

Higher National Unit Specification

General information for centres

Unit title: Nutrition for Sports Therapists

Unit code: DP67 34

Unit purpose: The Unit is designed to provide the candidate with a good working knowledge of human nutrition and how it can impact on sports performances and training.

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

- 1 Describe the structure and function of the digestive system.
- 2 Describe the function of the components of a balanced diet.
- 3 Describe the importance of adequate hydration in a sporting environment.
- 4 Describe the approach to nutrition during sports performance.

Credit points and level: 1 HN 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.*

Recommended prior knowledge and skills: It is recommended that candidates have some biological knowledge from *Higher Grade Biology* or *Human Biology* at SCQF level 6 or equivalent. Access to this Unit will be at the discretion of the centre.

Core Skills: There may be opportunities to gather evidence towards Core Skills 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 is an optional Unit in the framework for the HND Sports Therapy Group Award.

Assessment: Three different instruments of assessments will be used to assess this Unit.

Outcomes 1 and 2 will be closed-book assessments on a sample basis. Outcome 3 will be open-book with extended response and Outcome 4 will be assessed by a case study.

Higher National Unit specification: statement of standards

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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

Describe the structure and function of the digestive system

Knowledge and/or skills

- ◆ Structure of the digestive system
- ◆ Function of components of the digestive system
- ◆ The chemical and physical breakdown of food

Evidence Requirements

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

- ◆ identify the structure of the digestive system
- ◆ describe the function of important components of the digestive system to include, teeth, salivary glands, stomach, liver, pancreas, gall-bladder, duodenum, ileum and colon
- ◆ describe the complete chemical breakdown of starch to include sites of digestion and enzymes involved
- ◆ describe the chemical breakdown of protein to include sites of digestion and enzymes involved
- ◆ describe the chemical breakdown of fats to include sites of digestion and enzymes involved
- ◆ identify the end products of digestion

Candidates will be assessed using a closed-book, restricted response question paper set out in sections, with a marking scheme indicating a 70% pass rate for each section undertaken. Questions can be sampled from the full range of knowledge and skills.

Assessment guidelines

Candidates will have no prior knowledge of the areas to be assessed and a different sample will be used in each assessment instrument.

Higher National Unit specification: statement of standards (cont)

Unit title: Nutrition for Sports Therapists

Outcome 2

Describe the function of the components of a balanced diet

Knowledge and/or skills

- ◆ The nutritional components of a balanced diet
- ◆ The role of carbohydrates, proteins and fats in the diet
- ◆ The importance of adequate intake of vitamins, minerals and fibre in the diet
- ◆ The fate of excess nutrients

Evidence Requirements

Candidates will need to provide evidence, written or oral, to demonstrate their knowledge and/or skills by showing that they can:

- ◆ identify the components of a balanced diet
- ◆ identify the factors which affect the energy needs of an individual
- ◆ identify the percentage energy contribution of the three major food groups in a balanced diet for sport
- ◆ explain the role of carbohydrates as the main energy source
- ◆ describe the role of proteins in the growth and repair of tissues
- ◆ describe the role of proteins as a secondary energy source
- ◆ explain the role of fats in the provision of energy and vitamins
- ◆ describe the role of diet in the preparation for and recovery from exercise
- ◆ explain preferred energy substrates during exercise of different intensities
- ◆ describe the effect of inadequate intake of iron, calcium and vitamin D
- ◆ describe the role of fibre in the diet
- ◆ describe the fate of excess carbohydrate, proteins, fats and vitamins, both water and fat soluble

Candidates will be assessed using a closed-book restricted response question paper set out in sections, with a marking scheme indicating a 70% pass rate for each section undertaken. Questions can be sampled from the full range of knowledge and skills.

Assessment guidelines

Candidates will have no prior knowledge of the areas to be assessed and a different sample will be used in each assessment instrument.

Outcome 3

Describe the importance of adequate hydration in a sporting environment

Knowledge and/or skills

- ◆ The functions of water in the body
- ◆ The structure of the urinary system
- ◆ Maintaining a water balance
- ◆ Methods of re hydration/dehydration
- ◆ Hormonal regulation of water by the body

Higher National Unit specification: statement of standards (cont)

Unit title: Nutrition for Sports Therapists

Evidence Requirements

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

- ◆ describe the different functions of water in the body to include its use as a solvent, temperature regulator and as intracellular fluid
- ◆ describe the different ways that water can be lost by the body to include urine, sweat, and breathing (talking)
- ◆ identify the main parts of the urinary system to include kidneys, bladder, renal artery, renal vein, urethra and sphincter muscles
- ◆ explain the importance of adequate hydration before, during and after performance, to include effect of blood thickening on the distribution of nutrients
- ◆ describe the effect of consumption of hypertonic, isotonic and hypotonic drinks on the water balance of the cells
- ◆ compare the importance of using a re hydrating fluid rather than an energy drink
- ◆ describe how the water content of the blood affects the production of anti diuretic hormone (ADH)
- ◆ describe the effect of ADH on the kidney tubules

Candidates will be assessed using an open-book extended response question paper set out in sections, with a marking scheme indicating a 70% pass mark for each section undertaken.

Assessment guidelines

Candidates will be assessed on their knowledge by open-book, extended response questions under controlled conditions. Appropriate research will be required prior to submission. Candidates would be allowed to bring in limited relevant resources.

Outcome 4

Describe the approach to nutrition during sports performance

Knowledge and/or skills

- ◆ Nutritional supplements
- ◆ Replenishing energy stores to maximise performances
- ◆ Maintaining an energy balance
- ◆ Changes required in diet during prolonged inactivity

Higher National Unit specification: statement of standards (cont)

Unit title: Nutrition for Sports Therapists

Evidence Requirements

Candidates will need to provide written/oral evidence to demonstrate their knowledge and/or skills by showing that they can:

- ◆ explain what is meant by a nutritional supplement
- ◆ explain why some are not beneficial to the sports performer
- ◆ explain the importance of timing of glycogen replenishment after exercise
- ◆ suggest suitable foods for glycogen replenishment
- ◆ explain how energy substrates are stored in the body
- ◆ explain what is meant by an energy balance
- ◆ explain the dietary changes you would make to sports performers affected by sports injuries
- ◆ explain the dietary changes you would make to redress energy balance during periods of prolonged inactivity

Candidates will be assessed by the production of nutritional guidelines for a minimum two sports performers with different nutritional requirements.

The assessment will take the form of an open-book report submitted in scientific format with clear referencing. Time should be allowed for research purposes.

Assessment guidelines

A selection of case studies should be available for the candidate to choose from. In producing these guidelines, candidates must show that they have taken account of the individual needs of the client with regards to:

- ◆ nutritional supplements
- ◆ food groups, as included in a balanced diet
- ◆ energy values
- ◆ timing of replenishment

The guidelines must be in accordance with sports nutritional recommendations and any other relevant advice. In each case recommended foods must be justified. Also any nutrients that would not be recommended should be identified. The guidelines should be a mixture of “should eat” and “should not eat”.

Administrative Information

Unit code:	DP67 34
Unit title:	Nutrition for Sports Therapists
Superclass category:	RH
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Higher National Unit specification: support notes

Unit title: Nutrition for Sports Therapists

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 is intended to give candidates working as a sports therapist the knowledge required to give dietary advice to help maximise performances and prevent and recover from injuries in line with current recommendations.

Outcome 1

- ◆ Major organs of the digestive system:
 - (Primary): mouth; oesophagus; stomach; duodenum; jejunum; ileum; colon; rectum
 - (Secondary): salivary glands; liver; gall-bladder; pancreas
- ◆ Functions: candidates should be able to discuss the functions of the major organs within the digestive system in relation to the digestion and absorption of food. The major organs to include, the mouth, stomach, liver, pancreas, gall-bladder, duodenum, ileum, colon.
- ◆ Digestion of food: physical breakdown (mechanical breakdown in mouth, stomach and small intestine); chemical breakdown (enzyme action in mouth, stomach and small intestine).
- ◆ Absorption of food: structure of small intestinal lining (folds, villi, microvilli, capillaries, lacteal).

Outcome 2

- ◆ Nutrients: carbohydrates (simple and complex); fats (saturated and unsaturated); proteins; vitamins (fat and water soluble); minerals; fibre (soluble and insoluble); water.
- ◆ Basal metabolic rate; individual difference, age, gender, lifestyle, physical activity.
- ◆ Structures of energy yielding nutrients: carbohydrates (monosaccharides, disaccharides, polysaccharides); fats (triglycerides); proteins (amino acid chains, polypeptides).
- ◆ Roles of nutrients: candidates should have knowledge of the primary roles of nutrients within the body, eg fuel, growth etc.
- ◆ Energy use: at rest; during activity; factors affecting use during activity (intensity of activity, duration of activity, oxygen availability, muscle fibres used, pre-activity nutrition status).
- ◆ Food sources: candidates should be able to identify the main nutrients in the following food groups:
 - breads and cereals
 - fruit and vegetables
 - milk and dairy
 - fats and sugars
 - meat and fish

Remember that most foods contain multiple nutrients and candidates should be able to select the best source for different sports performances.

Higher National Unit specification: support notes (cont)

Unit title: Nutrition for Sports Therapists

Outcome 3

- ◆ Water uses as solvent, temperature regulator, intracellular fluids.
- ◆ Water loss should include urine, sweat, and breathing (talking).
- ◆ Effect of consumption of hypertonic, isotonic and hypotonic drinks on the water balance of body cells should include some understanding of osmosis on animal cells such as red blood cells.
- ◆ Suitable methods of restoring water balance should include the importance of using a rehydrating fluid rather than an energy drink.
- ◆ Structure of the urinary system to include kidney, ureter, bladder, urethra, sphincter muscles.
- ◆ Hormonal regulation of the body must include the effect of ADH on kidney tubules.

Outcome 4

- ◆ Nutritional supplements should include vitamins, minerals, and creatine.
- ◆ Glycogen replenishment should include the use of complex carbohydrates such as those found in pasta, couscous, rice, high GI and low GI foods.
- ◆ Energy storage: glycogen (muscle and liver), adipose tissue.
- ◆ Energy balance: energy balance equation (energy in — energy out); energy imbalance.
- ◆ Proteins, carbohydrates, fats, vitamins, minerals, fibre and water.

Guidance on the delivery and assessment of this Unit

This is an optional Unit delivered as part of the HND Sports Therapy Group Award. It could also be delivered as a 'stand alone' Unit.

Open learning

This Unit would lend itself well to an open learning approach, but only with regular tutor support. For further information on Open and Distance Learning please refer to the SQA Publication *Assessment and Quality Assurance for Open and Distance Learning* (A1030).

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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. For information on these, please refer to the SQA document *Guidance Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on the SQA website www.sqa.org.uk.

General information for candidates

Unit title: Nutrition for Sports Therapists

This Unit is designed to deliver basic knowledge and skills to enable you to provide sound advice on nutrition to sports participants.

Delivery of this Unit will be in the form of lectures where you will receive course notes and handouts, engage in group discussions and work through sports specific practical exemplars to consolidate your learning.