Unit 26: Nutrition for Physical Performance

Delivery guidance

Approaching the unit

This unit explores the importance as well as potential impact of nutritional needs and hydration requirements needed to meet the demands of physical performance whilst reflecting on the debate on drug use in sport. Learners will have the opportunity to appreciate the demands of a selected sport and work with a performer whilst suggesting dietary recommendations for future performance, having assessed their needs during a formal assessment of their current nutritional intake.

The use of guest speakers can add value as personal experience can cement the theory taught through tutor presentations. Use the specification to guide guest speakers so that information learners need for assessment is covered and can be used.

Investigating the world of anti-doping in all sports can be educational and reflective as class debates can take place to discuss the rules and regulations and those who break them for their own personal gain or in relation to the psychological impact of age or injury. How has science supported those who choose to take drugs whilst supporting organisations look to deter and prevent sport being tarnished by controversy. Articles from professional sports performers on their view can enhance the knowledge and understanding of the group to make valid recommendations within their work whilst gaining an educational view of drugs in sport.

You may wish to contact a local club to secure interviews with their performers on diet and hydration intake. Learners will benefit from working with those whose future depends on their diet and hydration levels meeting the demands of their sport so that future contracts can be secured. Players/athletes starting off on the path of sporting success will also add a positive reflection to learner understanding of diet, hydration and the impact on performance. Differentiate the opportunity by pairing up learners to interview the performer with confidence, having prepared appropriate questions so that all the essential information is gathered before the assessment phase begins.

Learners will benefit from 'command verb' practice as the assessment has various action verbs to secure grading at each boundary.

Delivering the learning aims

Learning aim A focuses the learner in appreciating the macro and micronutrients used to build a balanced diet whilst developing an understanding of the terminology used in the nutritional sector. Using sporting role models, learners will appreciate the role of food in the preparation for performance. Hydration is a vital element for a successful performance therefore learners will develop key knowledge and understanding of the appropriate fluid intake essential to a performer's diet. Guest speakers can be invited into the session to offer a personal experience of their fluid intake and examples of dehydration in their performance. Sport drinks companies offer support for educational organisations with resources or workshops being made available for assessors to use to enhance the learning experience, therefore a guest speaker from Lucozade could be arranged for additional information for learners. Appreciating the components of a balanced diet, whilst examining the influences on health, is critical in gaining further understanding of the impact of obesity, cancers and heart disease not only in everyday life but for sporting success too.

Using interactive methods to understand the digestive system enables learners to gain an insight into the journey of food through the body, and how digestive juices and enzymes extract the nutrients ready for the body to absorb through the villi. Developing knowledge in this area will allow appreciation of diet for sports performers and the impact of digestion and absorption as well as excretion.

Learning aim B explores how important the sources of energy are to a performer's diet whilst researching how the value of energy is measured. Using sporting examples to reflect on the energy demands of selected sports is key to learners appreciating the importance of ensuring intakes matches the expenditure. Body composition is a consideration for performers and coaches when selecting playing positions or events. Learners are offered the opportunity to appreciate the term whilst using the equipment available to measure their peers BMI to gain further understanding.

Learning aim C, the topic of performance enhancing drugs has always been a topic of debate, as the rules are adapted for modern performances athletes have enhanced access to research and guidance to support their control of the use of drugs when achieving their sporting goals. Learners will use news reports and articles to investigate the performers who have flouted the rules whilst appreciating the World Anti-Doping Agency's drive to allow sport to be a natural performance by hard- working athletes.

Performance is a balance between talent, hard work and psychological impacts as well as nutritional requirements. with many athletes concerned about body weight and more importantly their body mass index (BMI). Learners will appreciate the context of the term BMI through tutor information whilst discovering the importance of BMI to performance in selected sports. A guide to measuring body mass index will be created whilst using equipment available at the centre to discover the statistics of their peers and other sports performers.

Appreciating basal metabolic rate (BMR) is crucial in developing a holistic view of an athlete's requirements as the intake of calories is often reflected on to gain an insight into the assessment needs of a performer. Many factors affect BMR with current news articles discussing the impact of age, gender as well as levels of physical activity. Learners will gain information from a tutor presentation whilst working in small groups to discuss the impact on selected athletes and sports.

Assessment model

Learning aim	Key content areas	Recommended assessment approach
A Examine concepts of nutrition, diet and digestion	**A1** Nutrition **A2** Hydration **A3** Diet **A4** Digestion	A detailed case study examining the energy nutrition, hydration, diet and digestion for athletes and their importance in relation to sports performance. A report that investigates legislation, guidance and procedures associated with anti-doping.
B Explore energy intake and expenditure in sports performance	**B1** Energy **B2** Energy balance	
C Investigate legislation, guidance and procedures associated with anti-doping	**C1** Performance enhancing substances and drugs **C2** Anti-doping legislation and guidance **C3** Testing protocols and methodology	
D Produce a diet and hydration plan to support a selected sport or physical activity	**D1** Activities **D2** Planning diets	A justified two-week diet and hydration plan for a selected performer undertaking a specific sport.

Assessment guidance

This unit is internally assessed. There is a maximum number of two summative assignments for this unit. Tutors should refer to the assessment guidance in the specification for specific detail, particularly in relation to the requirements for Pass, Merit and Distinction grades.

It is suggested that learning aims A, B and C are assessed through the first assignment brief. Learners will base their evidence on sports performers who would benefit from nutritional guidelines to enhance their performance. A case study would be produced as the evidence to demonstrate learner understanding of the nutritional requirements for success in a specified sport.

It is suggested that for learning aim D the learner will generate a two-week diet plan for a selected player once an assessment has taken place on their current nutritional choices, whilst hydration levels will also be taken into account.

Learning aims A, B and C

For learning aims A and B, learners should create a case study on a sports performer's nutritional and fluid intake. The case study should be split into six sections to cover the unit content outlined in the specification. Professional sports performer examples from a variety of sports can be included to enhance the case study, including sports science that has impacted on their nutritional choices. Pictures, diagrams and information can be used in the generation of evidence to demonstrate the understanding of the digestive system.

For learning aim C, learners should write a report that outlines the legal policy on drugs in sport, whilst making links to selected sports performers as examples in the report. References should be used to outline the legislation as well as guidance and procedures for players and coaching staff.

Information should be included from Global Dro on the accepted as well as the prohibited drugs in the selected sport. Player rights and responsibilities should be addressed with examples from sport to enhance the points. Learners should provide strategies that the sports performer can undertake to be fully informed of drug protocols, examples from current performers could be used to enhance learner evidence. Learners should complete the report by examining the testing protocols within the selected sport for players in training and competitions.

Learning aim D

Learners would benefit from interviewing a sports performer either from a local sports club, a semi-professional club or a professional club depending on contacts within the community. Initially learners should assess the player's current nutritional intake and hydration levels and choices, completing a questionnaire and food diary during the interview. Once the base line assessment has been carried out, learners should assess the data against recommended amounts before creating a revised two week plan to address the needs of the performer during their training and competitive performances. A justification of the new plan should be attached to the evidence and learners should offer reasons on why they have included certain foods and amounts as well as hydration ideas. The justification should include the impact on the performer's performance, if the new plan was adopted.

Getting started

This gives you a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Introduction

Introduce this unit by painting a picture of diet and sport, use video clips of player interviews discussing their intake of food. Stress the importance of diet as recommended by sport science and government sources. Debate the consequences, allow learners to reflect on their diet choices; how is their performance impacted?

Learning aim A: Examine concepts of nutrition, diet and digestion

- Learning aim A offers the opportunity for learners to appreciate the concepts of a balanced diet whilst appreciating the terms associated with nutritional guidelines. Hydration is a key factor in nutritional planning for sports performers so learners will appreciate fluid intake. Sports science and government sources offer essential information on nutrition therefore it is vital that learners appreciate the messages so that they can make informed choices. Finally, an appreciation of the structure and function of the digestive systems allows the learner to understand the journey of food though the body and the role of enzymes in supplying the body with the nutrients it needs to create physical movement necessary for sport.
- For A1, learners will take notes from tutor presentations on the role of macro and micronutrients whilst carrying out additional reading to appreciate the role of nutritional choices and sports performance. Video clips and news articles will enhance learner understanding to fully appreciate the planning and preparation that selected athletes undertake to ensure their diet meets the demands of their sport. Local councils often have health resources for educational use that can support learning about balanced diets as well as individual nutrients and the impact of poor choices.
- For A2, hydration is often the key to appropriate nutritional intake, ensuring the body is hydrated can allow the performer to reach their optimal level of performance during training and competitions. Poor hydration can lead to dehydration, which in turn results in a drop-in performance as well as impacts on the body that may result in medical treatment. Using video clips and interviews by Olympic athletes, learners will explore the importance of hydration and the impact on performance. Lucozade sports drinks has an education pathway to offer guidance for presentations as well as a guest speaker opportunity. In contrast local performers could offer a personal experience of the impact of hydration on their performance during training or performing. Guest speakers enhance the understanding of the topic and motivate learners to ask further questions as well as initiate further reading.
- For A3, leaners will develop their research skills to gain information on the government recommendations for nutritional intake as well as the messages sports scientists offer performers in all sports. Appreciating the amounts of each nutrient is critical in the planning phase of a diet; again local health service resources can support the learning of this topic. Influences on nutritional health has become more apparent and again research can highlight statistics on obesity, cancers relating to food as well as heart disease. This will allow the realistic impact of these influences to be meaningful for each learner. A campaign

or classroom wall presentation can support learning whilst sharing the message with others.

- For A4, encourage a creative approach to developing knowledge and understanding of the digestive system. Use a step-by-step guide to allow learners to create the structure of the digestive system using Playdough or plasticine. Ask that they take pictures of their creation on their phones to share with others, which should also encourage each learner to share the journey of food through the system with their peers or family. Producing a story encourages more creativity to fully appreciate the journey of food through the digestive system and cement learning of the digestive juices and enzyme action.

Learning aim B: Explore energy intake and expenditure in sports performance

- Learning aim B investigates the importance of energy and expenditure at rest and whilst performing the required sporting actions. A tutor presentation will allow learners to understanding the term 'energy', sharing information on measuring the concept as well as including the appropriate foods to locate the sources needed for the requirements of the sport. Practically participating in measuring BMI will enhance the learning experience for each learner whilst cementing knowledge of the impact of BMI on sports performers. Energy balance is a key concept as is the factors that affect BMR, learners will use the information provided to develop their understanding of this concept.
- For B1, create a presentation that educates learners on the term 'energy', how it is measured and sources of fuel for sport performance. Offering a practical session to develop knowledge and understanding of BMI will cement learners' appreciation of how it is used. To reinforce the experience learners should create a step-by-step guide for each method experienced or researched.
- For B2, discuss BMR, reinforcing with an information presentation whilst allowing learners to appreciate factor that can affect a performer's BMR.

Learning aim C: Investigate legislation, guidance and procedures associated with anti-doping

- Learning aim C is an opportunity to introduce learners to 'drugs in sport'. Use case studies and news articles alongside videos to debate the topic with the group. Assess judgements and understanding as well as the reasons learners believe make a performer take performance enhancing drugs. Learners will investigate the role of the World Anti-Doping Agency and the policies the organisation develops for the safety of all performers.
- For C1, use case studies as well as videos to introduce the concept of performance enhancing drugs, offer an opportunity for learners to appreciate why athletes choose to use these methods to reach their physical goal. Initially examine the substances that are acceptable, look at the benefits of nutritional supplements. In contrast, use Global Dro to examine the list of banned substances (to increase understanding analyse a number of drugs that may be allowed in some countries but not others). Offer examples of athletes who have used drugs in competition, signposting which drugs are prohibited in competition or for a particular sport.
- For C2, enables learners to research and present information on the World Anti-Doping Agency, how does the organisation educate performers? How does the organisation support performers? How does the organisation enforce the law? Use a tutor presentation to investigate the rights and responsibilities of the performer, enhancing the learning experience with case studies from athletes who have not accepted strict liability. To paint a

complete picture of the concept of drugs in sport, discuss anti-doping violations by performers and the consequences of their actions.

- For C3, learners will gain an insight into the testing procedures of major sporting events and games. Research activities as well as news articles will enhance learner understanding of the testing methodology and its compliance in the world of sport.

Learning aim D: Produce a diet and hydration plan to support a selected sport or physical activity

- Learning aim D offers learners the opportunity to link theory to practice, assessing the needs of a performer before designing an appropriate diet plan to meet the needs of their sport.
- For D1, a tutor presentation as well as case studies will enable learners to appreciate the nutritional demands of selected sports as well as the timings necessary for effective training and performance.
- For D2, an initial approach is for the tutor together with learners to secure appropriate interviews with an athlete who will share their current nutritional intake and hydration choices. The athlete should also disclose if they take or are advised to take supplements and their reasons for doing so. Once secured learners must create an appropriate questionnaire to assess their needs for their future performance as well as ask that a food diary is completed to offer a complete picture of their current dietary choices. Interviews should then take place and information gathered to allow information to be generated to meet the assessment criteria.

Details of links to other BTEC units and qualifications, and to other relevant units/qualifications

This unit links to:

- Unit 1: Health, Wellbeing and Sport
- Unit 3: Research Project in Sport
- Unit 16: Applied Coaching Skills.

Resources

In addition to the resources listed below, publishers are likely to produce Pearson-endorsed textbooks that support this unit of the BTEC International L3 Qualifications in Sport. Check the Pearson website at: (http://qualifications.pearson.com/endorsed-resources) for more information as titles achieve endorsement.

Textbooks

Bean, Anita – *The complete guide to Sports Nutrition (Publisher, A&C Black, London 2009)* ISBN 9781408105382

Benardot, Ben - *Advanced Sports Nutrition* (Publisher: Human Kinetics 2020) ISBN 978-1492593096

Currell, Kevin – *Performance Nutrition* (Publisher: The Crowood Press Ltd (2016) ISBN 978-1785002229

Girard Eberle Suzanne – *Endurance Sports* Nutrition (Publisher Human Kinetics 2013) ISBN 978-1450432153

Jordan Matt – *Sports Nutrition* (CreateSpace Independent Publishing Platform 2017) ISBN 978-1981781867

Chester Neil – *Drugs in Sport* (Routledge; 7 edition (21 Feb. 2018) ISBN 978-0415789417

Websites

https://www.active.com/nutrition/articles/athletes-what-to-eat-and-when-for-top-performance?page=2

https://www.nutritionist-resource.org.uk/articles/sports-nutrition.html#theimportanceofsportsnutrition

https://www.nutrition.org.uk/healthyliving/an-active-lifestyle/eating-for-sport-and-exercise.html

https://jissn.biomedcentral.com/articles

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling learners to access them through the school/college intranet.