What Is Fatigue?

Fatigue is an overwhelming sense of tiredness and is one of the most challenging and prolonged symptoms of an acquired brain injury. It interferes with the ability to think and to function during the day. Fatigue is not cured by getting a good night's sleep, although sleep often helps. Between half and three quarters of all children and teens with an acquired brain injury, regardless of the severity of the injury, experience fatigue at least in the early stages of recovery. Some children and teens continue to experience fatigue for a long time after the injury.

How does fatigue affect a person with a brain injury?

Fatigue affects bodies, minds and sensory systems. Some research indicates that bodies recover more quickly from fatigue than do minds. Children with a brain injury may eventually feel energized after an hour of vigorous physical activity but they may find that even fifteen minutes of solving math problems leaves them exhausted and in need of rest. Fatigue doesn't just leave a child feeling tired, it can also affect the child's memory, attention, concentration and ability to learn. It can affect vision, balance, coordination and speech. It can increase sensitivity to sound, touch and light.

Why do people with brain injuries experience fatigue?

Scientists investigating fatigue after brain injury have found that people with brain injuries use just as much of their brains when they start a task as someone without a brain injury. However, the uninjured brain quickly begins to use less brain power as the task becomes familiar. People with brain injuries continue to use significant portions of their brain no matter how long they perform a task. The areas that continue to be used in injured brains are the middle frontal gyrus which stores information - especially immediate short term memories needed for learning and for making long term memories: the basal ganglia which is important for thinking and processing emotions, and the cingulate and superior parietal cortex which controls attention. In order to continue to pay attention and to think about what to do, the injured brain needs much more energy than the uninjured brain. This causes a brain injured person to experience fatigue.

What are some other reasons for fatigue after a brain injury?

There are other reasons for fatigue after a brain injury. If children or teens have physical challenges with walking or using their arms and hands, then simple activities like dressing, eating, walking around, playing and socializing take far more physical energy than before the injury. Frustration, worry, sadness, isolation and anger also take mental and emotional energy. Pain is another stressor that can cause fatigue and fatigue can lead to greater sensitivity to pain. Medications used to treat spasticity, seizures and low mood can cause fatigue and sleepiness. Your doctor may be able to supplement or modify these medications to ease tiredness. In some situations, doctors recommend a stimulant medication to help children to focus and to improve their ability to learn and to control their impulses.

Neuroendocrine deficiencies may also play a role in fatigue. The most common post brain injury hormonal shortages are in the thyroid, adrenal glands, testosterone and growth hormone. Your child's neurologist would be the best guide to determine whether your child's hormones need testing.

Can fatigue and depression be related?

Your child or teen may be having trouble getting enough sleep. An overtired brain sometimes has trouble falling asleep . Some children and teens experience depression after a brain injury, especially if their sleep is being affected. A depressed person may have problems concentrating, may have little energy and motivation and may no longer enjoy activities that previously gave pleasure. Your child's doctor should be alerted if you suspect depression. Your child and family may benefit from counselling from someone familiar with brain injury.

Community Brain Injury Program for Children & Youth in British Columbia

How can I help my child's brain to recover?

The brain uses approximately 25% of all the nutrients taken into the body and 70% of the body's glucose so good nutrition is very important when dealing with fatigue. Your child gets energy from regular meals and protein snacks as well as from drinking water, which can also help to ward off headaches. The brain also uses 30% of the body's oxygen so regular physical activity is important to provide oxygen to the brain.

Fatigue tends to accumulate over the day and over the week, especially when a child or teen has returned to school. Although every child is different most brain injured children learn best in the morning and earlier in the week. Research has shown that children and teens frequently have difficulty identifying when they are fatigued. They almost always underestimate how tired they are. It is important for parents to be watchful and to help children become aware of times when they need a break. It is also important to encourage children to identify patterns to their fatigue so that they can approach the most important learning activities when they are most energized and they can avoid situations that use up a great deal of energy.

What are some strategies for helping my child get the most from a fatigued brain?

Encourage children or teens to:

- Do only what is important and perform activities when they have the most energy
- Plan their days and weeks to balance difficult and easy activities and make sure that they set aside time for rest. A visual schedule might be helpful
- Schedule relaxation activities like yoga, breathing exercises or gentle martial arts
- Stick to regular routines for activities such as bedtime or getting ready for school so that they don't waste energy
- Keep important things in the same spot so they don't use up energy searching. For example, encourage your child to consistently put away a backpack on a specific hook
- Break big jobs into smaller tasks. Small successes fuel energy
- Use strategies for learning and memory rather than relying on will power
- Take the elevator instead of the stairs at school
- Plan to move from class to class at less busy times to avoid crowded hallways
- Ask to take tests or quizzes in a quiet environment with minimal distractions
- Avoid multitasking. Doing homework, having a conversation or doing a chore requires concentration. Encourage your child to find a quiet place and turn off the television, the radio or the phone
- Avoid loud, busy, bright, colourful environments like malls or grocery stores. Encourage them to shop at small stores and to shop during quiet times of the day
- Take short rest breaks – look out the window for a minute, walk down the hall to the water fountain
- Take longer rest breaks – eat a snack, listen to music, lie down or take a nap in a quiet place

References

"Prediction of Multidimensional Fatigue After Childhood Brain Injury", Alison J. Crichton, et al, Journal of Head Trauma Rehabilitation, Volume 32, No 2, 2017

"The neural correlates of cognitive fatigue in traumatic brain injury using functional MRI", A.D. Kohl, et al, Brain Injury, May 2009, 420-432.

"Fatigue after traumatic brain injury: Association with neuroendocrine, sleep, depression and other factors", Jeffrey Englander, et al, Brain Injury, November 2010, 1379-1388

Link: Coping with Fatigue: *https://www.health.qld.gov.au/__data/assets/pdf_file/0025/675052/fatigue_cl.pdf*

Community Brain Injury Program for Children and Youth in BC
2805 Kingsway, Vancouver BC V5R 5H9 Lower Mainland : 604.451.5511 or Toll Free : 1.877.451.5511
www. mybrainonline.ca

BC Centre for Ability
Beyond challenges—the sky's the limit