TAUTIKANGA ORA SERIES

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Epilepsy and Head Injury

This article is about how head injuries, concussion and epilepsy are related.

What is a head injury?

The Ministry of Health (2014) has this to say about brain injury: “Your brain is protected by your skull and cushioned by the spinal fluid inside your skull. However, if your head is hit or shaken forcefully, your brain will bounce against the inside of your skull. This can cause bruising and damage to the nerve fibres and blood vessels. If bleeding or a blood clot results, this can be serious.”

The Lancet (as cited in THINK, 2015) gives the statistics of brain injury as “A new brain injury occurs every 15 minutes in New Zealand, far surpassing the number of heart attacks and more than five times the number of new strokes. The estimated cost on the health system is $100 million a year, but it is expected that this figure will rise significantly. Brain injuries, including stroke and traumatic brain injury, is the leading cause of disability and death in New Zealand. However, the real cost in terms of rehabilitation, family impact and far reaching social implications for people whose head injury lasts a lifetime, is incalculable. - See more at: http://thinknz.org.nz/information.html#sthash.5mafNo70.dpuf”.

How do you get head injuries?

Head injuries happen whenever there is a strong impact to the skull. For example you can get a head injury from:

- Being hit in the head
- Vehicle accidents
- Falling
- Babies that get shaken often have brain injuries due to the delicate nature of their bodies
- Sports

Concussion

Concussion is described as a brain injury that disrupts the normal function of the brain. It can have many symptoms, such as:

- Constant headaches
- Trouble concentrating or remembering things
- Getting lost or confused easily
- Changes in sleeping pattern, insomnia or oversleeping
- Always feeling tired
- Loss of balance, dizziness
- Inexplicable mood changes
    - Sadness
    - Quick to anger or being irritable
    - Lack of motivation

Head Injury and Seizures

Seizures are reported to occur after 4 – 10% of brain injuries, with the highest risk of seizures being within the first 48 hours of the brain injury occurring, and high risk period occurring for up to a week after the injury.

In more severe head injuries, this chance of seizures, both focal and generalised, raises to 8 – 10% (Vespa et al. 1999)

Annegers and Coan (2000, p. 457) argue that “although TBI is a cause of epilepsy, only about 4 percent of all incidence cases of epilepsy can be reasonably attributed to TBI” (Traumatic Brain Injury).

How to treat head injury

The Head Injury Network for Kiwis divides recovery from head injury into eight levels listed below:

- **Level 1 No Response**
- **Level 2 Generalised Response –** mostly asleep but will respond irregularly to stimuli
- **Level 3 Localised Response –** awake more and responds more, beginning to gain more control of their body
- **Level 4 Confused–Agitated –** confusion can cause aggression and inappropriate reaction to stimuli
- **Level 5 Confused–Inappropriate –** responds to simple commands fairly quickly but struggles with complex commands
- **Level 6 Confused–Appropriate –** more aware of time and place, memory is improving, ability to complete routine tasks (eating, bathing, dressing) improving, still struggles with learning new information. Attention span can be held for roughly 30 minutes
- **Level 7 Automatic–Appropriate –** can perform tasks without confusion, but with little or no recollection of what they are doing. Limited insight and problem solving ability and cannot think realistically about the future.
- **Level 8 Purposeful–Appropriate –** physical capabilities are good, memories of past are good, recent memory is fuzzy. Able to learn new information at a slower rate than previously possible. Ability to handle stress can be decreased and social functions are lowered but still able to function in society.

Throughout this classification, the support network of the injured person is the most important tool for recovery. Recovery requires a slow input of stimulus from family that builds up to giving tasks then involving them socially and giving back control of aspects of their life i.e. giving them back control of money and working towards getting their drivers license if possible.

For a full copy of the recovery guide go to
http://www.thinknz.org.nz/infomation_articles/Eight%20levels%20of%20recovery.pdf

References

Annegers, J. F., & Coan, S. P. (2000). The risks of epilepsy after traumatic brain injury. *Seizure*, *9*(7), 453-457.

Vespa, P. M., Nuwer, M. R., Nenov, V., Ronne-Engstrom, E., Hovda, D. A., Bergsneider, M., ... & Becker, D. P. (1999). Increased incidence and impact of nonconvulsive and convulsive seizures after traumatic brain injury as detected by continuous electroencephalographic monitoring. *Journal of neurosurgery*, *91*(5), 750.

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