

Final Adult Height and Childhood Growth Trajectories in a Cohort of Preterm Infants



E.C. Ferguson¹, J.K. Wales², A.T. Gibson³, S. Carney¹, A. Wright¹ & N.P. Wright¹

¹Department of Endocrinology, Sheffield Children's NHS Foundation Trust, ²Children's Health Queensland and University of Queensland,

³Department of Neonatology, Jessop Wing, Sheffield Teaching Hospitals NHS Foundation Trust

Introduction

- Many premature infants experience growth failure following delivery¹
- Traditionally catch-up growth was assumed to be complete until early childhood, but research now suggests it is ongoing until at least adolescence^{2,3}
- Most studies have been biased towards Small for Gestational Age (SGA) premature infants⁴⁻⁶
- Few studies have compared growth to local term control populations⁴⁻⁶

Aim

To determine whether preterm appropriate weight for gestational age (AGA) children reach their expected adult height when compared to term controls.

Materials and methods

- 204 Preterm infants born at tertiary neonatal unit, Jessop Wing, Sheffield during 1994
- 50 Term controls, matched for sex, social class and maternal smoking
- Exclusions
 - Significant neurological impairment
 - Living more than 20 miles from study centre
- Annual assessment of growth by trained research nurse at child's home
- Parental heights recorded in neonatal period
- Growth complete when rate of growth <2cm/year

Conclusions

- **Preterm AGA children achieve comparable adult height to term controls**
- **Catch-up growth continues throughout childhood**

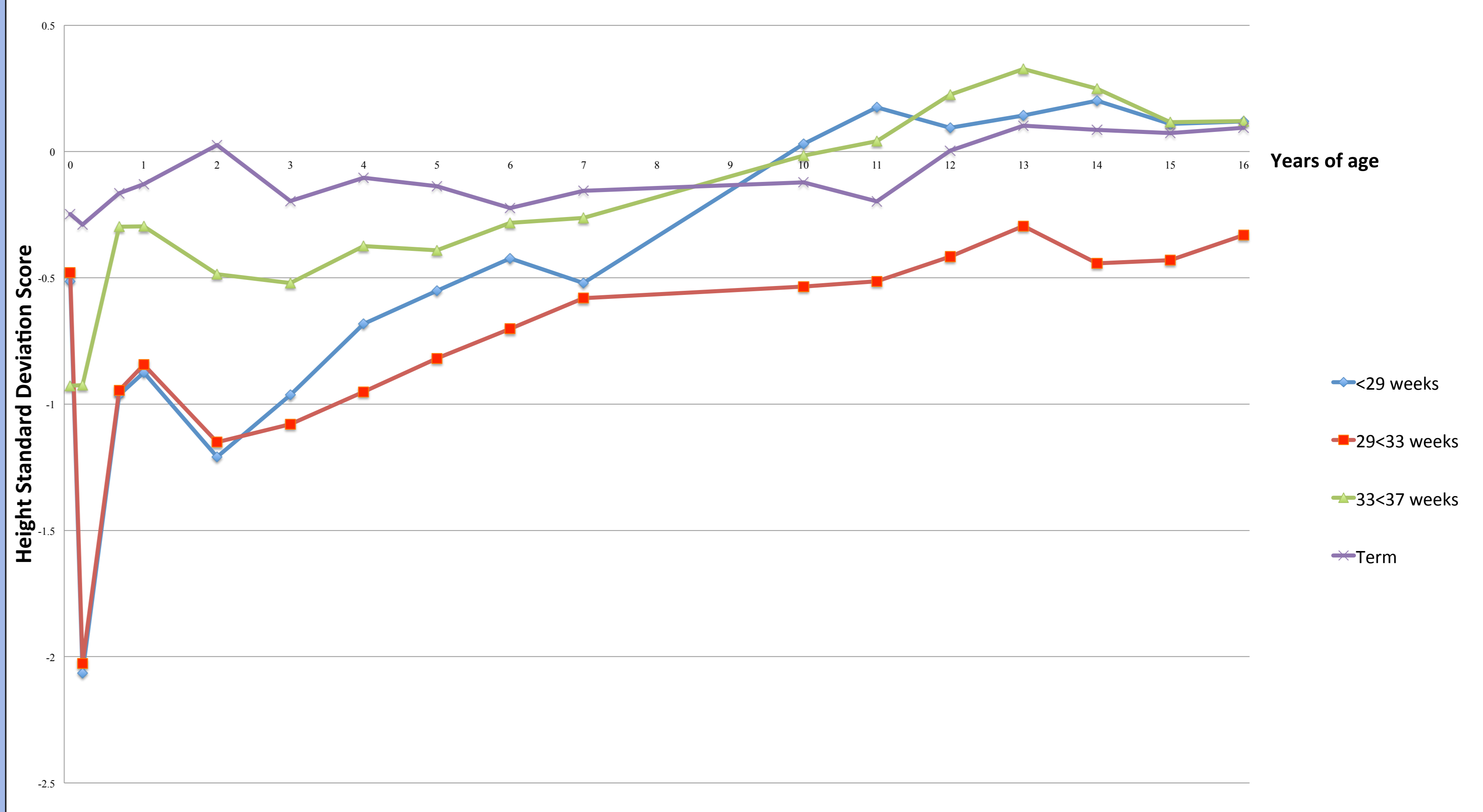
Results

- 80 preterm children and 30 term children followed up until completion of growth
- No significant difference in final height or BMI of term or preterm children compared to term controls
- Catch-up growth continued throughout childhood

	<29 weeks	29<33 weeks	33<37 weeks	Preterm	Term	P value (Term vs preterm)	P value (comparing gestational groups)
Mean Final Height SDS	-0.35	0.45	0.02	0.10	0.45	0.156	0.075
Proportion with Final Height <-2SD	N/A	N/A	N/A	5/80 (6.3%)	2/30 (6.7%)	1.00	N/A
Mean MPH SDS	-0.05	0.68	-0.09	0.18	0.32	0.522	0.006*
Mean Difference Between Final Height SDS and MPH SDS	-0.37	-0.25	0.03	-0.14	0.13	0.326	0.159
Proportion of Children Not Meeting Target Centile	N/A	N/A	N/A	7/73 (9.6%)	0/27 (0%)	0.185	N/A
Final BMI SDS	0.52	0.20	0.46	0.39	0.03	0.137	0.356
Proportion of Children with BMI >2SD at completion of growth	N/A	N/A	N/A	7/80 (9.0%)	1/30 (3.3%)	0.439	N/A

- Small number (n=7) of preterm and SGA infants
- SGA infants significantly shorter than peers (SGA mean height SDS -0.98 vs AGA 0.18, p=0.01) and parents (SGA mean difference in final height SDS to MPH SDS -1.52 vs AGA 0.12 p<0.01)

Graph to Show Mean Height SDS from 0-16 years for Four Gestational Groups, Corrected For Mean Mid-Parental Height SDS



References

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