

Unit 6: Sporting Injuries

Level: **3**

Unit type: **Internal**

Guided learning hours: **60**

Approaching the unit

This unit gives the learner an opportunity to understand different sports injuries and their symptoms, as well as how to effectively treat and develop rehabilitation plans for them. Learners will also explore injury risk reduction through the application of preventative measures.

For students participating in sports, injuries are a common occurrence. It is important that those involved in sport gain an appreciation and understanding of how the body responds to different injuries and the key factors to consider in the prevention and reduction of injuries. It is also important to understand how effective treatment and rehabilitation can reduce the amount of time spent out of sports participation. There are both high- and low-risk factors involved in sports participation, and you will need to appreciate both the physiological and psychological mechanisms of injury in terms of its occurrence, treatment and rehabilitation. Learners should be allowed to develop a clear understanding of how injuries can happen, the immediate responses of the body that should occur to promote healing, along with the potential strategies for injury management; this should include what can be done to promote recovery and help sports performers return to their pre-injured state in the shortest and safest possible time frames.

Learners will be encouraged to explore how the body responds to different types of injury, the causes, why some sports performers are more predisposed to certain injuries, and examine the importance of injury prevention. Having identified the key risk factors, they will then look at the different methods used to minimise risk. Learners will also explore the problems associated with injury prevention and build on existing knowledge of how to recognise the onset of injury, and how this can be best managed and treated.

The unit gives learners the knowledge and skills required to examine different types of sporting injury, explore the physiological and psychological responses to exercise as well as the risk factors and prevention strategies that can be used to reduce injury in sport; and investigate the different treatments and interventions that can be used to manage sporting injuries utilising the key principles in the design of safe treatment and rehabilitation programmes.

Learners will produce a written assignment that focusses on the types and mechanisms of common sporting injuries and the body's response to these; a presentation that evaluates the risk factors and prevention strategies that can be utilised to minimise sporting injuries; and finally, two separate treatment and rehabilitation plans that will include an evaluation and a justification of the treatments and intervention chosen for both plans as well suggesting alternatives where appropriate.

You could deliver this unit by using a mix of theory (to introduce learners to the topics listed in the unit content) visits and guest speakers (to enable learners to apply the theoretical concepts they have learned); as well as practical activities (to introduce learners to the application of treatments and interventions as appropriate to sporting injuries).

Learners could review and discuss their own experiences of injury, treatment and rehabilitation. This review and discussion process should be engaging. This can be achieved by using specific and informative examples – case studies and scenarios, information from video sharing websites, and news articles. A variety of visual aids, including posters, x-rays and anatomical models may also be useful while some aspects may be delivered practically. The treatment of injury must be based on practice. It should allow plentiful opportunities for learners to explore and become confident and effective in the application of all treatment methods in a range of situations, with aspects of rehabilitation also delivered practically, to engage learners and reinforce learning.

Delivering the learning aims

Learning aim A

Learners should be introduced to the types and causes of common sports injuries and their associated physiological and psychological responses. Injuries should be discussed regarding aetiology, mechanisms of injury, and signs and symptoms. This can be achieved via a combination of formal lectures and learner-centred learning (for example individual or group research using the internet and textbooks). Learning can be reinforced by watching video recordings or clips on video- sharing websites (you can select from the wide range available), with small-group discussion and completion of worksheets focusing on an injury overview, aetiology, mechanism of injury, and signs and symptoms.

Learners should also be able to explore physiological and psychological responses to injury and how these effect the rehabilitation process. These areas can be delivered via a combination of learner- directed research, discussion of learner experiences, use of video clips and guest lectures by semi/elite/pro athletes who have sustained injuries or sports therapists or physiotherapists. Guest lecturers should give first-hand descriptions of how they have coped, the help they received and allow question and answer discussion. Tutor-led delivery may be used to further support theoretical understanding. Group work should be encouraged using mini presentations to encourage peer learning and personal knowledge checks.

Learning aim B

This learning aim could be delivered via a combination of tutor-led delivery, learner-directed research and Guest lecturers with responsibility for sports injury management should be encouraged, such as sports and rehabilitation therapists, physiotherapists, sports coaches, sports management staff, and health and safety officers. Realistic examples are always good ways to promote learner engagement.

Learners should be given the opportunity to explore intrinsic and extrinsic injury risk factors that could contribute to sporting injury. These could be explored via a learner-

centred research approach. Research may be carried out using the internet, books, video clips, observation of sporting games, and class visits to sports events and environments. Group and individual tasks could be set, and information pooled within the group to encourage peer learning and consolidate learner understanding. An example of a group task could be the identification of all intrinsic and extrinsic risk factors, and appropriate preventative measures. Specific sporting examples could then be used by learners to discuss specific intrinsic and extrinsic risk factors and explore preventative measures.

Preventative measures and strategies should be evaluated as to highlight their usefulness in preventing sporting injuries across a range of scenarios. Scenarios should be provided for learners to explore the application and success of injury prevention measures. Mini presentations can be used to encourage peer learning and personal knowledge checks. Learners could also complete risk assessments, emergency action plans and/or other safety checks to consolidate their understanding of steps that can be taken to minimise risk; these could be undertaken by visiting local sports facilities to develop their knowledge and understanding of these processes in a variety of sporting environments.

Learning aim C

This Learning Aim could be delivered via several methods including formal lectures, independent research, practical activities and use of guest speakers. Using group and paired work for research tasks will allow learners to explore sports and activities which are of particular interest to them linking to the most common types of sports injuries that participants suffer and the process of rehabilitation that must be undertaken to successfully recover.

Learners could explore theoretical aspects of rehabilitation via formal delivery, group work and visual application of theory. Methods of rehabilitation and progression should be delivered practically, allowing learners to explore the application of theory to practice. For example, rehabilitation exercises for muscular conditioning and neuromuscular control can be delivered to allow learners to experience the exercises.

Learners should, where possible, be engaged in practical activities during the delivery of common treatment methods. Live demonstration of common treatment methods is effective initial delivery for this. This could be recorded and played for learners, to be used as a visual reference when practising their skills. You might also consider engaging the support of a qualified first aider. Learners should explore application of their practical skills via role play and/or a range of scenarios to allow the development of confident and effective application. Oral questioning during practical activities and On-the-spot quizzes should be encouraged to help learners apply the information they have learned to the practical exercise.

Guest lecturers from the industry, such as sports and rehabilitation therapists and physiotherapists, could be used to further explore real-life examples of rehabilitation programmes. Discussion should include the appropriateness of the programme to the individual, possible adaptations and any recommendations or considerations the learner should contemplate.

Transferable skills

Preparing for work

- Researching treatment and rehabilitation strategies and methods.
- Applying knowledge and practical skills to real-life injury scenarios.
- Planning treatment and rehabilitation programmes based on needs of athlete in relation to the sporting injury sustained.

Developing practical and technical skills

- Communicating with peers, sportspeople and Sports Injury professionals.
- Displaying appropriate skills and behaviours.
- Applying knowledge to real-life injury scenarios.

Managing information

- Problem solving.
- Management of information.

Key teaching areas in this unit include:

Sector skills	Knowledge	Transferable skills/behaviours
• Communicating with peers, sportspeople, and Sports Injury professionals • Researching treatment and rehabilitation strategies and methods • Displaying appropriate skills and behaviours • Applying knowledge and practical skills to real-life injury scenarios	• Types and mechanisms of sporting injuries • Physiological and psychological responses to injury • Risk factors and Prevention methods of sporting injuries • Developing treatment and rehabilitation programmes for sporting injuries	• Communication • Working with others • Thinking skills/adaptability • Problem solving • Management of information

Employer involvement

This unit would benefit from employer involvement (face to face and or virtual) in the form of:

- Guest lecture sessions from sports therapists, sports rehabilitators and physiotherapists; as well as previously injured players through practical treatment workshops
- Visits to a variety of sports facilities to look at risk assessment and preventative measures
- Videos for analysis on mechanisms of injury and immediate management.

Assessment guidance

These are only suggestions, and assessor can utilise professional judgment, to support this please consider the selection cited within' key summary of the types of evidence used for BTEC Nationals' in Appendix 1 of the spec. Where unsure on use or considering different method utilise the 'ask the expert service'.

This unit is internally assessed. Learners will be required to produce two assignments. There is a maximum number of two summative assignments allowed for this unit.

The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.P2, A.P3, A.M1, A.M2, A.D1)

Learning aims: B and C (B.P4, B.P5, B.M3, B.D2, C.P6, C.P7, C.M4, C.D3)

Example assessment strategies

This unit is internally assessed. There is a maximum number of two summative assignments for this unit. Tutors should refer to the essential information for assessment decisions in the specification for specific detail, particularly in relation to the requirements for Pass, Merit and Distinction grades.

Learning aim A – A infographic with a supplementary written report that focuses on common injuries in two different sports, ideally a contact and non-contact sport. Learners should discuss injuries to the upper limb, lower limb, the head, neck or spine. Details will be linked to the importance of recognising the mechanism of common injuries and the body's physiological and psychological responses.

Learning aim B and C combined - A presentation that covers the key risk factors for different sports venues, supported with methods for the prevention of injuries. This can be linked to risk analysis plans for the identified injuries in learning aim A and the treatment plans in learning aim C.

Two separate treatment and rehabilitation plans over a clearly identified and appropriate time frame. These could be in the format of rehabilitation diaries and broken down into weekly sessions, which will include the treatment and exercise plans for the injured

sports performer and will be supported with a summary report and an evaluation of the rehabilitation plans.

Suggested assessment scenarios – work experience working alongside a sports therapist / sports rehabilitator / sports physiotherapist - you are keen to how investigate how sports injuries occur including risk factors and prevention strategies / treatment and rehabilitation plans are created for specific injuries.

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Delivering the unit: suggested activities

This provides you with a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Learning aims / topic areas	Suggested Activity	Suggested time allocation
Learning Aim A	Introduce the topic and content of learning aim A to your learners with regard to the different types of sporting injuries, mechanisms of injury physiological and psychological responses to injury; as well as the assessment requirements of Learning Aim A	1 hour
A1 Types of sporting injuries	Formal delivery on types of injury to Provide an overview of sport injuries and introduce all categories as specified in the unit content. Delivery should be highly visual, using real-life examples, video clips and photographs. Group discussions to engage learners and explore possible cause/s, signs and symptoms of a range of common sports injuries linking to personal and sporting experience where possible Learner-led research using the internet and textbooks. For each type of injury, learners should be given a worksheet with columns headed 'aetiology,' 'mechanisms,' and 'signs and symptoms.' In small groups, get learners to research each injury and complete the worksheet.	8 hours
A2 Mechanisms of common sporting injuries	Formal delivery on mechanisms of sport injuries to Provide an overview of the mechanisms of sports injuries, as specified in the unit content. Learner research that could be done individually, in pairs or small groups; match words to their definitions (especially for less well-known terms such as 'microtrauma' and 'insidious') this could be done as a desktop activity or practically, as a relay race. Pairs' mini presentation with pairs to be allocated an injury (so that each pair has a different injury, to avoid repetition) about which they must devise and deliver a presentation to the rest of the group.	3 hours

	Presentations should make reference to prior learning concerning type of injury, possible cause/s, likely location/s, mechanism/s, signs and symptoms etc. You should ensure that there has been full coverage of the unit content for mechanism of injury, and confirm learners' understanding through question, answer and discussion.	
A3 Physiological responses to injury	Formal delivery of physiological responses included in the unit content, that haven't already been covered in previous activities (e.g. signs and symptoms may already have been looked at; primary injury, secondary metabolic injury, tissue responses to interventions, Lewis's hunting response etc. may not have been). Formal delivery of injury time factors as stipulated in the unit content. Pairs' mini presentations split the group into the pairs they worked in for their mini presentations about a specific sports injury. For the same injury, ask each pair to fully research the physiological responses of the body to that specific sports injury. They must include the relevant elements from the unit content (e.g. tissue responses to interventions, healing process and stages, neural responses, pain, visual analogue scale) Then ask the research pairs to feed back their findings in the form of another mini presentation, this could be combined with the presentation task for A2.	4 hours
A4 Psychological responses to injury	Formal delivery of the psychological responses to injury. In pairs or small groups, learners can be allocated a sports injury, along with its cause (e.g. simple fracture of the ankle caused by an opponent's mistimed tackle in a football match) and they must consider the potential psychological responses and impact, in the short, medium and longer term, of the injury and the way it happened. Be sure to include a cross section of causes, times and severity of injuries within the group. Learners can feed back their thoughts to the group and discussion around psychological responses and the link between cause and response can be explored. Explore the psychological response to injury by inviting semi/elite/pro athletes who have sustained injuries to share their experiences and discuss the psychological effects.	4 hours
All content in topic A	Revision session - learners should use this lesson to revise the topics covered in topic A. They should independently research and prepare notes for the assessment on this topic.	2 hours
All content in topics A	Assessment Planning and Development - learners should be given an assigned assessment for the content in topic A. They should use this lesson to produce evidence for the assessment - A written assignment that focuses on common injuries in contact and non-contact sports to the upper limb,	4 hours

	lower limb, the head, neck or spine. Details will be linked to the importance of recognising the mechanism of common injuries and the body's response.	
Learning Aim B	Formal Delivery: Introduction to the content and assessment requirements of Learning Aim B. Learners can be engaged by discussing their experiences of injury, aetiology (cause, or causes, of injury), and the predisposition of certain individuals to injury, as well as injury prevention measures.	1 hour
B1 Extrinsic risk factors And B2 Intrinsic Risk Factors	Small group or Pairs work - intrinsic and extrinsic factors to be divided amongst the learners so as to cover all listed in the unit content for each area. Learners should work research associated risk factors (intrinsic or extrinsic, as appropriate), using the internet and textbooks. Each team should devise a table identifying the risk factor, e.g., 'training effects', and in a separate column state all the risk factors associated with training effects. You should check the teams' tables to ensure all content has been included and is accurate. Small group or pairs informal presentation – learners present their findings to the rest of the group whilst their peers make notes in relation to the new information being presented. All groups/pairs share their research findings with the group. Throughout, peer review should be encouraged with pairs/groups by tutor-led question and answer session. Lead a discussion regarding intrinsic and extrinsic risk factors, using visual aids such as digital footage to verify learning. Extensive learner engagement can be achieved through question, answer and discussion based on the team research activity.	4 hours
B3 Preventative measures	Formally deliver the principles of injury prevention measures, using and applying learner's knowledge through question and answer and discussion. Learners could select (or be allocated) a specific sport and they must research how risk is minimised through the use of rules, equipment, clothing, training techniques, playing surfaces etc. Scenarios could be provided that allow learners, in pairs, to apply injury prevention measures appropriately then they can present feedback to the group, with peer review and question and answer.	2 hours

	A guest speaker, such as a podiatrist, sports therapist or physiotherapist, could be invited to talk to learners about gait analysis and how to treat or prevent injury. (Learners could also visit these professionals in their practice environment.)	
Learning Aim C	Formal Delivery: Introduction to the content and assessment requirements of Learning Aim C. This can be done by discussing learners' experiences of treating and managing injuries as well as rehabilitation of said injuries.	1 hour
C1 Treatments and interventions	You or a qualified first aider could demonstrate common treatment methods, with learners using role play to practise the skills. Discussion about the techniques should encourage learners to apply the skills confidently and effectively. It is recommended that you deliver no more than two skills before getting learners to practise them. Divide the group into research teams. Each team is to devise and complete a worksheet to identify, when a referral is required, appropriate medical personnel to refer to and how to refer an injured person. To consolidate learning, and further develop confident and effective application, give learners a practical (role play) scenario or a situation in which they need to apply treatment methods. You should question them during the application. The role play could be videoed, allowing for later analysis and reflection by the learner about what they did correctly and any areas for improvement.	6 hours
C2 Planning programmes And C3 Rehabilitation programmes	Introduce learning aims C2 and C3 by using digital footage of aspects of rehabilitation, followed by a question and answer session to ascertain learners' prior knowledge. Formally deliver the stages, principles and progression of rehabilitation, using specific injury examples, real-life examples, visuals aids and digital footage, where possible. Learners could be given examples of real-life treatment and/or rehabilitation programmes in order to familiarise themselves with the content, structure, format etc.	10 hours

	Methods of rehabilitation should be delivered in a practical environment and manner, ensuring learners fully engage with and experience all aspects. Discussion should include progression, alternatives, adaptations and any other considerations required, including monitoring. Ask learners, in groups, to reflect on the content of your delivery, and to prepare relevant questions concerning aspects of rehabilitation (ensuring coverage of the unit content) for the forthcoming interview of an industry professional. The learners interview an industry professional, e.g., sports and rehabilitation therapist or a physiotherapist or a sports psychologist. Follow up by leading a discussion to consolidate learning using question and answer. Consolidate learners' understanding by dividing them into small groups, providing scenarios for which they can design mini rehabilitation programmes, or aspects of a programme. Encourage peer learning by asking groups to present these to each other.	
All content in topic B and C	Revision session: learners should use these lessons to revise the topics covered in topic B and C. They should independently research and prepare notes for the assessment on this topic.	4 hours
All content in topics B and C	Assessment Planning and Development: learners should be given an assigned assessment for the content in topic B and C. They should use these lessons to produce the assessment - A presentation that covers the key risk factors for different sports venues, supported with methods for the prevention of injuries. This can be linked to risk analysis plans for the identified injuries in learning aim A and the treatment plans in learning aim C. Two separate treatment and rehabilitation plans over a clearly identified and appropriate time frame. These could be in the format of rehabilitation diaries and broken down into weekly sessions, which will include the treatment and exercise plans for the injured sports performer and will be supported with a summary report and an evaluation of the rehabilitation plans.	6 hours

Details of links to other BTEC units and qualifications

Several other units from this qualification complement this unit. These include:

Unit D1: Applied Coaching Skills

Unit 3: Sports Psychology

Unit 5: Anatomy and Physiology in Sport

Unit 7: Functional Sports Massage

Unit 8: Fitness Testing

Unit 9: Fitness Training

Unit 10: Technical and Tactical Skills in Sport

Unit 13: Influence of Technology in Sport and Physical Activity

Resources

The 2019 qualifications are industry-focussed, and it is key that learners maintain up to date understanding and visibility of key developments and influences within the market.

Textbooks

Brukner P and Khan K, *Clinical Sports Medicine* (Fourth Edition), McGraw-Hill Medical, 2012 ISBN 9780070998131

Comfort P and Abrahamson E, *Sports Rehabilitation and Injury Prevention*, Wiley-Blackwell, 2010 ISBN 9780470985632

Gill W, *A Practical Guide to Sports First Aid*, Lotus Publishing, 2004 ISBN 9780954318864

Kent M, *Oxford Dictionary of Sports Science and Medicine* (Third Edition), Oxford University Press, 2007 ISBN 9780199210893

Norris C, *The Complete Guide to Sports Injuries*, A&C Black Publishers, 2011 ISBN 9781408130773

Peterson L and Renstrom P, *Sports Injuries: Their Prevention and Treatment* (Third Edition), CRC Press, 2000 ISBN 9781853171192

Prentice W, *Rehabilitation Techniques for Sports Medicine and Athletic Training* (Fifth Edition), SLACK Incorporated, 2020 ISBN 9781630916237

St John Ambulance, *First Aid Manual* (11th Edition), DK, 2021 ISBN 9780241446300

The *BMA Guide to Sports Injuries*, Dorling Kindersley, 2010 ISBN 9781405354288

Walker B, *The Anatomy of Sports Injuries: Your Illustrated Guide to Prevention, Diagnosis and Treatment* (Second Revised Edition), Lotus Publishing, 2012 ISBN 9781905367382

Websites

<http://bjsm.bmj.com> – The British Journal of Sports Medicine (BJSM) has open access to some key articles and free podcasts. It is a useful portal for research, debates and news about sports medicine.

www.nhs.uk – Provides recommendations for the treatment and management of sports injuries, including first aid.

www.nsmi.org.uk – Provides information about sports injury, classification, signs and symptoms, mechanisms and injury prevention.

www.patient.co.uk – Patient is an independent health website set up by Patient Information Publications. Apart from other health-related information, it contains specific information about sports injuries, such as signs and symptoms, treatment and prevention.

www.physioroom.com – Offers educational content and features related to sports injury and sports medicine, including signs and symptoms, prevention and explaining jargon.

www.redcross.org.uk – The Red Cross is a first-aid organisation offering courses specifically related to sports injuries, including all aspects of first-aid management in the field.

www.sja.org.uk – St John Ambulance is a dedicated first-aid organisation, often present at sporting events. SJA offers courses ranging from basic sports first aid, training for school staff to match day first aid.

www.sportsinjuryclinic.net – Provides extensive information about sports injuries, prevention and rehabilitation.

www.stopsportsinjuries.org – Provides about a wide range of information about sports injuries and includes a virtual sports injury clinic, a symptom checker and advice on rehabilitation exercises and finding a sports injury clinic. There is also a range of interviews with top sports injury professionals about their particular specialist area.

Journals

The following journals provide articles relating to varied aspects of the specification content for the sporting injuries unit.

British Journal of Sports Medicine (BJSM)

Clinical Journal of Sports Medicine

Journal of Physiotherapy & Sports Medicine

Journal of Sport Rehabilitation

Peak Performance (Green Star Media)

Definition of key terms

Apophysitis - is the medical term used to indicate inflammation and stress injury where a muscle and its tendon attaches to the area on a bone where growth occurs in a child or adolescent, an area called the “growth plate.” Apophysitis is commonly seen in active, growing children and adolescents. It can occur in many different body parts, depending on the specific repetitive activities the young athlete is commonly doing.

Tensile force - a tension load injury pulls too hard on tissue in opposite directions

Shear force - mechanical force that acts on an area of skin in a direction parallel to the body's surface

Hemarthrosis – Bleeding into a joint.

Metabolic injury - when cells or tissue do not receive sufficient reactants to carry out normal processes of metabolism critical for functionality and survival. These reactants include nutrients and oxygen, both of which are delivered to cells and tissues by blood.

Lewis hunting response - a process of alternating vasoconstriction and vasodilation in extremities exposed to cold. The term Lewis reaction is used too, named after Thomas Lewis, who first described the effect in 1930.

Somatic pain - occurs when pain receptors in tissues (including the skin, muscles, skeleton, joints, and connective tissues) are activated. Typically, stimuli such as force, temperature, vibration, or swelling activate these receptors. This type of pain is often described as: cramping.

Visual analogue scale (VAS) - a tool widely used to measure pain.