

# Understanding Behavior Changes After Moderate to Severe Traumatic Brain Injury

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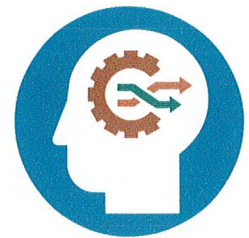
TBI Factsheet

This factsheet explains behavior changes after TBI.

## What are some possible behavior changes?

People who have a moderate or severe traumatic brain injury (TBI) may have changes in their behavior. People with a TBI and their families encounter some common behaviors:

- **Problems managing emotions.** People with a TBI may have a sudden change in mood; they also may have an extreme emotional response to a situation. They may raise their voice, cry, or laugh.
- **Restlessness.** People with a TBI may fidget, pace, or move in a repetitive way. For example, they may sway at an unusual pace.
- **Problems with social behavior.** People with a TBI may avoid others, interrupt others, or say things that do not fit the situation or are hurtful. They also may make sexually inappropriate comments.
- **Refusing to do things.** People with a TBI may say “no” to doing something, such as going to therapy or doing other activities.
- **Feeling unmotivated.** People with a TBI may have difficulty engaging in an activity even though they know the benefit of doing it or why it needs to be done. This is not caused by fatigue or laziness.
- **Difficulty starting tasks.** People with a TBI may have trouble starting tasks or conversations, even if these are things they want to do.



## Who is at risk for behavior changes?

Behavior changes (also called personality changes) are common for people with a moderate or severe TBI. These changes often occur soon after the TBI and may change across time. The types of changes people have and how long they last depend on where their injury is, how severe it is, and other factors. People with a severe TBI are more likely to have behavior changes that last for a while. The good news is that behavior changes can get better as time passes.

This factsheet talks about why changes in behavior happen. It also includes tips for what to do when problem behaviors occur. It includes a framework that people with a TBI, their families, and others can use to help manage changes in behavior caused by TBIs.

## Why do changes in behavior happen?

Changes in behavior after TBI happen for many reasons, including changes in the way the brain works. The following are some of the most common changes.

- Some people with a TBI may have **problems with focusing, thinking, or communicating.** They also may have issues with how long it takes to process information and respond to it. These issues can make it hard to **keep up** with a conversation or **understand a situation.** As a result, people with a TBI may appear to be uncooperative. They also may appear “off-task” or out of sync with what is happening in a fast-paced situation. They may avoid social situations because they feel uncomfortable or embarrassed when they are with other people.

The Traumatic Brain Injury Model System is sponsored by the National Institute of Disability, Independent Living, and Rehabilitation Research, Administration for Community Living, U.S. Department of Health and Human Services. (See <http://www.msktc.org/tbi/model-system-centers> for more information.)



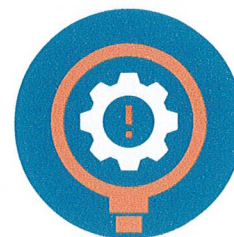
- People with a TBI may have **problems with thinking skills**. These problems may make it hard for them to understand *why* some things happen or *what to do* when they happen. This can make the person feel irritated, refuse to do things, or not do things that they agreed to do. They also may have a hard time making choices.
- People with a TBI may have **poor impulse control**. This can make it hard for them to filter their thoughts or actions. They may not think about or understand the effect of what they say or do before they say or do something inappropriate or unsafe.
- People with a TBI may not be fully **aware** of their current issues. This can cause them to refuse to use a walker or wheelchair. They also may refuse to take part in therapy. Some people with a TBI may not follow recommendations or restrictions that are meant to help them be independent, keep them safe, and help them recover.
- Keep in mind that people with a TBI cannot always control their behavior, which is especially true in situations that are highly stressful. The **A-B-C framework** discussed later in this factsheet includes strategies to help people with a TBI prevent problem behaviors. If the behavior does occur, the framework includes techniques to distract the person or help them relax.
- People with a TBI often have an **emotional response** to their injury. They may feel a sense of loss because of less independence, changes to their role within the family, and a lack of control over their situation. The following factsheets may help in these situations (see [Depression After TBI](#); [Relationships After TBI](#), [Emotional Problems After TBI](#); [Understanding and Coping With Irritability, Anger, and Aggression After TBI](#)). The following sections address problem behaviors.

## What can I do to deal with problem behaviors?

### Identify problem behaviors

The goal of the A-B-C framework is to keep the problem behavior (the “B”) from occurring. Other strategies involve changing the things that happen after a behavior occurs, which can help change how intense, severe, or frequent the behavior is.

- The first step is to identify the behavior. Make a list of behaviors that you see that are a problem.
- Work with a professional to review the list to identify the behavior(s) that need to change. Keep in mind that a specific behavior may not be a problem to everyone. Ask family and friends for their input.
- Update the list as new behaviors come up and old ones are no longer a problem.



### Follow the A-B-C approach to better understand problem behaviors

The A-B-C framework can help you understand the approach a professional may use to figure out when and why a behavior or emotional response may occur. This section discusses the framework. You may have a family member or friend assist with this exercise. If you have questions, you can contact a professional with experience in managing behavior after TBI before using.

- A. Antecedent.** An antecedent is what happens right before the problem behavior occurs. Take notes on everything you remember; it may not be clear what the “trigger” was for the behavior. Your notes can help you find patterns. From them, you will come up with ideas about triggers or causes of the problem behavior; triggers may include pain, fatigue, noise, or light sensitivity. The following are some questions to help you identify antecedents.
- Who is or is not present before the problem behavior happens?
  - Where does the problem behavior take place?
  - What desired items (e.g., television, video game, cell phone) are present or absent just before the problem behavior takes place? What about undesired items?
  - What events took place before the problem behavior occurred?
  - What time of day does the problem behavior happen?
  - Is there a root cause for the behavior? Causes such as poor sleep, a reaction to medicine, changes in schedule, and diet changes set the stage for problem behaviors throughout the day.

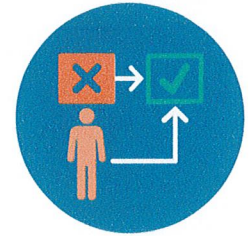


**B. Behavior.** Take a close look at the problem behavior or behaviors on your list. Make notes. Describe the problem behavior in as much detail as you can. Here are some questions to understand problem behaviors.

- What does the behavior look like?
- How often does the behavior happen?
- How long does the behavior last?
- How intense is the behavior?

**C. Consequences.** This is what happens right after the problem behavior occurs. Take notes on all changes you see within a few minutes of the behavior. It is not likely that things that happen several minutes, hours, or days after are causing the problem behavior. The following questions should help.

- What happened right after the problem behavior?
- How did people react?
- Did the person get something from the behavior? For example, did they get attention (either good or bad)?
- Was something taken away or avoided because of the behavior?
- Did the environment change because of the behavior? For example, did the person leave a situation or place?



### Identify and Change Antecedents (to Prevent Problem Behavior)

Spend time identifying a list of triggers and ways to prevent a problem behavior. If you cannot avoid triggers, find ways to decrease the impact of those triggers. You can organize your notes in a chart (such as the following chart) to make it easier to track your results.

A-B-C Plan: Changing the Antecedent (to "Prevent" Problem Behavior)				
A Antecedent	B Behavior	C Consequence	Ideas for change	Results
Physical therapy session focused on stretching activities in a patient with limited mobility because of stiffness or physical injuries that are painful during stretching	<ul style="list-style-type: none"> <li>• Screaming</li> <li>• Hitting therapist</li> <li>• Refusing physical therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Session ended early</li> <li>• Person with TBI returns to his or her room</li> <li>• Family upset</li> <li>• Therapist relieved</li> </ul>	<ul style="list-style-type: none"> <li>• Pain during exercises may serve as a trigger.</li> <li>• Talk with a doctor about ways to reduce pain while stretching.</li> <li>• Explain the purpose of stretching.</li> <li>• Add activities that make the person happy but also are therapeutic.</li> </ul>	<ul style="list-style-type: none"> <li>• Decreased frequency and intensity of screaming or loud volume</li> <li>• Therapist less anxious working with person with TBI</li> </ul>



## Change Consequences

Consequences can be hard to pinpoint. Some may be obvious and others not so obvious. It is helpful to use a chart to list things that may make it more or less likely that the problem behavior happens again. The following example shows how to organize a chart to help identify consequences.

Consequences	
Things that may happen right after a problem behavior that might lead to it happening <b>more often</b>	Things that may happen right after a problem behavior that might lead to it happening <b>less often</b>
<ul style="list-style-type: none"> <li>• Gets other people to laugh when acting out</li> <li>• Gets more attention</li> <li>• Gets out of doing an activity that he or she does not want to do, such as going to therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Sees that other people are disappointed in the behavior</li> <li>• Thinks he or she is being nagged</li> <li>• Gets less time to hang out with friends or loved ones</li> </ul>

You can use an A-B-C chart when you work with experienced professionals, caregivers, or trusted friends to come up with ideas to improve behavior. If you feel stuck or need additional ideas, check with an experienced professional. Praise and access to desired activities are positive actions. These methods have a better impact on behavior change than negative actions and reactions (such as screaming or arguing as a response to a problem behavior).

A-B-C Plan: Changing the Consequence (to encourage or discourage a problem behavior)				
A Antecedent	B Behavior	C Consequence	Ideas for change	Results/Goal
<ul style="list-style-type: none"> <li>• Does not want to do therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Refuses to do therapy</li> <li>• Is verbally abusive</li> </ul>	<ul style="list-style-type: none"> <li>• Gets out of doing therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Give the person a reward that is exciting to them, such as extra game time if they go to therapy.</li> <li>• Let them choose from different activities that are fun and therapeutic.</li> </ul>	<ul style="list-style-type: none"> <li>• More likely to do therapy</li> </ul>
<ul style="list-style-type: none"> <li>• Forgets to take medication/forgets that medication has already been taken</li> </ul>	<ul style="list-style-type: none"> <li>• Does not take medication as prescribed</li> </ul>	<ul style="list-style-type: none"> <li>• Misses therapeutic dose of important medication/takes too much medication</li> </ul>	<ul style="list-style-type: none"> <li>• Use pill box, phone, or calendar reminders; place pill box in easily visible location.</li> </ul>	<ul style="list-style-type: none"> <li>• Improved medication compliance</li> </ul>

You also want to think about how to handle things that are seen as punishments. You should clearly explain the reasons and time frame for any punishments. Keep any restrictions in place for a short time. Talking about these things in detail helps avoid confusion. It also helps keep the punishment from being seen as random and unfair.





## What are some realistic goals for behavior change?

- Aim to reduce the number of times that problem behaviors happen and their intensity. Do not expect to prevent all problem behaviors.
- Aim to make small changes across time. Changing behavior takes time. Do not expect changes to happen quickly.
- Focus first on behaviors that are easy to recognize and occur often. As you build your confidence and make progress changing behavior, you can focus on more challenging behaviors.
- Problem behaviors can be exhausting for everyone. Take time for yourself. Get help from others.
- As you start to see success in changing behavior, slowly reduce positive reinforcements. At first, you will likely use positive reinforcements each time you see good behavior. Your goal is to reach a point when you need to use only positive reinforcements from time to time and they are not expected every time. Using the A-B-C chart to track changes across time may be helpful.



## Other tips

- Come up with a plan to address problem behavior. It should include the person with a TBI and use the A-B-C approach.
- Reward positive or good behavior often (“Catch them being good”). Avoid giving attention only when the problem behaviors occur. Do not hit or push the person with a TBI. It will not change problem behavior and may cause them to hit or push back in response.
- Come up with ideas to use when behavior problems happen. Have a plan in place that is ready to use. For example, be ready to leave a situation if you need to or bring distracting items with you. Be consistent! Your response to problem behavior should be the same each time. You should respond within a few minutes of the behavior. Behavior changes are most likely to happen when everyone involved is consistent and responses are quick.
- Do not be surprised if you notice an increase in problem behaviors at first. This is normal, not a sign that you have done something wrong or that your efforts are not working. Stick with your plan!
- Make eye contact. Speak slowly and in a normal voice. Do not touch the person without first saying why you are touching them.
- Explain changes in routine.
- Clearly end conversations. You can say, “I need to go do something else in the other room now. We’ll talk some more later.”
- You may choose to bargain for positive behavior. For example, a person with a TBI wants to go outside but they do not want to do their daily exercise. One way to bargain is to let them go outside but make sure they exercise while outside and in a certain time frame. Doing some stretching while outside may help make them want to take part in physical therapy.
- Take a deep breath to help stay calm. Problem behaviors are a result of the TBI; they are not meant to target anyone. Try not to take them personally.
- Avoid arguing. Fighting can make things worse and will not help the person calm down.
- Do not call attention to problem behavior in front of others; this may make the person with TBI feel embarrassed. Instead, use a nonverbal cue such as a head shake or time out signal. You can come up with the cue ahead of time.
- Leave the situation if you need to but only if the person is safe.
- Be mindful of your own actions and reactions. You cannot control someone else’s behavior. Behavior tends to get better across time as the person recovers. Learn to understand what causes problem behavior. You also can model desired behavior. Be consistent.





Sample A-B-C Chart

<b>A</b> Antecedent What was happening before?	<b>B</b> Behavior What does the behavior look like?	<b>C</b> Consequence What happened afterward?	Ideas for change	Results



## Authorship

*Understanding Problem Behavior Changes After Moderate to Severe Traumatic Brain Injury* was developed by Sean Hollis, PhD; Phillip Klebine, MA; Risa Nakase-Richardson, PhD, FACRM; Tom Novack, PhD, ABPP-CN; and Summar Reslan, PhD, ABPP-CN, in collaboration with the Model Systems Knowledge Translation Center.

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