



Banff Sport Medicine
FOUNDATION

ANNUAL REPORT **2019 - 2020**

Table of Contents

OUR MISSION	1
OUR VISION	1
YEAR IN REVIEW	2
MESSAGE FROM THE CHAIR.....	3
MESSAGE FROM THE DIRECTOR OF RESEARCH	5
MESSAGE FROM THE DIRECTOR OF EDUCATION.....	6
RESEARCH SPOTLIGHT ~ IMPACTS OF COVID-19 CLOSURES ON ORTHOPAEDIC PATIENTS.....	7
STUDENT TESTIMONIAL	8
PATIENT TESTIMONIAL.....	9
RESEARCH & EDUCATION HIGHLIGHTS	11
SPORT COVERAGE	15
COMMUNITY PRESENTATIONS & OUTREACH	16
CURRENT RESEARCH COLLABORATION	17
BSMF PUBLICATIONS 2019 - 2020.....	18
RESEARCH GRANTS	19
AWARDS	19
EDUCATION & COMMUNITY OUTREACH GRANTS	20
FINANCIAL STATEMENTS EXCERPTS	21
LOOKING FORWARD.....	23
BOARD OF DIRECTORS	24
STAFF DIRECTORY.....	24
THANK YOU TO OUR SUPPORTERS.....	25
SUPPORT BSMF	26
DONATE.....	26
FOLLOW US	26
STAY INFORMED.....	26

OUR MISSION

To advance research, prevention, treatment, and rehabilitation of musculoskeletal and sport injuries among people of all ages and abilities. This is achieved through the synergistic interaction of three core components: Research, Education and Clinical care.



OUR VISION

World-class sport medicine and arthroscopy clinical care, research, and education.

2019 - 2020 Year in Review

Committed to advancing research, prevention, treatment, and rehabilitation of musculoskeletal and sport injuries among people of all ages and abilities.

Visit us at www.bsmfoundation.ca or follow us on social media to learn more.



MESSAGE FROM THE CHAIR



Dr. S. Mark Heard, MD, PhD, FRCSC, Dip Sport Med.
Orthopaedic Surgeon, Clinical Associate Professor

When one reviews this annual report, it is quite amazing what the Banff Sport Medicine Foundation (BSMF) has accomplished over the past year despite so much turmoil from the global pandemic as well as the economic hardship being experienced in the province of Alberta.

There are many research publications and knowledge sharing activities that were accomplished. I am very proud of the number of local, national, and international educational presentations and workshops that were completed by our hardworking team. This work will make a difference in injury risk reduction and patient outcomes, which are two key priorities of our Foundation.

Through these education and research efforts, BSMF has impacted the lives and practices of orthopedic colleagues, sport medicine physicians, physiotherapists and other health care providers, as well as our patients.

I would like to dedicate this report to thanking those involved in making this year an ongoing success. Firstly, I would like to thank the Board for all the volunteer time and energy put into making the Foundation function.

I would like to single out John Clarkson who is a driver and leader of our charitable work, and who has given so much time and financial support that it would be remiss not to acknowledge his wisdom, vision, and dedication to BSMF. Next, I would like to thank Kevin Nugent for his financial savvy and guidance, as well as his time and energy. His knowledge and experience from his extensive board work have been invaluable.

My orthopaedic colleagues on the board, I know how busy our lives are, and carrying out the research and education programs has required a divide and conquer approach. I want to thank you for your time, commitment, and excellence in research, publications, and educational programs.

I want to thank Rice and Company, our accountants who have supported us in so many ways. Tyler, Chad, and Austin have helped us to keep our foundation moving forward. Their personal approach with high ethics and integrity are welcome and appreciated.

The Foundation would not function without the tireless work of Julie-Anne Frayn. She is a consummate professional who delivers the highest quality of work. We are fortunate to have Julie-Anne's expertise, creativity, and resourcefulness as part of our team. The true quarterback of the Foundation is Sarah Kerslake, who has been leading our research and education to a world-class standard long before the creation of BSMF. She always goes above and beyond to ensure high-quality work and enviable output.

Lastly, I want to thank the whole team, too numerous to single out. Our sport medicine physicians who are writing articles, participating in journal club and research. Also, the physiotherapists in the Bow Valley and beyond that participate in the educational sessions, work on rehabilitation protocols, and who collaborate with functional testing and data collection. There is

an ever-expanding group of Master's candidates, medical students, orthopaedic residents, and orthopaedic Fellows that participate in writing articles, data collection, and publications.

The Foundation has a commitment to excellence in education and research that we gladly share, to promote prevention, science-based medicine, and most importantly patient-centered care. As Chairman, I am proud to present to you our 2019 - 2020 report.



MESSAGE FROM THE DIRECTOR OF RESEARCH



Dr. Laurie A. Hiemstra, MD, PhD, FRCSC
Orthopaedic Surgeon, Assistant Professor

For the research program at the Banff Sport Medicine Foundation, it has been a year filled with success and opportunity alongside adversity.

The closure of the orthopaedic clinical practice for 3 months gave the research team time to bring many projects to a conclusion with the submission of 12 manuscripts and the publication of ten peer-reviewed papers.

The range of publications included a focus on outcomes from patellofemoral joint stabilization surgery including a collaboration with colleagues at the University of Michigan, further research findings from the STABILITY ACL reconstruction study led by the University of Western Ontario, an

international collaboration assessing gender diversity in orthopaedic surgery, as well as additional collaborations with our colleagues at the University of Calgary.

The COVID-related closures also provided a new opportunity to assess how Banff Sport Medicine patients coped with the postponement of their surgery or the lack of in-person follow-up by surgeons and physiotherapists. (See page 6 for additional details) The analysis of these survey results was published in an international journal, and a second publication analysing the COVID-19 closure patient survey data by age and sex will be forthcoming.

Although these have been bright sides for our research program, at the same time recruitment for studies has been on hold since mid-March due to limitations associated with the pandemic. Additional ethics approval will now be required for all projects and this has and will cause, a significant delay in enrolment for all of the clinical trials. It is still unclear when recruitment for all trials will be allowed to proceed.

We feel thankful that the robust data collection over many years at Banff Sport Medicine, along with the diverse research project portfolio has not left us aimless during the restrictions due to the COVID-19 pandemic.

We have focussed our attention on completing manuscripts, cleaning data for upcoming research papers, and re-prioritization of our different studies. This work will allow for the ability to concentrate on our multiple clinical trials once they are able to resume.

To all our patients who tirelessly complete patient-reported outcome measure forms and return for functional testing assessments, we offer a sincere thank you. Although our research efforts are undertaken to help our patients have the best possible outcomes, we also cannot succeed without their participation and cooperation.

Stay healthy, stay moving, but most of all, stay safe.

MESSAGE FROM THE DIRECTOR OF EDUCATION

Michaela Kopka, MD, FRCSC, DipSportMed
Orthopaedic Surgeon



For better or worse, 2020 will be a year to remember. As this tumultuous year comes to an end, I am proud to share with you some of the education initiatives that the Banff Sport Medicine Foundation was able to deliver. Despite the pandemic and associated restrictions, BSMF staff worked hard to meet our mission of providing community and medical education in sport medicine and injury prevention.

On the medical education side, BSMF welcomed our Orthopaedic Sport Medicine Fellow, Dr. Meaghan Marien. Dr. Marien joined us after completing her first Fellowship in paediatric orthopaedic surgery in Salt Lake City, Utah. She will spend the 2019/20 academic year learning advanced surgical skills to treat individuals with sport-related knee and shoulder injuries with our team in Banff. She will then begin her position as a full-time paediatric orthopaedic surgeon at the Alberta Children's Hospital. Although the health system closures impacted our ability to accept visiting medical students and residents during the spring, we were able to reinstate our clinical rotations in the summer and are now back up to full teaching capacity.

The summer conference season looked a bit different this year but our faculty was quick to adapt. The BSMF surgeons and physicians presented at several virtual medical conferences including the Canadian Orthopaedic Association (COA) annual meeting and the Canadian Arthroscopy Meeting (CAM). During the COA meeting, Dr. Hiemstra earned the great honour of being named the first female second president-elect!

During the early part of 2020, the BSMF team hosted a number of injury prevention seminars targeting the active Bow Valley community. We partnered with our local physiotherapy colleagues to present sessions to individuals of all ages, discussing (and demonstrating) strategies to keep knees and shoulders safe. Dr. Reed has also continued his weekly column in the Crag and Canyon newspaper in which he shares his expertise on staying healthy, active, and happy. Finally, our BSMF website has seen many updates and new educational content added over the past year. Be sure to check it out to learn more about your injury (or how to prevent one)!

Despite the challenges presented by this unconventional year, BSMF was able to adapt and deliver many of our education initiatives. Given that the current restrictions are likely to persist into the new year, we will strive to deliver our message through virtual and other creative means. We hope to expand our injury prevention audience by creating virtual content across a spectrum of injuries and activities. We are also planning an inaugural BSMF sport medicine course targeting primary care physicians and allied care practitioners. The world may have changed forever, but sport-related injuries will undoubtedly continue and so too will BSMF's mission to educate our colleagues and community on the principles of sport injury prevention and management. Stay safe!

RESEARCH SPOTLIGHT ~ IMPACTS OF COVID-19 CLOSURES ON ORTHOPAEDIC PATIENTS



The COVID-19 pandemic has significantly impacted our daily activities. As a charity, we've experienced a significant decrease in funding, reduced staffing, and postponement of our clinical research programs.

While we continue to wait for our clinical research programs to resume, in May, we sought to determine how COVID-19 closures affected the health, recovery, and access to resources of our orthopaedic patients.

Our research team designed and distributed a questionnaire to 269 patients that had their surgery postponed due to COVID-19 closures, and 476 patients that were within 3 months post-operative at the time of COVID-19 closures in March.

What did we find?

We found evidence that orthopaedic surgery is not “elective” but is necessary for our patients’ ability to work, for their mental health, and for their physical health.

Virtual care did not adequately replace the hands-on assessments of allied care (e.g. physiotherapists) and orthopaedic surgery specialists

This work has so far been published in the peer-reviewed Journal of ISAKOS, as well as in the Canadian Orthopaedic Association’s Summer Bulletin, and has been presented by OrthoEvidence as an OE Original study.



Studies completed by: Michaela Kopka MD, FRCSC, Laurie Hjemstra MD, PhD, FRCSC, Julie-Anne Freyn PhD, Sarah Kerslake MSc, PT.

Presented by: OrthoEvidence

Training & Practice Management / Formation et gestion d'une pratique

31

The Effect of COVID-19 Closures on Orthopaedic Sport Medicine Patients: Insights from Banff Sport Medicine

Michaela Kopka, M.D., FRCSC
Laurie Hjemstra, M.D., PhD, FRCSC
Julie-Anne Freyn PhD
Sarah Kerslake, MSc, PT
David Gorton, M.D., FRCSC
Banff, AB

The coronavirus (COVID-19) outbreak was first described in Wuhan, Hubei, China in December 2019, and was declared a global pandemic by the World Health Organization on March 11, 2020. In response, the Government of Canada initiated a nationwide lockdown that resulted in the cancellation of non-essential orthopaedic surgeries as well as supportive health-care services such as physiotherapy.

The Banff Sport Medicine Foundation sought to assess the impacts of COVID-19 closures on patients via questionnaires targeting two patient populations at the Banff Sport Medicine clinic: 1) Patients who had their surgeries postponed Jan-Mar, and 2) Patients who were up to three-months postoperative (Jan-Mar).

The surveys were designed as Quality Assurance instruments, predominantly using a 7-point Likert Scale for the responses. The EQ-5D was also included as a measure of generic health status.

Completed surveys were submitted by 42.0% of the postponed surgery group and 41.4% of the acute postoperative group. Descriptive statistics were used to analyze the data.

How have COVID-19 closures affected patients waiting for orthopaedic surgery?
More than 90% of patients were between the ages of 18 to 64 years (94.6%). This most common reason for surgery was anterior cruciate ligament (ACL) reconstruction, shoulder stabilization and knee arthroscopy for meniscal injury.

Effects on physical & emotional health

- 87.8% of patients were able to stay physically active
- 88.7% indicated the delay in surgery negatively impacted their physical health
- 75.7% of patients experienced pain because of their injury during the COVID-19 closures
- 51.1% indicated their pain increased, while 47.6% of patients indicated that their pain stayed the same
- 41.7% stated that their symptoms increased in severity



Figure 1
Feelings expressed by patients that had their surgery postponed

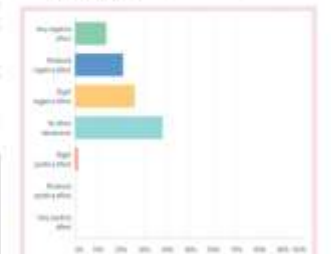
- 85.5% of feelings expressed by patients about the postponement of their surgery were negative (Figure 1)

Negative feelings described: anxious, worried, angry, concerned, frustrated, lost, annoyed, irritable, resigned, disappointed, useless, depressed, down.

Positive feelings described: empowered, positive, motivated, grateful, happy.

Effects on the ability of patients to return to work and other activities

- 62.6% of patients indicated that postponement of their surgery had, or will, negatively affect their ability to return to work (Figure 2)
- 70.4% of patients indicated there are, or will be, negative effects on their ability to return to sport and leisure activities (Figure 3)



Stories from patients that indicated their delayed surgery will negatively affect their return to work:

"I'm scheduled in the coming months, then it will affect my ability to do that work in the summer months."

"Will be able to return to work but I will be in pain and have trouble including surgery due to the financial strain of being off for 6 weeks and then off for surgery."

"I am unable to work in my field until I resume from surgery."

Figure 2
Survey Q2: To what extent has the postponement of your surgery affected (or will affect) your ability to return to work? Please specify why in 150 characters.

CSA Bulletin 2020 - Summer / The 2020

STUDENT TESTIMONIAL

Nathaniel Morris, University of Calgary

I work as part of an incredible team of sport practitioners and researchers at the Canadian Sport Institute Calgary (CSIC) and the University of Calgary.

The CSIC is a national training center that is home to many of Canada's best winter slope sport athletes such as alpine ski racers and freestyle skiers. These athletes push themselves to the boundaries of performance where injury can often be a side effect.

Knee joint injuries, such as anterior cruciate ligament (ACL) ruptures, are the most common injuries in these sports and after sustaining one traumatic knee joint injury, athletes are at high risk of re-injury.

The primary research goals of our team are to develop better diagnostic tests and techniques to be able to assess and restore deficits in muscle strength and power following traumatic knee joint injuries, to facilitate better decision-making around return to sport, and to help athletes return to high performance.

The main focus of my graduate research thesis was aimed at identifying the neuromuscular deficits that arise from using a hamstring tendon autograft for ACL reconstruction surgery because it is the most common autograft used in winter slope sport athletes.

We found significant deficits in hamstring muscle size, strength, and power that persisted beyond 12-months post-surgery in elite athletes, with larger deficits in strength and power at deep angles of knee flexion. This study emphasized the need to train the hamstrings, which are an ACL agonist and an important knee joint stabilizer, throughout the rehab process and across the full knee joint range of motion.

Dr. Heard, in addition to playing an instrumental role in the work that the CSIC does in ACL injury research, was one of my graduate supervisors and played a large role in my development as a student. I had the opportunity to shadow Dr. Heard on numerous occasions in the operating room during ACL reconstructive surgeries. Through these experiences, I developed an appreciation for the beauty and the trauma of the surgical reconstruction process.

My conversations with Dr. Heard in the operating room and over lunch always challenged me to understand the link between the clinical implications of ACL injury and reconstruction and what we see in our rehabbing athletes. Being able to sit with Dr. Heard and have him explain the nuances of reconstruction surgery and knee joint anatomy has enabled me to be a better sport science practitioner. We are very lucky to have someone as passionate and willing to share as Dr. Heard is. His experience, passion, and willingness to teach make him a great mentor and resource.



PATIENT TESTIMONIAL

KARIN'S STORY

Medial Patellofemoral Ligament and Meniscus Repair

As a Registered Nurse suffering from spontaneous, bilateral subluxing patellae (partial to complete dislocations of the knee caps) since the age of 16, and the mother of two, active boys, life for Karin was becoming increasingly challenging.

She was experiencing an *"increasing frequency of dislocations with activities of daily living, including pulling up pants and walking"* that were unpredictable in nature.

Recovery from these dislocation events was becoming prolonged and more painful.

The dislocations severely restricted her activities and made her fearful of having an event at work, which could cause a safety issue; resulting in anxiety for Karin.

Knee and joint pain and swelling also led to poor sleep quality.

As a previously active person, alpine skiing, running, playing hockey, hiking, cycling, swimming, and participating in aerobics and boot camps, Karin's condition led to many of these activities being eliminated from family and social events.

With her last complete dislocation that occurred while simply walking her dog, the trauma surgeon who reduced her kneecap informed her to lose weight and that *"any surgical intervention would cause arthritis; therefore, she would 'not touch me'".*

Karin proceeded to lose 35 lbs, but with no relief of pain or decrease in the frequency of knee cap dislocations, she turned to her Family Physician and the team at the University of Calgary Knee Clinic who referred her to Banff Sport Medicine (BSM).

"I am grateful to the team at the U of C for recognizing and embracing the foreword thinking practitioners/pioneers in their field. Without them, I would not have been introduced to Dr. Hiemstra, and cannot even imagine where I would be today. Thanks!"

Under the care of BSM surgeon, Dr. Laurie Hiemstra, Karin underwent a medial patellofemoral ligament (MPFL) reconstruction to both knees, as well as repair of the meniscus (cartilage) in her left knee.



"Dr. Hiemstra instilled a sense of hope and positivity. She was forthcoming, honest, and confident in her ability to enhance my overall well-being. She has worked with all of the ups and downs for my rehab and recovery. She never demonstrated ageism or bias in relation to my concerns. All of the care, pre- and post- were excellent and straightforward - you will get out of it what you put into the recovery. The reception team in the clinic, the staff at the Mineral Springs Hospital, and the rehabilitation teams were excellent."

One year following surgery from her right knee, which was also the most frequently and significantly impacted by the dislocations, Karin's knee was stable and strong. Some lubricating injections were initially required, but are no longer necessary.

Recovery of her left knee following surgery took longer, but has now stabilized, with dislocations no longer being a concern. Karin also had cortisone and hyaluronic acid injections to help manage discomfort and range of motion.

"Overall, an improvement to where I might be without these interventions".

Since Karin's surgery, her quality of life has improved significantly.

She has returned to many activities, including hockey, and has added regular spin and sculpt yoga classes to her health routine.

She no longer has anxiety with performing patient care, *"including newborns!"*, and has a better quality of sleep due to decreased joint pain.

"No amount of weight loss or muscle strengthening would have resulted in such a positive outcome for overall health and lifestyle maintenance."

Her positive experience as a patient at BSM has Karin *"Looking forward to being an active grandmother in the next couple of years!!"*



RESEARCH & EDUCATION HIGHLIGHTS

Orthopaedic Fellowship:

Sport Medicine and Arthroscopic Reconstruction of the Knee and Shoulder

BSMF welcomed Dr. Meaghan Marien in August as our Orthopaedic Surgery Fellow for the 2020/2021 academic year. Meaghan received her Medical Degree at McGill University, completed her orthopedic surgery residency at the University of Ottawa, and then pursued a Clinical Fellowship in Paediatric Orthopedic Surgery at the University of Utah in Salt Lake City. She is now in Banff to complete a second year of Fellowship training in Arthroscopic Surgery and Sport Medicine with the Banff Sport Medicine team. Meaghan is involved with the Canadian Orthopedic Association (COA) and the Pediatric Orthopedic Society of North America (POSNA) and looks forward to becoming a member of other sport medicine organizations. Meaghan loves the outdoors and is excited to explore the beautiful mountains while hiking, skiing, and biking in the Bow Valley.



BSMF's new YouTube Channel

BSMF established a YouTube Channel this year as a patient and community education initiative. Videos available on this channel include interviews with Dr. Mark Heard, Dr. Greg Buchko, and Dr. Laurie Hiemstra. This content is shared on all of BSMF's social media channels as well as in the newly established Newsletter. BSMF will continue to develop and share content on this platform.

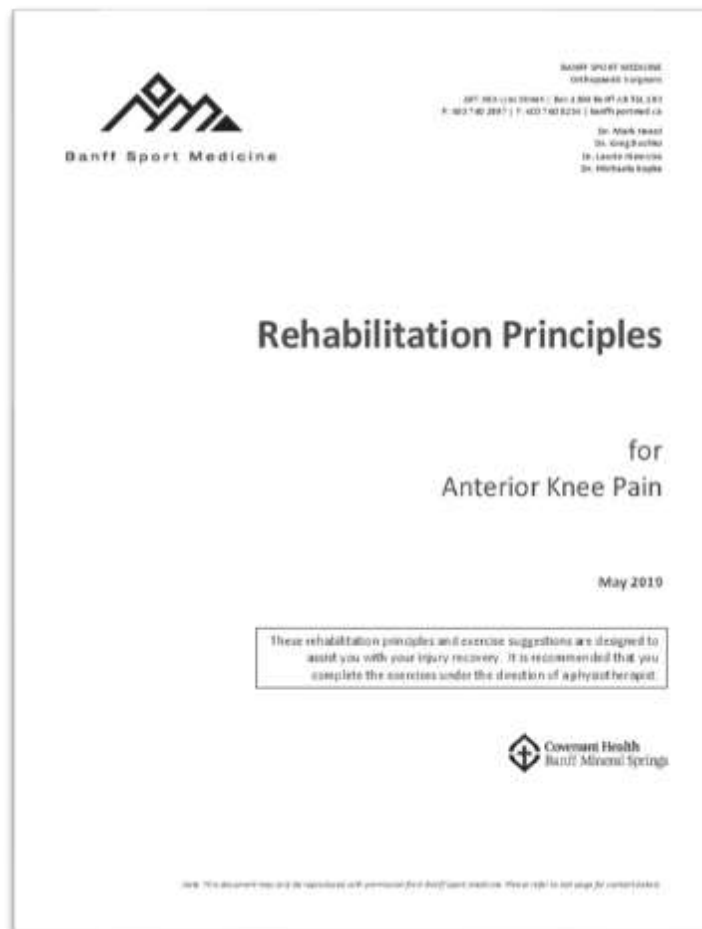


Research Placement

The BSMF Research Group welcomes applications on an on-going basis from medical, allied health, and other tertiary students to complete supervised research placements. This summer, we welcomed George Reed, a student at Western University completing a Bachelor of Medical Sciences (BMSc). During George's placement, he worked with Dr. Hiemstra on a project investigating the number of patients that had additional procedures and re-dislocations following MPFL Reconstruction.

Patient Education

BSMF develops education material and pre- and post-operative rehabilitation procedures to improve musculoskeletal patient outcomes and health. This year, BSMF developed "Rehabilitation Principles for Anterior Knee Pain", which contains illustrated exercise suggestions designed to help patients recovering from anterior knee pain. Evidence-based updates were also completed for the post-operative MPFL reconstruction and Multi-ligament reconstruction protocols. All protocols can be accessed on the BSM clinic website at: banffsportmed.ca.



Arthroscopy Association of North America - Advanced Master Lab

This year, Dr. Heard participated in the Arthroscopy Association of North America's (AANA) Advanced Master Lab on the Knee as an instructor and presenter. AANA Lab Courses allow Orthopaedic Fellows and Surgeons to practice the latest skills and techniques related to their specialties alongside experts in the field. In addition to discussing Case Studies, Dr. Heard presented on "High Tibial Osteotomies: Technique Options & Avoiding Complications".

Injury Prevention Education & Outreach Program

Our Injury Prevention Education & Outreach Program continued this year with funding from the Banff Canmore Community Foundation, The Town of Canmore, and The Town of Banff.

BSMF collaborated with several local physiotherapists to develop and deliver this program. Those involved included Lynn Richardson and Barb Clems from Rocky Mountain Rehab & Sports Medicine, Rebecca Mottram from Altitude Physiotherapy, and Ryan Wilkinson from Rundle Physiotherapy, alongside BSMF's Dr. Laurie Hiemstra, Dr. Mark Heard, and Dr. Michaela Kopka.

"Awesome to know what / how from experts"

Martina V. – Program Participants



Digital ACL Reconstruction Rehabilitation Program

All Banff Sport Medicine patients undergoing a primary ACL reconstruction will now be enrolled in our new digital rehabilitation program!

This program is designed to:

- visually demonstrate exercises suggested in the Banff Sport Medicine ACL reconstruction rehabilitation booklet
- provide on-going reinforcement about the importance of rehabilitation through automated reminders in the first 6 months following surgery
- automatically deliver recommended rehabilitation exercises and expected functional milestones to a patient's email
- provide support to patients between physiotherapy appointments
- provide essential support to patients that can't access a physiotherapist (patients in remote areas or those without benefits)

The goal of this initiative is to improve patient engagement and adherence in the first six months of their post-operative rehabilitation program following ACL reconstruction ~ a crucial time point that influences how well a person will recover.

This program has been made possible with support from The Calgary Foundation, The Banff Canmore Community Foundation, and Canmore Rotary Club Charitable Organization.



5
Community
Presentations

Almost
100
participants

450+
patients
enrolled

Newsletter

This year BSMF launched a quarterly newsletter to inform subscribers about advances in research, BSMF education workshops and programs, patient stories, injury prevention, and management tips, as well as other relevant content focussed on improving the health and wellbeing of people suffering from musculoskeletal injury.

Subscription to the BSMF newsletter is via the website (www.bsmfoundation.ca) or the @BanffSportMedicineFoundation Facebook page.

Social Media

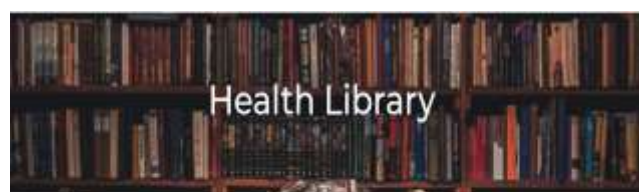
BSMF continues to grow its reach through the @BanffSportMed Twitter account and the @BanffSportMedicineFoundation Facebook page.

The goal of BSMFs social media outreach is to advance education on the prevention, management, and early treatment of musculoskeletal injury, to promote new and innovative research, and to promote our education and outreach programs.

This year BSMF has also used these platforms to share the sport medicine articles written by Banff Sport Medicine Physician, Dr. Andy Reed.

New Website

As part of the process of creating a separate and distinct entity from the Banff Sport Medicine Clinic, BSMF launched its new website in February (www.bsmfoundation.ca). Visitors can find a wealth of information about the BSMF, our core pillars of Research, Education and Clinical Care, patient education resources on injury prevention and management including a Health Library with articles written by experts (researchers, clinicians, physiotherapists, and sport medicine physicians). The website also hosts education and training information for students, healthcare professionals, and researchers, as well as a blog, ways to volunteer and support BSMF, patient stories, and a donation page. Researchers can also access the Banff Patellofemoral Instability Instrument (BPfII) developed by BSMF, as well as supporting documentation and BPfII translations.



Welcome to the Banff Sport Medicine Foundation Health Library!
Here you will find content written and developed by experts – researchers, physiotherapists, sport medicine physicians and orthopaedic surgeons – to help you manage your health and wellness.

Over 70%
of e-mails
opened

58
newsletter
subscriber
s

320
Twitter
Followers

95
Facebook
Followers

14
Sport Med
Articles

SPORT COVERAGE

Each year, BSMF physicians and Fellows are involved with providing coverage for events such as FIS World Cup Ski and Snowboard, and the Canadian Finals Rodeo. They also work directly as team physicians for Canadian Pro Rodeo, Alpine Canada, Canada Snowboard, and Biathlon Canada. While several events were cancelled due to COVID-19, BSMF physicians were still able to offer online and virtual support to their athletes.

Photos provided by Dr Andy Reed from pre-COVID-19 events



COMMUNITY PRESENTATIONS & OUTREACH

Thrive Health & Wellness Festival – “First Responder Tips for Managing Dislocations and Fractures” and “The Elite Athlete – the pros and cons of elite sport. A perspective based on 30 years of experience”. Canmore, AB

Injury Prevention Education & Outreach Program – “Knees-4-Skis” ACL injury prevention for skiers. Canmore and Banff, AB.

Injury Prevention Education & Outreach Program – “Knee Injury Prevention and Management for ACL Reconstruction” for teachers and coaches. Our Lady of The Snows Catholic School, Canmore, and Alberta Teachers Convention, Canmore, AB

Injury Prevention Education & Outreach Program – “Injury Prevention while training” knee and shoulder injury prevention. Bow Valley CrossFit Banff, AB

Hinton Family MDs and allied health practitioners – “Common fracture management and acute knee care”. Hinton, AB

University of Calgary Rural Family Medicine conference - “Common fracture management”. Calgary, AB

Canada Snowboard Annual Meeting – “Return to snow after injury”. Virtual

Calgary Area Physicians – “Considerations for the earlier use of Cingal”. Calgary, AB

Calgary Area Physicians – “Intra-articular injections for knee osteoarthritis – review and case-based discussion of the AAC position statement”. Calgary, AB



Vancouver Area Physicians – “Considerations for the earlier use of Cingal”. Vancouver, BC

Victoria ReBalance Physicians – “Intra-articular injections for knee osteoarthritis – review and case-based discussion of the AAC position statement”. Vancouver, BC

Nordic Athletes and Coaches – “COVID19 and training protocols”. Virtual

Biathlon Canada – “Clinical, social and training related issues related to COVID19”. Virtual

Calgary Area Physicians – “Calgary Knee Rounds”. Calgary, AB

CURRENT RESEARCH COLLABORATION

What happens to the knee after an ACL injury and are these changes related to the development of osteoarthritis?

Research has shown that anywhere from 10% to 90% of individuals who injure their anterior cruciate ligament (ACL) go on to develop knee osteoarthritis (OA) within 10 to 20 years. OA is a debilitating condition that causes pain, swelling of the joint, and reduced range of motion, leading to substantial reductions in mobility, activity, and quality of life.

This is particularly significant considering the majority of individuals that sustain their first ACL injury are under the age of 30.

The **Bone Imaging Laboratory** at the **McCaig Institute for Bone and Joint Health, University of Calgary**, has initiated a clinical research study to visualise the damage that occurs to the knee joint immediately following an ACL injury. They are using several imaging techniques, including magnetic resonance imaging (MRI), to see possible bone bruises, as well as to look at the meniscus, ligament, and cartilage, of both the injured and uninjured knee.

To goal of this study is to monitor bone and soft tissue changes that occur in the knee in the first 3 years after an ACL injury, and compare them to the patient's healthy knee.



A normal knee joint (left) and an osteoarthritic knee (right). Picture from the American Academy of Orthopaedic Surgeons (orthoinfo.aaos.org).

The BSMF Research team are screening patients through the BSM clinic as part of this study. Patients that have sustained an ACL injury within the prior 6 weeks and that are between 14 to 55 years old and can fully extend their injured knee are screened for inclusion in the study.

Additional research projects currently underway include collaborations with local and international partners. These projects cover diverse research questions that include assessing and improving patient outcomes following ACL and patellofemoral surgery, comparing different orthopaedic surgery techniques, evaluating pain and medication use following orthopaedic surgery, and novel treatments for musculoskeletal conditions.

For a detailed list of current research projects, please visit the BSMF website, www.bsmfoundation.ca.

BSMF PUBLICATIONS 2019 - 2020

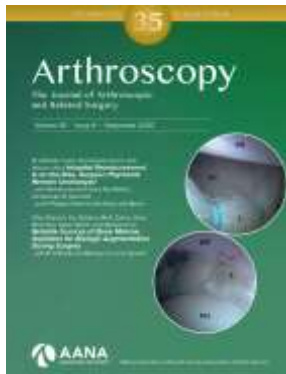


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RESEARCH GRANTS

SHould You transFer the Tubercle? (The SHYFT Trial): A Randomized Clinical Trial comparing Isolated MPFL Reconstruction to MPFL combined with Tibial Tubercle Osteotomy

ConMed Research Award

Canadian Orthopaedic Research Legacy (CORL) Grant

Clinical, Functional and Quality of Life Outcomes 2-Years after ACL Reconstruction in Patients with a Partial ACL Tear

Canadian Orthopaedic Association Community Investment Grant

AWARDS

"No Difference in Functional Outcomes when Lateral Extra-articular Tenodesis is added to Anterior Cruciate Ligament Reconstruction in Young Active Patients: The Stability Study"

2020 *Arthroscopy* Best Clinical Research Award



EDUCATION & COMMUNITY OUTREACH GRANTS



Sport Medicine / Arthroscopy of the Knee and Shoulder Fellowship

ConMed Educational Grant

University of Calgary

Injury Prevention Education & Outreach Program

The Town of Canmore

The Banff Canmore Community Foundation

The Town of Banff

Digital ACL Reconstruction Rehabilitation Program

The Calgary Foundation

The Banff Canmore Community Foundation

Canmore Rotary Club Charitable Organization

FINANCIAL STATEMENTS EXCERPTS

Banff Sport Medicine Foundation

Statement of Financial Position

PREPARED BY RICE & COMPANY LLP

September 30, 2020

ASSETS

CURRENT ASSETS

Cash
Accounts Receivable
Inventory Asset
Sales Tax
Prepaid Expenses

TOTAL CURRENT ASSETS

EQUIPMENT (net)

TOTAL ASSETS

2020	2019
125,631	104,184
25,212	18,139
7,756	14,809
1,024	4,147
7,064	7,200
166,687	148,479
1,442	2,228
168,129	150,707

LIABILITIES AND NET ASSETS

LIABILITIES

Accounts Payable
Fund Balances

NET ASSETS

30,168	35,225
137,961	115,482
168,129	150,707

	Unrestricted	Restricted	2020	2019
SALES				
Equipment and injection sales	175,717	-	175,717	187,537
Cost of goods sold	119,664	-	119,664	131,507
GROSS PROFIT	56,053	-	56,053	56,030
OTHER INCOME				
Sustainability funding	2,407	-	2,407	3,308
Donations	80,833	(25,000)	55,833	182,103
Grants	76,127	17,503	93,630	168,067
TOTAL SALES and OTHER INCOME	215,420	(7,497)	207,923	409,508
OPERATING EXPENSES				
Wages and salaries	139,254	-	139,254	183,416
Office expenses	13,431	1,896	15,327	3,510
Professional Fees	11,733	-	11,733	13,981
Rent	7,200	82	7,282	7,200
Bank charges and Interest	4,397	-	4,397	5,138
Advertising	2,709	300	3,009	6,000
Subcontractors	990	300	1,825	6,975
Travel	1,273	308	1,581	2,306
Depreciation	786	-	786	131
Fundraising and grant support	250	-	250	65,369
TOTAL OPERATING EXPENSES	182,023	2,886	185,444	294,026
EXCESS OF REVENUE OVER EXPENSES	33,397	(10,918)	22,479	115,482
FUND BALANCES, BEGINNING	40,662	74,820	115,482	
FUND BALANCES, ENDING	74,059	63,902	137,961	115,482

Completed financial statements prepared by Rice & Company LLP available upon request.

LOOKING FORWARD

BSMF will continue to develop new and current education initiatives including an expansion of our Injury Prevention Education & Outreach Program and foster relationships with other organizations and partners. We will continue to spread the word about the prevention and early treatment of musculoskeletal injury. We will continue to design and carry out meaningful research that can be rapidly implemented into clinical practice and seek out fruitful collaborations with industry partners and academic institutions.

Our vision for 2020 - 2021 includes:

- Developing a strategic plan to provide a road-map for the BSMF mission, vision, values and strategic goals;
- Resuming research study recruitment in local and multi-centre clinical trials to assess optimal treatments for musculoskeletal injuries;
- Continuing to develop the BSMF website as an education and research hub for orthopaedics and sport medicine;
- Promoting an awareness campaign using the BSMF social media channels and website, coupled with participation in local events, to promote BSMF's programs and key messages;
- Expanding BSMF's injury prevention audience by creating virtual content across a range of injuries and activities;
- Hosting an inaugural Sport Medicine course targetting primary care physicians and allied care practitioners.



BOARD OF DIRECTORS



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Sarah Kerslake BPhy MSc
Sarah@banffsportmed.ca



Research & Programs Coordinator

Julie-Anne Frayn PhD
BSMresearch@banffsportmed.ca

THANK YOU TO OUR SUPPORTERS

We continue to develop partnerships and projects with the funding provided by community members, organizations, and industry. The support and generosity of these partnerships provide our communities of Banff, Canmore and beyond with innovative research, education and outreach programs, and evidence-based clinical care.

The Board of Directors and BSMF staff wish to thank those that have generously supported our efforts this past year including our valued individual donors:





DONATE

www.bsmfoundation.ca

www.canadahelps.ca

Box 1300, #207 - 303 Lynx St.

Banff, Alberta T1L 1B3

Phone: (403) 760 2897 Extension 6

Tax receipts for donations are provided.

SUPPORT BSMF

As a registered charity, contributions from the community play a crucial role in our work.

Your financial support to carry out leading-edge research and to develop and deliver education and community outreach initiatives assists in advancing the treatment of MUSCULOSKELETAL conditions and injury; helping people get back in motion.

Charitable Registration #793737685RR0001

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www.bsmfoundation.ca

STAY INFORMED

Sign up for our newsletter on our website (www.bsmfoundation.ca) to receive expert injury prevention and musculoskeletal health tips, a sneak preview of our latest research, and inspiring patient stories direct to your inbox.