

## Identifying and prioritizing research to inform a research agenda for Canadian chiropractors working in sport – the Canadian sports chiropractic perspective.

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## The Burden of Sports & Physical Activity Injuries



**\$1.5 billion (CAD)<sup>1</sup>**

**\$2.4 billion (EUR)<sup>2</sup>**



(The Cost of Injury in Canada, Parachute, 2015)<sup>1</sup>  
(The Burden of Sport Injuries in the European Union, Kisser & Bauer, 2012)<sup>2</sup>



## An important sector of professional activity.

- 49.5% of chiropractors report treating athletes<sup>2</sup>
- Chiropractors who treat sports injuries:



Collaborative<sup>3</sup>



Assoc. with physician referrals<sup>4</sup>

(Adams et al, 2018)<sup>3</sup> (Blanchette et al, 2014)<sup>4</sup>

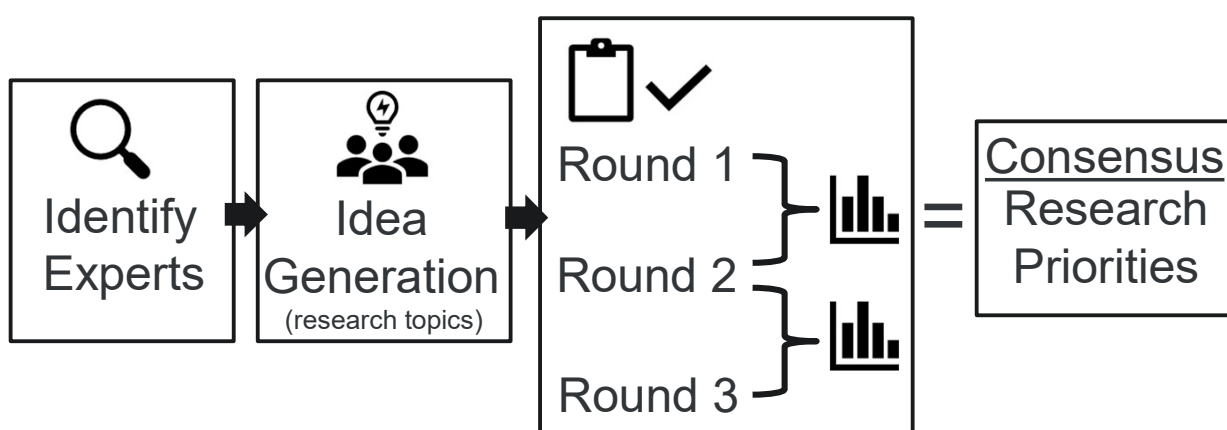
## An important sector of professional activity.



Pursue? Invest? Develop? Partner?



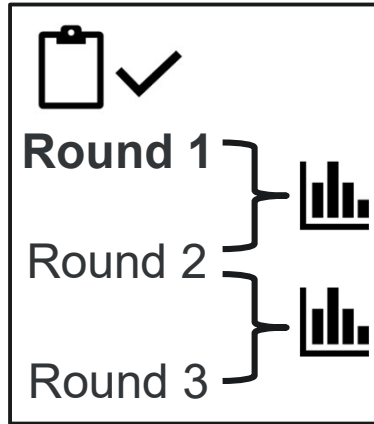
## Research Priorities: Delphi Method



### Research Priority Setting – Delphi Method



← Research Directives

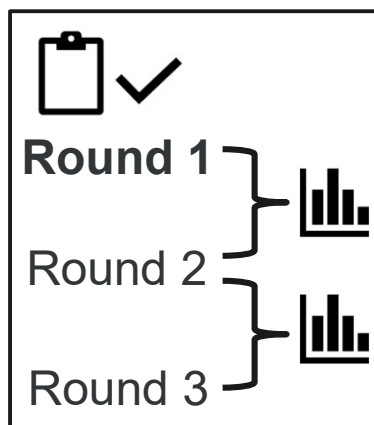


Consensus  
Research  
Priorities

### Research Priority Setting – Delphi Method

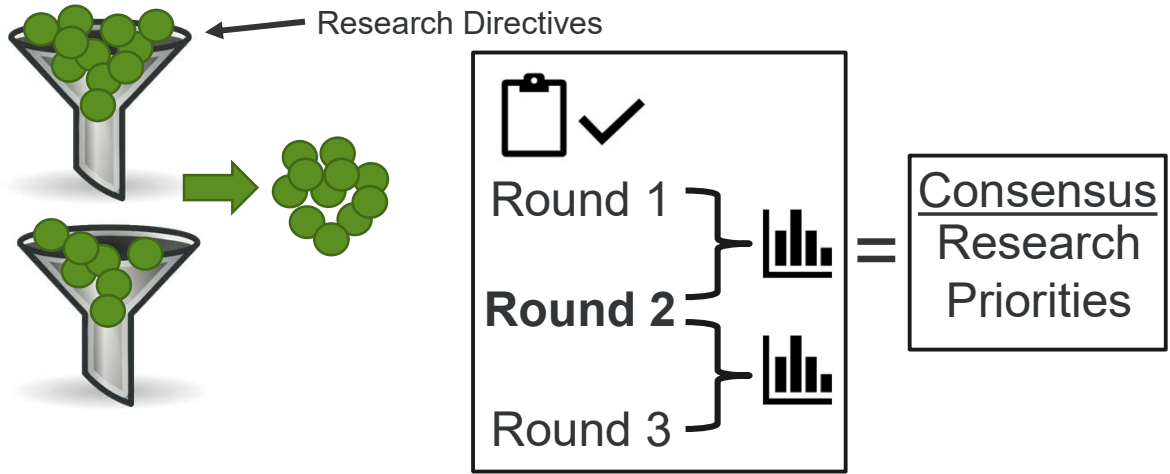


← Research Directives

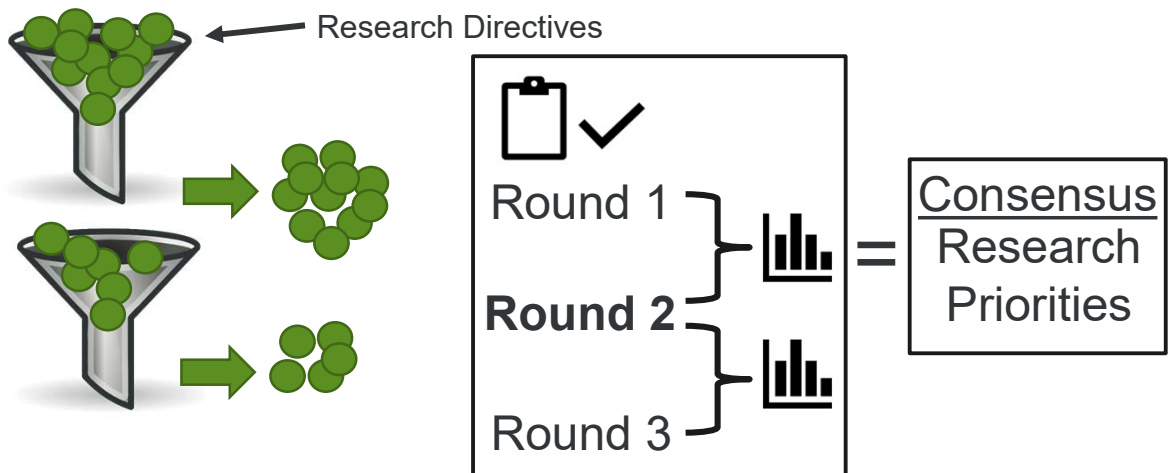


Consensus  
Research  
Priorities

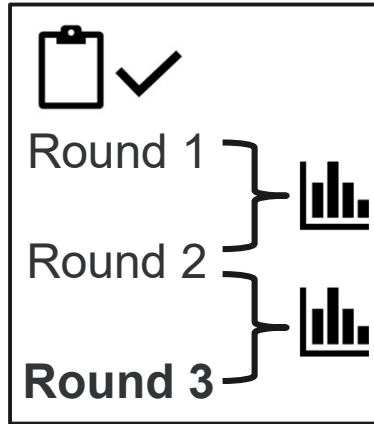
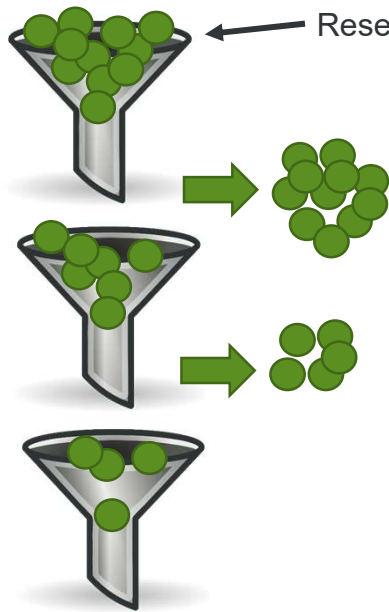
### Research Priority Setting – Delphi Method



### Research Priority Setting – Delphi Method



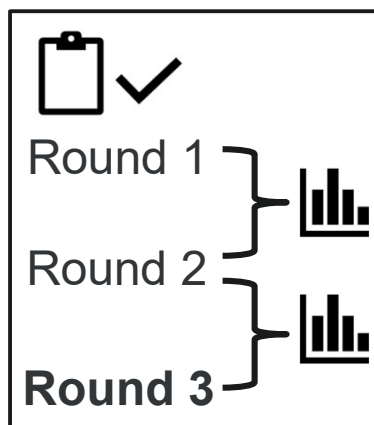
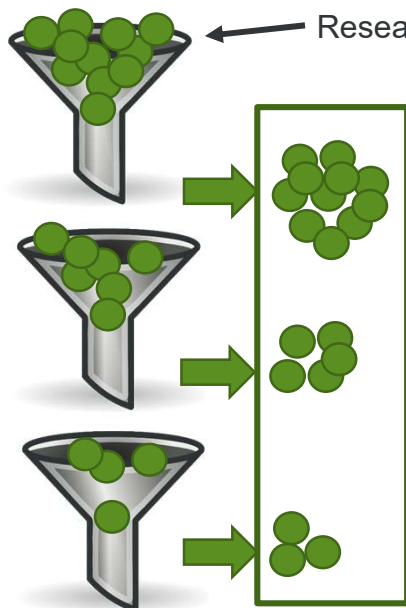
### Research Priority Setting – Delphi Method



Consensus  
Research  
Priorities



### Research Priority Setting – Delphi Method




✓  
Consensus  
Research  
Priorities



**RESEARCH** Open Access

**The first research agenda for the chiropractic profession in Europe**


Sidney M Rubinstein<sup>1\*</sup>, Jenni Bolton<sup>2</sup>, Alexandra L Webb<sup>3</sup> and Jan Hartvigsen<sup>4</sup> (2014)




**RESEARCH** Open Access

**Research priorities of the Canadian chiropractic profession: a consensus study using a modified Delphi technique**

Simon D. French<sup>1,2\*</sup>, Peter J. H. Beliveau<sup>3</sup>, Paul Bruno<sup>4</sup>, Steven R. Passmore<sup>5</sup>, Jill A. Hayden<sup>6</sup>, John Sebely<sup>7</sup> and Greg N. Kawchuk<sup>8</sup> (2017)



Rubinstein et al.	French et al.
Cost-effectiveness/economic evaluations	Integration of chiropractic into multi-disciplinary care
Identification of subgroups likely to respond to treatment	Effectiveness of chiropractic care
Initiation and promotion of research efforts	Effect of chiropractic care on reducing medical services
Promotion of research to obtain funding	Effects of chiropractic care
Duration, response and frequency of treatment	Safety and side-effects of chiropractic care



Canadian Memorial Chiropractic College

## Research Question:

- Is there a **consensus** on **sports-focused research priorities** amongst Canadian sports chiropractic researchers, clinicians and leaders, as determined by a **Delphi** consensus procedure?

Methods:

- Identification of Experts

**Study Advisory Committee**



Clinicians (n=30)



Researchers (n=30)



Leaders (n=30)



Methods:

**Step 1:** Procedure to refine research directives & pilot Delphi survey

**Step 2:** Delphi Survey

Delphi Round 1

Delphi Round 2

Delphi Round 3

**Step 3:** Priority Ranking Survey

9-point Likert Scale



Lowest importance

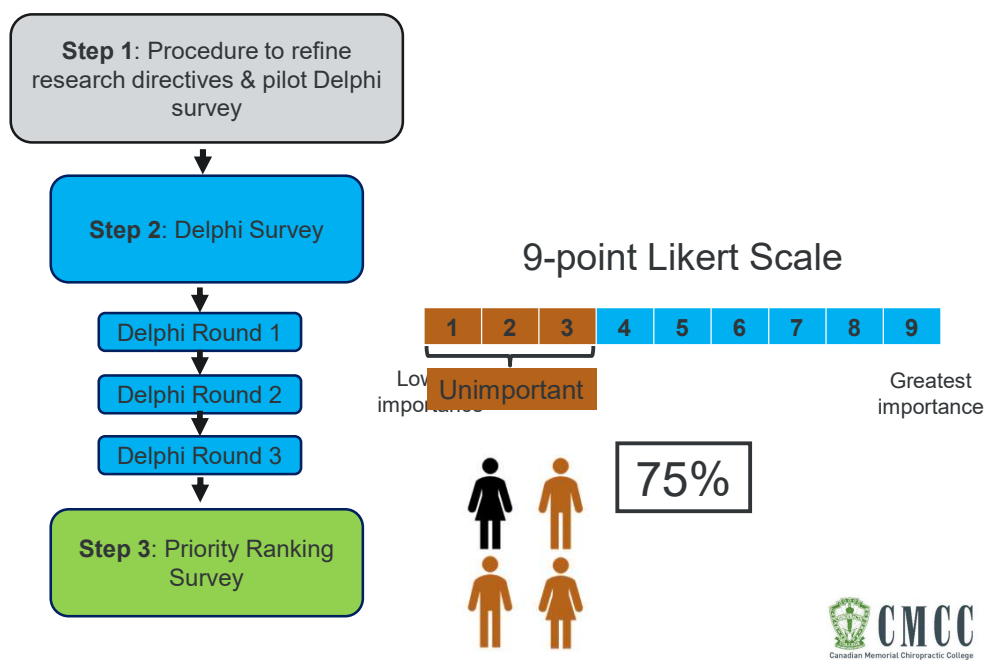
Greatest importance

75%

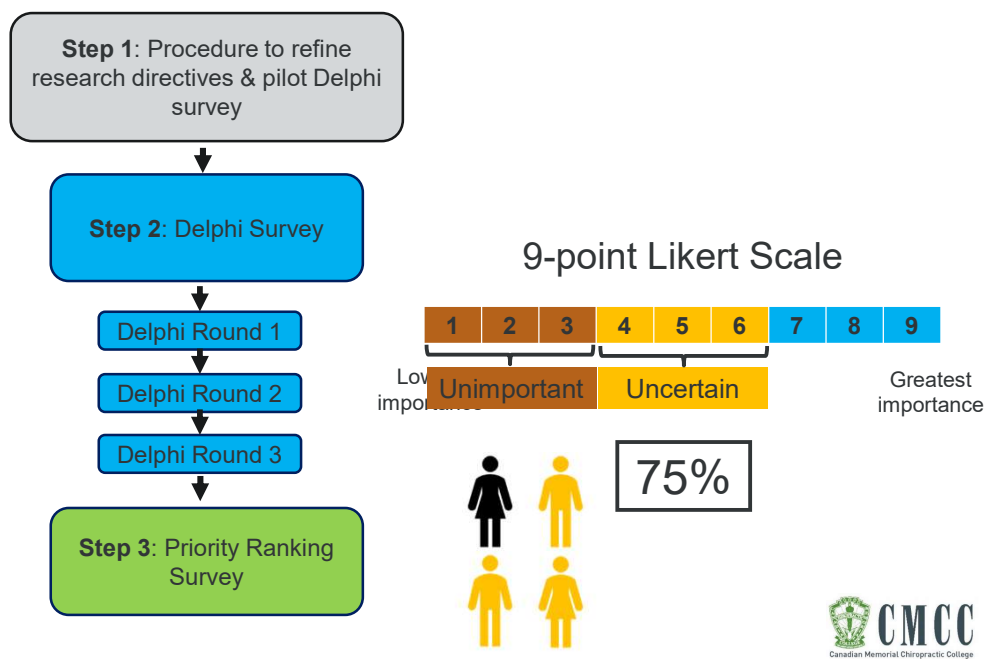




Methods:



Methods:



**Methods:**

**Step 1:** Procedure to refine research directives & pilot Delphi survey

**Step 2:** Delphi Survey

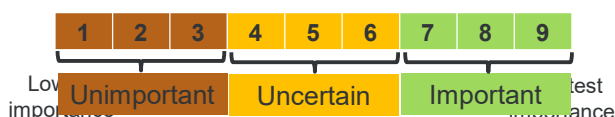
Delphi Round 1

Delphi Round 2

Delphi Round 3

**Step 3:** Priority Ranking Survey

**9-point Likert Scale**



**Results:**

**Step 1:** Procedure to refine research directives & pilot Delphi survey

**Research Directives**

150 directives  
 +11 (Study Advisory Committee)  
 - 24

137 directives

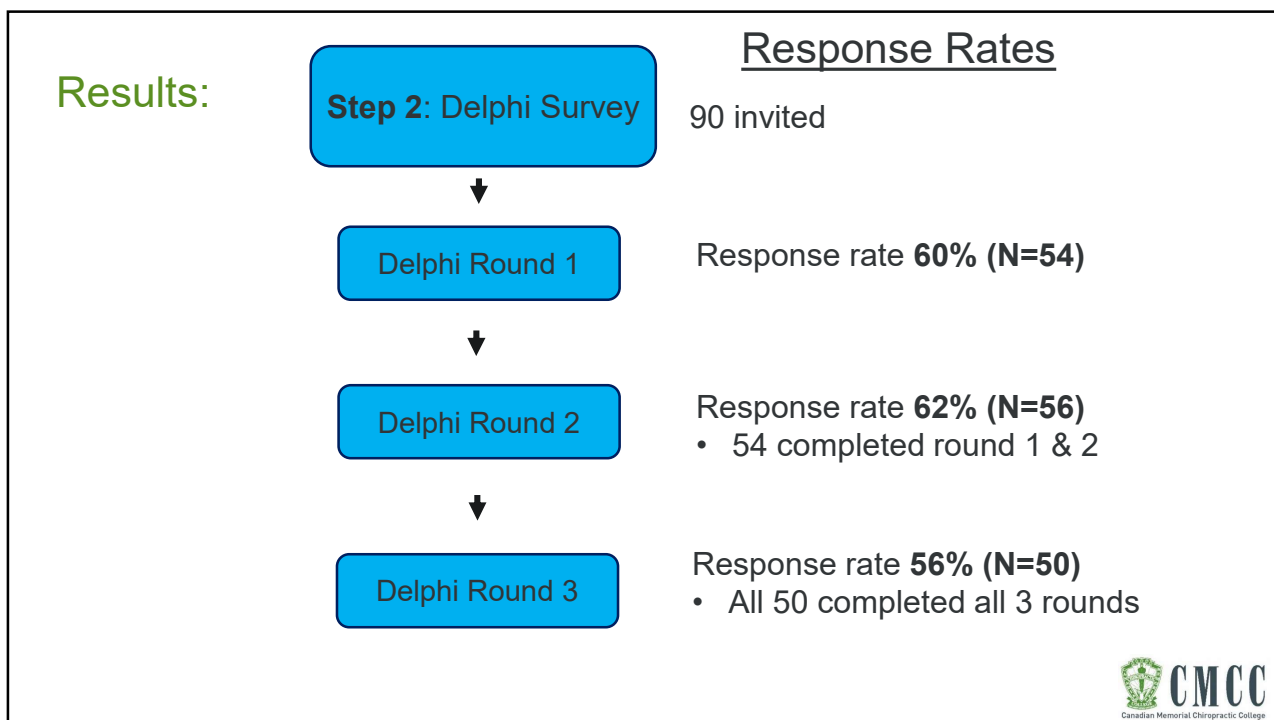
**Pilot Delphi Survey**

166 invited, response 42% (N=69)  
 No consensus "unimportant"  
 2 directives suggested

2 directives to add


**Delphi Round 1 = 139 directives**





**Results: The Delphi Panel**

Age (mean, SD)	47.3, 12.2	Institution where received chiropractic degree	
Years since graduating from chiropractic college (mean, SD)	20.5, 12.2	<b>Canadian Memorial Chiropractic College</b>	<b>49 (91%)</b>
Province of primary duties		Université du Québec à Trois-Rivières	1 (2%)
<b>Ontario</b>	<b>40 (74%)</b>	Other: (New York Chiropractic College, Parker College of Chiropractic West, University of Western States)	4 (7%)
British Columbia	5 (9%)		
Alberta	4 (7%)		
Nova Scotia	2 (4%)		
Manitoba	1 (2%)		
Newfoundland and Labrador	1 (2%)		
Quebec	1 (2%)		
New Brunswick	0 (0%)		
Prince Edward Island	0 (0%)		
Saskatchewan	0 (0%)		
Northwest Territories, Nunavut, Yukon	0 (0%)		
		<b>Holds a leadership position in a chiropractic association/organization</b>	<b>20 (37%)</b>
		Board member of chiropractic association(s)/organization(s)	10 (19%)
		Committee member of a chiropractic association(s)/organization(s)	13 (28%)
		Other: Journal editor-in-chief	1 (2%)



## Results: The Delphi Panel

Academic degree	
Bachelor's Degree	41 (76%)
<b>Master's Degree</b>	<b>14 (26%)</b>
<b>PhD</b>	<b>3 (6%)</b>
Doctor of Chiropractic	49 (91%)
FCCS(C)	4 (7%)
FCCOS(C)	1 (2%)
FCCR(C)	0 (0%)
FCCPOR(C)	5 (9%)
<b>FRCSS(C)</b>	<b>46 (85%)</b>
Other	6 (11%)

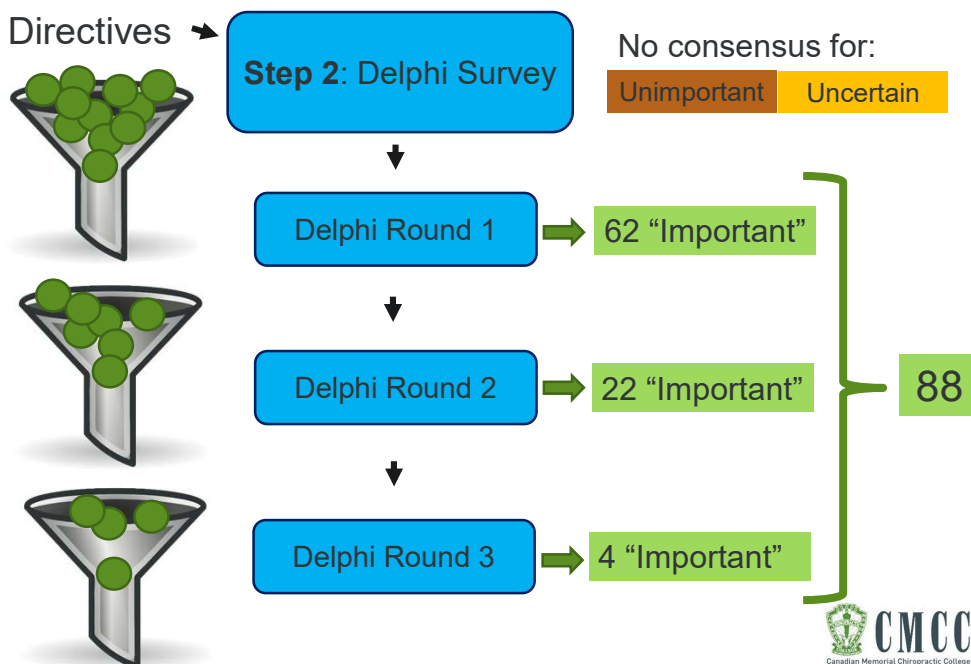
Holds an academic position	
Teaching Assistant	1 (2%)
Instructor	3 (6%)
Assistant Professor	7 (13%)
Associate Professor	2 (4%)
Full Professor	5 (9%)
Other: guest lecturer, adjunct professor	4 (7%)

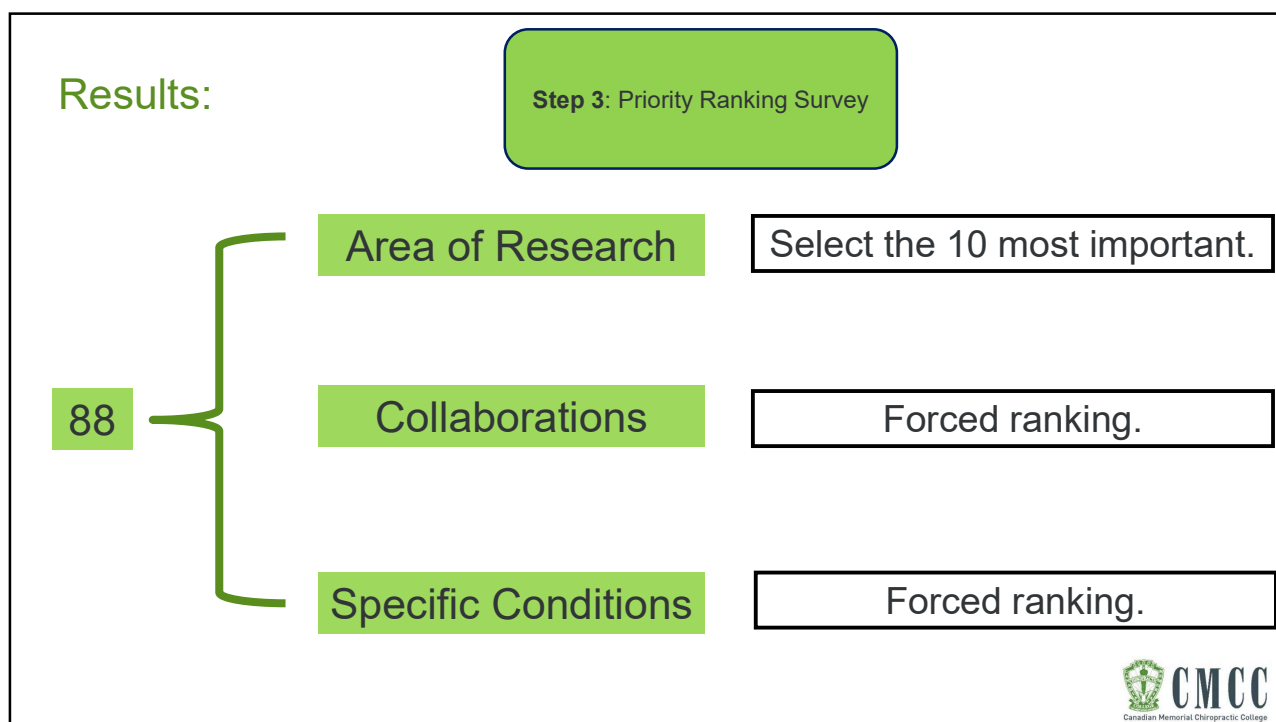
Involvement in research	
<b>Currently involved in research</b>	<b>21 (39%)</b>
<b>Previously involved in research</b>	<b>26 (48%)</b>
Never been involved in research	7 (13%)



## Results:

139 Research Directives






Prioritized Areas of Research	Participants who selected the research priority as a "top 10" (N=55)
Effects of <b>interventions on athletic outcomes</b> (e.g. athletic recovery, return to play/sport and athletic performance)	63.6%
Research about <b>sports healthcare teams</b> (e.g. interprofessional dynamics in sports healthcare teams, integration of chiropractic in sports healthcare teams)	54.6%
Clinical research: <b>spinal manipulative and mobilization therapy</b>	50.9%
<b>Utilization</b> of sports healthcare services (e.g. utilization of sports chiropractic)	50.9%
Research conducted on <b>specific conditions</b> (e.g. concussion, tendinopathy, hamstring strains, ankle sprain, neck pain, low back pain)	50.9%

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Prioritized Collaborations	Ranking score
<b><u>Interprofessional</u></b>	
<b>Sports physicians</b>	5.71
Orthopaedic surgeons	3.58
Physiotherapists	3.38
<b><u>Interorganizational</u></b>	
<b>Canadian Academy of Sport &amp; Exercise Medicine</b>	4.58
Sports Physiotherapy Canada	3.36
American College of Sports Medicine	2.69
<b><u>Intraprofessional</u></b>	
<b>Sports chiropractic associations/organizations</b>	2.85
Chiropractic sports sciences residents	2.85
Canadian Chiropractic Research Foundation research chairs	2.45



Prioritized Collaborations	Ranking Score
<b><u>Sports community</u></b>	
<b>Sports organizations, federations &amp; associations (eg. national sports organizations, etc.)</b>	3.24
Specialized sports training & development centres (eg. Canadian Sports Institutes, etc.)	3.04
Non-profit organizations involved in sport (eg. AthletesCan, Own the Podium)	1.93
<b><u>Academic</u></b>	
<b>Universities &amp; colleges</b>	1.69
Chiropractic educational institutions	1.31



Prioritized Specific Conditions	Ranking Score
Low back pain	9.60
Neck pain	9.25
Concussion	9.07
Soft tissue injuries & myofascial pain	8.75
Thoracic spine pain	7.31

## Discussion – Impact



Fondation  
canadienne pour  
la recherche  
en chiropratique



Canadian  
Chiropractic  
Research  
Foundation

• We Prove. To Improve.

**Fall 2022 RFP**



### Discussion – Impact

Canadian Delphi



Dr. Melissa Belchos  
International Delphi



### Next Steps

Research  
Capacity



Delphi  
Results



Research  
Agenda





# Thank you!



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References:

1. Parachute. The Cost of Injury in Canada. Toronto; 2015.
2. Kisser R, Bauer R. (2012). The Burden of Sport Injuries in the European Union. Research report D2h of the project "Safety in Sports". Vienna: Austrian Road Safety Board. Available from: [www.kfv.at](http://www.kfv.at)
3. Adams J, Lauche R, de Luca K, Swain M, Peng W, Sibbritt D. Prevalence and profile of Australian chiropractors treating athletes or sports people: A cross-sectional study. Complement Ther Med. 2018;39(May):56-61.
4. Blanchette M-A, Rivard M, Dionne CE, Cassidy JD. Chiropractors' characteristics associated with physician referrals: results from a survey of Canadian doctors of chiropractic. J Manipulative Physiol Ther. 2015;38(6):395-406.

