Higher National Unit specification: general information

Unit title: Anatomy and Physiology for Support Workers

Unit code: H1SS 34

Superclass: RH

Publication date: July 2012

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This Unit is intended to provide the candidate with an introduction to the anatomy and physiology of the human body and allow them to apply this to practice within a care support role.

This Unit is suitable for Group Awards for care support workers, eg Professional Development Award (PDA) in Occupational Therapy Support.

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

1 Explain the structure and function of selected body systems.
2 Explain homeostasis and its importance in maintaining health.
3 Identify and describe one disorder for each of four selected body systems.

Recommended prior knowledge and skills

Candidates should have good communication skills, both written and oral. These can be evidenced either by the achievement of nationally recognised qualifications for example Higher English or a qualification equivalent to SCQF level 6 or by the completion of a pre-course interview part of which could take the form of a written assignment. The skills to undertake this Unit could also be demonstrated through an employer's reference or the process of application and interview. In addition to this candidates should typically be working as a support worker within a care setting and have access to supervision from a registered practitioner.

General information (cont)

Credit points and level

1 Higher National Unit credit at SCQF level 7: (8 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.*

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

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 in the framework for Group Awards for support workers, the PDA Occupational Therapy Support (level 8). It is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes. It is recommended that it should be delivered early in the course.

Higher National Unit specification: statement of standards

Unit title: Anatomy and Physiology for 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

Explain the structure and function of selected body systems.

Knowledge and/or Skills

- Structure and function of the cardiovascular system
- Structure and function of the respiratory system
- Structure and function of the nervous system
- Structure and function of the musculo-skeletal system
- Structure and function of the digestive system
- Structure and function of the integumentary system
- Structure and function of the urinary system
- Structure and function of the reproductive system
- Structure and function of the endocrine system

Evidence Requirements

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

- identify the main organs of four of the above systems.
- describe the structure and explain the functions of four of the above systems.

Higher National Unit specification: statement of standards (cont)

Unit title: Anatomy and Physiology for Support Workers

Outcome 2

Explain homeostasis and its importance in maintaining health.

Knowledge and/or Skills

- The principles of homeostasis and negative feedback
- The role of body systems in maintaining homeostasis and health

Evidence Requirements

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

- discuss the principles of homeostasis and negative feedback mechanisms.
- explain the importance of homeostasis and the role of body systems in maintaining health.

Outcome 3

Identify and describe one disorder for each of four selected body systems.

Knowledge and/or Skills

- Predisposing factors (eg age, gender, heredity, lifestyle, physical and chemical damage and pre-existing conditions)
- Physiological terminology of disorders
- Immediate effects of disorders on individual
- Long term effects of disorders on individual

Evidence Requirements

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

- identify possible predisposing factors for one disorder within each body system.
- using physiological terminology, identify and describe one disorder from each body system highlighting immediate and long term effects on individuals.

Higher National Unit specification: support notes

Unit title: Anatomy and Physiology for 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 40 hours.

Guidance on the content and context for this Unit

This Unit may be used within Group Awards relevant to care support work such as the PDA Occupational Therapy Support (level 8). The Unit is designed to be delivered in 40 hours. It is primarily intended to help candidates working in a care setting to contribute to the care of people by providing the appropriate underpinning knowledge essential for support work.

It is essential that candidates are aware that they need to achieve all Evidence Requirements for the award.

Outcomes could be taught and assessed in an integrated manner to ensure that candidates are given the opportunity to demonstrate a holistic approach to care and depth of understanding of the human body.

Tutors should be aware that this is a single Unit and the design of the award allows for only 40 hours. This is challenging for both students and tutors. Every effort should be made to use a variety of teaching methods to stimulate and promote independent learning in addition to taught hours.

Outcome 1

The aim of this Outcome is to enable candidates to develop knowledge of a minimum of four body systems. Systems considered should relate to the Group Award within which the Unit is taught and/or to the needs of the candidate support worker role.

The candidate is expected to have a knowledge and understanding of the organs, structures and functions of each system but will be assessed on four systems.

Cardiovascular system: structure of the cardiovascular system, to include, components of blood (red blood cells, types of white blood cells, platelets and plasma), the heart, to include structure of cardiac muscle, chambers, septum, tendons, valves and conduction system. Blood Vessels, to include structure of arteries, veins and capillaries.

Respiratory system: structure of the respiratory system, to include nasal cavity, pharynx, larynx, trachea, bronchi, bronchioles and alveoli. Diaphragm and intercostal muscles.

Nervous system: structure of nervous system, to include the main structural divisions of the nervous system, types of neurones, structure of neurones, structure of synapse, the main regions of the brain, regions of spinal cord, spinal and cranial nerves.

Higher National Unit specification: support notes

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Musculo-skeletal System: structure of the skeletal system, to include the structure of compact and cancellous bone tissue, names of main bones of skeleton, structure of synovial joints, structure of skeletal muscle including structure of sarcomere.

Digestive system: structure of the digestive system to include buccal cavity, oesophagus, stomach, small intestine, large intestine and accessory organs; salivary glands, liver and pancreas.

Integumentary system: structure of the skin and appendages.

Urinary System: structure of the urinary system to include ureters, bladder, urethra and kidney including structure of nephron.

Reproductive System: structure of the reproductive system to include both male and female structures.

Endocrine System: structure of the endocrine system to include pituitary, thyroid, parathyroid, thymus, adrenals, pancreas, ovaries, testes

Evidence Requirements:

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

- identify the major structures of four of the major body systems from diagrams and anatomical descriptions.
- describe the structure of selected organs from four of the major body systems.

The assessment could be extended or restricted response questions and should be completed under closed-book supervised conditions. This could be integrated with Outcome 2 assessment and could be in the form of, eg a case study.

Higher National Unit specification: support notes (cont)

Unit title: Anatomy and Physiology for Support Workers

Outcome 2

Homeostasis — maintain a state of balance within the human body, eg body temperature, composition of body fluids, heart rate, respiration rate and blood pressure must be kept within set limits to maintain good health.

The importance of the negative feedback mechanisms monitoring the body's internal conditions and emphasis on the main regulating systems, eg nervous and endocrine.

This Outcome develops candidates' knowledge and understanding of the physiology related to homeostasis. This Outcome covers the following:

- the principles of homeostasis and negative feedback control.
- the role of the cardiovascular system in homeostasis to include the conduction system of the heart, control of heart rate, control of blood pressure and immune response.
- the role of the respiratory system in homeostasis to include the physiology of the gas exchange, breathing mechanism and the control of breathing.
- the role of the nervous system in homeostasis to include the transmission across the synapse and neuromuscular junction. The function of the autonomic nervous system in maintaining homeostasis.
- the role of the musculo-skeletal system in maintaining homeostasis to include its role in movement, protection of underlying organs, formation of blood cells and storage of Calcium.
- the role of the digestive system in maintaining homeostasis to include digestion, absorption of nutrients, the role of the pancreas in digestion, the role of the liver in the metabolism of nutrients.
- the role of the integumentary system in maintaining homeostasis to include protection, temperature control and its role as a sensory organ.
- the role of the urinary system in maintaining homeostasis to include urine formation, micturition, control of urine formation and control of blood pH.
- the role of the reproductive system in maintaining homeostasis to include spermatogenesis, oogenesis, control of the menstrual cycle.
- the role of the endocrine system in maintaining homeostasis to include the principle functions of the major endocrine hormones and mechanisms of steroid and non-steroid hormone action.

Evidence Requirements

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

Explain the role of four of the major body systems in maintaining homeostasis.

The assessment could be extended or restricted response questions and should be completed under closed-book supervised conditions. This could be integrated with Outcome 1 assessment and could be in the form of, eg a case study.

Higher National Unit specification: support notes (cont)

Unit title: Anatomy and Physiology for Support Workers

Outcome 3

The candidate has studied the healthy human body throughout Outcomes 1 and 2.

This Outcome requires the candidate to further investigate and understand disorders and consider predisposing factors such as age, sex, heredity, lifestyle, mental health, physical and chemical damage, eg tissue degeneration, general wear and tear.

Predisposing causes:

- Age, tissue degeneration, general wear and tear. Incidence of disease, eg whooping cough and osteoporosis.
- Sex, eg some diseases are more likely to be gender based, eg early heart disease in men and diabetes in women. Other diseases can be highlighted which are changing previously identified tends, eg lung cancers increasing in women.
- Heredity, eg inherited diseases, certain cancers and many allergies.
- Lifestyle, good diet, physical activity, smoking, alcohol and drug usage. Hygiene and poor living conditions.
- Physical and chemical damage, eg occupational diseases, associated with professions such as mining, possible damage to respiratory and cardiac diseases
- Accidents causing burns, fractures and crushing injuries.
- Air pollution and environmental causes including pesticides, etc.
- Pre-existing illnesses, eg diabetes, hypertension.

The candidate should provide evidence of one disorder for each of the four body systems focussing on the functional difficulties, immediate and long term effects caused by the disorders. It enables candidates to develop a knowledge and understanding of abnormal body functions relating to the four selected body systems.

Correct physiological terminology is used to describe one named disorder for each of the four body systems, eg cardiovascular, respiratory, nervous and musculo-skeletal (ie four disorders in total).

Descriptions of the immediate and long term effects of each disorder on an individual focus on the functional difficulties caused by these conditions.

This Outcome could involve a literature search including patient leaflets with a detailed bibliography.

Below are examples of medical conditions which could be studied. Depending on the role and workplace some may be more relevant than others, a balance of the disorders studied should be considered.

Cardiovascular system: leukaemia, coronary artery disease, myocardial infarction, arrhythmias, varicose veins, rheumatic heart disease, valve disease, hypertension, allergies, HIV/Aids

Respiratory system: bronchial asthma, bronchitis, emphysema, tuberculosis, pulmonary embolism, pulmonary oedema.

Nervous system: TIA, CVA, epilepsy, cerebral palsy, Parkinson's disease, multiple sclerosis, aphasia, agraphia, apraxia, ataxia, sciatica.

Musculo-skeletal system: muscular dystrophy, myasthenia gravis, osteoporosis, fractures, rheumatoid arthritis, osteoarthritis.

Digestive system: pancreatitis, celiac disease, cirrohsis, chron's disease

Integumentary system: psoriasis, eczema**,** dermatitis, impetigo, verrucas

Urinary system: Nephritis, urinary tract infection, bladder infection, kidney stones, urinary incontinence

Reproductive system: endometriosis, ectopic pregnancy, mastitis, prostate cancer, male infertility.

Endocrine system: hypo- hyperthyroidism, diabetes, pituitary dwarfism.

Guidance on the delivery of this Unit

This Unit is likely to form part of a Group Award, which is primarily designed to provide candidates with knowledge and skills to work with people in need of care. Anatomy and Physiology are often viewed as a very factual subject and many candidates will develop their awareness through rote learning.

This has influenced the assessment format, allowing more options, therefore allowing the candidate more opportunity to apply their knowledge.

Guidance on the assessment of this Unit

Candidates should demonstrate that they can identify possible predisposing factors for one disorder within each body system.

They should evidence use of physiological terminology, identify and describe one disorder from each body system highlighting immediate and long term effects on individuals.

Higher National Unit specification: support notes (cont)

Unit title: Anatomy and Physiology for Support Workers

Assessment Guidelines

Outcomes 1 and 2

Outcomes 1 and 2 may be assessed using restricted or extended response questions under supervised, closed-book conditions.

The assessments for Outcomes 1 and 2 could be integrated.

The pass mark for each assessment is recommended at 60%.

It is suggested that there are four separate assessment occasions, one for each of the selected body systems.

Outcome 3

Outcome 3 is more focused to enable the candidate to move from rote learning to demonstrate application of knowledge gained in Outcomes 1 and 2. Outcome 3 could be assessed using a folio of evidence, to include a minimum of four disorders (one for each of the four body systems). It is recommended that the folio is word processed, and will include a bibliography. A guide of 500 words for each disorder is suggested.

The following texts are useful as a resource:

A good Medical Dictionary

Smart Ted, *Human Body,* Dorling Kindersley Ltd, 1st Edition 2001, ISBN 0-7513-3514-2 This is a very good basic text with excellent diagrams.

Thibodeau Gary A, Patton Kevin T, *The Human Body in Health and Disease*, Mosby, 3rd Edition 2002, ISBN 0-323-01338-4

Another book which may help is:
Waugh, Grant, Ross and Wilson*, Anatomy and Physiology in Health and Illness*, Churchill Livingstone, 10th Edition 2002. ISBN 0-443-10101-9

Tortora G J, Gabrowski SR, *Principles of Anatomy and Physiology*, John Wiley and Sons Inc, 11th Edition 2003, ISBN 0-471-224-723.

Several websites may be useful resources including:

http://www.mhhe.com/biosci/ap/saladin2e/student_index.mhtml

http://www.bhf.org.uk/

Higher National Unit specification: support notes (cont)

Unit title: Anatomy and Physiology for Support Workers

Online and Distance Learning

This Unit may be developed for delivery by Open Learning. However, it would require planning by the centre to ensure the sufficiency and authenticity of candidate evidence.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Communication* at SCQF level 5 and *Numeracy* at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Communication: will be evidenced via the candidates' work with individuals and groups.

Numeracy: will be evidenced through the candidates' ability to carry out numerical calculations with regard to homeostasis.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**

History of changes to Unit

Version	Description of change	Date

General information for candidates

Unit title: Anatomy and Physiology for Support Workers

This Unit will enable you to demonstrate a knowledge and understanding of the normal functioning of the human body and its systems. Anatomy and Physiology deal with the ways that various systems of the body work to produce function. It will provide you with the knowledge and understanding of the normal and abnormal functioning of four selected body systems and allow you to apply this knowledge to disorders that you may come across within your role as a support worker.

There are three Outcomes. On completion of these you should be able to:

Outcome 1: Explain the structure and function of selected body systems.

This Outcome enables you to develop a sound understanding of body systems. It will cover the structures and functions of a number of body systems (cardiovascular, respiratory, musculo-skeletal, nervous, integumentary, digestive, urinary, reproductive and endocrine). You will be assessed on four of these systems.

Outcome 2: Explain homeostasis and its importance in maintaining health.

This Outcome will help you develop your knowledge and understanding of homeostasis and the role of this in maintaining a healthy body.

You will be introduced to new concepts and language associated with the body. It is essential for you to grasp the knowledge and understanding at Outcome 1 to progress onto the other Outcomes.

Outcome 3: Identify and describe one disorder for each of four selected body systems.

This gives you the opportunity to study the body in terms of disorders and to further describe particular disorders in detail. In particular it is important in the understanding of immediate and long term effects on function.

This is a challenging Unit but one which will provide essential underpinning knowledge for candidates hoping to progress onto degree level study or for use in their workplace/life.

You may be assessed through a number of instruments, extended or restricted response questions and folios of evidence may be used. There could be three instruments of assessment addressing Outcomes 1, 2 and 3. Assessment 1 and 2 could also be combined.

Assessment for Outcome 1 may comprise four of the selected body systems and could be through extended or restricted response questions.

Assessment for Outcome 2 may be through restricted or extended response questions.

Assessment for Outcomes 1 and 2 will be carried out under supervised closed-book conditions.

Assessment for Outcome 3 may be through the production of a folio of work relating disorders affecting selected body systems. A guide of 500 words per disorder is suggested.

General information for candidates (cont)

Unit title: Anatomy and Physiology for Support Workers

Core Skills

There is no automatic certification of Core Skills or Core Skill components in this Unit.

The following texts are useful as a resource:

A good Medical Dictionary, a must buy.

Smart Ted, *Human Body,* Dorling Kindersley Ltd, 1st Edition 2001, ISBN 0-7513-3514-2 This is a very good basic text with excellent diagrams. Try and buy through Amazon as out of print.

Thibodeau Gary A, Patton Kevin T, *The Human Body in Health and Disease*, Mosby, 3rd Edition 2002, ISBN 0-323-01338-4
This is a more detailed text, try to borrow and use as a reference.

Another book which may help you with your study is,
Waugh, Grant, Ross and Wilson*, Anatomy and Physiology in Health and Illness*, Churchill Livingstone, 10th Edition 2002. ISBN 0-443-10101-9

You don't need to buy this textbook but you may be able to borrow it from your workplace library.

Tortora G J, Gabrowski SR, *Principles of Anatomy and Physiology*, John Wiley and Sons Inc, 11th Edition 2003, ISBN 0-471-224-723.

This book is very technical, used mainly for Medical and Nursing Degree courses. Can be used as a reference for more detailed explanations.

At the end of this textbook, G1–G42 is a very useful **glossary** which you could use if you come across any terms you are not sure of.

Several websites may be useful resources including:

http://www.mhhe.com/biosci/ap/saladin2e/student_index.mhtml

http://www.bhf.org.uk/