

A practical approach to paediatric ECG interpretation

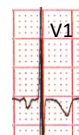
Rate = 60/RR interval (1 small square = 0.04 sec)

Rhythm

- Is there a P wave before each QRS?
- Is the P wave axis normal? P waves positive in I, II, aVF.
- Is the PR interval normal? Neonates <0.15sec, children <0.18 sec

Are there signs of RA enlargement?

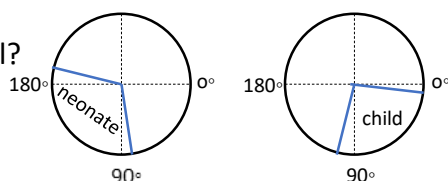
- ≥ 3 mm peaked p waves in II, V1.



Are there signs of LA enlargement?

- P waves broad & bifid in II or terminal negative inflection in V1.

Is the QRS axis normal?

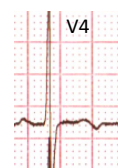


Is the progression of QRS voltages in V1 to V6 normal?

- Neonates: R>S in V1 and S>R in V6.
- Children: S>R in V1 and R>S in V6.

Are there signs of RVH?

- Upright T waves in V1 between ages of 7 days to 5 years.
- Pure R wave in V1, V4R.
- Tall R in V1 combined with deep S in V5,6.*



Are there signs of RV dilatation?

- Right sided T wave inversion extending to V4 (in children > 1 year).

Are there signs of LVH?

- Tall R in V5 or V6 combined with deep S in V1.*

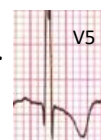
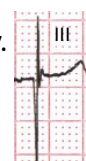
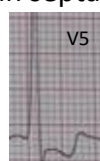
Are there abnormal Q waves?

- Q wave in V1 may occur when the position of the RV and LV are inverted.
- Q wave in I and aVL may occur in anomalous origin of left coronary artery from pulmonary artery.
- Deep Q waves in III (>5mm) and V5,V6 (>8mm) may occur in septal hypertrophy.



Are the ST segments / T waves abnormal?

- ST segment elevation may occur in pericarditis.
- ST segment depression may occur in chronic ischaemia.
- T wave inversion over left chest leads may occur in myocarditis or ischaemia.



*Normal values vary with age during childhood. There is also some variation between studies.