# METHODS FOR THE ASSESSMENT OF FOOD AND PHYSICAL ACTIVITY ENVIRONMENTS: BROOKLYN SENIORS AND THE BUILT ENVIRONMENT (BSBE) STUDY

**Kimberly B. Morland, Ph.D., M.P.H,** *Mount Sinai School of Medicine, Department of Preventive Medicine*
**Kelly R. Evenson, Ph.D., M.S.**,*University of North Carolina at Chapel Hill, Chapel Hill, USA*
**Richard Bordowitz, M.D.**, *Mount Sinai School of Medicine, New York, USA*
**James H. Godbold, Ph.D.**, *Mount Sinai School of Medicine, New York, USA*
**Evelyn C. Granieri, M.D., M.P.H., M.S.Ed***, Columbia University, New York, USA*
**Arlene Spark, Ed.D***., City University of New York at Hunter College, New York, USA*
**Philip J. Landrigan, M.D., MSc,** *Mount Sinai School of Medicine, New York, USA*

**Background and Aims:** Methods to evaluate the food and physical activity environment within the same study remain sparse. It is hypothesized that the types of local food retailers will affect individuals' dietary intake and both density and types of neighborhood infrastructure will influence walking. Therefore, methods to assess all features of local urban residential environments were developed.
**Methods:** One-thousand four hundred residents of Brooklyn New York, aged 60 years or older, were recruited during 2009-2011. Using Arc-GIS, participants' residential addresses were geocoded and 600-meter buffer zones were created, representing individuals' immediate residential environments. Using walking audits, information on the presence of the following types of places was collected. The categories of places include: (a) General (schools, places of worship, post office, medical, bank, libraries, service industries, retail industries); (b) Food (bodegas, franchised fast food, small grocery stores, specialty food stores, supermarkets, restaurants, tavern/bars, liquor stores, food vendors, convenience stores); (c) Physical Activity (parks, gyms, other physical activity resources); (d) Land Use (vacant commercial, land, residence and office spaces, residential, parking lots, factory/warehouse ); and (e) Public Transportation (bus stops, subway stops).
**Results:** Using data from the New York City Department of Transportation, 38,122 street segments in Brooklyn were identified. A segment is the road length between two adjacent intersections. Some street segments were excluded such as alleys or paper streets, resulting in a total of 35,122 eligible segments. There is an average of 56 street segments (standard deviation (SD)=16.0) per buffer zone. Within each buffer zone, examples from each category of places include an average of 0.41 banks (SD=0.82); 1.3 supermarkets (SD=1.2); 6.3 green space entrances (SD=6.1); 10.4 vacant commercial spaces (SD=7.2); and 10.7 bus stops (SD=16.0).
**Conclusions:** Characterizing neighborhood infrastructure will allow for a robust evaluation of neighborhood variations and mechanisms of built environments affecting wellness among older adults.