



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **SISFFIT525A Advise on injury prevention and management**

**Release: 2**

## **SISFFIT525A Advise on injury prevention and management**

### **Modification History**

Not Applicable

### **Unit Descriptor**

This unit describes the performance outcomes, skills and knowledge required to provide information to fitness clients about exercise related injuries, their prevention and management.

### **Application of the Unit**

This unit applies to those working in a sport, fitness and recreation environment. It applies to specialised exercise trainers who are responsible for providing fitness training programs for general populations, including older adults, with the ability to customise fitness training programs to meet the specific individualised needs of different client groups.

### **Licensing/Regulatory Information**

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

### **Pre-Requisites**

Nil

### **Employability Skills Information**

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

### Elements and Performance Criteria

#### ELEMENT

#### PERFORMANCE CRITERIA

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

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|--|--|
| 1. Undertake injury surveillance.          | <ul style="list-style-type: none"> <li>1.1. Source and analyse <b><i>data</i></b> on common <b><i>injuries</i></b> for specific fitness activities.</li> <li>1.2. Monitor occurrence of injury and analyse injury patterns for specific fitness activities.</li> <li>1.3. Identify <b><i>risk factors</i></b> that may lead to injury for specific fitness activities according to <b><i>relevant legislation</i></b> and <b><i>organisational policies and procedures</i></b>.</li> <li>1.4. Identify <b><i>preventative measures</i></b> in consultation with <b><i>medical or allied health professionals</i></b>.</li> </ul> |
| 2. Develop injury prevention strategies.   | <ul style="list-style-type: none"> <li>2.1. <i>Analyse various exercises, exercise technique and fitness activities to formulate effective <b><i>injury prevention strategies</i></b></i> according to relevant legislation and organisational policies and procedures.</li> <li>2.2. <i>Develop</i> injury prevention strategies in consultation with medical or allied health professionals.</li> <li>2.3. <i>Communicate</i> recommendations about injury prevention strategies to relevant <b><i>stakeholders</i></b> according to organisational policies and procedures.</li> </ul>  |
| 3. Implement injury prevention strategies. | <ul style="list-style-type: none"> <li>3.1. Assess <b><i>facilities and equipment</i></b> for safe participation and advise relevant personnel of problems according to organisational policies and procedures.</li> <li>3.2. Promote preventative strategies to clients to minimise the likelihood of injury according to <b><i>best practice guidelines</i></b>.</li> <li>3.3. Implement strategies for the management of common exercise-related musculoskeletal injuries according to relevant legislation and organisational policies and procedures.</li> </ul>  |
| 4. Monitor injury                          | <ul style="list-style-type: none"> <li>4.1. Monitor <b><i>client</i></b> progress and encourage reassessment</li> </ul>  |

ELEMENT	PERFORMANCE CRITERIA
management.	of injury by a medical or allied health professional as required.
	4.2. Adjust preventative measures and interventions in response to ongoing injury surveillance.
	4.3. Conduct ongoing monitoring of injury trends in consultation with medical or allied health professionals as required.
	4.4. Evaluate own performance and identify potential improvements for future implementation of injury prevention strategies.
5. Conduct postural appraisals tests to evaluate the clients mobility, stability, muscle strength and endurance.	5.1. Observe the client's static posture using a valid and reliable postural screening method to identify common postural variances and observe the degree of deviation.
	5.2. Conduct standardised tests to evaluate joint mobility and observe joint specific functional <b>range of movement</b> of the <b>major joints</b> to identify restrictions and right and or left differences in range.
	5.3. Conduct standardised <b>postural appraisal</b> tests to evaluate muscle strength and muscular endurance in order to identify functional ability.
	5.4. Apply knowledge of the <b>functional anatomy of the joints</b> and the location of relevant <b>bony landmarks</b> when conducting postural appraisals.
	5.5. Use a standardised method of recording the results of tests accurately and systematically using a process that allows for subsequent re-evaluation.
	5.6. Refer clients with significant injury and postural variances or concerns to appropriate medical or allied health professional before recommending any corrective exercises.
	5.7. Consult with an appropriate medical or allied health professional to discuss results of the postural evaluation to determine an appropriate exercise management plan.
	5.8. Implement valid postural appraisal methods according to recognised test protocols and industry standards.
6. Observe and evaluate a client's dynamic posture through observation of gait.	6.1. Observe the client's dynamic <b>posture</b> whilst performing suitable <b>locomotive movements</b> and record information about movement coordination and balance.
	6.2. Apply an understanding of the <b>biomechanics of</b>

**ELEMENT****PERFORMANCE CRITERIA**

*movement* to the *gait observation* to obtain relevant information about the client's dynamic posture.

- 6.3. Relate the effect of common *postural variances* to the client's gait.
- 6.4. Conduct functional tests to evaluate range of movement, movement control, muscular deficits and proprioception.
- 6.5. Use a standardised method of recording information obtained to allow for further re-evaluation.
- 6.6. Understand the aim of gait observation by the specialised exercise trainer is not to be diagnostic or prescriptive, but to identify potential causes of injury.

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

- communication skills to:
  - convey information to clients about injury prevention strategies
  - liaise with appropriate personnel to report problems that can contribute to injury
- problem-solving skills to:
  - assess the risk of equipment and facilities to clients
  - identify appropriate preventative methods and interventions
  - adapt measures in response to ongoing surveillance
  - identify and report issues related to implementation of injury prevention strategies
  - conduct a postural appraisal to identify potential causes of injury
  - assess the need for referral and reassessment of client injuries
- language and literacy skills to access, record and interpret information about injuries related to specific fitness activities and their causes
- observation skills to identify the bony landmarks used as identification points when conducting postural screening tests
- numeracy skills to calculate client range of movement at major joints
- self-management skills to:
  - recognise and work within own professional roles and responsibilities
  - review and reflect on own performance.

### Required knowledge

- legislation and organisational policies and procedures to enable safe conduct of all activities according to job role and responsibilities
- principles of biomechanics to enable the application of appropriate techniques and strategies to minimise injuries for specific fitness activities
- pathology of injury and injury response and the phases of healing and repair to enable appropriate exercise prescription to aid healing
- anatomy of the musculoskeletal system and its supporting systems to enable the design of appropriate programs
- function of the musculoskeletal system to enable design of appropriate programs
- range of motion and stretching techniques to enable the inclusion of exercise variables to suit client's functional capacity
- common causes of musculoskeletal injuries in relation to fitness activities
- the role of exercise and fitness in the prevention, management and rehabilitation of common exercise related injuries and falls prevention.
- defined roles and responsibilities of the specialised exercise trainer and their ethical and legal limitations to enable understanding of work parameters in implementing injury prevention and management strategies.



## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

### Overview of assessment

#### Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- researches cause and prevalence of commonly occurring injuries to develop injury prevention strategies for fitness clients
- implements injury prevention strategies and monitors and adjusts the effect of interventions within the parameters of own accepted roles and responsibilities
- applies effective contingency management techniques according to own level of responsibility to respond to problems impacting on effective injury prevention and management
- evaluates and reflects on own performance in implementing and evaluating injury prevention strategies.

#### Context of and specific resources for assessment

Assessment must ensure development and implementation of effective injury prevention strategies that are of sufficient breadth to allow the candidate to demonstrate competency and consistency of performance.

Assessment must also ensure access to:

- a fitness centre with appropriate equipment and facilities in which the candidate operates or intends to operate
- fitness clients participating in the specific fitness environment in which the candidate operates or intends to operate.

#### Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- observation of interaction with fitness clients and other personnel in conveying information about injury prevention strategies
- oral or written questioning to assess knowledge of common injuries and preventative methods related to fitness activities
- portfolio containing evidence of analysis of injury patterns in relation to fitness activities and self



evaluation of own performance

- third-party reports from a supervisor detailing performance
- portfolio containing evidence of injury prevention and management strategies developed for specific clients.

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- SISFFIT526A Deliver prescribed exercise to clients with musculoskeletal conditions

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

***Data*** may include:

- incidence
- severity
- prevalence
- cause
- types of injuries.

***Injuries*** may include:

- primary or secondary
- direct or indirect
- acute or overuse
- musculoskeletal.

***Risk factors*** may include:

- personal and internal factors
- extrinsic factors
- equipment used
- gender
- age
- weight
- fitness level.

***Relevant legislation*** may include:

- Occupational Health and Safety
- duty of care
- privacy
- codes of practice
- fair trading.

***Organisational policies and procedures*** may include:

- Occupational Health and Safety
- emergency procedures
- risk management
- use of client record systems
- collection and use of client information
- equipment use and maintenance
- client supervision
- incident reporting
- client screening procedures
- client referral procedures.

***Preventative measures*** may include:

- screening
- physical conditioning
- protective equipment

***Medical or allied health professionals*** may include:

- hydration and nutrition.
- sports physician
- sports doctor
- general practitioner
- physiotherapist
- accredited exercise physiologist
- occupational therapist
- remedial massage therapist
- chiropractor
- osteopath
- accredited practising dietician
- psychologist
- aboriginal health worker.

***Prevention strategies*** may include:

- pre-exercise, warm-up and stretching
- neural stretching
- protective equipment
- recovery strategies and physical conditioning
- frequency and duration of participation
- correction of technique
- adequate rehabilitation following injury
- appropriate management of previous injury.

***Stakeholders*** may include:

- clients
- fitness professionals and centre owners
- coaches
- parents or caregivers
- medical or allied health professionals.

***Facilities and equipment*** may include:

- exercise specific equipment
- first aid kit
- environment
- protective equipment.

***Best practice guidelines*** may include:

- guidelines for fitness trainers
- Code of Ethics
- Code of Conduct.

***Clients*** may include:

- young or aged
- experienced or inexperienced.

***Range of movement*** may include:

- joint specific
- muscle specific
- passive range
- active range
- functional range
- joint and muscle specific tests

- equipment:
    - flexometer
    - goniometer
    - electronic
  - intervertebral
  - glenohumeral
  - elbow
  - radiocarpal
  - sacroiliac
  - hip (coxal)
  - tibiofemoral
  - patello-femoral
  - ankle
- Major joints* may include:
- visual observation
  - appraisals using appropriate equipment
  - joint mobility:
    - joint specific range of movement
    - tests for specific joints
    - segmental mobility of vertebral sections
    - active range
    - passive range
    - functional range
    - hypo and or hyper mobile joints
    - contra lateral
    - symptoms
  - muscular strength:
    - tests for specific muscles and or muscle groups
    - functional strength
    - relative strength
  - muscular endurance:
    - tests for specific muscles and or muscle groups
    - functional endurance
  - functional tests:
    - squat
    - single leg squat
    - single arm push up
  - special tests
  - postural screening equipment:
- Postural appraisal* may include:

*Functional anatomy of the joints* may include:

- plumb line
- grid
- photographic technology
- video analysis
- tape measure
- goniometer
- flexometer
- plurimeter
- pressure biofeedback unit.
- glenohumeral:
  - bones:
    - humerus
    - scapula
    - clavicle
  - ligaments:
    - corocohumeral
    - corococlavicular
    - glenohumeral
    - transverse humeral
  - related structures:
    - subscapular bursa
    - subacromial bursa
    - subdeltoid bursa
    - subcorocoid bursa
  - muscles acting on the joint
- elbow:
  - bones:
    - humerus
    - ulna
    - radius
  - ligaments:
    - ulnar collateral
    - radial collateral
  - related structures:
    - olecranon bursa
  - muscles acting on the joint
- lumbo-sacral:
  - bones:
    - 5<sup>th</sup> lumbar vertebrae

- 1st vertebrae of sacrum
- ligaments
- muscles acting on the joint
- intervertebral:
  - bones:
    - vertebral bodies
  - ligaments
  - muscles acting on the joint
- hip (coxal):
  - bones:
    - femur
    - hip
  - ligaments:
    - pubofemoral
    - iliofemoral
    - ischiofemoral
    - transverse ligament of acetabulum
    - ligament of head of femur
  - muscles acting on the joint
- knee (tibiofemoral and or patellofemoral):
  - bones:
    - tibia
    - femur
    - patella
  - ligaments:
    - patella
    - oblique popliteal
    - arcuate popliteal
    - tibial collateral
    - fibular collateral
    - posterior cruciate
    - anterior cruciate
  - related structures:
    - tendons of the quadriceps femoris and fascia latae
    - medial meniscus
    - lateral meniscus
    - prepatellar bursa
    - intrapatellar bursa
    - suprapatellar bursa

- muscles acting on the joint
- ankle (talocrucal):
  - bones:
    - talus
    - tibia
    - fibula
  - ligaments:
    - deltoid
    - anterior talofibial
    - posterior talofibial
    - calcaneofibular
  - related structures:
    - achilles tendon
- muscles acting on the joint

***Bony landmarks*** may include:

- mastoid process
- spinous process of the vertebrae
- spine of the scapula
- inferior angle of the scapula
- acromion process
- coracoid process
- xiphoid process
- lateral epicondyle of humerus
- head of the radius
- styloid process
- olecranon process
- umbilicus
- anterior superior iliac spine
- posterior superior iliac spine
- iliac crest
- ischial tuberosity
- greater trochanter
- lateral femoral condyle
- medial epicondyle
- lateral epicondyle
- superior border of the patella
- inferior border of the patella
- lateral malleolus
- medial malleolus
- calcaneous.

***Posture*** may include:

- static
- dynamic

- standing
- sitting
- supine
- specific observations of standing posture:
  - head and neck
  - thoracic spine
  - rib cage
  - shoulder position
  - scapula position
  - elbow position
  - lumbar spine
  - pelvis
  - abdominals
  - femur
  - knee
  - patella
  - foot position.

***Locomotive movements*** may include:

- walking
- jogging
- running.

***Biomechanics of movement*** may include:

- levers
- loads
- fulcrum
- movement arms
- muscle actions
- centre of gravity
- base of support
- balance
- stability
- equilibrium.

***Gait observation*** may include:

- view:
  - anterior
  - posterior
  - lateral
- gait cycle:
  - stance phase
  - swing phase
  - flight phase
  - double stance phase
- evaluation:



- ankle
- foot
- tibia
- knee
- pelvis
- trunk
- head
- arm
- foot cycle:
  - foot strike
  - mid-stance
  - toe off
- evaluation of:
  - sequence of movement at each joint
  - sequence of muscle actions
  - efficiency of movement
- method:
  - visual analysis
  - video analysis.

*Postural variances* may include:

- structural
- functional.

## **Unit Sector(s)**

Fitness

## **Competency Field**

Fitness