information, but at a slower speed and with more difficulty than before the injury. They may need someone to be with them as they are not safe to be alone. They are able to take part in and enjoy more recreation and social activities.

## SUGGESTIONS FOR THE FAMILY FOR LEVEL 7

1. Talk about safety and emergency measures. Have them repeat what you have talked about.
2. Ask the patient to write in their journal every day.
3. If there are problems with memory or the person is easily distracted, encourage your family member to write things down.
4. Each day, ask the patient to make a list of things they should do. Allow them time to make the list as they may be slow to think of ideas and write them down.
5. Try to do activities together, such as using the phone or going grocery shopping, or doing laundry.
6. Work on a computer to help the patient follow steps and instructions.
7. Ask the team for ideas of how to teach the person ways of doing new tasks, for example cooking.
8. Your words, actions and gestures must be all clear and consistent. Teasing and sarcasm can be misunderstood.
9. Do not let your family member drive a car, take a boat out alone or operate any dangerous equipment unless the doctor has given permission to do these things.
10. Your family member may say what is on their mind without showing good social manners. Offer calm and gentle feedback for such behaviour.

# LEVEL 8: PURPOSEFUL-APPROPRIATE

Memory has improved but memory for recent events may still be a little impaired. Following severe brain injury, a person may be slow to figure out situations and problems, deal with stress or use good judgment in emergencies or unusual situations. Their behaviour is more appropriate and good enough for the person to function in most social situations. Any problems remaining with thinking and behaviour might only be noticeable to close family and friends.

## SUGGESTIONS FOR THE FAMILY FOR LEVEL 8

1. Allow the person time to do tasks in the home, school or job to the best of their physical and thinking limits. You should help the person to work slowly.
3. As the person gets better, they can do more complex things such as meal planning and preparation, home tasks, and taking their medication. As much as possible let the person work on their own so that they can learn to be independent.
4. As they can now learn new information, have them work using money and doing their own banking.
5. Learning how to ride the bus or subway is very important. You will need to ride with them to provide support, until they can find their own way.
6. Start and continue a daily routine with activities they can do on their own and with help. This helps the person feel secure in their environment.
7. Think about the person getting better from the time of the accident and do not say things about how they were before the injury. They may be very different from that and you will need to appreciate the new person who needs your support, love, and company.
8. You need to be patient; offering a balance between opportunities for independence and providing enough support for safety. Work toward new goals with independence. It is a fine balance and can be hard to achieve. Congratulate yourself whenever you're successful.
9. At this stage, some people are referred for neuropsychological assessment or tests which look at a person's overall thinking skills. The tests provide more information about the patient's progress in areas such as memory, attention, "mental speed" and learning ability. These tests will help to decide when and if someone is ready to return to work or school, full or part-time. Returning too early can be a major source of frustration.
10. Ask your doctor or medical team when it is safe to return to driving.



**Levels 5 and 6**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

**Levels 1, 2 and 3**

---

---

---

---

---

---

---

---

---

---

**Level 7**

---

---

---

---

---

---

---

---

---

---

**Level 4**

---

---

---

---

---

---

---

---

---

---

**Level 8**

---

---

---

---

---

---

---

---

---

---



## RESOURCES:

- **Ontario Brain Injury Association**  
[www.obia.ca](http://www.obia.ca)  
1-800-263-5404
- **Brain Injury Society of Toronto**  
[www.bist.ca](http://www.bist.ca)  
416-830-1485
- **Toronto ABI Network**  
[www.abinetwork.ca](http://www.abinetwork.ca)  
416-597-3057
- **Ontario Neurotrauma Foundation**  
[www.onf.org/documents](http://www.onf.org/documents)
  - Guidelines for Pediatric Concussion
  - Guidelines for Concussion/mTBI & Persistent Symptoms: Second Edition

### Adapted from:

The Thomas Rehabilitation Hospital, North Carolina  
Rancho Los Amigos National Rehabilitation Center, California.