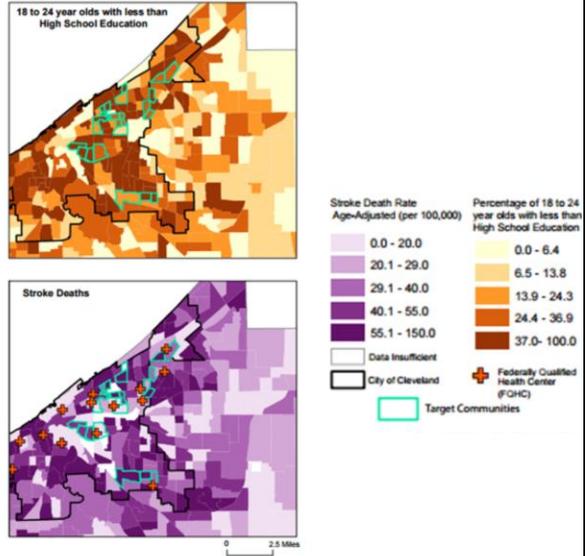


Generating useful composite measures

Using GIS Training to Address Blood Pressure Medication Adherence



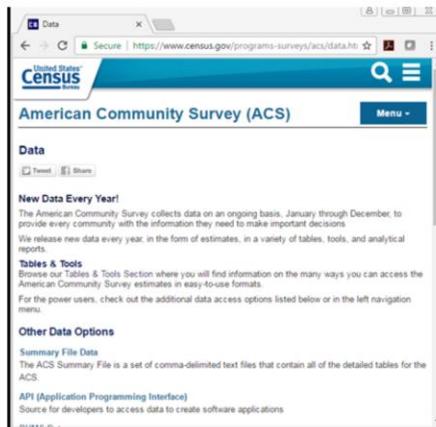
- Review the utility of the American Community Survey (ACS)
- Explore the concepts of community-neighborhood-social environment and their impacts on health and well being
- Consider and apply a neighborhood measure to your own context(s)





The American Community Survey : Available Data

- In 2010, the American Community Survey (ACS) replaced the long form decennial census
- **5-year estimates** available for all areas down to the block group scale. For example, the 2013 ACS 5-year estimates were released in 2014 and summarize responses received in 2009, 2010, 2011, 2012, and 2013 for all geographies



3-year estimates were available for areas with 20,000 people or more. For example, the 2013 ACS 3-year estimates were released in 2014 and summarize responses received in 2011, 2012, and 2013 for all states but only the 59% of [counties](#) with 20,000 people or more. This data product was discontinued in 2015 due to budget cuts, meaning the last 3-year release is the 2011-2013 estimates.

5-year good for understanding longer-term changes at small geographic scales

How do you get the data? Lot's of ways! ACS estimates are available via online data tools The American Fact Finder (AFF) is the primary tool for disseminating ACS data, allowing users to drill down to specific tables and geographies (starting with 2013 estimates, AFF also includes block group data). A selection of the most popular tables are shown in the QuickFacts, Easy Stats, Census Explorer, and OnTheMap tools for 5-year estimates, and My Congressional District for 1-year estimates. The Summary File is the most detailed data source, and is available as a series of downloadable text files or through an API for software developers.

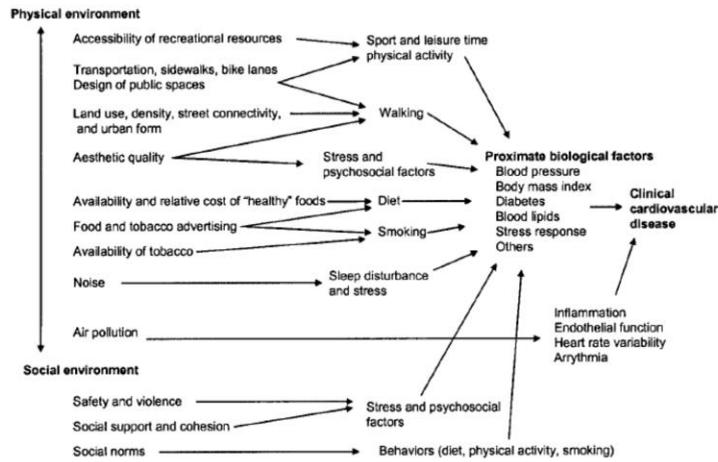


FIGURE Schematic representation of possible pathways linking residential environments to cardiovascular risk.

Census data from the ACS are frequently used for assessing the neighborhood social economic context

Are some areas more disadvantaged than other?

Research has shown that they answer is yes- and that these contextual variables are associated with health outcomes and behaviors.

Krieger N, Williams DR, Moss NE. Measuring social class in US public health research: concepts, methodologies, and guidelines. *Annu Rev Public Health* 1997;**18**:341–78

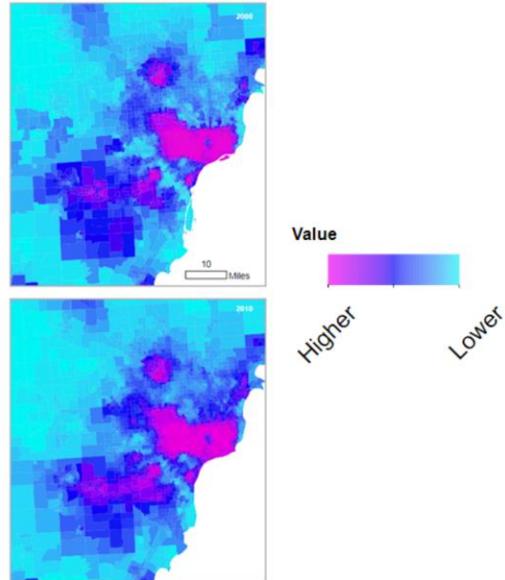
Diez Roux AV. Investigating neighborhood and area effects on health. *Am J Public Health* 2001;**91**:1783–9.

schematic representation from:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3456219/pdf/11524_2006_Art

icle_259.pdf

- **Neighborhood indices**
 - Standardized
 - Reproducible
 - Summarize multiple domains of disadvantage
- **Useful in showing**
 - Cumulative variation of disadvantage over time and space
 - Evaluating relationship between SES factors and health



Single variables:

Subject to geographic trends – which hinders comparison over time and place

Can be strongly associated problems for regression

Cons for indices:

Tradeoff lose some interpretability: what is more important ?

- **Dubowitz T, Heron M, Basurto-Davila R, Bird CE, Lurie N, Escarce JJ. Racial/ethnic Differences in U.S. Health Behaviors: A Decomposition Analysis. American journal of health behavior. 2011;35(3):290-304.**
- Krieger, N. (2009). "Putting health inequities on the map: social epidemiology meets medical/health geography--anecosocial perspective." *GeoJournal* 74(2): 87-97.
- Krieger, N., J. Chen, et al. (2003). "Choosing area based socioeconomic measures to monitor social inequalities in low birth weight and childhood lead poisoning: The Public Health Disparities Geocoding Project (US)." *Journal of Epidemiology and Community Health* 57(3): 186-199.
- Krieger, N., J. T. Chen, et al. (2003). "Race/Ethnicity, Gender and Monitoring Socioeconomic Gradients in Health: A Comparison of Area-Based Socioeconomic Measures-The Public Health Disparities Geocoding Project." *American Journal of Public Health* 93(10): 1655-1671.
- **Messer, L. C., B. A. Laraia, et al. (2006). "The Development of a Standardized Neighborhood Deprivation Index." *Journal of Urban Health* 83(6): 1041-1062.**