学位の種類	博士（医学）
報告番号	甲第１９８３号
学位記番号	第１３９４号
氏名	吉田 あや
授与年月日	令和５年 ９月 25 日
学位論文の題名	Relationship between Birth Order and Postnatal Growth until 4 Years of Age: The Japan Environment and Children's Study （出生順位と出生時から４歳までの成長の関連：エコチル調査） Children 2023, 10(3), 557
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学位論文 Abstract

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論 文 題 名

Relationship between Birth Order and Postnatal Growth until 4 Years of Age: The Japan Environment and Children's Study

Abstract

Objectives: Later-borns tend to be shorter than first-borns in childhood and adulthood. However, large-scale prospective studies examining growth during infancy according to birth order are limited. We aimed to investigate the relationship between birth order and growth during the first 4 years of life in a Japanese prospective birth cohort study.

Study Design: The Japan Environment and Children's Study (JECS) is an ongoing nationwide prospective birth cohort study in Japan. A total of 26,249 full-term singleton births were targeted. General linear and multivariable logistic regression models were performed and adjusted for birth weight, parents' heights, maternal age at delivery, gestational weight gain, maternal smoking and alcohol drinking status during pregnancy, household income, breastfeeding status, and Study Areas.

Results: The multivariate adjusted mean length Z-scores in "first-borns having no sibling", "first-borns having siblings", "second-borns", and "third-borns or more" were −0.026, −0.013, 0.136, and 0.120 at birth and −0.324, −0.330, −0.466, and −0.569 at 10 months, respectively. Results similar to those at 10 months were observed at 1.5, 3, and 4 years. The adjusted odds ratios (95% confidence intervals) of short stature at 4 years in "first-borns having siblings", "second-borns", and "third-borns or more" were 1.08 (0.84–1.39),

1.36 (1.13–1.62), and 1.50 (1.20–1.88), respectively, versus “first-borns having no sibling”.

Conclusion: Birth order was significantly associated with postnatal growth and may be a factor predisposing to short stature in early childhood.