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THE WEIGHT OF PLACE

How Neighborhood Disadvantage in Adolescence Shapes Obesity Trajectories into Early Midlife

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INTRODUCTION

Obesity is usually framed as individual behavior, yet the neighborhood a teenager grows up in may set the course of their weight for decades. This study asks whether adolescent neighborhood disadvantage predicts which body mass index (BMI) path people follow from age 16 to 38, and whether the local food environment explains the link.

KEY FINDINGS

- Three BMI paths ran from ages 16 to 38: **normal stable** (59.7%), **overweight rising** (31.3%), and **obese accelerating** (9.0%), the last gaining about **14 BMI units in 22 years**.
- Each standard deviation increase in neighborhood disadvantage was linked to **18% higher odds** of the obese accelerating path (OR = 1.18), independent of household income and parental education.
- Moving from the 10th to the 90th percentile of disadvantage raised the predicted probability of that path from **7.4% to 10.6%**.
- The **food retail environment did not mediate** the association (about 0% mediated), and neither did adolescent diet quality or sports participation.
- About **63%** of the association ran through BMI **already elevated by adolescence**, and roughly **1 in 7** of these trajectories traced to high disadvantage (PAF = 13.6%).

WHY IT MATTERS

- Place shows up in weight **early**. The neighborhood signal was already present in adolescent BMI, before trajectories diverged.
- **Food access alone is unlikely to be the mechanism**. Chronic stress, safety, and recreational space are more plausible pathways.
- Prevention may need to **begin before early adolescence** and reach family-level influences, paired with place-based investment in housing, employment, and recreational space.

RESEARCH DESIGN

- Followed **8,951 U.S. adolescents for 22 years** in the National Longitudinal Study of Adolescent to Adult Health (Waves I, III, IV, V; 1994–2018).
- Measured **concentrated disadvantage** at Wave I from five census block-group indicators:
  - households below poverty
  - civilian unemployment
  - single-parent households
  - adults without a high school diploma
  - households on public assistance
- Identified **BMI trajectory classes** from ages 16 to 38 using latent class growth modeling.
- Tested mediation by the **food retail environment** (supermarkets, fast food, convenience stores) and by adolescent diet quality and sports frequency.
- Applied survey-adjusted multinomial logistic regression pooled across **20 multiply imputed datasets**.

MAIN THEMES

> Where adolescents live is tied to which weight path they follow into midlife, but the pathway is *not* the corner store. The association held across race and ethnicity, sex, and income, and traced back to weight already carried at age 16, which places the window for prevention well before adulthood.

FOR MORE

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