
Unit Specification

USP139 – Health screening and fitness testing

Unit reference number: F/616/9402

Level: 3

Guided Learning (GL) hours: 60

Overview

Health screening and fitness testing play a valuable role in exercise and sport. Participation in exercise and sport can provide many benefits, but participation is not without risk. Health screening can help to identify individuals who have an increased risk of illness or medical emergency occurring during physical exertion.

Fitness testing provides an indication of an individual's level of fitness relative to health-related standards and norms. This enables the development of tailored programmes to meet individual needs. Athletes regularly participate in fitness tests to identify strengths and areas for improvement and to determine baseline levels from which progress can be measured.

This unit will provide learners with the opportunity to investigate a range of laboratory and field-based fitness tests and evaluate their advantages and disadvantages.

Learners will be introduced to the practice of health screening and the administration of health monitoring tests. They will also be introduced to a range of fitness tests and will explore how to select appropriate tests to meet individual needs.

Learners will explore how to administer fitness tests safely and effectively. They will also explore test validity and reliability. They will investigate how to interpret test results against normative data and how to provide feedback that is appropriate to meet individual needs.

Learning outcomes

On completion of this unit, learners will:

LO1 Know a range of fitness tests and health screening assessments

LO2 Be able to conduct health screening assessments and administer fitness tests

LO3 Be able to interpret results of health screening and fitness tests and provide feedback to the client on how to improve fitness

Unit content

LO1 Know a range of fitness tests and health screening assessments

Learners must know the purpose of health screening, monitoring and fitness testing
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Content to include

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| <ul style="list-style-type: none">• Purpose<ul style="list-style-type: none">- Baseline measure of information<ul style="list-style-type: none">▪ Identify health risk factors▪ Assess fitness against normative data▪ Record baseline data for later comparison as a measure of progress- Use information to set training goals and health targets- Identify reasons for referral or deferral to other professionals<ul style="list-style-type: none">▪ GP (for a medical reason or as first point of referral to other healthcare professionals e.g. dietitian, physiotherapist, psychologist)▪ Personal trainer▪ Sports coach• How to select appropriate tests/assessments<ul style="list-style-type: none">- Consideration of client needs, e.g. injuries or physical limitations, health status, medical conditions- Estimated current fitness from other information gathered, e.g. lifestyle, current participation in sport and exercise, demands of sport- Purpose of assessment – reason why it is needed. This may render some assessments non-essential and unnecessary for some clients and in these instances the assessments should be excluded, e.g. the use of skin calipers for a client who is visibly obese, may be insensitive and invasive- Components of fitness to be measured- Component of health to be assessed- Time available for measurement- Significance or relevance of the measurement for the individual |
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Learners must know fitness tests used to assess different components of physical fitness

Content to include

- Cardiovascular fitness (assessments and protocols)
 - Maximal versus submaximal tests
 - Treadmill – based tests – Bruce protocol, modified Bruce, Balke-Ware, modified Balke, ramp
 - Cycle ergometer tests – Astrand, YMCA
 - Field-based tests – multi-stage fitness test, Rockport 1 mile walk, Brigham Young University jog test, Cooper 1.5 mile run test, Queens College/Chester/YMCA step test
 - Conconi test for estimating aerobic and anaerobic thresholds using Heart Rate – running track and treadmill variants
- Muscular fitness
 - Muscular strength
 - Static – hand grip dynamometer, cable tensiometers
 - Dynamic – repetition maximum
 - Isokinetic muscle testing at constant speeds
 - Muscular endurance
 - Press-up test – timed
 - Abdominal curl test – timed
 - YMCA bench press
 - Muscular endurance test battery
 - Core muscle tests – plank, supine bridge
 - Repetition maximum (15RM)
 - Muscular power
 - Standing broad jump
 - Vertical countermovement jump
 - Repetition maximum (1RM) explosive/Olympic lifts and derivatives e.g. Power clean, Push press, Power clean/snatch
 - Margaria-Kalamen test
- Performance and motor skills
 - Sport specific or task specific movement performed and timed under standardized conditions
 - Balance/proprioception – standing stork test
 - Reaction time (reaction time ruler test)
 - Romberg's test
 - Star excursion balance test
 - Speed
 - 35m speed test
 - 60m speed test

- Agility
 - T-test
 - Hexagon test
 - Illinois agility run test
 - Hurdle jump
- Anaerobic power
 - Wingate cycle test
 - 300m run
- Flexibility
 - Sit and reach
 - Individual joint assessment
 - Goniometry
- Body composition
 - Skinfolds
 - Bioelectrical impedance
 - Hydrostatic weighing
 - Air-displacement plethysmography
 - Infra-red scanning
 - MRI scanning
 - Circumference measurements
- The advantages and disadvantages of different tests
 - Validity – extent to which the test actually measures what it is supposed to, specificity of assessments
 - Reliability – extent to which the test could be repeated and the same result achieved
 - Accuracy – test variables, such as time of day, tester skills, use of protocols, order of tests, pre-test warm up; individual factors, e.g. clothing, test experience/practice, food eaten, other training participated in on previous days
 - Suitability – for different needs, e.g. injury or medical conditions may make some tests inappropriate/unsafe
 - Practicality – environment and space, cost
 - Time needed to complete tests
 - Equipment – including calibration
 - Facilities
 - Number of individuals who can be tested at the same time

Learners must know health screening and health monitoring assessments

Content to include

- Procedures
 - Client consultation – questioning, listening, non-verbal communication
 - Use of questionnaires
 - Maintaining client confidentiality
 - Gaining informed consent
 - When to seek medical clearance

- Health screening
 - Self-guided 2014 PAR-Q+ (and review of earlier versions, e.g. PAR-Q, PARmedX)
 - Risk assessment and recommendations based on assessment outcomes; referral to exercise specialist or medical clearance (comparison of new ACSM model and previous ACSM stratification model stratification for cardiovascular, pulmonary and metabolic disease and other stratification tools)
 - Informed consent requirements prior to assessment
 - Other questionnaires used in exercise referral, e.g. IPAQ (activity levels) and EQ-5D (wellbeing)
- Health monitoring tests
 - Resting heart rate
 - Resting blood pressure
 - Lung function (peak expiratory flow - PEF)
 - Forced vital capacity (FVC)
 - Forced expiratory volume in one second (FEV1)
 - Ratio of FEV1 to FVC
 - Height/weight
 - Waist circumference measurement
 - Waist-to-hip ratio
 - Body mass index (BMI)
 - Bio-electrical impedance analysis
 - Functional assessments
 - Posture
- The advantages and disadvantages of different tests
 - Validity – how well does the test measurement relate to performance in the sport or activity the participant does?
 - Reliability – can the result be reproduced consistently if the test is performed multiple times, meaning that a change in result is truly a change in ability and not heavily affected by other factors?
 - Accuracy – test variables, such as time of day, tester skills, use of protocols, order of tests, pre-test warm up; individual factors, e.g. clothing, test experience/practice, food eaten, other training participated in on previous days
 - Suitability
 - Practicality – environment and space, cost
 - Time needed to complete tests
 - Equipment – including calibration
- Correct order of assessments
 - Health screening, resting heart rate and blood pressure and informed consent prior to any further assessments
 - Cardiovascular assessments before flexibility assessments to ensure muscles are warm

LO2 Be able to conduct health screening assessments and administer fitness tests

Carry out health screening for individuals with a variety of needs
Content to include
<ul style="list-style-type: none"> • Selection based on client's needs and goals • Consideration to <ul style="list-style-type: none"> - Type of sport (where relevant) - Team sport player or individual sports person (where relevant) - Playing positions (where relevant) - Level of fitness - Ability - Components of fitness - Individual needs, e.g. any exclusions, such as injury, age, gender, cultural and health considerations • Assessments <ul style="list-style-type: none"> - Resting heart rate - Resting blood pressure - Anthropometrics (height and weight/body mass index (BMI)/circumference measurements – waist, hips and others/waist to hips ratio) - Body composition (skinfold calipers/bio-electrical impedance) - Cardiovascular fitness (Astrand bike test/Rockport walking test/step test/Cooper 12-minute walk/run) - Flexibility range of movement (sit and reach test/visual assessment during stretch positions/goniometer or app for joint angle measurement) - Muscular strength - Muscular endurance - Motors skills/performance (balance, agility, speed, reaction time or power) • Explain suitability of assessments as part of the informed consent process <ul style="list-style-type: none"> - Purpose – to provide the client with the information they need to make an informed decision regarding their participation in fitness assessments, to provide the client the opportunity to reflect on verbal and written information provided, to check the client's understanding, legally admissible evidence - Process – explain the reasons for informed consent, inform the client of the types of assessments and the purpose for using these assessments and their relevance to the client's goals, the benefits and risks of the planned assessments, respond to client questions, recording signed consent, secure and confidential storage of written informed consent - Content of informed consent record contents – aims, benefits, risks, responsibilities of client and instructor, record of questions and answers, date and signatures of client and instructor

Select and carry out appropriate fitness tests for individuals with a variety of different needs

Content to include

- Gain informed consent prior to any assessment
- Administration of the following health and fitness assessments using validated and recognised protocols
 - Resting heart rate
 - Resting blood pressure
 - Anthropometrics (height and weight/body mass index/BMI/waist circumference/waist to hips ratio)
 - Lung function (peak expiratory flow (PEF); forced vital capacity (FVC); forced expiratory volume in one second (FEV1); ratio of FEV1 to FVC)
 - Body composition (skinfold calipers/bio-electrical impedance)
 - Cardiovascular fitness (Astrand bike test/Rockport walking test/step test/Cooper 12-minute walk/run)
 - Flexibility range of movement (sit and reach test/visual assessment during stretch positions)
 - Muscular strength
 - Muscular endurance
 - Motor skills/performance (balance, agility, speed, reaction time or power)
- Give consideration to
 - Pre-test procedures and explanation guidance to client
 - Test sequence and protocols
 - Contra-indications to testing
 - Reasons to terminate test
 - Test environment
- Use appropriate communication skills throughout the assessment
 - Verbal and non-verbal communication to meet client needs and check on client experience and how they are feeling
 - Encourage the client to speak openly and provide feedback e.g. use positive and open body language, relevant open questions, active and empathic listening and reflective statements
 - Respond to client questions and provide appropriate answers, e.g. explaining the purpose of health screening and the specific fitness assessments selected; and any of the reasons for the inclusion or exclusion of any assessments

See other assessments listed in LO1

Record findings of health screening and fitness tests

Content to include

- Record results
 - Appropriate method (data collection sheet)
 - Correct unit of measurement
 - Process raw data (e.g. test result converted from step test or multi stage fitness test result to predict VO2 max etc.)
- Consideration to data protection

Give rationale for choice of tests

Content to include

- Selection based on client's needs and goals
- Reasons for any exclusions
- Informed consent
- Consideration to
 - Type of sport (where relevant)
 - Team sport player or individual sports person (where relevant)
 - Playing positions (where relevant)
 - Levels of fitness
 - Ability
 - Components of fitness
 - Individual needs, e.g. any exclusions, such as injury, age, gender, cultural and health considerations.

LO3 Be able to interpret results of health screening and fitness tests and provide feedback to the client on how to improve fitness

Interpret health screening and fitness test results against normative data
Content to include
<ul style="list-style-type: none"> • Interpret results against of health screening tests against normative data (significance for health) • Interpretation considerations for health screening – reasons for referral or deferral of exercise/sport and fitness assessment <ul style="list-style-type: none"> - Client ready to participate <ul style="list-style-type: none"> ▪ Apparently healthy, negative, ‘no’ responses to 2014 PAR-Q+ or standard PAR-Q - Clients who need to be referred or signposted <ul style="list-style-type: none"> ▪ Positive, ‘yes’ response to one or more 2014 PAR-Q+ or standard PAR-Q questions – to complete additional questions to assess risk ▪ ‘Yes’ response to additional questions – signpost to exercise specialist or GP ▪ Injuries – signpost to GP, physiotherapist, sports therapist - Clients who need temporary deferral <ul style="list-style-type: none"> ▪ Feeling unwell, minor illness, e.g. colds, minor injuries, e.g. muscle strain, excessive fatigue ▪ Client presents with inappropriate clothing, footwear or equipment • Interpretation considerations for health screening measurements <ul style="list-style-type: none"> - Use of national guidelines for interpretation and feedback of results for specific assessments, e.g. blood pressure, waist circumference (NICE, Department of Health, BASES) - ACSM guidelines may be referenced where no UK ones exist • Interpretation for fitness tests <ul style="list-style-type: none"> - Against normative data – published data interpretation tables; selection of data tables; accepted ranges for health; norms for sports performers, and elite athletes; significance of results - ACSM guidelines may be referenced where no UK ones exist

Feedback results to individuals

Content to include

- Clarify scope of practice and the difference between screening and diagnostic measurements
- Explanation of results
 - Highlight strengths and weaknesses
 - Areas for improvement – health, fitness, lifestyle factors
 - Goal setting – as appropriate to client
 - Recommendations and justification
- Provide feedback that is
 - Timely – measurement to be relayed immediately after testing, interpreted result to be provided in an agreed timeframe e.g. within the consultation after calculation is performed, by written report, or at a second scheduled appointment
 - Factual, accurate results to be provided using positive and constructive language to explain outcomes
 - Sensitive to client feelings and needs – demonstrate empathy and avoid blaming, shaming, scapegoating, minimizing etc.
- Maintain confidentiality
- Maintain accurate records of assessment
- Make suggestions for exercise recommendations to develop specific components of fitness:
 - Muscular fitness:
 - ACSM guidelines for frequency, intensity, time to be used as a basis with modification to meet individual needs
 - Bodyweight resistance exercises (pull ups, chin ups, press ups, lunge, squat, abdominal curl, plank, back raise, triceps dips)
 - Resistance machines
 - Cable machine exercises
 - Free weights
 - Cardiovascular fitness
 - ACSM guidelines for frequency, intensity, time and type to be used as a basis with modification to meet individual needs
 - Running, swimming, cycling, walking, dancing
 - Bodyweight cardiovascular exercises – step-ups, running on spot, sprints, mountain climbers, burpees, jumping jacks, lunges
 - Cardiovascular machines – upright cycle, recumbent cycle, treadmill, stepper, rowing machine, elliptical trainer, cross trainer
 - Variables of different machines: level, intensity, strokes per minute, revolutions per minute, kilometers per hour, step speed, incline, decline, impact, range of motion, muscle groups emphasized in different activities
 - Flexibility
 - ACSM guideline for frequency, intensity, time and type to be used as a basis with modification to meet individual needs

- Types: static maintenance (short duration) and developmental stretching (extended duration – 15-30 seconds), dynamic (range of movement) stretching
 - Stretching exercise positions – standing, sitting, kneeling or lying
 - Assisting aids – wall, step, strap, towel, gravity
- Motor skills
 - Specific to skill, e.g. speed, agility, reaction time, power, co-ordination, balance
- Activities of daily living
 - Active travel
 - Walking
 - Climbing stairs
 - Gardening
 - Desk breaks
 - Moving more often and sitting down less

Assessment requirements

Internal mandatory assignment

The content of LO1 – LO3 will be assessed via an externally set, internally marked and internally graded assignment and observed practical assessment at the end of the period of learning.

Learners must demonstrate their knowledge and understanding of:

- a range of fitness tests and health screening assessments

Learners must demonstrate skills to:

- conduct health screening assessments and administer fitness tests
- interpret results of health screening and fitness tests and provide feedback to the client on how to improve fitness

Assessment criteria

Learning outcome The learner will:	Pass The learner can:	Merit To achieve a merit grade, in addition to achievement of the pass criteria, the learner can:	Distinction To achieve a distinction grade, in addition to achievement of the pass and merit criteria, the learner can:
LO1 Know a range of fitness tests and health screening assessments	P1 Explain the purpose of health screening and fitness assessment	M1 Explain the advantages and disadvantages of each test	D1 Compare and contrast tests for each component of fitness
	P2 Explain methods used to perform health screening		
	P3 Describe tests for cardiovascular fitness		
	P4 Describe tests for muscle strength		
	P5 Describe tests for muscle endurance		
	P6 Describe tests for flexibility		
	P7 Describe tests for body composition		
LO2 Be able to conduct health screening assessments and administer fitness tests	P8 Carry out health screening for individuals with a variety of needs	M2 Give rationale for choice of tests	
	P9 Select and carry out appropriate fitness tests for individuals with a variety of different needs		
	P10 Record findings of health screening and fitness tests		
LO3 Be able to interpret results of health screening and fitness tests and provide feedback to the client on how to improve fitness	P11 Interpret health screening and fitness test results against normative data	M3 Provide recommendations for improving the health and fitness of individuals	D2 Justify recommendations for improving the health and fitness of individuals
	P12 Feedback results to individuals		

Assessment guidance

Assessors must use the amplified assessment guidance in this section to judge whether assessment criteria have been achieved.

P1 Explain the purpose of health screening and fitness assessment

Learners must explain why health screening is used and the purpose it serves. They must explain why fitness assessments are used and the purpose they serve. Learners must also explain specific benefits of health screening and fitness assessment for the client and trainer.

P2 Explain methods used to perform health screening

Learners must provide an explanation of two methods used for health screening. Learners should explain each method, its advantages, disadvantages and application. Learners must also provide an explanation of two health monitoring tests. The explanations should include all the relevant features of each test and its purpose.

P3 Describe tests for cardiovascular fitness

Learners must describe two tests for cardiovascular fitness. Learners may select the tests from the examples provided in the unit content for LO1 or use other appropriate tests. Learners' descriptions should include all the relevant features of each test.

P4 Describe tests for muscle strength

Learners must describe two tests for muscle strength. Learners may select the tests from the examples provided in the unit content for LO1 or use other appropriate tests. Learners' descriptions should include all the relevant features of each test.

P5 Describe tests for muscle endurance

Learners must describe two tests for muscle endurance. Learners may select the tests from the examples provided in the unit content for LO1 or use other appropriate tests. Learners' descriptions should include all the relevant features of each test.

P6 Describe tests for flexibility

Learners must describe two tests for flexibility. Learners may select the tests from the examples provided in the unit content for LO1 or use other appropriate tests. Learners' descriptions should include all the relevant features of each test.

P7 Describe tests for body composition

Learners must describe two tests for body composition. Learners may select the tests from the examples provided in the unit content for LO1 or use other appropriate tests. Learners' descriptions should include all the relevant features of each test.

P8 Carry out health screening for individuals with a variety of needs

Learners must carry out health screening on two individuals with different needs. For example, one individual may be a competitive athlete while the other may be sedentary. Learners must administer three health monitoring tests with each individual.

P9 Select and carry out appropriate fitness tests for individuals with a variety of different needs

Learners must select appropriate tests for each of the components of fitness for two individuals with different health and fitness goals or needs. Learners must carry out the tests (as appropriate) for each of the components of fitness for two individuals.

P10 Record findings of health screening and fitness tests

Learners must record the findings of the individuals' health screening measurements and fitness tests accurately and consistently with data protection requirements. This may be done electronically or on paper.

P11 Interpret health screening and fitness test results against normative data

Learners must compare the results of the health screening measurements and fitness tests of the two individuals against normative data and interpret the results ready to provide constructive feedback to the subjects.

P12 Feedback results to individuals

Learners must feedback results of the fitness tests to their two different individuals. Learners' feedback must explain how individuals' results compare with normative data and highlight their strengths and areas for improvement.

Based on the results of health screening questionnaires and results from health monitoring and fitness tests, learners must provide recommendations on how each individual can improve their health and fitness. Learners' recommendations must include goals, appropriate activities and lifestyle changes related to the individual's expressed goals and the needs identified by the health screening measurements and fitness tests.

M1 Explain the advantages and disadvantages of each test

Learners' descriptions of each test should be accompanied by an explanation of its advantages and disadvantages.

M2 Give rationale for choice of tests

Learners must provide a rationale for their choice of health screening and fitness tests. This should address why they thought these tests were most appropriate for the individuals and show how the individual's goals, needs and fitness levels were reflected in the selection of the tests.

Reasons for exclusion of any assessments or tests must be explained, e.g. if the test is too invasive; if safety of client affected.

M3 Provide recommendations for improving the health and fitness of individuals

Based on the results of health screening questionnaires and results from health monitoring and fitness tests, learners must provide recommendations on how each individual can improve their health and fitness. Learners' recommendations must include goals, appropriate activities and lifestyle changes.

D1 Compare and contrast tests for each component of fitness

Learners must compare and contrast two tests for each component of fitness. Learners must ensure they address both the similarities and differences of the tests for each component of fitness. Learners must also comment on the validity, reliability and practicality of each test.

D2 Justify recommendations for improving the health and fitness of individuals

Learners must provide a rationale for the recommendations provided for M3. This must explain why the recommendations are appropriate to meet the individual's needs.

Delivery guidance

Whilst this unit is predominantly practical based, there is a significant theoretical element which underpins the health monitoring and fitness tests. All practical work should be supported by theoretical information delivered both in the field and the classroom. Every opportunity should be taken to allow learners to practise their screening and fitness testing skills with contrasting individuals.

Teachers are encouraged to use innovative, practical and engaging delivery methods to enhance the learning experience.

Learners may benefit from:

- **Practical demonstrations:** Learners need to know how to administer a range of laboratory-based and field-based fitness tests. Where possible these should be practically demonstrated, and the learners given the opportunity to participate in and administer each test. However, it is acknowledged that not all centres will have access to laboratory-based fitness testing equipment. In this situation, tests should be covered theoretically. Video footage would be a useful resource to demonstrate tests when practical demonstration is not possible.
- **Field trips and visits:** There may be a university or high-performance centre in the area that conducts laboratory-based tests. Learners would benefit from visiting such a facility and engaging with the staff to gain a greater understanding of the advantages and disadvantages of specific tests and the issues to consider when administering such tests.
- **Classroom research:** The learners will need to be able to critically compare field-based tests and laboratory-based tests. Classroom work researching each test will extend the learners' knowledge and provide the opportunity for group discussions and presentations. Where laboratory-based fitness testing facilities are available, for example gas analysis, learners would benefit from comparing an individual's measured VO₂max with their predicted score derived from a sub-maximal test. This would help to highlight the issues of validity and reliability.
- **Discussion groups:** There are many ways discussion groups can be useful. The purpose and benefits of fitness testing and any potential negative consequences can be explored through discussion; so too, can the reliability, validity and practicality of specific tests. Other discussion topics could be the advantages and disadvantages of different tests and maintaining health and safety during assessments.
- **Teacher presentations:** Learners should be provided with an explanation of the various methods of health screening from self-guided questionnaires, such as the 2014 PAR-Q+ and predecessor questionnaires. Learners must also understand risk assessment and stratification by health and exercise professionals to medical evaluation. The advantages and disadvantages of each method should be discussed.
- **Role play:** The procedural aspects of a client consultation should be explored, with role playing providing an effective method for demonstrating the practical application of screening methods and the analysis of client interaction. Learners would benefit from role-playing within the class to help them practise their communication skills and providing feedback before screening their contrasting individuals. Issues such as client confidentiality, risk stratification and informed consent should be discussed.
- **Independent research:** Learners would benefit from gathering a number of different health screening forms from local health and fitness facilities, textbooks or the internet. Learners could analyse these forms, noting down all the common themes across the different forms and discuss what they think should comprise a form to enable all the relevant information to be collected. This could be done in groups or as a class discussion. Learners could design their own form.

- **Demonstration and explanation:** Learners need to know how to conduct health monitoring tests such as blood pressure, lung function, waist-to-hip ratio and body mass index. These should be demonstrated and an explanation of the significance of their results for an individual's health should be given. Normative data should be provided and explained. Learners should be given the opportunity to participate in and administer as many health monitoring tests as practically possible. This could be done in small groups.
- **Case studies:** Learners would benefit from the analysis of case studies involving the screening and risk stratification of individuals with contrasting health profiles. Situations that necessitate medical referral should be examined. Learners need to select fitness tests for contrasting individuals, safely administer the tests and record the findings. The use of case study information can help develop learners' skills in selecting appropriate tests. To help develop the learners' breadth of knowledge, the case studies should cover a range of individuals from different sports and different levels of ability. Learners should also give consideration to the validity, practicality and reliability of the tests. Learners' ability to interpret fitness test results and make recommendations based on their findings can also be developed through the use of case studies.
- **Practical workshops and peer assessment:** Learners need to carry out health screening and fitness testing for contrasting individuals. Tutors should discuss the selection of the individuals with learners and ensure that contrasting individuals are selected. Learners could select a peer as one of their individuals and have a parent or guardian act as a contrasting individual. Alternatively, learners could select contrasting individuals from their peers, if there is sufficient contrast between individuals. Learners should practise administration of fitness tests on their peers to ensure they conduct the tests correctly and practise recording results accurately. This is best achieved by learners working in groups, with one learner acting as the client, one as the instructor and another as an observer. The observer is then able to give feedback. Learners should design a recording sheet for their findings. Learners should also be encouraged to interpret results and provide feedback as part of their practical workshops. Learners should consider any factors that may affect the validity and reliability of the tests on the day, such as the environment, how the participant is feeling and the time of day.
- **Text books:** Learners need to be able to interpret test results against normative data and provide feedback regarding the results of assessments. Normative data can be found in textbooks and on the internet.
- **Interactive information and technology systems:** Computer software and fitness apps that generate fitness assessment reports would be a useful resource when interpreting results.

Resources

The special resources required for this unit are access to an environment which supports the undertaking of health screening and fitness testing.

Best practice should be encouraged by giving learners the opportunity to work on real or realistic clients and in real or realistic environments, e.g. sports and fitness clubs and personal training studios with individuals requiring health screening and fitness tests. However, as this is not always possible and may create barriers to assessment, learners may carry out treatments on peers (realistic clients).

Learners must also have access to consultation documentation, resources to aid health screening and fitness testing. Learners should also be directed to information that allows them to access norm values and standardisation of test protocol.

Recommended text books:

- ACSM (2017). ACSM's Guidelines for Exercise Testing and Prescription. 10th ed. American College of Sports Medicine. Wolters Kluwer/Lippincott Williams & Wilkins. Philadelphia. USA.
- Bursztyn, P (1990) Physiology for Sports People. A serious user's guide to the body. USA. Manchester University Press.
- Coulson, M., and Archer, D. (2009) Practical Fitness Testing: Analysis in Exercise and Sport. UK. A&C Black.
- Fleck, S.J, and Kraemer, W.J (1997) Designing Resistance Training Programmes. 2nd ed. Human Kinetics. USA.
- Golding, L et al (1989) Y's Way to Physical Fitness. The Complete Guide to Fitness Testing and Instruction. USA.YMCA
- McArdle, W.D. Katch, F.I. and Katch, V.L (1996) Exercise Physiology. Energy, Nutrition and Human Performance. USA. Lea and Febiger
- Norris, C (2007) The Complete Guide to Stretching. 2nd edition. UK. A&C Black/Bloomsbury Publishing.
- Sharkey, B (1990) Physiology of Fitness. 3rd Edition. Champaign, Illinois. USA. Human Kinetics.

NB: This list is not exhaustive. There are many other valuable text books.

Websites:

- American College of Sport Medicine (ACSM): www.acsm.org
- British Association of Sport and Exercise Science: www.bases.org.uk
- British Heart Foundation National Centre for Physical Activity and Health: www.ncsem-em.org.uk
- Department of Health: www.gov.uk/government/organisations/department-of-health
- National Institute for Health and Care Excellence (NICE): www.nice.org.uk
- School of Sport, Exercise and Health Sciences at Loughborough University (SSEHS): www.ssehsactive.org.uk

Document History

Version	Issue Date	Changes	Role
v1	16/03/2018	First published	Qualifications Manager
v2	12/07/2018	Amended following DfE approval	Product Administrator