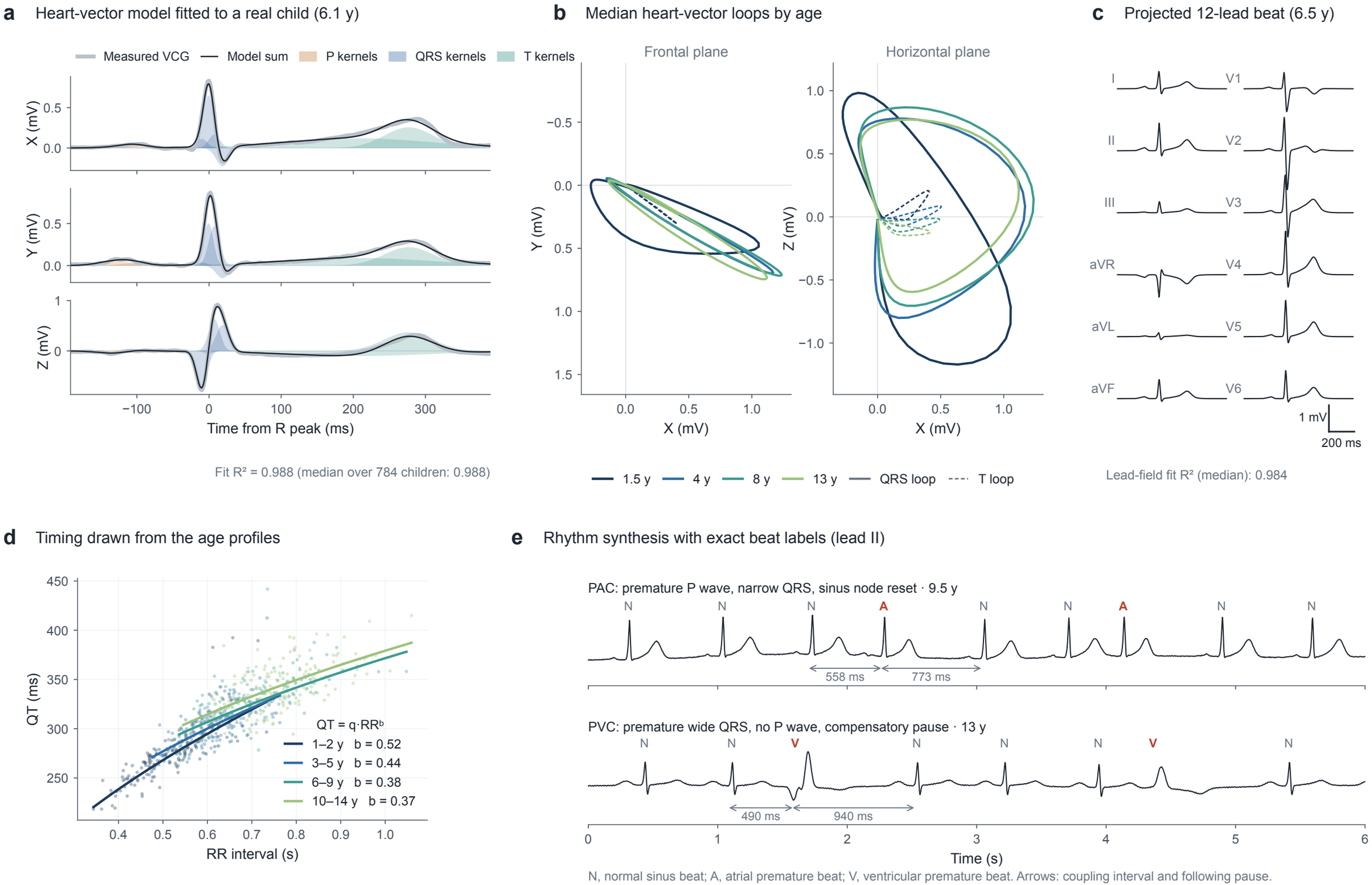

a
Heart-vector model fitted to a real child (6.1 y)
Measured VCG
Model sum
P kernels
QRS kernels
T kernels
X (mV)
Y (mV)
Z (mV)
Time from R peak (ms)
Fit R² = 0.988 (median over 784 children: 0.988)
b
Median heart-vector loops by age
Frontal plane
Horizontal plane
X (mV)
Y (mV)
Z (mV)
1.5 y
4 y
8 y
13 y
QRS loop
T loop
c
Projected 12-lead beat (6.5 y)
I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6
1 mV
200 ms
Lead-field fit R² (median): 0.984
d
Timing drawn from the age profiles
QT (ms)
RR interval (s)
QT = q·RR^b
1–2 y b = 0.52
3–5 y b = 0.44
6–9 y b = 0.38
10–14 y b = 0.37
e
Rhythm synthesis with exact beat labels (lead II)
PAC: premature P wave, narrow QRS, sinus node reset · 9.5 y
558 ms
773 ms
PVC: premature wide QRS, no P wave, compensatory pause · 13 y
490 ms
940 ms
Time (s)
N, normal sinus beat; A, atrial premature beat; V, ventricular premature beat. Arrows: coupling interval and following pause.