

Children's Environmental Health: From Biomonitoring to Birth Cohort Studies

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The environment in which children grow has significantly changed in the past 50 years especially in developed countries. While having better sanitation and thus less chance for communicable diseases, children are facing unprecedentedly rapid development and changes in lifestyle. For example, children are living their lives surrounded by plastics, preservatives, antibiotics, sun screen and many other industrial chemicals most of which did not exist until a past few decades. A variety of gadgets including smart phones, tablets and computers are in place for both babysitting and schooling. Parents are encouraged to put their children on screen instead of reading while they drive or even during eat-out time. Children are experiencing less quality of sleep and more sedative lifestyle. A longitudinal prospective study is one of the ways to investigate the effect of those environmental factors on children's health and development. In order for successful conduct of such studies, exposure measurements play a key role. The more precise exposure measurements, the more sensitive and accurate the assessment of their effects becomes. Biomonitoring is one of the common tools that are often used to estimate individual exposure to mainly chemical substances. Personal monitoring using sensors and samplers is another way of the individual exposure measurements. In the presentation, recent techniques developed for children's exposure measurements and their uses in birth cohort studies are introduced.