

SPC CERTIFICATE OBJECTIVES AND REFERENCES

Certificate Program Objectives

Upon completion of the Certificate in Sport Physiotherapy, the physiotherapist will be able to:

1. *Understand the organizational hierarchies, credentialing processes and legal implications of working in sport in Canada.*
2. *Demonstrate knowledge & proficiency in managing the therapy needs of an athlete or athletic team, during training and/or competition.*
3. *Demonstrate and describe appropriate first response procedures for common athletic injuries and medical emergencies including transportation procedures for the conscious and unconscious athlete.*
4. *Work independently at athletic events providing first aid, wound care & splinting of acute athletic injuries with appropriate materials, as required.*
5. *Prevent, detect and evaluate concussion using current, evidence based assessment tools to determine management, including the need for emergency transport, referral and education regarding follow up care and return to sport protocols, as appropriate.*
6. *Work independently at athletic events providing taping, wrapping, and strapping of acute and/or chronic athletic injuries, as appropriate.*
7. *Advise athletes, coaches and guardians regarding proper fitting and maintenance of equipment and protective devices.*
8. *Be proficient in the basic assessment and management of athletic injuries commonly encountered in sport.*
9. *Understand the biomechanics of fundamental movement patterns, including running, and effectively evaluate and modify biomechanical aspects, along with associated risk factors, which may contribute to injury.*
10. *Understand guiding principles of return to sport (RTS) processes/progressions and be able to use these principles to make RTS decisions in both sideline and clinical settings.*
11. *Understand theoretical & technical aspects of sport massage and be able to select and apply appropriate techniques both in clinic and with athletes in various sporting environments for pre, post & inter-event timings, as appropriate.*
12. *Be knowledgeable regarding the physiological, medical & practical considerations relevant to Parasport, and have a general understanding of the classification systems used in Parasport.*

Certificate Exam Application Prerequisites

Please refer to the SPC Credential Program Handbook for full details regarding prerequisites for Certificate exam applicants.

References

The following references act as key resources in preparation for Sport Physiotherapy Canada's **Certificate examination** and supplement the **Fundamentals Core Competency Course** with specific page numbers indicated in the table below, where possible, to facilitate self-directed learning.

Texts:

1. Brukner, P., & Khan, K. (2018). *Brukner & Khan's clinical sports medicine volume 1: Injuries* (5th ed.). McGraw-Hill.
2. Beam, J. W. (2017). *Orthopedic taping, wrapping, bracing, & padding* (3rd ed.). FA Davis.
3. Magee, D. J., Manske, R. C., Zachazewski, J. E., & Quillen, W. S. (2011). *Athletic and sport issues in musculoskeletal rehabilitation*. Elsevier Saunders.
4. The Professional Responder. (2018). In *Emergency Care for Professional Responders*. The Canadian Red Cross Society.

Scholarly Articles, Position and Consensus Statements:

5. McCrory, P., Meeuwisse, W., Dvorak, J., Aubry, M., Bailes, J., Broglio, S., et al. (2018). Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016. *British Journal of Sports Medicine*. 51:838–847. <https://bjsm.bmj.com/content/bjsports/51/11/838.full.pdf>
6. Ljungqvist, A., Jenoure, P., Engebretsen, L., Alonso, J. M., Bahr, R., Clough, A., De Bondt, G., Dvorak, J., Maloley, R., Matheson, G., Meeuwisse, W., Meijboom, E., Mountjoy, M., Pelliccia, A., Schwellnus, M., Sprumont, D. (2009). The International Olympic Committee (IOC) consensus statement on periodic health evaluation of elite athletes. International Olympic Committee. https://www.triathlon.org/uploads/docs/The_IOC_Consensus_Statement_on_Periodic_Health_Evaluation_of_Elite_Athletes.pdf

Other (Online learning modules, tools & courses):

7. Lacroix, M., Dunne, P., Gallinger, T., Prince, F., West, C., Roney, P., Dilkas, S., Musalem, L., Christie, S., Hynes, H. 2020. Paralympic sport modules: Physiology module. Sport Scientist Canada. <https://www.sportscientistcanada.ca/en-CA/Programs/Modules/Parasport-Module> .*
8. Davis, G.A., et al. (2017). Sport concussion assessment tool- 5th edition. *British Journal of Sports Medicine*, 0, 1–8. <https://bjsm.bmj.com/content/bjsports/early/2017/04/26/bjsports-2017-097506SCAT5.full.pdf>
9. Concussion in Sport Group. (2017). Child sport concussion assessment tool- 5th edition. *British Journal of Sports Medicine*, 1-9. <http://www.sportphysio.ca/wp-content/uploads/bjsports-2017-097492childscat5.full-2.pdf>
10. Boutin, G., Seguin, C., Renaud, S., Schneider, K., Fremont, P., Mathieu, P., Renaud, G., Lundquist, L., Estabrooks, S., Fraser, S., Leaver, R., Bucci, R., Botting, N. 2022. Fundamentals Core Competency Course. Sport Physiotherapy Canada. <https://physiotherapy.ca/divisions/sport/corecourses/> .*

*Accessible via Sport Scientist Canada membership or enrollment into SPC's Fundamentals Core Competency Course.

Certificate Curriculum Objectives & References AREA OF STUDY	REFERENCES (PAGE NUMBERS)
INTRODUCTION TO SPORT PHYSIOTHERAPY	
<ol style="list-style-type: none"> 1. Understand the structure and function of the Canadian Sport System. 2. Understand the organizational structure of different entities in Canadian Sport (COC, CPC, OTP, NSI). 3. Understand the structure and function of Sport Physiotherapy Canada. 4. Understand the pathway to High Performance Certification in Canada. 5. Understand the legal implications of being a Sport Physiotherapist. 6. Be familiar with the therapy needs of an athlete or athletic team in training and/or competition. 7. Be able to develop & implement an Emergency Action Plan and keep proper records. 8. Understand the objectives of and be able to develop & implement Pre Participation Physical Examinations (PPE) as well as and Periodic Medical Assessments (PMA). 9. Be familiar with the implementation of injury prevention programs. 	<p>10</p> <p>1(p1017-1019)</p> <p>1(p1020-1021), 4</p> <p>2(p9-36) 1(p171-172), 6</p> <p>1(p165-188)</p>
EMERGENCY CARE	
<ol style="list-style-type: none"> 1. Be familiar with the roles and responsibilities of a Sport Physiotherapist in Emergency Care. 2. Prepare an Emergency Action Plan (EAP), including a pre-event site & safety inspection. 3. Perform an effective emergency scene assessment before & during an athletic event, as required. 4. Perform a safe and effective primary and secondary evaluation of acute athletic injuries and medical emergencies, as indicated. 5. Be familiar with the management of life-threatening conditions encountered in sport. 6. Assess and treat wounds commonly encountered in sport. 7. Be familiar with and effectively apply clinical prediction rules commonly used in the management of musculoskeletal injuries, including Canadian Spine, Ottawa Knee, Foot & Ankle rules. 8. Be familiar with immobilization principles & equipment needed to effectively sling and/or splint upper or lower extremity injuries. 9. Adapt the provision of emergency care according to sport & environmental differences. 10. Demonstrate the ability to anticipate the needs of an athlete/team in terms of therapy equipment and supplies. 	<p>10</p> <p>1(p1020-1021), 4,</p> <p>4, 10</p> <p>1(p893-915, 898, 713-767, 720-23)</p> <p>4</p> <p>1(p1017-1019)</p>

CONCUSSION

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| 1. Define and describe the pathophysiology of concussion & traumatic brain injury. | 1(p296), 5, 10 |
| 2. Define and be familiar with second impact syndrome and chronic traumatic encephalopathy (CTE). | 1(p310), 3(p543), 5, 8 |
| 3. Understand the appropriate use of baseline testing in the context of concussion. | |
| 4. Recognize the signs and symptoms that suggest a concussion may have occurred and take appropriate, immediate action to manage concussion when one is suspected. | |
| 5. Demonstrate competency on the use of concussion recognition (CRT5) & assessment tools (SCAT5 & Child SCAT5). | 8, 9 |
| 6. Describe recommendations for early management and rationale for rest in the early time period following concussion. | |
| 7. Understand and implement the components of a detailed assessment of concussion relevant to physiotherapy practice. | 1(p296-316); 3(p536-545), 5, 10 |
| 8. Understand and implement the components of rehabilitation of concussion relevant to physiotherapy practice. | |
| 9. Describe the rationale for, and define parameters for, sub-symptom threshold aerobic exercise. | |
| 10. Understand the definition of persistent symptoms following concussion and the types of evaluation and treatment which may be indicated. | |
| 11. Understand pediatric & para athlete considerations in concussion management. | |
| 12. Demonstrate competency in coordinating care with the health care team for patients with persistent post-concussion symptoms. | 1(p309), 5, 10 |
| 13. Effectively describe return to school & sport strategies. | |
| 14. Develop recommendations for a safe return to activity (school, work and sport) that are adapted to specific environments following concussion, as needed. | |
| 15. Identify & integrate concussion prevention strategies into practitioner settings and protocols. | |

INTRODUCTION TO TAPING, WRAPPING & STRAPPING

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| 1. Demonstrate foundational knowledge of anatomy, and mechanism of injury as relevant to taping techniques. | 10 |
| 2. Use essential theoretical knowledge in clinical and field settings to make principle-directed and appropriate taping decisions to facilitate optimal athlete performance. | |
| 3. Understand the sport specific needs of the participant and the rules and regulations for use of taping and bracing in specific sports. | |
| 4. Describe the basic purpose of taping, wrapping, splinting, slinging & padding. | 2(p8,16, 21, 259) |
| 5. Demonstrate effective history taking, analysis of a possible mechanism and assessment of the athlete to determine & implement the most appropriate technique(s). | 2(p43, 93-95, 243) |
| 6. Demonstrate and explain the purpose of pre-taping procedures including positioning of the athlete & preparation of the body part for application of materials (tape/wraps/splints/pads/slings etc). | 2(p8, 10-12, 363) |

<p>7. Describe the types and properties of different tape & tape products and select appropriate materials to achieve desired outcomes safely.</p>	<p>2(p3-17, 20-29)</p>
<p>8. Demonstrate taping/wrapping/slinging/padding in the management of acute injuries (upper extremity [UE] & lower extremity [LE] fractures, subluxations, contusions, tendon ruptures, strains, sprains, contusions) and explain the technique considering function.</p>	<p>2, 4</p>
<p>9. Analyze & adapt common taping techniques to meet the biomechanical and anatomical needs of the athlete to improve functional outcome.</p>	<p>2</p>
<p>10. Demonstrate taping/wrapping/padding in the context of injury management & return to sport (UE & LE fractures, subluxations, contusions, tendon ruptures, strains, sprains, contusions) to achieve functional outcomes such as, compression, immobilization & restriction of movement in the desired plane(s).</p>	<p>2, 4</p>
<p>11. Demonstrate effective taping/wrapping/slinging/padding techniques in a reasonable time frame and in a neat and organized fashion.</p>	<p>2, 4</p>
<p>12. Demonstrate and explain the procedure of tape removal and explain aftercare with respect to skin integrity, home care and follow up management.</p>	<p>2(p12-13)</p>
<p>13. Understand the precautions and possible complications associated with taping/wrapping/splinting.</p>	<p>2(Chapter 1)</p>
<p>14. Understand basic roles and indications for over-the-shelf and custom bracing.</p>	<p>2(p18, 20, 72-76, 128, 185-188, 193, 195, 266-267, 305, 308-309, 343-344, 382, 412)</p>

EQUIPMENT & PROTECTIVE GEAR

1. Identify and describe the principles and four main properties of protective equipment (PE).
2. Describe the different types of protective equipment seen in sport and explain the advantages and disadvantages of the different types of equipment for the different parts of the body and in different sports.
3. Identify and compare different types of PE.
4. Describe the indications for, and limitations of, PE.
5. Properly fit various pieces of PE (helmet, shoulder pads, shoes etc) and understand their applicability to sport(s).
6. Describe the uses of different types of footwear seen in sports and analyze the advantages and disadvantages of each type.
7. Describe the indications for, and precautions associated with, PE in different sports.
8. Demonstrate introductory knowledge of tools and specialized equipment developed & used in emergency removal of PE.
9. Describe when & how PE may be modified or adapted and maintained.
10. Demonstrate knowledge regarding liability and standards of testing for PE.
11. Demonstrate knowledge of various types of athletic shoes and applicability to specific sports and training surfaces.
12. Describe how different types of playing surfaces may be associated with certain patterns of injuries and which shoes favor performance on certain surfaces.
13. Describe the role of braces, orthotics, pads and splints in injury prevention and management.

3(p478-485), 2(p425-428), 10

3(p486-513), 2(p410-419, 425-448)

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3 (p487, 496, 511),
2(p432-35, 444-7)

3(322-325,508- 511),
1(105-106)

2(p429-443)

4, 10

3(p480-87), 2(p224-25, 413-17)

2 (p426), 3(p478-479)

1 (p187-88), 3(p767,
510-11, 279)

3(p504-508), 2(p18-29,
120-28, 182-95,

306-309, 342-348,
377-38, 404-412)

FUNCTIONAL RETURN TO SPORT

1. Identify the role of a Sports Physiotherapist in Return to Sport (RTS) decision making.
2. Describe the StAART framework and how this can be used to guide RTS process and decision making.
3. Describe typical RTS pathways in stepwise progressions/stages for a variety of injuries and sports.
4. Demonstrate progression of various rehabilitation elements (e.g. ROM, strength, proprioception, energy systems, sport specific skills, etc.) from easiest to more challenging.
5. Describe appropriate criteria for progressing to the next stage in a RTS pathway.
6. Demonstrate a working knowledge of relative risk for returning & progressing athletes through various stages of the RTS pathway.
7. Establish practice and training modifications that athletes may incorporate at different stages of their rehabilitation.
8. Describe how RTS progressions require subtle differences to account for the unique demands of specific sports.

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1(p285-293)

<ol style="list-style-type: none"> 9. Understand load management and how to account for this when developing a RTS strategy related to longer-term absence from sport. 10. Formulate both clinical & on-field RTS decisions in a safe manner, recognizing red flags that preclude participation in sport. 	
<p>SPORT EVENT MASSAGE</p>	
<ol style="list-style-type: none"> 1. Explain indications, contraindications and precautions of sport event massage. 2. Explain indications, contraindications and precautions of sport event massage. 3. Explain the physiological and psychological effects of a given sport event massage (pre, post or inter event timings). 4. Explain anatomical, performance as well as other related factors to consider in sport event massage. 5. Gather pertinent subjective information to ensure a safe, efficient and effective sport event massage. 6. Explain the purpose, application and stroke of 6 fundamental massage techniques commonly used in sport. 7. Demonstrate competency implementing 6 fundamental massage techniques used with athletes to provide a quality sport event massage. 8. Explain the purpose, timing, technique and sequencing as well as demonstrate an appropriate and effective pre, post and/or inter-event sport massage. 9. Demonstrate appropriate athlete positioning, draping and handling for a given sport event massage. 10. Demonstrate safe and effective therapist body mechanics throughout a given sport event massage. 	<p>10</p>
<p>PARASPORT</p>	
<ol style="list-style-type: none"> 1. Describe the four most common impairments in parasport: visual impairment, cerebral palsy, spinal cord injury and limb deficiency. 2. Identify challenges and considerations unique to parasport athletes and the associated effects on performance. 3. Identify the information practitioners require to provide safe and effective support for each parasport athlete and their unique physiological needs. 4. Communicate with parasport athletes with respectful, person-centered language. 5. Understand Paralympic Games History. 6. Identify similarities/differences between Parasport and Able- Bodied sport coverage. 7. Understand Sport Physio role in Classification and how to become a Classifier. 8. Become familiar with Winter (team) vs. Summer (individual) sport athletes. 9. Have a deeper understanding of Common Medical Conditions in Parasport athletes. 10. Be able to identify signs and symptoms of Autonomic Dysreflexia (AD) in Spinal Cord Injury (SCI) and how to treat, 11. Identify skin and wound care protocols and common products used to treat wounds, 12. Understand common injuries seen in SCI, Amputee (Limb Deficient) and Visually Impaired (VI) athletes and common sport physiotherapy treatment 	<p>7, 10</p>

<p>strategies.</p> <ol style="list-style-type: none"> 13. Understand training adaptations for Parasport athletes. 14. Understand management of spasticity in Parasport athletes. 15. Be familiar with travel considerations with Parasport athletes. 16. Be familiar with equipment + use of technology innovation in Parasport. 	
<p>SPORT INJURIES</p>	
<ol style="list-style-type: none"> 1. Be familiar with the assessment and treatment of sport related pain & injury for various body parts, including: <ol style="list-style-type: none"> a. Face b. Neck c. Shoulder d. Elbow e. Wrist f. Hand & Finger g. Abdominal, thoracic & chest h. Lower back i. Buttock j. Hip k. Groin l. Thigh m. Knee n. Leg o. Calf p. Achilles q. Ankle r. Foot & Toe 2. Be familiar with assessment & treatment of headache disorders. 3. Be familiar with sport specific functional assessment. 4. Understand and perform static, dynamic and functional evaluation of the shoulder, including glenohumeral (GH) and surrounding joints. 5. Understand and perform special tests of the shoulder. 6. Understand shoulder impingement syndrome classification, recognition, and treatment. 7. Understand clinical signs and management of GH subluxation, dislocation, rotator cuff as well as labral pathology. 8. Understand the types, clinical signs and management of acromioclavicular joint conditions. 9. Understand clinical signs and management of various nerve entrapments, including: suprascapular, long thoracic, axillary and brachial plexus (thoracic outlet syndrome). 10. Understand return-to-play criteria for the overhead throwing athlete. 11. Be familiar with best evidence for lateral elbow pain resulting in tendinopathy. 12. Understand biomechanical stressors or faults that may predispose to medial or lateral elbow pain. 13. Understand the intrinsic/extrinsic factors, the mechanism and the diagnosis of overuse injuries in sport for various tissues. 	<p>1(p331-346); 3(p581-595) 1(p347-375) 1(p377-438) 1(p439-462) 1(p463-487) 1(p489-505) 1(p507-520); 3(p596-628) 1(p521-565), 1(p567-590) 1(p593-628) 1(p629-657) 1(p659-677, 679-711) 1(p769-803, 805-824) 1(p825-846) 1(p847-863) 1(p865-892) 1(p917-936) 1(p937-972, 941-946)</p> <p>1(p317-329) 1(p365)</p> <p>1(p377-387)</p> <p>1(p388-400) 1(p388, 402-407)</p> <p>1(p407-419)</p> <p>1(p426-429) 1(p429-432)</p> <p>1(p438)</p> <p>1(p445-451)</p> <p>1(p443-444, 452)</p> <p>1(p29-53)</p>

<ol style="list-style-type: none"> 14. Be familiar with common stress fracture sites and their associated risk (low/high) along with management strategies. 15. Be familiar with and understand the continuum model of tendon pathology. 16. Understand and implement the stages of rehabilitation for optimal return to sport following tendinopathy. 17. Understand and manage the process of recovery. 18. Be familiar with the management of delayed onset muscle soreness (DOMS). 19. Be familiar with the management of Myositis Ossificans. 20. Be familiar with, and make considerations for, dermatologic conditions commonly encountered in sport. 	<p>1(p38)</p> <p>1(p46-49)</p> <p>1(p46-51) 1(p189-200), 7</p> <p>1(p45-46), 3(p423-436)</p> <p>3(p451-452)</p> <p>3(p455-477)</p>
<h2>SPORT BIOMECHANICS</h2>	
<ol style="list-style-type: none"> 1. Understand running biomechanics including abnormalities commonly observed in running. 2. Identify faulty biomechanics during the running cycle with an effective means to evaluate and correct it, as needed. 3. Describe the various components of the running shoe and their role in protecting and supporting the runner. 4. Understand the correlation between injury, associated risk factors and running retraining considerations. 	<p>3(p307-327) 1(p90-95) 1(p101, Table 8.2)</p> <p>1(p105, Table 8.3)</p> <p>1(p107, 109, Tables 8.5 & 8.6)</p>