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Title	Infant growth during the first year of life and age at puberty onset: Hong Kong's "Children of 1997" birth cohort
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Conclusions: The survival disadvantage associated with lower birthweight is confirmed for Aboriginal infants and children. It is also documented for the first time for Aboriginal adults, supporting the Barker hypothesis. Better services have dramatically reduced mortality of infants and children in all birthweight categories, which must be applauded. However, improved survival of low birthweight infants has resulted in a population of adults at higher risk for adult death. The current trend of improving birthweights promises further reductions in mortality.

P-4B-125

Infant growth during the first year of life and age at puberty onset: Hong Kong's "Children of 1997" birth cohort

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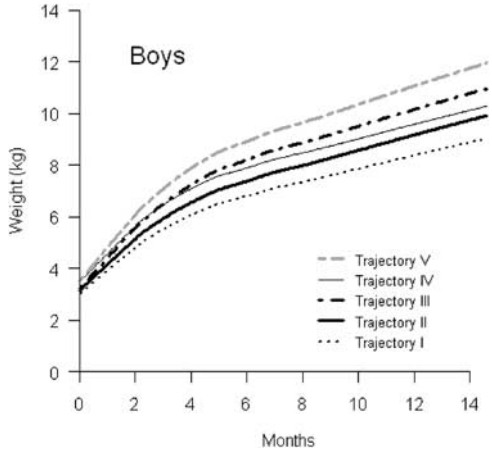
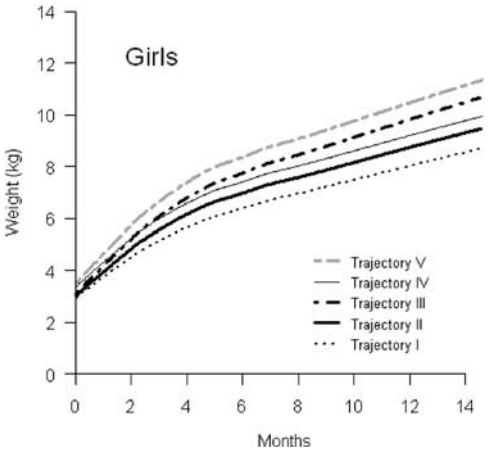
Objective: Younger age at puberty is associated with adult metabolic risk; it is unclear whether this is due to events at puberty or to the preceding growth trajectory as rapid infant growth is also associated with adult metabolic risk. To clarify this question, we examined the association of early growth with age at onset of puberty and whether the association was mediated by body mass index before puberty, at age 7 years. ***Methods:*** We used interval-censored survival analyses in term births (3369 boys and 3016 girls, 82% follow-up) from a Chinese birth cohort, "Children of 1997", comprising 88% of births in Hong Kong in April and May 1997, to examine the association of five sex-specific growth trajectories from birth to 12 months, derived from latent class analyses (figure), with clinically assessed age at onset of puberty (Tanner stage II for breast size or penis size). Confounders included were sex, gestational age and parental education.





Results: There was no evidence that infant growth trajectory had different associations with age at onset of puberty in boys and girls. Compared with infants born light who "tracked" (growth trajectory II), infants born light with slow growth (I) had older age at onset of puberty (Table). Children born heavy who grew fast during infancy (trajectory V) started puberty at the earliest age, about 4 months earlier than the children of same sex in trajectory I. However, the associations shown were negated by adjustment for body mass index at 7 years.

	Mean birth weight z-score	Infant Growth rate	Time ratio (95% CI)	Adjusted age at onset of puberty, years (95% CI)	
				Boys	Girls
Trajectory I	−0.71	Slow	1.01* (1.00, 1.03)	9.8 (9.7, 9.9)	12.0 (11.8, 12.2)
Trajectory II	−0.50	Tracked	Ref	9.6 (9.5, 9.7)	11.9 (11.7, 12.1)
Trajectory III	−0.24	Fast	0.99 (0.98, 1.00)	9.6 (9.5, 9.7)	11.7 (11.5, 11.9)
Trajectory IV	0.24	Tracked	1.00 (0.99, 1.01)	9.6 (9.5, 9.7)	11.9 (11.7, 12.1)
Trajectory V	0.44	Fast	0.98* (0.97, 1.00)	9.6 (9.5, 9.7)	11.6 (11.4, 11.7)

Conclusions: Earlier age at puberty appears to be a marker of more rapid pre-natal, infant and childhood growth. Whether the associations between rapid early growth and adult metabolic risk are in any way modified by the intensity or duration of puberty remains to be determined. Acknowledgements: We thank the Student Health Service and the Family Health Service of the Department of Health Hong Kong SAR, and grants HCPFC 216106 and HHSRF 03040711.

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Alberta Pregnancy Outcome and Nutrition (APrON) study

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