

Higher National Unit Specification

General information for centres

Unit title: Sports Injury Pathology

Unit code: DP6D 34

Unit purpose: This Unit is designed to develop knowledge of the pathology of sports injuries, especially in the prevention, management and subsequent rehabilitation of these injuries. It is intended that candidates will require a detailed knowledge of these issues to be able to subsequently clinically assess and treat sports injuries. The Unit is aimed at candidates who wish to work in the Sports Therapy industry. The Unit includes competencies specified by the Society of Sports Therapists.

On completion of the Unit the candidate should be able to:

- 1 Explain the pathology of soft tissue healing.
- 2 Describe the principles of soft tissue injury prevention and initial management.
- 3 Describe the pathophysiology and management of bone injuries.
- 4 Outline the signs, symptoms, prognosis and management of some common sporting injuries.
- 5 Select and use the equipment commonly used in the treatment of sports injuries.

Credit points and level: 1.5 HN Credit at SCQF level 7: (12 SCQF credit points at SCQF level 7*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit will be at the discretion of the centre. This Unit requires prior knowledge of **Applied Anatomy** and **Applied Physiology** for Sports Therapists to Higher National level or equivalences at a related level.

Core Skills: There may be opportunities to gather evidence towards Core Skills in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

This Unit is included as a mandatory Unit in the framework for the HND Sports Therapy Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes, and should be introduced at the end of the year one programme.

General information for centres

Unit title: Sports Injury Pathology

Assessment: Candidates must provide written or oral evidence of knowledge within all Outcomes.

Higher National Unit specification: statement of standards

Unit title: Sports Injury Pathology

Unit code: DP6D 34

The sections of the Unit stating the Outcomes, knowledge and/or skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Explain the pathology of soft tissue healing

Knowledge and/or skills

- ◆ Types of soft tissue
- ◆ Mechanisms of soft tissue injury
- ◆ Phases of healing
- ◆ Vascular and cellular changes during healing phases
- ◆ Classification of soft tissue injuries
- ◆ Complications of soft tissue injury

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ describe tissues in terms of physiological/anatomical individual types and function (muscle, tendon, ligament, fascia, bursa, capsule, articular cartilage and meniscal cartilage)
- ◆ outline traumatic and overuse injuries in terms of mechanisms of injury (sprain, strain, contusion, tendinopathy, dislocation, subluxation)
- ◆ describe the healing phases and their duration (inflammatory, proliferative and remodelling phases)
- ◆ explain the vascular and cellular progression of inflammation
- ◆ describe the classification of a soft tissue injury in terms of tissue involved, grade, phase of healing, (sprain, strain, contusion, tendinopathy, dislocation, subluxation, acute/sub-acute/chronic)
- ◆ identify common complications of soft tissue injury (decreased mobility, weakness, stiffness, loss of function, nerve damage, instability).

This will be evidenced by a written/oral response under supervised conditions. A pass rate of 70% for each section is required.

Higher National Unit specification: statement of standards (cont)

Unit title: Sports Injury Pathology

Assessment guidelines

An assessment constructed in sections covering each of the knowledge and skills. Written and/or oral evidence of the explanation of the Outcomes should be achieved. A 70% pass rate will be required in each section. Assessment must be undertaken under supervised conditions.

Outcome 2

Describe the principles of soft tissue injury prevention and initial management

Knowledge and/or skills

- ◆ Guidelines of injury prevention
- ◆ The relationship of healing phases and the initial management principles (Stop, Ask, Look, Touch, Active, Passive, Strength (SALTAPS); Protection, Rest, Ice, Compression, Elevation (PRICE); Movement, Ice, Compression, Elevation (MICE); Heat, Alcohol, Return to sport/exercise, Massage (HARM)

Evidence Requirements

Candidates will need written or oral evidence to demonstrate their skills and/or knowledge by showing that they can:

- ◆ identify and explain injury prevention principles (warm up, cool down, equipment — protective/modification, facilities-surfaces/conditions/environment, physical fitness, matching young performers by skill and physical maturation, rule changes within sport, skill match with physical and intellectual ability of group)
- ◆ describe the principles of management of soft tissue injury, with specific reference to the vascular and cellular effects of early management principles (SALTAPS, PRICE, MICE, HARM. The role of these principles and their effect on the process of healing must include vasoconstriction, vasodilation, blood clot formation, fibrin formation, pain and rehabilitation time).

This will be evidenced by a written/oral response under supervised conditions. A pass rate of 70% for each section is required.

Assessment guidelines

An assessment constructed in sections covering each of the knowledge and skills. Written and/or oral evidence of the explanation of the Outcomes should be achieved. A 70% pass rate will be required in each section.

Higher National Unit specification: statement of standards (cont)

Unit title: Sports Injury Pathology

Outcome 3

Describe the pathophysiology and management of bone injuries

Knowledge and/or skills

- ◆ The process of fracture healing
- ◆ Classification of fractures
- ◆ Management of fractures
- ◆ Sites of common fractures
- ◆ Complications of fractures
- ◆ Other bone injuries identified

Evidence Requirements

Candidates will need written or oral evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ describe the fracture healing process from haematoma formation through to bone union (blood clot formation, osteoprogenitor/osteoblast/osteoclast activity, callus formation, union)
- ◆ identify the methods of fracture classification (open/closed, type of fracture (transverse, spiral, comminuted, stress)
- ◆ describe what methods are commonly used to manage fractures (internal fixation methods — plates/screws, nails, external fixation — external fixators, POP, traction)
- ◆ identify which bones are involved in the following common fractures (Pott's, Bennet's, Colle's, clavicle, humerus, ribs)
- ◆ describe common complications of fracture healing (mal-union, non-union, infection, nerve damage, muscle injury, tendon/ligament damage, stiffness, weakness)
- ◆ identify and explain bone injuries other than a fracture (periostitis, bone contusion, tenoperiosteal injury, epiphyseal plate injuries, enthesitis injuries)

This will be evidenced by a written/oral response under supervised conditions. A pass rate of 70% for each section is required.

Assessment guidelines

An assessment constructed in sections covering each of the knowledge and skills allowing comparative levels of achievement in each. Written and/or oral evidence of the explanation of the Outcomes should be achieved. A 70% pass rate will be required in each section.

Outcome 4

Outline the signs, symptoms, prognosis and management of some common sporting injuries

Knowledge and/or skills

- ◆ Common sports injuries are identified in terms of signs and symptoms
- ◆ The estimated recovery time of common sports injuries are identified
- ◆ The possible management/therapy plan for these sports injuries

Higher National Unit specification: statement of standards (cont)

Unit title: Sports Injury Pathology

Evidence Requirements

Candidates will need written or oral evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ describe the common mechanism of injury of the following sports injury
- ◆ identify the common signs and symptoms of the following sports injury
- ◆ describe the management principles and estimated recovery time of the following sports injury

Common sports injuries:

- ◆ Fascia: plantar fasciitis, iliotibial band syndrome
- ◆ Tendinopathy: achilles', patellar, quadriceps, rotator cuff, lateral/medial epicondylitis
- ◆ Strains: gastrocnemius, quadriceps, hamstrings
- ◆ Ligament sprains: lateral ankle, anterior/posterior cruciate and medial/lateral collateral of knee, medial collateral of elbow, radial/ulnar collateral of wrist
- ◆ Bursitis: retrocalcaneal, infrapatellar, pes anserinus, trochanteric, psoas, sub deltoid
- ◆ Meniscal: knee, acetabular labrum and glenoid labrum

Timescale for healing process identified for each injury.

- ◆ management/therapy is outlined for each injury
- ◆ surgical, eg arthroscopy, reconstruction
- ◆ injection
- ◆ electrotherapy
- ◆ massage
- ◆ exercise rehabilitation.

This will be evidenced by a written/oral response under supervised conditions. A pass rate of 70% for each section is required.

Assessment guidelines

An assessment constructed in sections covering each of the knowledge and skills. Written and/or oral evidence of the explanation of the Outcomes should be achieved. A 70% pass rate will be required in each section. This may be a closed-book examination under supervised conditions or a project covering the common sports injuries detailed.

Outcome 5

Select and use the equipment commonly used in the treatment of sports injuries

Knowledge and/or skills

- ◆ Basic contents of a sports medicine bag
- ◆ Use of walking aids
- ◆ Use of collars and splints within initial injury management

Higher National Unit specification: statement of standards (cont)

Unit title: Sports Injury Pathology

Evidence Requirements

Candidates will need written or oral evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ describe the basic contents of a sports medicine bag:
(tape (various), scissors, resuscitation mask, foil blanket, bandages (various), dressings, sling, pen/paper, emergency ice pack, plastic bags)
- ◆ describe how to measure and teach the basic use of the following walking aids:
(walking stick, elbow /axillary crutches)
- ◆ demonstrate the application of collars and splints

This will be evidenced by an assessor's observation checklist.

Assessment guidelines

An assessment constructed of sections covering each of the knowledge and skills. Written and/or oral evidence of the explanation of the Outcomes should be achieved. A 70% pass rate will be required in each section.

Where elements of knowledge and skills are not covered through direct observation, additional evidence may be derived from:

- ◆ case study
- ◆ tutor checklist
- ◆ verbal or written answers to questions

Administrative Information

Unit code:	DP6D 34
Unit title:	Sports Injury Pathology
Superclass category:	PB
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Higher National Unit specification: support notes

Unit title: Sports Injury Pathology

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 60 hours.

Guidance on the content and context for this Unit

This Unit is intended to introduce candidates to fundamental concepts of the pathology of tissue injury. Candidates will develop knowledge of prevention and initial injury management of these types of injuries. Common injuries will be identified in terms of signs, symptoms, estimated healing time and management in order to prepare candidates to treat these effectively. The knowledge gained within this Unit should be used to progress understanding of physical assessment skills.

Outcome 1

- ◆ Soft tissue must include: muscle, tendon, ligament, fascia, bursa, capsule, articular cartilage and meniscal cartilage
- ◆ Mechanisms must include: traumatic and overuse
- ◆ Phases of healing must include: inflammatory, proliferative, remodelling, timescale, physiological and cellular progression, acute/sub-acute/chronic
- ◆ Vascular and cellular changes during healing phases must include: vasopermeability, vasoconstriction, bleeding, blood clot formation, migration of cells, cell metabolic activity changes, secondary hypoxia, fibroblast activity levels, vasodilatation
- ◆ Classification of soft tissue injuries must include: type and grade of the following: muscle, tendon, ligament, fascia, bursa, capsule, articular cartilage and meniscal cartilage
- ◆ Complications of soft tissue injury should include: decreased mobility, muscle weakness, stiffness, loss of function, nerve damage, instability

Outcome 2

- ◆ Guidelines of injury prevention must include: warm up, cool down, equipment — protective/modification, facilities-surfaces/conditions/environment, physical fitness, matching young performers by skill and physical maturation, rule changes within sport, skill match with physical and intellectual ability of group
- ◆ Initial management of soft tissue injury must include:
 - Stop, Ask, Look, Touch, Active, Passive, Strength (SALTAPS)
 - Protection, Rest, Ice, Compression, Elevation (PRICE)
 - Movement, Ice, Compression, Elevation (MICE)
 - Heat, Alcohol, Return to activity/sport, Massage (HARM)

The role of these principles and their effect on the process of healing must include vasoconstriction, vasodilatation, blood clot formation, fibrin formation, pain and rehabilitation time.

Higher National Unit specification: support notes

Unit title: Sports Injury Pathology

Outcome 3

- ◆ Process of fracture healing must include: blood clot formation, osteoprogenitor — osteoblast/osteoclast activity, callus formation, union
- ◆ Classification of fractures must include: open/closed, type of fracture (transverse, spiral, comminuted, stress)
- ◆ Management of fractures must include: internal fixation (plates/screws/nails), external fixation (external fixator), POP, traction
- ◆ Sites of common fractures must include: Pott's, Colles', Bennet's, clavicle, humerus, rib
- ◆ Complications of fractures must include: mal-union, non-union, infection, nerve damage, muscle injury, tendon/ligament damage, stiffness, weakness
- ◆ Other bone injuries must include: epiphyseal plate injuries, entheses injuries, periosteal damage (periostitis, tenoperiosteal injury)

Outcome 4

- ◆ Common sports injuries should include:
 - Fascia: plantar fasciitis, iliotibial band syndrome
 - Tendinopathy: Achilles', patellar, quadriceps, rotator cuff, lateral/medial epicondylitis
 - Strains: gastrocnemius, quadriceps, hamstrings
 - Ligament sprains: lateral ankle, anterior/posterior cruciate and medial/lateral collateral of knee, medial collateral of elbow, radial/ulnar collateral of wrist
 - Bursitis: retrocalcaneal, infrapatellar, pes anserinus, trochanteric, psoas, sub deltoid
 - Meniscal: knee, acetabular labrum and glenoid labrum
- ◆ Possible management/therapy plans for these injuries should include:
 - surgical (arthroscopy, reconstruction)
 - injection
 - electrotherapy
 - massage
 - exercise rehabilitation

Outcome 5

- ◆ Contents of a medical bag must include:
 - tape (various); scissors, resuscitation mask, foil blanket, bandages (various), dressings, sling, pen/paper, emergency ice pack, plastic bags
- ◆ Walking aids covered must include:
 - walking stick, elbow crutches
- ◆ Equipment used within initial injury management must include:
 - collars, splints

Higher National Unit specification: support notes

Unit title: Sports Injury Pathology

Guidance on the delivery and assessment of this Unit

This Unit is mandatory to the completion of the HND Sports Therapy Award and as such it may contribute to the Graded Unit for that Award.

Open learning

This Unit could be delivered by open learning with suitable support materials and tutor guidance. The candidate would be required to attend closed-book assessments under exam conditions. For further information on Open and Distance Learning please refer to the SQA publication *Assessment and Quality Assurance for Open and Distance Learning* (A1030).

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on the SQA website www.sqa.org.uk.

General information for candidates

Unit title: Sport Injury Pathology

The Unit is designed to introduce you to Sports Injury Pathology, a subject which will be used and further developed within other Units of the HND Sports Therapy. The Unit will be delivered in the form of lectures and self-study which will develop a clear understanding of the importance of the principles of soft tissue management such as SALTAPS, PRICE, MICE and HARM.

You will be shown, in the form of practical demonstrations, the use of certain commonly used pieces of equipment and develop an understanding of the proposed contents of a sports medicine bag.

References

Brukner, P., and Khan, K., (2002), *Clinical Sports Medicine*, McGraw Hill.

Peterson, L., and Renstrom, P., (2000), *Sports Injuries — Their Prevention and Treatment*, Taylor and Francis.

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