

SOLUTIONS

FOR THE CANADIAN INSURANCE INDUSTRY

CONCUSSIONS AND UNDERWRITING

With the recent plethora of media coverage of athletes with concussion, there has been increased public awareness of this type of brain injury and of its complications. As a result, the underwriter is frequently confronted with the challenge of assessing insurance risk for applicants with concussion history.

Recent research has explored the biochemistry of concussion, the diagnosis, clinical assessment, treatment, complications and prevention of concussion and has expanded our understanding of this type of injury. This article will highlight this information and provide some suggested guidelines for underwriting.

Mechanism of Concussion:

A concussion is a type of traumatic brain injury produced by a bump, blow or jolt to the head or a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause stretching and temporary damage to the brain cells creating a variety of symptoms.

Biochemistry of Concussion:

Following concussion, a neurometabolic cascade producing temporary changes in brain glutamate, glucose, potassium and calcium concentrations and temporary impairment of cerebral blood flow has been identified. Medications aimed

to alter these changes during the first few hours or days following concussion are being studied.

Diagnosis and Treatment of Concussion:

The "Pocket Concussion Recognition Tool" and the "Sport Concussion Assessment Tool – 3rd Edition (SCAT3™)" are on the internet*. These tools summarize the symptoms of concussion and provide current guidelines for optimal clinical evaluation. After an initial period of physical and mental rest, a gradual return to activity is recommended.

Complications of Concussion:

Most individuals experience complete resolution of concussion symptoms within one to two weeks. However, approximately 15% experience prolonged symptoms. Symptoms persisting for longer than four weeks meet the criteria for post-concussion syndrome. Many individuals with post-concussion syndrome benefit from treatment for psychiatric comorbidity (e.g. depression).

Various treatments and evaluation for post-concussion syndrome have been explored but, at present, none have been shown to be universally more effective than gradually increasing activity as tolerated and avoiding situations of sustaining a second concussion before symptoms of the initial concussion have resolved.

Repeated concussions may cause chronic traumatic encephalopathy (CTE) which is

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characterized by aggressiveness, depression and memory loss. At present, there is no validated method to identify those living with this dreaded disorder but research into biochemical saliva testing and advanced brain imaging techniques is being studied.

Prevention of Concussion:

With regards to concussion prevention in contact sports, it is important to note that helmets reduce the risk for skull fractures and brain hemorrhage and that mouthguards reduce the risk for dental fractures and facial fractures, but neither have been proven to reduce the risk of concussion. Helmet and mouthguards design research is ongoing.

Sport medicine studies, however, have shown a reduction in concussion incidence with the institution of "fair play" rules, changes in body checking rules, changes in fighting and "head hit" rules and with mandatory participation in online concussion awareness programs.

Suggested Underwriting Guidelines for Concussion:

a) Life and Critical Illness:

- 1) Most = standard risk
- 2) Ratings for some with associated depression
- 3) Postpone or decline those with cognitive decline

b) Disability Income:

- 1) Uncomplicated concussion, symptoms less than 1 to 2 weeks in duration and full recovery for greater than 3 to 4 months = standard
- 2) Uncomplicated concussion, symptoms less than 1 month in duration but recovery for less than 3 to 4 months = exclusion rider; reconsider in 6 to 12 months
- 3) Post-concussion syndrome in the past = exclusion rider; reconsider if recovery from all symptoms for at least 2 years duration, and no associated psychiatric disorder
- 4) Recurrent concussions and chronic post-concussion syndrome = exclusion rider / to decline

Understanding concussion and being aware of its complications and associated conditions will enable the underwriter to accurately assess the insurance risk of applicants with a concussion history.

* Pocket Concussion Recognition Tool:

<http://bjsm.bmj.com/content/47/5/267.full.pdf>

Sport Concussion Assessment Tool3 (SCAT3™):

<http://bjsm.bmj.com/content/47/5/259.full.pdf>

Dr. Boyd's article is a synopsis of his November presentation delivered at the Canadian Living Benefits Seminar. A copy of the full presentation given in English is available by contacting insurance@gamma-dynacare.com

BIOGRAPHY - DR. BRUCE BOYD

- Graduated from the University of Manitoba Faculty of Medicine in 1975;
- Later obtained certification and fellowship in the College of Family Physicians of Canada and;
- Board Certification in the American Academy of Insurance Medicine.
- Dr. Boyd has enjoyed a blend of medical practice experiences including:
 - Group Family Practice
 - Cardiac Rehabilitation
 - Sports Medicine
 - And Insurance Medicine with Great-West Life/London Life/Canada Life as well as Wawanesa Life, Western Life and ManuLife Financial
- Dr. Boyd joined Gamma-Dynacare as Insurance Medical Director in September 2011
- Past President of the Manitoba College of Family Physicians
- President of CLIMOA (Canadian Life Insurance Medical Officers Association).

Dr. Boyd loves hockey and still plays over 90 games per year and was a proud member (along with one of his sons) of the Great-West Life 2011 hockey league champions!



Dr. Boyd addressing the Claims Association of Manitoba.