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SYMPOSIUM

Environmental Influences on Development of Type 2 Diabetes and Obesity: Challenges in Personalizing Prevention and Management

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Abstract

Recent epidemic increases in the U.S. prevalence of obesity and diabetes are a consequence of widespread environmental changes affecting energy balance and its regulation. These environmental changes range from exposure to endocrine disrupting pollutants to shortened sleep duration to physical inactivity to excess caloric intake. Overall, we need a better understanding of the factors affecting individual susceptibility and resistance to adverse exposures and behaviors and of determinants of individual response to treatment. Obesity and diabetes prevention will require responding to two primary behavioral risk factors: excess energy intake and insufficient energy expenditure. Adverse food environments (external, nonphysiological influences on eating behaviors) contribute to excess caloric intake but can be countered through behavioral and economic approaches. Adverse built environments, which can be modified to foster more physical activity, are promising venues for community-level intervention. Techniques to help people to modulate energy intake and increase energy expenditure must address their personal situations: health literacy, psychological factors, and social relationships. Behaviorally oriented translational research can help in developing useful interventions and environmental modifications that are tailored to individual needs.

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Abbreviations: (BMI) body mass index [weight (kg)/height (m^2)], (BPA) bisphenol A, (DPP) Diabetes Prevention Program

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