

Analysis of Child Growth Trajectories

Growth of children, characterised by gain in height, weight and other measures, is a fundamental characteristic of development. Normal and altered growth reflect biological, environmental and psychosocial conditions of the child and serve as a sensitive indicator of a child's health and well-being. Growth characteristics already in utero, as well as growth in infancy and early childhood, were shown to have long-term implications on health over the life span of an individual. These findings on powerful programming effects of early growth trajectories on later body function, health and disease risks have sparked a much intensified research on the understanding of human growth, its regulation, and its short- and long-term consequences. By its very nature, growth is a longitudinal dynamic process and thus raises special challenges in its analysis from a conceptual and methodological perspective. With the aims to address some of these issues in research on child growth and to discuss the models and statistical approaches for describing and analysing growth trajectories over time, an International Research Workshop on the Analysis of Child Growth Trajectories was held on January 14–15, 2013, at the Center for Advanced Studies, Ludwig Maximilians University, Munich, Germany. This special issue of *Annals of Nutrition and Metabolism* is based on presentations

given at this workshop by internationally renowned researchers on growth with backgrounds in paediatrics, anthropology, epidemiology, social science and statistics.

The key goals of this workshop were to review current knowledge and recent developments on the methodology used to describe and analyse child growth trajectories and the potential applications of these methods, and to review and discuss expertise on longitudinal statistical methods for clinical and epidemiological research on human growth and development. A focus of this workshop was on advances in growth modelling by multilevel, non-linear and the newly emerging approaches of latent growth curve and growth mixture modelling analyses. Moreover, the workshop aimed at stimulating and facilitating collaborative research as well and joint initiatives for data analysis from longitudinal growth studies.

This workshop was initiated jointly by Mathew Gillman, Department of Population Medicine, Harvard Medical School, Boston, Mass., USA, Nolwenn Regnault, INSERM U1018, Center for Research in Epidemiology and Population Health, Villejuif, France, and Peter Rzehak and Berthold Koletzko, Dr. von Hauner Children's Hospital, Ludwig Maximilians University, Munich, Germany.

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