Pediatric RESEARCH

COMMENT

ECI Biocommentary—February

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Type of study: ECI biocommentary

I hail from Ann Arbor, Michigan, the vibrant backyard of the University of Michigan where I received my BS in Neuropsychology (2008), followed by my MPH (2010) and PhD (2012) in Epidemiology. My interest in pediatrics stems from a broader intrigue in developmental origins of health and disease (DOHaD). I thank my PhD advisor, Dr. Eduardo Villamor, for piquing my curiosity about this topic via my dissertation on early-life determinants of weight gain in Colombian schoolchildren. During my postdoc, I worked with Dr. Emily Oken at Harvard Medical School on a variety of DOHaD projects using data from project viva, an ongoing Boston-area pre-birth cohort. At the time, Dr. Oken had just received results from metabolomic profiling in fasting blood of 8–13-year-old participants. She bravely loosed me on these exciting data. Inspired by evidence in adults that elevated serum branched-chain amino acids (BCAAs) precede type 2 diabetes by over a decade, I explored relations of > 300 serum metabolites with conventional metabolic biomarkers in project viva. I found that by the age of 8 years, BCAAs were already associated with insulin resistance, inflammation, and dysregulated satiety hormones. The motivation to replicate these findings in another pediatric population led to my contribution in this issue of *Pediatric Research*. My study revealed sex- and pubertal-stage-specific associations of BCAAs with 5-year change in glycemia, lipids, and leptin among adolescents in ELEMENT, a cohort led by Drs. Karen Peterson (University of Michigan) and Mara Téllez-Rojo (Institute of Public Health in Mexico). My findings emphasize the need to examine the relationship between metabolites and metabolic risk at a finer resolution in pediatric populations. Within my broader research agenda concerning DOHaD of obesity in youth, I view metabolomics as a tool to identify biomarkers and mechanisms linking modifiable behaviors (i.e., diet) to cardiometabolic risk in children.

My journey so far has taught me to temper persistence with patience, to plan meticulously while staying nimble in the face of unanticipated hitches, and to seek not only mentors with scientific expertise but also those willing to share insights on work and life. Rather than give advice to those who follow, I implore my fellow early career investigators to put themselves, regularly, in settings where they know the least of anyone else on a different topic. Under this condition, ideas grow into innovation, silos of expertise merge in an era that focuses on specialization, and we stand to learn the most.

ADDITIONAL INFORMATION

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