Asthma and Cellular Aging: Evidence from a 4-Decade Longitudinal Study

Daniel W. Belsky, *Duke University Medical Center*

Asthma is receiving attention as a disease of aging. In adulthood, asthma is characterized by significant comorbidity with other chronic conditions, is prospectively associated with risk for cardiovascular disease, cancer, and early mortality. These observations suggest the hypothesis that asthma may relate to a general, multi-system phenotype of accelerated aging. To investigate whether asthma is associated with accelerated aging we conducted a longitudinal study to test associations between asthma and leukocyte telomere length. Data come from the Dunedin Multidisciplinary Health and Development Study, a 4-decade longitudinal study of a complete birth cohort (N=1,037; retention=95% at age 38). We constructed developmental phenotypes of asthma from prospective data collected at 9 in-person assessments. Cohort members with life-course-persistent asthma had shorter telomeres. This association was not accounted for by perinatal or childhood risk factors, health behaviors, or comorbid conditions. Asthma persisting from childhood into adulthood may forecast accelerated aging across biological systems.