



## *Sports medicine*

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## Definition

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Sports medicine encompasses the range of study into the medicine of exercising people. This involves the assessment and management of sporting people, the prevention of injury through the application of sports science knowledge and the application of exercise physiology knowledge to our community at large.

The core elements for consideration are knowledge of:

- the prevention and management of common sport and exercise related injuries
- the role of inactivity in the aetiology of chronic disease, and
- exercise as a therapeutic tool.

## Curriculum in practice

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The following case illustrates how the sports medicine curriculum applies to general practice:

- Jemma, a slightly overweight 12 year old girl, joined a netball team to become fit. Almost immediately she began to experience anterior knee pain. The pain is worse with running and also with walking down stairs. Sometimes when she has been sitting still for a time the knee feels unstable when she first stands up, but she does not have significant swelling.

## Rationale and general practice context

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Competitive sport holds a prominent place in the Australian psyche and recreational physical activity is a key strategy in promoting healthy lifestyles and preventive medicine. Although many patients first present with an acute sporting injury to hospital emergency departments,<sup>1</sup> general practitioners provide a comparable or even higher number of sports medicine related services than hospitals.<sup>2</sup> Therefore the assessment and management of sporting injuries is a significant part of the workload of general practice.

The study and practice of sports medicine is a rapidly growing area of medicine, and athletes and recreational sports participants now expect a high standard of care which has had a direct impact on the practice of sports medicine by GPs.

Patients present for a wide range of advice related to sport and exercise. The study of sports medicine also entails an understanding of the relevance of exercise to the general population and the aging Australian community. This includes the benefits and risks of exercise and the important role of exercise in the management of many chronic diseases.

General practitioners are well situated to provide holistic care in these areas,<sup>3</sup> helping to avoid fragmentation of management.

### Related curriculum areas

Refer also to the curriculum statements:

- *Musculoskeletal medicine*
- *Occupational medicine.*

# Training outcomes of the five domains of general practice

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## 1. Communication skills and the patient-doctor relationship

- SPOT1.1 Listen and understand the needs of the sports medicine patient. Athletes may have different expectations of outcomes compared to other recreational sports participants or someone using exercise for chronic disease management.
- SPOT1.2 Use empathy and supportive strategies to encourage the patient to show their emotions and express their needs and fears, for examples athletes with injuries will often have fear of their injury and develop an early grief reaction when seen for treatment. Patients with diabetes and obesity may be fearful of an exercise program, with different types of fears.
- SPOT1.3 Develop a partnership with the patient so that issues surrounding the injury and exercise can be assessed and explored more easily. It may be that the athlete has unrealistic expectations of their speed of recovery or has an eating disorder; or that the diabetic may have an underlying depressive illness.

## 2. Applied professional knowledge and skills

- SPOT2.1 Know the basis of musculoskeletal medicine, physiology and pathology that needs to be applied in an efficient and productive way to manage sports related conditions.
- SPOT2.2 Understand applied anatomy and surface anatomy to be able to assess sports injuries quickly and thoroughly.
- SPOT2.3 Know the concepts of injury causation (trauma versus repetitive microtrauma).
- SPOT2.4 Know the difference between types of exercise and their effects on the body, the beneficial effects of exercise on the body (both normal body and diseased), and have a basic understanding of potential risks of exercise.
- SPOT2.5 Know the more common sporting injuries and conditions that need to be excluded for proper and safe practise of sports medicine.
- SPOT2.6 Be able to take a thorough history and apply a specific examination to elicit the information needed to make a proper diagnosis.
- SPOT2.7 Understand the available investigations and how and when to apply them.
- SPOT2.8 Have the appropriate skills in directing treatment to the athlete or injured patient which may involve other healthcare professionals as part of co-ordinated care.

## 3. Population health and the context of general practice

- SPOT3.1 Apply opportunistic injury prevention, for example, the assessment of obvious biomechanical abnormalities in young athletes to the expected level of knowledge of the clinician.
- SPOT3.2 Apply exercise physiology concepts to the general community and specific targeted groups including: impaired glucose tolerance/metabolic syndrome; type 2 diabetes; obesity and hypertension; prevention of ischaemic heart disease; fall prevention in the elderly; and mental health, including depression, anxiety and premenstrual dysphoria syndrome.

## 4. Professional and ethical role

- SPOT4.1 Understand the ethical issues surrounding duty of care toward athletes and how this may have the potential to conflict with pressures from coaches and sporting clubs.
- SPOT4.2 Have a working knowledge of drugs in sport requirements to meet legal and ethical responsibilities.

## 5. Organisational and legal dimensions

- SPOT5.1 Recognise that sports medicine workplaces may involve sporting field/arena attendance and issues related to safety and security.
- SPOT5.2 Ensure appropriate equipment is available for any eventuality when treating in a sporting field/arena and ensure compliance with guidelines for existing minimum on field equipment.
- SPOT5.3 Ensure practice security, sound record keeping, confidentiality and safe handling practices when providing care in a sporting field/arena.
- SPOT5.4 Ensure that the practice and practitioner comply with occupational health and safety guidelines when assessing and managing injured athletes and other patients, including universal precautions and safe management of sharps.
- SPOT5.5 Know the legal requirements for the safe management of athletes including resolving the potential conflict of interest when the duty of care is to the athlete, when a sporting club may employ the GP and a knowledge and application of drugs in sport guidelines.

# Learning objectives across the GP professional life

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## Medical student

### 1. Communication skills and the patient-doctor relationship

- SPOLM1.1 Demonstrate how to take a history including the onset, mode of injury and consequent symptoms that relate to the injury.
- SPOLM1.2 Describe how the sports medicine needs and expectations of patients may differ.
- SPOLM1.3 Describe the importance of developing a partnership with the patient in sports medicine.

### 2. Applied professional knowledge and skills

- SPOLM2.1 Demonstrate good knowledge of anatomy and surface anatomy.
- SPOLM2.2 Describe the basic concepts of injury type and their differences.
- SPOLM2.3 Demonstrate a basic physical examination on a patient presenting with a sport related injury.
- SPOLM2.4 Demonstrate the ability to suggest appropriate initial investigations, a provisional diagnosis and an early management plan.
- SPOLM2.5 Describe the basic clinical management of more common sporting injuries.
- SPOLM2.6 Describe the basic concepts and interpretation of imaging modalities.
- SPOLM2.7 Describe the basic concepts of therapeutics as they pertain to sports medicine (eg. pharmacology, manual therapies and injection therapies).
- SPOLM2.8 Outline the principles of the physiology of exercise including hydration and nutrition.

### 3. Population health and the context of general practice

- SPOLM3.1 Outline key concepts in injury prevention.
- SPOLM3.2 Describe the population based benefits of exercise, both for the general population and for specific subgroups.
- SPOLM3.3 Describe the broad based public health effects on well people and people with illness with respect to aerobic exercise versus resistance exercise. needs.

### 4. Professional and ethical role

- SPOLM4.1 Describe ethical issues surrounding duty of care toward athletes and potential to conflict with other pressures (eg. internal pressures self imposed by the athlete and external pressures, eg. coaches and clubs).
- SPOLM4.2 Outline ethical principles of the use of drugs in sport.

### 5. Organisational and legal dimensions

- SPOLM5.1 Describe the concepts of occupational health and safety issues as they pertain to the health and sporting sectors.
- SPOLM5.2 Describe the issues of duty of care and legal responsibility issues involved in on-field care.
- SPOLM5.3 Outline legislative requirements in relation to sports and exercise (eg. drugs in sport).

# Learning objectives across the GP professional life

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## Prevocational doctor

Assumed level of knowledge – medical student

### 1. Communication skills and the patient-doctor relationship

- SPOLP1.1 Demonstrate how to take a thorough history and examination to elicit the information needed make a proper diagnosis in the hospital setting, especially in the emergency department.
- SPOLP1.2 Demonstrate how to elicit a history that is specific to the type of injury, whether acute, subacute or chronic in nature and mode of injury.
- SPOLP1.3 Describe the use of empathy and supportive strategies to encourage the patient to show their emotions and express their needs and fears.
- SPOLP1.4 Demonstrate how to communicate realistic expectations on recovery to patients.
- SPOLP1.5 Describe how to ensure clear communication of referral and follow up procedures.

### 2. Applied professional knowledge and skills

- SPOLP2.1 Demonstrate the application of the concepts of exercise physiology and the role of exercise in disease modification and prevention.
- SPOLP2.2 Demonstrate an understanding of applied anatomy and surface anatomy which is very important to assess sports injuries quickly and thoroughly.
- SPOLP2.3 Describe concepts of injury causation (trauma versus repetitive microtrauma) and the natural history of sports related injuries.
- SPOLP2.4 Describe the management of the more common sporting injuries and conditions.
- SPOLP2.5 Describe important conditions that need to be excluded for proper and safe practice of sports medicine.
- SPOLP2.6 Understand the available investigations and how and when to apply them.

### 3. Population health and the context of general practice

- SPOLP3.1 Demonstrate an ability to counsel for promoting exercise and injury prevention.
- SPOLP3.2 Identify subgroups that benefit from exercise and the levels of exercise appropriate to each group.

### 4. Professional and ethical role

- SPOLP4.1 Describe the roles of health professionals managing sports related injuries (eg. medical specialists and physiotherapists).
- SPOLP4.2 Demonstrate a working knowledge of the importance of duty of care issues in sports medicine.

## 5. Organisational and legal dimensions

- SPOLP5.1 Demonstrate a knowledge of potential sports medical, occupational health and safety related issues.
- SPOLP5.2 Describe processes and procedures in place to ensure that sports related injuries are appropriately referred when indicated.
- SPOLP5.3 Demonstrate compliance with any legislative requirements regarding sports medicine.

# Learning objectives across the GP professional life —

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## Vocational registrar

Assumed level of knowledge – prevocational doctor

### 1. Communication skills and the patient-doctor relationship

- SPOLV1.1 Demonstrate advanced history taking skills including the meaning of the injury to the patient.
- SPOLV1.2 Discuss the importance of empathy and a partnership approach to treatment and management.

### 2. Applied professional knowledge and skills

- SPOLV2.1 Demonstrate good knowledge of applied anatomy, applied physiology and applied pathology.
- SPOLV2.2 Demonstrate the ability to accurately take a history and examine and order appropriate investigations.
- SPOLV2.3 Demonstrate an ability to accurately diagnose injuries and prescribe exercise where appropriate.
- SPOLV2.4 List differential diagnoses that pertain to an injury to include important other injuries.

### 3. Population health and the context of general practice

- SPOLV3.1 Describe the role of inactivity in the aetiology of chronic illnesses and the role of exercise in prevention and management of these conditions.
- SPOLV3.2 Demonstrate opportunistic injury prevention.
- SPOLV3.3 Describe how to detect and treat biomechanical problems and, thereby, prevent sporting injury to the level of knowledge of the clinician.
- SPOLV3.4 Describe the differing types of exercise and which subpopulations exercise types are suitable for and when to prescribe exercise, including the special requirements of elite or professional athletes.

### 4. Professional and ethical role

- SPOLV4.1 Demonstrate use of a team approach to managing sports related injuries.
- SPOLV4.2 Demonstrate compliance with the concept of duty of care and potential for conflict.
- SPOLV4.3 Demonstrate use of drugs in sport practice requirements and understand the consequences of not doing this.

### 5. Organisational and legal dimensions

- SPOLV5.1 Outline a practice approach to sports injury management including the involvement of allied health practitioners (eg. physiotherapy, podiatry, dietician, psychologist), as well as appropriate referral to doctors with special expertise.
- SPOLV5.2 Describe strategies in place for reviewing and assessing outcomes of treatment.
- SPOLV5.3 Describe practice processes in place to safeguard occupational health and safety and meeting legislative drugs in sport requirements.

# Learning objectives across the GP professional life

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## Continuing professional development

Assumed level of knowledge – vocational registrar

### 1. Communication skills and the patient-doctor relationship

SPOLC1.1 Reflect on, and update, communication skills necessary for managing sports related injuries, including more specific questioning about mode of injury, consequences of the injury to the patient, as well as the meaning of the injury to the patient's future sporting activity.

### 2. Applied professional knowledge and skills

SPOLC2.1 Demonstrate the long term educational need to maintain an up-to-date knowledge of sports injury and exercise physiology.

### 3. Population health and the context of general practice

SPOLC3.1 Demonstrate the long term educational need to maintain an up-to-date knowledge of exercise concepts and the ability to prescribe the correct type of exercise is important at this level.

SPOLC3.1 Demonstrate the long term educational need to maintain an up-to-date knowledge of injury prevention concepts.

### 4. Professional and ethical role

SPOLC4.1 Consider further education concerning sports medicine and exercise prescription as part of ongoing professional development and education.

SPOLC4.2 Consider specific further education if developing a special interest in sports medicine through short courses, seminars and specific postgraduate courses, mainly run through universities.

SPOLC4.3 Demonstrate maintenance of an up-to-date knowledge of duty of care issues and drugs in sport requirements

SPOLC4.4 Consider teaching sports medicine related issues to training GPs and other doctors.

SPOLC4.5 Demonstrate a good working knowledge of exercise prescription and its importance to public health and future disease prevention

### 5. Organisational and legal dimensions

SPOLC5.1 Demonstrate maintenance and compliance with an up-to-date knowledge of legal and ethical issues relating to sports medicine, including changes in legislation, changes in banned substances and changes in duty of care issues.

## References

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