

Unit 58: Recognising ECG Abnormalities in Children

Level:	4
Unit type:	Optional (Cardiac Physiology)
Credit value:	10
Guided learning hours:	80

Unit summary

The aim of this unit is to equip you with the knowledge and skills to recognise common ECG abnormalities in children. You will be expected to develop a framework for ECG identification. You will be expected to build your patient-centred professional practice to enable you to undertake this skill safely in the workplace.

Unit assessment requirements

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

Additional information

It is suggested that learners will have completed the Level 3 *Unit 74: Performing Routine Electrocardiography in Children* or have appropriate experience before completing this unit.

All procedures must be undertaken in accordance with the Standard Operating Procedure in own area of work.

AC2.10 includes:

- normal ECG age-related values, particularly for criteria relating to right or left ventricular hypertrophy.

AC2.11 includes:

- heart rate > 100 beats/min
- QRS axis > 90°
- right precordial T wave inversion
- dominant right precordial R waves
- short PR and QT intervals
- short P wave and short duration of QRS complexes
- inferior and lateral Q waves.

AC2.12 includes:

- syncope or seizure
- exertional symptoms
- drug ingestion
- tachyarrhythmia
- bradyarrhythmia
- cyanotic episodes
- heart failure
- hypothermia
- electrolyte disturbance
- Kawasaki disease
- rheumatic fever
- myocarditis
- myocardial contusion
- pericarditis
- post-cardiac surgery
- congenital heart defects.

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 principles and practice of electrocardiography (ECG)	1.1	Explain the principles of the paediatric ECG			
		1.2	Evaluate the strengths and weaknesses of 12-lead ECG recording			
		1.3	Explain the relationship between ECG leads and cardiac anatomy			
		1.4	Evaluate ways to ensure and promote patient-centred, child-friendly care			
		1.5	Evaluate safeguarding procedures and the process for reporting safeguarding issues			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Understand the normal ECG in children	2.1	Explain the relationship between the normal ECG and cardiac physiology in children			
		2.2	Explain the relationship between the electrical and mechanical action of the heart during a normal cardiac cycle			
		2.3	Explain the main waves, complexes, segments, duration and intervals of the normal ECG in children			
		2.4	Explain how the heart develops during infancy and childhood and the impact of development on the ECG			
		2.5	Explain the derivation of the 12 ECG leads			
		2.6	Explain the term cardiac axis			
		2.7	Explain how to measure the cardiac axis			
		2.8	Explain the age-related changes in heart rate from birth to adulthood			
		2.9	Explain how to measure heart rate			
		2.10	Know the normal ranges for each component of the ECG in children			
		2.11	Explain ECG changes that may be abnormal in adults but normal in children			
		2.12	Explain the indications for ECG in children			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Be able to recognise the ECG changes associated with arrhythmias in children	3.1	Recognise the ECG changes associated with: <ul style="list-style-type: none"> • ventricular fibrillation • asystole • ventricular tachycardia 			
		3.2	Recognise the ECG changes associated with: <ul style="list-style-type: none"> • sinus arrhythmia • sinus bradycardia • sinus tachycardia 			
		3.3	Explain the effect of exercise on ectopic activity			
		3.4	Recognise the ECG changes associated with atrial and ventricular ectopics			
		3.5	Recognise the ECG changes associated with supraventricular tachycardia			
		3.6	Recognise the ECG changes associated with atrial fibrillation			
		3.7	Recognise the ECG changes associated with atrial flutter			
		3.8	Recognise the ECG changes associated with atrioventricular re-entrant tachycardia			
		3.9	Recognise the ECG changes associated with ventricular arrhythmias			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
		3.10	Recognise the ECG changes associated with Wolff-Parkinson-White syndrome			
		3.11	Recognise the ECG changes associated with atrioventricular conduction blocks			
		3.12	Recognise and escalate arrhythmias that need urgent action			
4	Be able to recognise the ECG changes associated with conditions affecting the left and right sides of the heart of children	4.1	Recognise the ECG changes associated with left and right atrial abnormalities			
		4.2	Recognise the ECG changes associated with right and left ventricular hypertrophy			
		4.3	Recognise the ECG changes associated with left and right bundle branch block			
		4.4	Recognise the ECG changes associated with fascicular blocks			
		4.5	Recognise the ECG changes associated with conditions affecting the left and right sides of the heart that need urgent action			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Be able to produce a factual ECG report	5.1	Evaluate ECG reporting frameworks			
		5.2	Produce factual ECG reports on a range of normal and abnormal results from children			

Learner name: _____

Date: _____

Learner signature: _____

Date: _____

Assessor signature: _____

Date: _____

Internal verifier signature: _____

Date: _____

(if sampled)