



**PUBLIC HEALTH STRATEGIES TO IMPROVE  
SPORT-RELATED CONCUSSION CARE AND PREVENTION  
IN CANADIAN COMMUNITIES**

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**Joint Submission to the Subcommittee on Sport-Related  
Concussions in Canada  
House of Commons Standing Committee on Health**

**from the:**

- 1) Canadian Academy of Sport and Exercise Medicine (CASEM)**
  
- 2) College of Family Physicians of Canada (CFPC)**
  
- and**
  
- 3) Canadian Medical Association (CMA)**

**Submitted January 29, 2019**

## **PREAMBLE**

Based on a well-established collaboration addressing concussion, the Canadian Academy of Sport and Exercise Medicine (CASEM), the College of Family Physicians of Canada (CFPC), and the Canadian Medical Association (CMA) are pleased to submit this brief to the Subcommittee on Sport-Related Concussions (SCSC) of the House of Commons Standing Committee on Health.

### **About the Canadian Academy of Sport and Exercise Medicine (CASEM)**

CASEM is a physician member-based organization comprised of 850 medical doctors from many specialties who have specialized training and skills in sport and exercise related injuries/illnesses for active patients of all ages and abilities, including concussion care. CASEM physicians hold national and international leadership roles in concussion care. Namely, at the national level, CASEM chairs the Canadian Concussion Collaborative (CCC) and at the international level, several CASEM members played leadership roles in the development of the International Consensus Statements on Concussion in Sport which is the key document that establishes concussion management recommendation every 4 years.

### **About the College of Family Physicians of Canada (CFPC)**

The CFPC is the professional organization that represents more than 38,000 family physician members across the country. The College establishes the standards for, and accredits, postgraduate family medicine training for Canada's 17 medical schools. It reviews and certifies continuing professional development programs, and materials, that enable family physicians to meet certification and licensing requirements. The CFPC provides high-quality services, supports family medicine teaching and research, and advocates on behalf of family physicians and the specialty of family medicine.

### **About the Canadian Medical Association (CMA)**

The Canadian Medical Association unites 85,000 physicians on national health and medical matters. Formed in Quebec City in 1867, the CMA's rich history of advocacy led to some of Canada's most important health policy changes. As we look to the future, the CMA will focus on advocating for a healthy population and a vibrant profession. Along with CASEM, the CMA is a co-founding member of the CCC.

## **KEY THEMES AND RECOMMENDATIONS:**

In this brief, CASEM, CFPC, and the CMA submit a series of recommendations under two key themes. Taken as a whole, we believe these will help inform the Subcommittee's study on how to improve concussion awareness, prevention and treatment for all Canadians. Background information regarding the groups and initiatives mentioned in the key themes and recommendations, is provided in the subsequent part of this document.

### **KEY THEME #1:**

The impacts of concussion and the benefits of awareness efforts are slowly becoming better known at the higher levels of sport participation that received support for the implementation of proper concussion management strategies (namely through the Canadian Concussion Protocol Harmonization Project). Further efforts and government funding should address the issue at all levels of sport participation. This must include school-based sport programs, and concussion occurring in other contexts (e.g. leisure, occupation, etc.).

#### **RECOMMENDATIONS related to key theme #1:**

- #1.1 The federal government should commission and fund the development and evaluation of additional efforts to improve awareness and proper management of concussion at all levels of sport participation and contexts where concussions occur in Canada.
- #1.2 Since “key aspects of concussion prevention, detection and management occur prior to, as well as after, the initial medical intervention”<sup>1</sup>, “public health strategies should be developed and implemented to address the issue of concussions.”<sup>1</sup>
- #1.3 Given their competencies and expertise in this area, “family physicians<sup>2</sup> and sport and exercise medicine (SEM) physicians should play a central role in the design and implementation of strategies that work in conjunction with families, schools, sports organizations, employers and governments to educate, support and empower the implementation of proper concussion prevention, detection and management protocols.”<sup>1</sup>
- #1.4 Any future effort to improve concussion awareness and management should, whenever possible, be evidenced-informed, and aim for synergy with ongoing Canadian initiatives.
- #1.5 Innovative dissemination strategies that have the potential to reach all levels of sport participation and contexts where concussions occur should be considered and evaluated (e.g. massive open online course or MOOC<sup>3</sup>).

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<sup>1</sup> The Role of Family Physicians and physicians with Added Competencies in Sport and Exercise Medicine in a Public Health Approach to Concussions. A joint position statement of CASEM and the CFPC. 2017  
<https://www.cfpc.ca/ProjectAssets/Templates/Resource.aspx?id=4319&langType=4105>

<sup>2</sup> This is not meant to exclude the possible role of other health care disciplines, such as nurse practitioners, that can be involved in the diagnosis and medical management of concussions in some Canadian jurisdictions.

<sup>3</sup> <https://www.ulaval.ca/les-etudes/mooc-formation-en-ligne-ouverte-a-tous/commotion-cerebrale-prevention-detection-et-gestion-dans-mon-milieu.html>

## **KEY THEME #2:**

For the majority of Canadians affected by a concussion, family physicians play a central role in concussion identification and management through the recovery process. However, where persistent concussion symptoms arise, family physicians and their patients require timely access to SEM physicians, and multidisciplinary care for the development and implementation of individualized treatment plans. As it presently stands, access to such expert medical and multidisciplinary resources for concussion is very limited (especially in rural and remote regions). To complicate matters, Canadians affected by a concussion are all too often uncertain how best to navigate a health care system that isn't well organized to address their unique needs.

### **RECOMMENDATIONS related to key theme #2:**

- #2.1 Medical schools and organizations should maintain continuous efforts aiming for the rapid integration of the most current clinical practice recommendations about concussion.
- #2.2 Initial care for Canadians affected by a concussion should be coordinated by the patient's family physician.
- #2.3 To work in collaboration with their family physicians, patients affected by persistent symptoms following a concussion should have timely access to medical experts on concussion and allied professionals with expertise in concussion management.
- #2.4 The potential of telemedicine strategies or other virtual network to improve access to concussion experts for support in the management of concussion should be considered and evaluated.

## **BACKGROUND:**

**The challenging dynamics of concussion:** Sport-related concussion seriously impacts the health and well-being of Canadians across the country; to say nothing of the costs to the health care system and concussed individuals. Canadian statistics show that among children and youth (10-18 years) who visit an emergency department for a sports-related head injury, 39% were diagnosed with concussions, while a further 24% were possible concussions.<sup>4</sup>

Between 2003 and 2013 in Ontario, a 4.4-fold increase of pediatric concussion-related consultations has been observed, with a sharp increase between 2010 and 2013 and nearly 35000 visits in 2013.<sup>5</sup> Although, the precise reasons for this increased incidence of concussion are unknown, the study suggests that “...*concussion education and awareness, improved diagnosis of*

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<sup>4</sup> <https://www.canada.ca/en/canadian-heritage/services/concussions.html>

<sup>5</sup> Zemek et al. J Pediatr 2017; 181: 222-8 (<https://doi.org/10.1016/j.jpeds.2016.10.067>)

*concussion, and revised concussion guidelines advocating stricter follow-up...*” played an important role.

The body of knowledge regarding concussion is rapidly and constantly changing; a dynamic that is unlikely to change for the foreseeable future. One important limitation of our knowledge about concussion is the lack of information on the true burden of concussion in Canada. A significant proportion of all concussions are not captured by traditional health-related databases, or clinical research, because individuals often do not consult a physician. One positive and recent development that will help better understand the true burden of sport related concussion in youth occurred in November 2018 when a group of more than 30 Canadian researchers including CASEM and CFPC leaders on concussion received \$12 million from the National Football League “Play Smart, Play Safe” initiative.<sup>6</sup> This 3-year longitudinal cohort study will evaluate diagnostic tools, prognostic indicators, prevention strategies, and treatment strategies. This study will characterize the true incidence rate and recovery characteristics of concussion in high school-based sport settings.

Psychological and social factors must also be considered. Attitudes and awareness towards injury are complicating factors that highlight the need for improved concussion prevention and awareness. These include injury minimization, the lack of a visible injury, and a general lack of both pre and post-injury awareness. Those closely associated with a concussed individual (coaches, co-workers, employers, or an injured individual themselves) may have an incentive, or experience pressure, to hide/downplay injury or avoid medical assessment due to stigma.<sup>7</sup> The natural human predilection towards downplaying the nature of injury is another important factor to consider, especially where, post-injury, the effects aren’t clearly visible. A concussed individual may lack the mental acuity to be able to understand that their symptoms require medical attention.

Another area to consider is the availability of qualified health care resources. Family physicians, whether in primary care settings or emergency departments, and SEM physicians, are generally the first medical professionals seen by a person who has sustained a concussion during a sport, leisure or occupational activity. They are the first point of contact for proper management, advice, and education regarding that person’s gradual return to cognitive (e.g. school and work) and physical activities (e.g. sport, exercise or work).<sup>8</sup> Gaps in medical training, and the fast-paced evolution of concussion best practices, means that clinicians sometimes struggle to maintain up-to-date knowledge regarding the detection and treatment of concussions. These factors are further complicated by ambiguous scopes of practice across the multidisciplinary professions involved

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<sup>6</sup> <https://www.ucalgary.ca/utoday/issue/2018-11-16/nfl-gives-significant-funding-help-youth-shred-burden-concussion>

<sup>7</sup> Delaney J, Caron J, Correa J, et al. Why Professional Football Players Choose not to Reveal their Concussion Symptoms During a Practice or Game. *Clin J Sport Med*, 2018, 28(1): 1-12.

<sup>8</sup> College of Family Physicians of Canada & Canadian Academy of Sport and Exercise. Joint Position Statement - The Role of Family Physicians and Physicians with Added Competencies in Sport and Exercise Medicine in a Public Health Approach to Concussions. 2017.

with concussion management. Finally, there is general lack of available medical experts on concussion to whom family physicians can refer patients that present persistent symptoms.

Our recommendations also take into consideration the following factors:

- The simple principles of initial concussion management<sup>6-8</sup> are within the scope of practice of family physicians.
- In the vast majority (80-90%) of cases, once simple principles of initial management have been implemented, concussion is a condition that will evolve favorably within 7-10 days.<sup>8</sup>
- Even with proper initial management, some concussion patients will present with persistent symptoms that require a multidisciplinary team approach.
- “Persistent symptoms” has been defined as more than 4 weeks in youth and more than 2 weeks in adults.<sup>9</sup>
- Access to physicians with added competencies in concussion care (e.g. SEM Physicians, Psychiatrists, Neurologists), and allied health professionals with experience in treating specific presentations of concussions is limited, especially in Canada’s rural and remote areas.

**CASEM & CFPC’s concussion efforts to date:** Since 2012, CASEM has played a key role in the evolution of concussion care in Canada by leading the work of the CCC<sup>10</sup>. The CCC is composed of 18 health organizations concerned with concussions that aim “to improve education about concussions, and the implementation of best practices for the prevention and management of concussions”. The CFPC has been involved with the CCC from the start. In 2015, the CCC published 2 key recommendations in a document entitled “*Recommendations for policy development regarding sport-related concussion prevention and management in Canada*”<sup>11</sup> that state:

- Organizations responsible for operating, regulating or planning sport and sporting events with a risk of concussion should be required to develop/adapt and implement a concussion management protocol, based on current best practices, that is customized for their context and available resources.
- In situations where timely and sufficient availability of medical resources qualified for concussion management is lacking, multidisciplinary collaborative approaches should be used to improve concussion management outcomes while facilitating access to medical resources where appropriate.

Since 2015, the CCC has contributed a multidisciplinary health care perspective to key concussion-related initiatives in Canada. The first of these initiatives was initiated in January 2015 by Sport

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<sup>9</sup> McCrory et al. Consensus statement on concussion in sport. (2017) <https://bjsm.bmj.com/content/51/11/838>

<sup>10</sup> <https://casem-acmse.org/resources/canadian-concussion-collaborative/>

<sup>11</sup> <https://bjsm.bmj.com/content/49/2/88>

Canada and led to the creation of a Federal-Provincial-Territorial working group (FTP-WG) on concussion that brings together sport, education, government and health stakeholders. Later in 2015, the mandate letters from Prime Minister Trudeau asked the Minister of Health and the Minister of Sport and Persons with Disabilities to collaborate on a national strategy on concussion. The Federal government budgeted \$1.4 million to allow the Public Health Agency of Canada to work with provinces and territories to develop harmonized concussion management guidelines across Canada.<sup>12</sup> Most of that work has been accomplished by funding to Parachute for the development of the Canadian guideline on concussion in sport.<sup>13</sup> Members of the CCC and concussion leaders from the CFPC and CASEM were closely involved.

Since 2016, one of the CASEM and CFPC leaders on concussion developed a Massive Open Online Course (MOOC) to develop general awareness on concussion and facilitate the implementation of proper concussion management protocols in specific settings. After 4 iterations of that French language MOOC, over 8000 participants have accessed it. Presently an English version is being developed in collaboration between Laval University and the University of Calgary.

In August 2017, CASEM and the CFPC published a joint position statement entitled “*The role of family physicians and physicians with added competencies in sport and exercise medicine in a public health approach to concussions*”<sup>14</sup> that is directly related to the recommendations presented in this brief.

Finally, since mid-2018, CASEM and CFPC have partnered with the Canadian Medical Association (CMA) to completely revamp the CMA’s policy on Head Injury in Sport. To foster high-level advocacy, cultural sensitivity, and awareness messaging on concussion, it has been redeveloped for a host of target audiences from all relevant perspectives. It is set for release in early 2019.

## **CONCLUSION:**

Concussion is a pressing public health issue in Canada. The members of the SCSC should keep in mind that concussions are not limited to higher level organized sport. It’s a sudden, and unwanted challenge that hundreds of unsuspecting and unprepared Canadians face each day. These concussions occur in a range of situations, inside and outside of sports settings, and often go untreated; with a potential for tragic consequences.

To truly address the issue and make progress towards the objectives expressed by Prime Minister Trudeau in the mandate letters, the Government of Canada must provide significant investments. To make progress across the spectrum of sports, leisure and other context where concussions

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<sup>12</sup> <https://www.budget.gc.ca/2016/docs/plan/ch5-en.html>

<sup>13</sup> The [Canadian guideline on concussion in sport](#) was part of the Parachute-led [Concussion Protocol Harmonization Project](#).

<sup>14</sup> <https://www.cfpc.ca/ProjectAssets/Templates/Resource.aspx?id=4319&langType=4105>

occur, the Government funding should minimally represent a 10-fold increase from the initial \$1.4M budgeted in 2016.

With their respective membership, tools and resources, CASEM, CFPC and CMA can play an important role in addressing the burden that concussions place on Canadians. With this brief, we are expressing the willingness of our organizations to collaborate with the government in the design and implementation of strategies to systemically address concussion from all causes as a public health issue. To be successful this must occur across all levels of sport participation and include: leisure, school-based sports, occupational activities and address the rural and remote areas of the country.

On behalf of CASEM, CFPC and CMA we would welcome the opportunity, and privilege, to present and discuss these recommendations with your Committee.

Respectfully submitted,

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