

# Facts for Physicians: **MILD ACQUIRED BRAIN INJURY IN CHILDREN AND YOUTH**

## DEFINITION

An acquired brain injury is damage to the brain that occurs after birth and is not related to a congenital disorder, a developmental disability or a disease process which progressively damages the brain.

The damage may be caused traumatically (i.e. from an external force such as a collision, fall, assault or sports injury) or through a medical problem or a non-progressive disease process which causes damage to the brain (e.g. infection or anoxia).

## SIGNS AND SYMPTOMS

COGNITIVE SYMPTOMS	PHYSICAL SYMPTOMS	BEHAVIOURAL CHANGES
Difficulties associated with: <ul style="list-style-type: none"><li>▪ Attention/Concentration</li><li>▪ Memory</li><li>▪ Orientation</li><li>▪ Decision-making</li><li>▪ Problem-solving</li><li>▪ New learning</li></ul>	<ul style="list-style-type: none"><li>▪ Headaches</li><li>▪ Fatigue</li><li>▪ Dizziness</li><li>▪ Uneven gait</li><li>▪ Nausea</li><li>▪ Visual disturbances (e.g. blurring)</li><li>▪ Seizures</li><li>▪ Changes in sleep pattern</li><li>▪ Changes in eating habits</li></ul>	<ul style="list-style-type: none"><li>▪ Depression</li><li>▪ Anxiety</li><li>▪ Irritability</li><li>▪ Emotional/impulse control difficulties</li><li>▪ Reduced initiative/motivation</li></ul>

## DIAGNOSIS

Diagnosing mild brain injuries in children can be particularly difficult. Symptoms can mimic other medical problems and the onset of symptoms may be delayed and may only become apparent as the child reaches developmental milestones. As a result, emergent difficulties may be misunderstood and misattributed (e.g. seen as a behavioural problem).

A diagnosis of mild brain injury should be considered when one or more of the following conditions occur following an injury\*:

- Confusion or disorientation
- Amnesia for time around the injury
- Loss of consciousness up to 30 minutes
- Neurological or neuropsychological problems and/or
- After 30 minutes, score of 13-15 on the Glasgow Coma Scale (ref: [www.abinetwork.ca](http://www.abinetwork.ca))

\* The Center for Disease Control, Heads up: Facts for Physicians About Mild Traumatic Brain Injury (<http://www.cdc.gov/doc.do?id=0900f3ec80017619>)

*For more information about brain injury or how to access specialized services, contact:*

**Toronto ABI Network • 416-597-3057 • [www.abinetwork.ca](http://www.abinetwork.ca)  
Bloorview Kids Rehab • (416) 425-6220 • [www.bloorview.ca](http://www.bloorview.ca)**

# Facts for Physicians: **SECONDARY PREVENTION OF ACQUIRED BRAIN INJURY IN CHILDREN AND YOUTH**

## SECONDARY PREVENTION

Mild brain injury is associated with diminished reaction time and therefore children are at risk for a second injury.

Patients should be provided with information regarding timing for return to regular and high-risk activities. It is very important to avoid subsequent injuries as the effects of each injury can compound the others. Repeated concussions may result in "second impact syndrome," which can be fatal, if the individual does not have sufficient time to heal.

### ACTIVITY RESTRICTIONS

Experts have recommended the following activity restrictions following a mild brain injury\*:

- ▶ **No contact sports for 6 months** following injury or discharge from rehabilitation, including:
  - Tackle football
  - Ice hockey
  - Wrestling
  - Trampoline
  - Rugby
  - Heading during soccer
  - Martial arts
  - Lacrosse
- ▶ **Avoid high velocity/pressure-shifting activities for 6 months** after the injury, such as:
  - High diving
  - High pressure shifts to bodily system (i.e. scuba diving below one fathom or six feet)
  - Sky diving
  - Adult-only roller coasters
  - Parachute jumping
- ▶ **Lifelong avoidance of:**
  - Boxing
  - Bungee jumping
  - Kick boxing
  - Trampoline use in the home or untrained facility
- ▶ **When a bone flap is removed:**
  - Young children should wear a helmet at all times (even while sitting) due to impulsivity
  - Wear a helmet whenever ambulating (walking) if balance or protective reactions are impaired
  - Avoid contact sports
  - Continue helmet use until the bone flap has been replaced and healed, approximately 12 weeks post-injury

\* From *Activity Restrictions, Bloorview Kids Rehab*

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