

HQ3017
PARENTAL BOOKLET

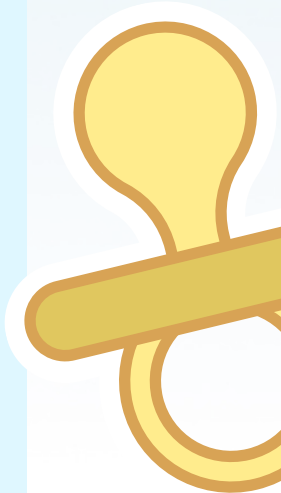



My child and

**TRAUMATIC
BRAIN INJURY**



Understanding the effects of TBI
and tips to enhance home
learning



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MY CHILD HAS EXPERIENCED A TRAUMATIC BRAIN INJURY! NOW WHAT?

AGE GROUP: 3-5 YEARS OLD

A BRIEF OVERVIEW

- According to Individuals with Disabilities Education Act (IDEA), a traumatic brain injury (TBI) refers to an acquired injury to the brain caused by an external physical force. This results in functional disabilities and psychosocial impairments and these dysfunctions vary typically with the age of the child and the location of their injuries (James & Reynolds, 1994). While parents may not consider TBI to be an issue that will ever hinder their child, it is actually a relatively common problem amongst children. It accounts for approximately 100000 hospitalisations each year. So, while the outcomes of TBI are diverse and can range from physical to cognitive and social problems (Yap, Ng, Yap & Bok 2007), this brochure will concentrate on the cognitive and social aspects of TBI. This booklet will serve to be a starting point for parents who want more information about the effects of TBI on their children and the ways in which learning can be enhanced for their children.

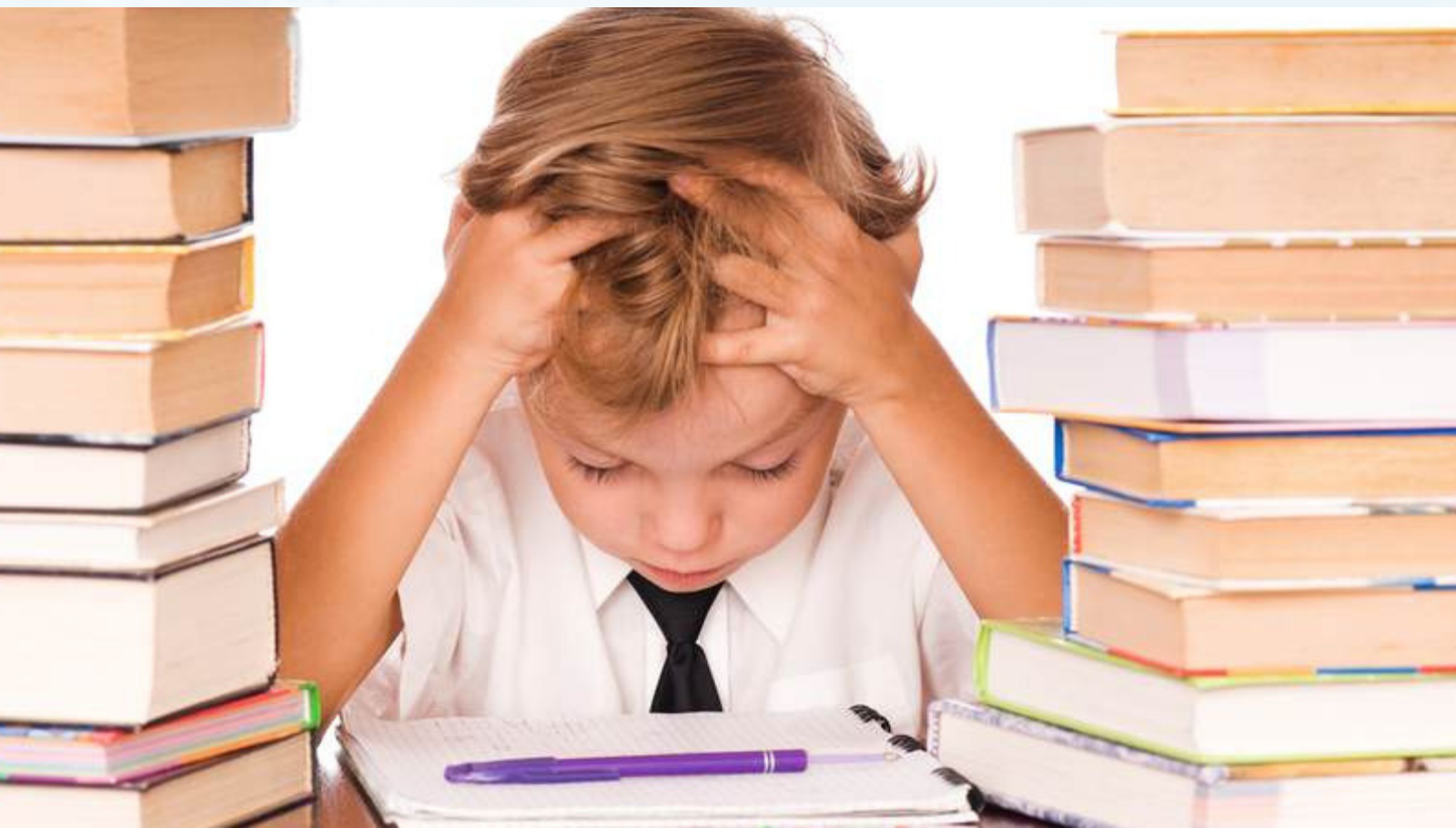


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- 1** The inpatient treatment is usually followed up with a rehabilitation period and it concentrates on social and emotional reintegration (Yap, Ng, Yap & Bok 2007). This is paramount for a patient who has had isolation during inpatient treatment that can take up to 3 months. (Gupta & Taly 2012)
- 2** During this period, the child would have also missed on on a term of school and is probably facing backlog with regards to what has been taught in school. During this period, the child would have also missed on on a term of school and is probably facing backlog with regards to what has been taught in school.
- 3** Coupled with being out of school for a long period is the onset of a traumatic brain injury which will inevitably change the child's needs and ability to learn language. To maximise learning, there needs to be an understanding of what functions are impeded and how they affect language learning.
- 4** Rehabilitative treatment is salient for children in the age range of 3-5 years old as it is when they start developing a rich diction and learn how to speak in proper sentences.(Talkingpoint) If they are not treated with the right care, it can affect their language learning in the long run.

Educational impairments my child may face



Educational impairments include but are not limited to executive function, memory, abstract thinking, information retrieval and delayed auditory processing capabilities. (Hawley, Warb & Mychalkiw, 2004). The effects of memory impairment in a child who has experienced TBI can be long lasting where they face difficulties in memory and concentration (Brainline, 2017). Information given to a child can be lost within the day and they may not even understand the input given to them. (Hawley, Warb & Mychalkiw, 2004)

How do educational impairments affect my child's learning?

In order to deal with the educational impairments in language learning, there needs to be an understanding of the manner in which language is learnt. Language learning consists of three steps. Firstly an input is given, then the input is processed and stored. Lastly, it can be reproduced as an output. When a child has TBI, the educational impairments can affect them at any of the three steps listed above. As such, we need to understand which area is affected by which impairment before preparing a learning solution.



1. Input

One key impairment that a child faces is the depletion of executive function. To put it simply, executive function is a set of mental skills that help you get work done.

The function pays particular importance in the ability to pay attention and get tasks done on time. When a child experiences TBI, their ability to pay attention and complete tasks reduces. They are often distracted by their surroundings and are unable to concentrate. (James and Reynolds, 1994)

2. Processing

Your child may face delayed auditory processing after a TBI. This means that he/she can be in a situation where they can hear but cannot listen well. In other words, they have no hearing difficulties so while they can hear the input given to them, it takes them a longer time for them to understand the information leading to poor vocabulary recognition, following instructions and memory work. (DePompei & Blosser, 2003) Not only that, when given a new piece of information, they might not be able to infer the important parts of information for their brains to abstract and store. They often retain unimportant information which also results in them performing poorly in language related tasks. (DePompei & Blosser, 2003)

3. Output

Information retrieval may also be a problem for your child. While they may know the word, it may take them a longer time to retrieve the word to use in a spontaneous situation. They may also be prone to using the wrong words for a given situation. (DePompei & Blosser, 2003)

ENHANCING LEARNING IN THE HOME ENVIRONMENT



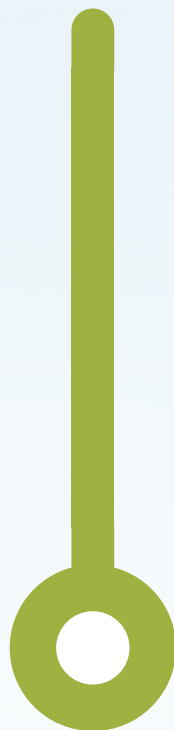
What can I do as a parent?

It must be noted that after a TBI, parents play a more significant role in their child's life to aid in rehabilitation and wellbeing (James & Reynolds, 1994). They provide a form of long term support by helping to structure plans and being decision makers in the child's education. According to a study published in the Biological Psychiatry journal, a person who has had a TBI have a higher chance of experiencing anxiety so they should avoid stressful situations for a period of time (Spielberg, McGlinchey, Milberg & Salat 2015) . In the case of a child with TBI, the fear and anxiety they feel might stem from learning.

Learning as a stressor



Frustration from not being able to remember what they have learnt and consistently being unable to focus their attention on a task to complete it.



Frustration of a parent from continuously being unable to get the child to memorise might be projected on a child.



This will increase the fear of learning in a child as they draw links between learning to themselves being frustrated and their parents being frustrated with them as well.

ENHANCING LEARNING IN THE HOME ENVIRONMENT

What can I do as a parent?

To avoid such a situation where a child shies away from learning, one should create a more relaxed and enriching learning environment to cultivate a desire to learn. Here are a few things you can do with/for your child to enhance their learning.

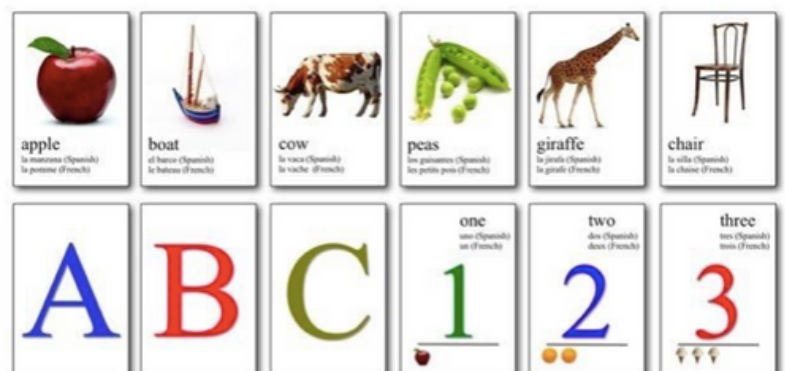
1 Minimise learning space

As mentioned above, TBI affects executive function, this means the ability of the child to pay attention to what is being said. This is largely caused from a larger work space and a lot of audio and visual distractions. By minimising work space, you create focus on the task at hand instead of allowing them to get distracted (Sohlberg, Ehlhardt, & Kennedy, 2005).



2 Internal aids

This strengthens memory and executive function. By using cue cards with visual images, you can encourage the recall for words. They learn to link new information with the ones already in their memory space (Kennedy, & Sohlberg, 2015).



3 Chunking

Sometimes, a large chunk of information can be provided that needs to be memorised. In order to improve memorisation, help them break up information into smaller chunks and logical categories so that they can create links within the information, making memorising a little easier (Marzano, 2007).

Un-chunked List	Chunked List
Bread	Frozen foods
Ice cream	Ice cream
Milk	Frozen peas
Tomatoes	
Eggs	Diary
Butter	Milk
Apples	Eggs
English muffins	Cream
Frozen vegetables	Butter
Bagels	
Lettuce	Bakery
Cream	English muffins
Banana	Bread
	Bagels
	Fruits and Vegetables
	Lettuce
	Banana
	Tomatoes
	Apples

4 Metacognitive skills training

This is done to tackle delayed auditory processing capabilities. As mentioned above, when provided with a barrage of information, the child will not be able to understand it. In order to curb that problem goal setting strategies can be used. This means that you can set small goals with your child about what they want to complete that day and keep reminding them about the goal. By using an agenda, self reflection and provision of feedback, you can track the progress towards their goals and keep them focused on the learning tasks. This will help to cultivate their focus and maximise their learning capabilities in that timespan (Harandi, Eslami Sharbabaki, Ahmadi Deh & Darehkordi, 2013, Safari & Maskini, 2016).

5 Distributed practice

Rather than having a long learning period with your child, break up the learning time into short chunks. This will encourage repeated practice which will improve the recall and transfer of information(Benjamin & Tullis, 2010).





LONG TERM EFFECTS OF TBI

What should I be prepared for?

While you can start giving aid to your child at this age, the brain is still undergoing development. As such, some of the injuries to the reading and writing centres of the brain will not be very apparent until they are slightly older. Furthermore, because they might have a delayed response to retrieving information, they might start to display a delay in response in a spontaneous situation (DePompei & Blosser, 2003). This might occur during a conversation i.e. an uncontrolled environment. That would be when they might show signs of delayed reading and writing. Moreover, they might face problems in the social sphere as well. In early adolescence, they could display anxiety and behavioural changes (Spielberg, McGlinchey, Milberg & Salat 2015). This might be hard to identify as it is a common trait amongst young adolescents as well. Hence it is good to have check-ups to track the effects of the injuries throughout adolescence as well.

MY CHILD LEARNS LANGUAGE OUTSIDE AS WELL

Getting help outside and accessible resources for enhanced learning

Singapore does provide many resources for children who have had TBI but to ensure their learning is maximised outside, the work starts with parents at home. The above mentioned age group is where children are just starting out in school between nursery and kindergarten. Parents should reach out to attain the available resources.

School

Parents should reach out to the educational institute to inform educators about the TBI and kind of impairments their child face. This will allow educators to understand and adjust the classroom teaching methods according to the child's needs. Not only that, teachers can help parents to provide a more structured plan and tap into their available resources to help the child.

Singapore Brain development centre

SBC runs several programmes to help brain trauma patients reintegrate back into society and eases their educational impairments. For a child of the age range 3-5, the more suitable programmes would be the brain training program. They follow a two step approach where first they have a one-on-one assessment and then create an individualised programme to aid a child's foundational skills. This is one step ahead than simply working with your child at home as your child will have a more rigorous program, with professionals.

Another plausible programme is listening therapy that mostly deals with problems in relation to executive control. The clinical approach has proven itself useful in training the auditory system to process sounds and skills needed to listen, learn and communicate. The main beneficiaries from the programme are developing children from 2 years of age. This means that your child will be in the suitable age group for the programme.

For more information about the programmes listed above you can contact Singapore Brain Development Centre or have a look at their website <http://brain.com.sg>

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