

Unit 52: Principles of Ultrasound

Level:	4
Unit type:	Optional (Life Science)
Credit value:	3
Guided learning hours:	24

Unit summary

In this unit, you will gain an understanding of the principles of ultrasound that underpin many investigations, including those undertaken by the healthcare science workforce. You will be expected to build your patient-centred professional practice and practise safely in the workplace, seeking advice and referring as appropriate to your scope of practice.

Unit assessment requirements

There are no specific assessment requirements for this unit. Please refer to the assessment strategy in *Annexe B*.

Additional information

AC1.1 ultrasound terms include:

- ultrasound
- Doppler ultrasound
- common artefacts
- echogenic
- anechoic
- acoustic enhancement
- acoustic shadowing.

AC1.3 includes:

- A-Mode
- B-Mode
- M-Mode
- 2-D
- 3-D
- Doppler ultrasound.

AC1.5 includes:

- longitudinal and transverse waves.

AC1.7 includes:

- power
- intensity
- pressure
- acoustic output of diagnostic machines
- tissue effects.

AC1.8 includes:

- ultrasound-induced heating
- mechanical bio-effects

Learning outcomes and assessment criteria

To pass this unit, learners need to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria outline the requirements that the learner is expected to meet **in own area of work and in accordance with Standard Operating Procedures (SOPs)** to achieve the learning outcomes and the unit.

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Understand the basic principles of ultrasound	1.1	Explain common ultrasound terminology			
		1.2	Explain how ultrasound is generated and detected			
		1.3	Explain the physical properties of the different types of ultrasound			
		1.4	Explain the principles of Doppler ultrasound			
		1.5	Explain how ultrasound and Doppler ultrasound propagates through tissue			
		1.6	Explain how a transducer works to produce images in own area of work			
		1.7	Describe the risk of ultrasound exposure in own area of work			
		1.8	Describe the biological effects of ultrasound			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Understand the applications of ultrasound in healthcare science	2.1	Explain an application of ultrasound in own division of healthcare science or own area of practice			
		2.2	Evaluate the advantages and disadvantages of ultrasound within healthcare science or own area of practice			

Learner name: _____

Date: _____

Learner signature: _____

Date: _____

Assessor signature: _____

Date: _____

Internal verifier signature: _____

Date: _____

(if sampled)