

Paediatric ECG Interpretation

CHECK CALIBRATION

Lead position matches machine diagram
Vertical 1mm/10mV
Horizontal 25mm/sec



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1 Rate Calculation

Regular - $300 / (\text{no. large squares between R-R})$
Note if **irregular**

2 Rhythm

Assess in rhythm strip (lead II),

1 small square = 0.04 sec

Normal sinus rhythm:

- P wave before each QRS
- Normal P wave morphology
- Normal P wave axis (upright II, III, aVF)
- Normal PR interval
- Appropriate rate for age

3 QRS Axis

Use vector addition plotting arrows along **lead I** (positive to right) and **aVF** (positive downwards)

0-90° normal 1-8 years. Mild LAD (-30°) normal puberty- adulthood. RAD 90-180° normal <1 year

4 P Wave

Amplitude <3mm
<2 year 0.08-0.16
2-15 years 0.08-0.2
>15 years 0.12-0.2

Tall - **P pulmonale** - RA dilatation
Bifid & wide - **P mitrale** - LA dilatation

5 ST Segment

ST should be isoelectric

6 QTc

$QTc = QT / \sqrt{\text{(preceding RR)}}$
0-6m - variable - max 0.46 secs
>6m - < 0.45 secs



7 QRS Complex

Duration increases with age and bradycardia
Max duration usually 0.12 secs during childhood
Bundle branch block - prolonged QRS duration and interruption in flow of R/S waves
Partial BBB (i.e. without QRS prolongation) normal finding

In BBB look for the pattern:

wiLLiam

maRRow

Then look at complex height across the chest leads:

Tall complexes V1-V3 - ?RVH

Tall V4-V6 complexes - ?LVH

8 T Wave

Physiological inversion V1-V3 after birth
Return to upright in reverse order during childhood, persisting inversion of V1 normal variant

Check if very tall/peaked, broad and flat, abnormally inverted or bifid
U wave normal if bradycardic, should be same orientation as T wave