

# Sports Cardiology BC

## Annual Report

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## **Introduction**

Since inception in Spring 2012, Sports Cardiology BC (SCBC) has made consistent progress towards its foundational four pillars of: Research, Education, Advocacy and Clinical Assessment. It has now reached a level of maturity and is becoming recognized as playing a leadership role in this developing area of cardiology. Being the first formal communication, this report encompasses the activities of SCBC over the past 18- 24 months.

Funding novel clinics in a public healthcare environment is challenging due to the many competing areas of need. We acknowledge the ongoing fundraising support of the VGH & UBC Hospital Foundation, through which this first of its kind program in Canada, has been made possible.

## **Research**

Our research mission is to investigate risk factors and warning signs associated with sudden cardiac death and cardiovascular disease in order to make participation in sport and exercise safer. This has been facilitated and driven by the hiring of two UBC masters candidate students (Daniel Lithwick and Barb Morrison)

A number of areas of research have been identified and include: the young athlete and the inherent risk of sudden cardiac death due to pre-disposed genetic conditions; the master's athlete (over age 35) that is at risk due to the onset of coronary heart disease; the weekend warrior and our increasing involvement in sporadic but extreme sport activities; as well, professions that demand a high level of activity.

### **1. Current Research:** *“Prevalence of Cardiovascular Disease in British Columbia for Young Competitive Athletes – Screening Using Electrocardiogram, Physical Exam and Personal and Family Questionnaire”*

Apart from prevalence, the study is attempting a comparison of efficacy between the ESC and AHA pre-participation evaluation criteria.

To date, over 600 athletes have been tested. The study is expected to be completed by summer 2015.

### **2. Current Research:** *“Firefighters in Burnaby, B.C.: The Impact of a 5-Year Exercise and Diet Intervention Program on Cardiovascular Health, Aerobic Fitness and Quality of Life”*

SCBC is playing a consultative role in this study led out of the new Fortius Sports Institute in Burnaby. SCBC is providing technical expertise in

cardiovascular health interpretation and will have access to the de-identified data for its own future use<sup>1</sup>.

**3. Future Research:** *Evaluation of the prevalence of risk factors and the best screening tool to detect cardiovascular disease that can lead to sudden cardiac death in the Masters athlete.*

There is growing societal acceptance of activity leading to wellness. In many cases, the activity is intense but infrequent. Research shows that individuals that do not participate in regular physical activity have the highest risk for cardiac events during sports. Consequently, a European consensus document recommending pre-participation evaluation has been proposed and the American Heart Association is following a similar pathway. SCBC is developing a study protocol in order to evaluate prevalence of cardiac disease in this population and the effectiveness of different screenings tools. This study is projected to commence in the spring of 2015.

**4. Future Research:** *Prevalence of cardiovascular disease in former Olympic athletes in British Columbia*

A study protocol is currently being developed.

## **Education**

Due to the high visibility of adverse cardiac events in the professional sporting arena, it is important to present a balanced view of these risks. Our educational mission is to impart the latest evidence-based knowledge on the risk factors, signs and symptoms, and management of cardiovascular disease in this population.

**1. Journal Articles:**

Three articles are currently in various phases of completion:

- i. Aetiology of diseases that lead to sudden cardiac death in the young competitive athlete as well as incidence of sudden cardiac death.
- ii. Overview of screening in the young competitive athlete – current international recommendations, sensitivity/specificity of screening tests, cost-effectiveness and the Canadian perspective.
- iii. Screening in the Master's athlete – incidence and mechanism of SCD, current recommendations, precedent studies and future direction.

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<sup>1</sup> Dobie, Cayley. "Fortius Partners with Firefighters in New Health Program." Burnaby Now. N.p., 26 Mar. 2014. Web.

## **2. Public Education:**

A number of media interviews have been conducted in print, radio, television and online. Many have been due to adverse events in the sporting arena, while others were to publicize our research initiatives<sup>2</sup>.

## **3. Seminar/Rounds:**

The first seminar with the aim of educating members of the athletic and medical communities on the importance of athlete heart health was held in October 2013. Close to 100 attendees comprised of coaches, parents, and members of the clinical and research communities were in attendance to hear Dr. Saul Isserow, Dr. Brett Heilbron and Dr. Jack Taunton speak. Topics included sudden cardiac death and its aetiologies, congenital heart disease in the young athlete, and coronary heart disease in the master's athlete.

Two Cardiology Rounds have been delivered; on Prevention of Sudden Cardiovascular Death in the Young Athlete (Dr. Chris Fordyce) and Impact of Excessive Endurance Exercise on the Heart (Dr. Andrea Lee)<sup>3</sup>.

## **4. Conference Presentations:**

Dr. Michael Luong (cardiology fellow) presented data on indicators for follow-up consultation from the young athlete screening study at the 5<sup>th</sup> annual Asian Preventive Cardiology and Cardiac Rehabilitation Conference in Hong Kong from November 6<sup>th</sup>-9<sup>th</sup>.

An abstract has been submitted for the 2015 ACSM annual meeting with a focus on ECG findings from the young athlete study, and separating physiological training adaptations from abnormal ECG findings.

An abstract is being planned for the 2015 Annual ESC Congress with a view to revising current pre-participation evaluation for young athletes based on the data gathered by SCBC, as well as providing recommendations for screening physicians and health professionals.

## **5. Student Engagement:**

Several medical residents and cardiology fellows have become involved in this program. Medical residents have volunteered their time in order to conduct the physical exam portion of the screen in young competitive athletes. Fellows have been involved in follow-up consultations based on the screening protocol.

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<sup>2</sup> Fayerman, Pamela. "UBC Researchers to Study Cardiac Abnormalities in Athletes." Vancouver Sun. N.p., 23 Oct. 2013. Web.

<sup>3</sup> Slides available upon request

## **Clinical Assessment**

Being the first clinic of its kind in Canada has resulted in us receiving referrals from all corners of Canada. Although this has required some effort to manage expectations, it has also shown the demand for this clinic as well as the budgetary and resource constraints that it presents. This has highlighted the need to develop proper evaluation guidelines that can be pushed out to primary practice, and is a high priority for SCBC. It has also required our non-lower mainland team members (Dr. Della Siega - Vancouver Island and Dr Pistawka - Interior) to become actively engaged.

At this time, clinical assessment has been limited mainly to patients identified through the screening research protocol, but plans include the creation of a triage mechanism to allow referrals from family physicians to be funneled to an available and appropriate member of the Sports Cardiology BC team.

## **Advocacy**

- Collaborative efforts have been ongoing with the Heart and Stroke Foundation, St. John's Ambulance, the IOC, and Rowing Canada.
- The development of the program to date has been with project management support from VGH, office space and clerical support out of Dr Isserow's private offices, and research testing space at various sporting and tertiary education facilities. Ongoing work to strengthen the relationship at the senior executive level of VCH has provided the opportunity for permanent space for SCBC at the UBC Hospital location. This is expected to be available by mid 2015.
- Advocacy through public awareness has been through media as well as via social networking.

Our website is at [www.sportscardiologybc.org](http://www.sportscardiologybc.org)  
Our Facebook page is Sports Cardiology B.C.  
Our Twitter handle is @sportscardiobc

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### **Acknowledgements:**

Sports Cardiology BC team

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