



Australian Government

SISFFIT047 Use anatomy and physiology knowledge to support safe and effective exercise

Release: 1

SISFFIT047 Use anatomy and physiology knowledge to support safe and effective exercise

Modification History

Supersedes and is not equivalent to SISFFIT004 Incorporate anatomy and physiology principles into fitness programming.

Application

This unit describes the performance outcomes, skills and knowledge required to identify the role of anatomy and physiology knowledge in fitness instruction, and to use that knowledge to develop and instruct safe and effective exercise activities.

Knowledge of anatomy and physiology underpins effective performance in a range of work functions for fitness instruction. This unit has direct links to, and supports, a range of units for planning and instructing group and personalised exercise programs.

This unit applies to group fitness instructors, gym instructors and personal trainers. They practise in settings such as fitness facilities, gyms, leisure and community centres, client workplaces and homes and outdoor locations, depending on their role.

The skills in this unit must be applied in accordance with Commonwealth and State or Territory legislation, Australian standards and industry codes of practice.

No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Fitness

Unit Sector

Fitness

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|--|---|
| 1. Identify role of anatomy and physiology in fitness instruction. | 1.1. Identify credible sources of information about anatomy and physiology that are relevant to fitness instruction.
1.2. Review information and identify how it relates to safe and effective fitness training for clients. |
| 2. Select effective exercise activities for participants. | 2.1. Identify aspects of anatomy and physiology that impact selection of suitable exercises for participants.
2.2. Select exercises that account for variations associated with participant sex and age. |
| 3. Support participants to exercise safely and effectively. | 3.1. Provide succinct explanations about the relationship between exercises and their beneficial impacts on the body and health.
3.2. Explain injury risk factors and demonstrate and explain safe and effective exercise technique to participants. |

Foundation Skills

Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed here, along with a brief context statement.

SKILLS	DESCRIPTION
Reading skills to:	interpret information of varying complexity about anatomy and physiology, including anatomical terminology.
Oral communication skills to:	- explain information that includes anatomical and physiological references using terms that participants can understand - support verbal explanations using visual aids including diagrams and infographics.
Initiative and enterprise skills to:	- critically analyse information about anatomy and physiology for its application to fitness instruction - critically interpret and synthesise complex information into participant focussed fundamental information.

Unit Mapping Information

Supersedes and is not equivalent to SISFFIT004 Incorporate anatomy and physiology principles into fitness programming.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1ca50016-24d2-4161-a044-d3faa200268b>

Assessment Requirements for SISFFIT047 Use anatomy and physiology knowledge to support safe and effective exercise

Modification History

Supersedes and is not equivalent to SISFFIT004 Incorporate anatomy and physiology principles into fitness programming.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- source and review information about anatomy and physiology relevant to fitness instruction from three credible sources, and select specific information for use in different areas of fitness instruction work
- choose two exercises that are suitable for each of the following client types (ten exercises in total):
 - female adults
 - male adults
 - clients aged 55 years or over
 - sedentary clients
 - active clients
- for each of the ten exercises:
 - demonstrate safe and effective exercise technique to clients during either individual or group exercise sessions
 - during session instruction, provide a plain language explanation to the individual client or group about:
 - the relationship between the exercise and its beneficial impacts on the body and health, and muscular function
 - associated injury risk factors and safe exercise technique.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- types of activities where fitness instructors use knowledge of anatomy and physiology:
 - interpreting client health information and related terminology
 - developing exercise programs and sessions appropriate for participant characteristics and goals
 - providing instruction about exercise technique
 - explaining purpose of exercises and answering client questions

- credible sources of information about human anatomy and physiology that draw links with fitness instruction activities
- overview of the six levels of structural organisation of the human body:
 - chemical
 - cellular
 - tissue
 - organ
 - system
 - organism
- basic aspects of the following and any variances for different sexes:
 - cardiovascular system:
 - structure and overall function
 - role of blood and circulation pathways
 - relationships between exercise intensity and circulatory and ventilator responses
 - short- and long-term effects of different types of exercise on blood pressure and cardiorespiratory fitness
 - respiratory system:
 - structure and overall function
 - mechanics of breathing
 - respiratory system demands of exercise activities
 - muscular system:
 - structure and overall function
 - types of muscle tissue and classifications
 - major muscle groups
 - function of muscle proprioceptors
 - functions and actions of major muscles during movement and exercise, and resulting joint actions
 - short- and long-term effects of different types of exercise on muscle
 - changes to the muscular skeletal system over the lifespan
 - skeletal system:
 - structure and overall function
 - major bones, major joints and joint structures
 - bony landmarks
 - short- and long-term effects of different types of exercise on bones and joints
 - nervous system:
 - structure and overall function
 - the specific role of the central and peripheral nervous systems in controlling skeletal muscle
 - nerves and nerve impulses
 - short- and long-term effects of different types of exercise on neuromuscular system

- overview of these aspects of human biomechanics:
 - forces which act on the body during exercise
 - lever systems in the body
- anatomical planes and axes of movement, and relationships to joints and range of movement:
 - sagittal
 - frontal
 - transverse
- meaning of the following anatomical terms of location:
 - medial and lateral
 - anterior and posterior
 - superior and inferior
 - proximal and distal
 - superficial and deep
- meaning of the following anatomical terms relating to movement:
 - flexion
 - extension
 - abduction
 - adduction
 - pronation
 - supination
 - dorsiflexion
 - plantarflexion
 - circumduction
 - inversion
 - eversion
- basics of thermoregulation and its application to exercise activities:
 - processes of heat gain and heat loss
 - effects of environmental conditions
 - effects of dehydration on body temperature
- basic definitions of these types of injuries, and common exercise related causes:
 - primary and secondary
 - direct and indirect
 - acute and overuse
- how exercise activities can be adjusted to safely accommodate common and low risk injuries
- client-focussed plain language explanations of anatomical and physiological information
- types of visual aids that can assist with providing anatomical and physiological information to clients.

Assessment Conditions

Instructional activities for this unit can be demonstrated in:

- the workplace, or
- a simulated workplace set up for the purpose of skills assessment.

The following resources must be available to replicate industry conditions of operation:

- first aid equipment
- communication equipment for emergency response.

Assessment must ensure the use of:

- interaction with individual clients or group exercise participants; these can be:
 - clients or participants in an industry workplace, or
 - people who participate in simulated activities used for the purpose of skills assessment
- equipment required for selected exercise types.

Assessors must:

- satisfy the Standards for Registered Training Organisations requirements for assessors, and
- hold a Certificate IV in Fitness, and have a collective period of at least two years' experience working in fitness instruction, where they have applied the skills and knowledge covered in this unit of competency; the two years' experience can incorporate full and part time experience, or
- be a registered or accredited practising health or exercise professional with a degree and experience relevant to this unit of competency.

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