



Higher National Unit specification

General information for centres

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

Unit code: F2GN 34

Unit purpose: This Unit is designed to provide an overview of the structure, function, disease or injury of the main systems of the human body. It gives a broad understanding of the component parts of the human body in terms of how they are made up, how they work and relates this to physiotherapy support worker practice.

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

- 1 Identify the main components of the skeletal system and describe how they work in relation to injuries and disease.
- 2 Identify different types of muscle, and describe how muscle is constructed and how it works in relation to commonly encountered injuries and disease.
- 3 Explain the effect of injury and disease on the main components of the nervous system.
- 4 Identify the main components of the cardio-respiratory system within the body and describe how they work in relation to injuries and disease.

Credit points and level: 1.5 HN credits 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: While entry to this Unit will be at the discretion of the centre, it is recommended that candidates possess or be working towards DR3P 34 *Physiology for Health Care Professions*.

Core Skills: There are opportunities to develop the component 'Written Communication' of the Core Skill of Communication, and the component 'Critical Thinking' of the Core Skill of Problem Solving at SCQF level 5 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 mandatory in the framework for HNC Allied Health Professions: Physiotherapy Support.

General information for centres (cont)

Assessment: Each Outcome could be assessed separately or combined with other Outcomes. Single assessments may consist of short answer questions combined with a twenty minute practical examination. This Unit must be assessed under closed-book, supervised conditions.

Higher National Unit specification: statement of standards

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

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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

Identify the main components of the skeletal system and describe how they work in relation to injuries and disease

Knowledge and/or Skills

- ◆ Bone structure and function
- ◆ Position of specific bones within the body
- ◆ Types of joints, structure and function
- ◆ Injury and disease of the skeletal system

Evidence Requirements

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

- ◆ describe structure and function of bones and joints, including long bones, pelvic and shoulder girdles, skull, vertebrae, tarsal, carpal, metatarsal, metacarpal and phalanges
- ◆ identify the main bones and joints of axial and articular skeleton, including tarsal, carpal, metatarsal, metacarpal and phalanges within the human body with at least 70% accuracy
- ◆ explain structure and functions in relation to 2 commonly encountered injuries or diseases of bone and joints

This Outcome must be assessed under closed-book, supervised conditions.

Assessment Guidelines

This assessment could be combined with Outcomes 2, 3 and 4 or as part of a single assessment for the Unit.

The single assessment could consist of short answer questions, combined with a twenty minute practical examination.

Higher National Unit specification: statement of standards (cont)

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

Outcome 2

Identify different types of muscle, and describe how muscle is constructed and how it works in relation to commonly encountered injuries and disease

Knowledge and/or Skills

- ◆ Structure of muscle and the use in the body of different muscle types
- ◆ Position of muscles in relation to the skeletal system
- ◆ Actions and functions of muscle and resultant movement
- ◆ Injuries and disease affecting muscle function

Evidence Requirements

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

- ◆ describe the structure and function of different types of muscles. This must include cardiac, smooth, and skeletal.
- ◆ name and identify positions of main muscle groups in the upper and lower limbs and trunk with at least 70% accuracy, in each of these 3 body areas.
- ◆ explain the actions and functions of all the muscles identified above.
- ◆ describe the changes in muscle function in response to commonly encountered injury and disease of bone and joints.

This Outcome must be assessed under closed-book, supervised conditions.

Assessment Guidelines

This assessment could be combined with Outcomes 1, 3 and 4 or as part of a single assessment for the Unit.

The single assessment could consist of short answer questions, combined with a twenty minute practical examination.

Outcome 3

Explain the effect of injury and disease on the main components of the nervous system

Knowledge and/or Skills

- ◆ Structure and function of the main components of the nervous system. The main components should include:
 - Nerve cells and nerve conduction
 - Brain stem/basal ganglia/cerebellum/medulla/autonomic nervous system
 - Cerebral hemispheres, cortical localisation
 - Ventricles, Cerebral Spinal fluid (CSF), meninges

Higher National Unit specification: statement of standards (cont)

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

- Blood supply to the brain
- Spinal Cord, spinal nerves, dermatomes
- Motor and sensory control
- ◆ Injury and disease of the central and peripheral nervous systems

Evidence Requirements

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

- ◆ name and identify the component parts of the central and peripheral nervous systems with at least 70% accuracy
- ◆ explain the structure and function of the main components of the nervous system
Evidence for the above Knowledge and/or Skills will be provided on a sample basis and be presented in response to specific questions. Each candidate will need to demonstrate that they can answer correctly questions based on a sample of the knowledge and/or skills shown above. In any assessment of this Outcome, five out of seven main components should be sampled. In order to ensure candidates will not be able to foresee the items on which they will be questioned a different sample is to be used each time the Outcome is assessed. Candidates must provide a satisfactory response to all five items
- ◆ describe the changes to the nervous system in response to commonly encountered injury and disease of central and peripheral nervous systems

This Outcome must be assessed under closed-book, supervised conditions.

Assessment Guidelines

This assessment could be combined with Outcomes 1, 2 and 4 or as part of a single assessment for the Unit.

The single assessment could consist of short answer questions, combined with a twenty minute practical examination.

Outcome 4

Identify the main components of the cardio-respiratory system within the body and describe how they work in relation to injuries and disease.

Knowledge and/or Skills

- ◆ Structure and function of the heart and circulatory system
- ◆ Structure and function of the lungs and respiratory system
- ◆ Function of the cardio-respiratory system
- ◆ Injuries and disease of the cardio-respiratory system

Higher National Unit specification: statement of standards (cont)

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

Evidence Requirements

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

- ◆ name and identify the structure and function of the heart, lungs and cardio-respiratory system within the human body with at least 70% accuracy
- ◆ describe the function of the main components of the cardio-respiratory system
- ◆ describe the changes in the cardio-respiratory system in response to commonly encountered injuries and disease

This Outcome must be assessed under closed-book, supervised conditions.

Assessment Guidelines

This assessment could be combined with Outcomes 1, 2 and 3 or as part of a single assessment for the Unit.

The single assessment could consist of short answer questions, combined with a twenty minute practical examination.

Administrative Information

Unit code: F2GN 34

Unit title: Applied Anatomy and Physiology for
Physiotherapy Support Workers

Superclass category: RH

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Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

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 an essential component for the study of disorders of human movement. Most of this Unit deals with the human anatomy and physiology of the production of human movement. This Unit should provide candidates with a basic understanding of human movement and an understanding that injury and disease processes could influence more than one system at any one time.

Anatomy and physiology respectively deal with the bodily structure; and with the ways that various systems of the body work to produce the activities of living. The body is normally in a state of balance and the study of physiology assists with the understanding of how the balance is maintained.

The rationale underpinning this Unit is that Physiotherapy Support Workers should have good knowledge of the human body. Candidates must know which are upper limb bones, as opposed to the bones of the lower limb, or trunk. In Outcome 1, the structure and function of bones and joints should be described including long bones, pelvic and shoulder girdles, skull, vertebrae, tarsal, carpal, metatarsal, metacarpal and phalanges — small tarsal/carpal bones are not necessary.

Outcome 3 deals with the functional anatomy of the human nervous system and provides candidates with an understanding of the structure of the nervous system; basic concepts of sensory and motor pathways; and relevant peripheral nerves, eg the cerebellum controls co-ordination of movement, is sited at the back of the brain, has several lobes and has pathways that link it to the motor centres to provide feedback during movement. Damage to the cerebellum leads to inco-ordination, ataxia, altered gait and balance. Both structure and function and injury/disease for each should be described. Certain injuries are more common eg diffuse head injury, peripheral nerve injury, spinal cord injury; most of the others will be diseases.

Outcome 4 should include the structure of the heart including chambers, valves and main blood vessels into and out of the heart, as well as the vascular supply to the heart muscle, lungs — main bronchi and alveoli, lobes, arterial and venous systems, muscle pump and gaseous exchange. Commonly encountered lung diseases, include chronic obstructive pulmonary disease (COPD), asthma, bronchiectasis, lung cancer, cardiac disease including coronary heart disease, cardiac failure. The assessment should include the description of disease process and effects on function and progress of the diseases.

Each Outcome of the Unit is mutually supportive of the other and candidates will need an understanding of each in order to meet all the Unit Outcomes.

During the delivery of this Unit ongoing reference may be made to candidates' workplace experiences and it will be useful to draw on the group's knowledge of a variety of clinical settings.

Higher National Unit specification: support notes (cont)

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

Function of nervous system and changes that occur with different pathologies could include stroke, MS, Parkinson's disease, dementia, peripheral nerve damage, head injury, spinal cord disease and injury, etc.

References and useful resources:

Moffat D and Mottram R (1987) 2nd Ed Anatomy and Physiology for Physiotherapists, Blackwell Scientific Publications Oxford

Jones K and Barker K (1996) Human Movement Explained Butterworth-Heinemann Ltd Oxford

Guidance on the delivery and assessment of this Unit

Assessment instruments should take into account the need for candidates to demonstrate their knowledge of and ability to identify key anatomical components of the structures involved in movement. Candidates also need to be able to demonstrate their understanding of the related functions of each key anatomical structure.

This Unit has been designed to be delivered within the HNC Allied Health Professions: Physiotherapy Support framework.

It is recommended that candidates have completed the HN Unit DR3P 34 *Physiology for Health Care Professions* prior to undertaking this Unit.

Opportunities for developing Core Skills

There are opportunities to develop the component 'Written Communication' of the Core Skill of Communication, and the component 'Critical Thinking' of the Core Skill of Problem Solving at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

The general skills of the Written Communication are component 'read, understand and evaluate written communication' for its reading element and 'produce well-structured written communication' for its writing element. Specific reading skills required by candidates at SCQF level 5 include identifying and summarising significant information, ideas and supporting details in a written communication, and evaluation of the effectiveness of the communication in meeting its purpose; and specific writing skills include presenting all essential ideas, information and supporting detail in a logical and effective order, and use of a structure which takes account of purpose and audience, emphasising the main points.

For assessment of all four Outcomes, candidates may be asked to complete extended response questions on various topics. The skills outlined above may be utilised to produce responses covering such topics as the structure and function of different types of muscles.

There may also be opportunities to develop the component 'Critical Thinking' of the Core Skill of Problem Solving, as in each Outcome, candidates are required to explain complex topics such as the changes to the nervous system in response to commonly encountered injury and disease.

Higher National Unit specification: support notes

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

Open learning

Although this Unit is suitable for open and distance learning, it would require a considerable degree of planning by the centre to ensure the authenticity of candidate evidence. Arrangements would have to be made to ensure that closed-book assessment is delivered under supervised conditions.

Candidates with disabilities and/or additional support needs

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. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

Unit title: Applied Anatomy and Physiology for Physiotherapy Support Workers

This Unit will give you an overview of the structure, function, disease or injury of the main systems of the human body. It is designed to be relevant to your work as a physiotherapy support worker. It will give you a broad understanding of the component parts of the human body in terms of how they are made up, how they work, and how they relate to each other. You will be encouraged to use this knowledge to improve your understanding of the management of individual clients, and should then be able to describe the nature of their conditions using the knowledge you have acquired within the Unit.

On completion of the Unit you will be able to:

- 1 Identify the main components of the skeletal system and describe how they work in relation to injuries and disease.
- 2 Identify different types of muscle, and describe how muscle is constructed and how it works in relation to commonly encountered injuries and disease.
- 3 Explain the effect of injury and disease on the main components of the nervous system.
- 4 Identify the main components of the cardio-respiratory system within the body and describe how they work in relation to injuries and disease.

Each Outcome may be assessed separately or in combination with other Outcomes, and your assessment may be by short answer questions combined with a twenty minute practical examination. This Unit is assessed under closed-book, supervised conditions.

Over the course of the Unit, there may be opportunities for you to develop Core Skills in the areas of Communication and Problem Solving.