

# Contemporary Neurology

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Social and Structural  
Determinants of  
Cognitive Aging

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# Disclosures

None

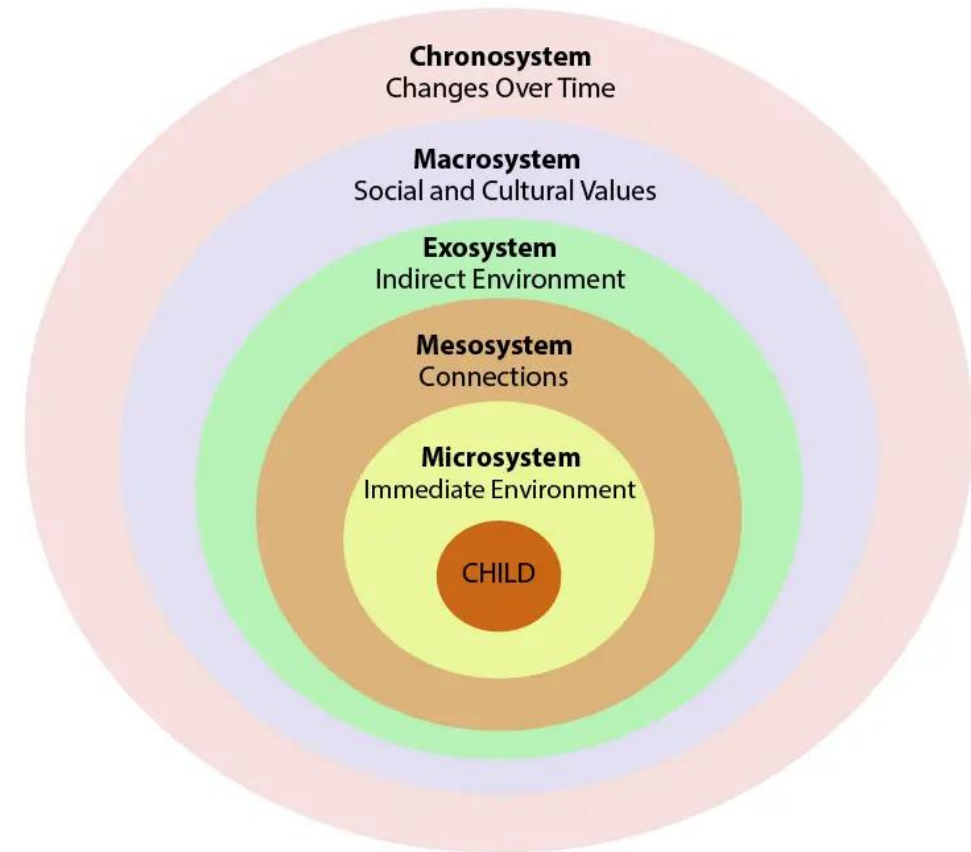
# Objectives

- Understand the role of social drivers of health in influencing health outcomes
- Examine the historical and current structural drivers of health that contribute to disparities in cognitive aging and neurological disease
- Identify key racial disparities in neurological diseases
- Implement strategies to improve clinical practice and patient care, including addressing implicit bias, promoting equity, and advocating for systemic change

# Background

- **Structural drivers of health** - overarching systems, policies, and societal norms that shape the conditions in which people live, work, and access healthcare
- **Social Drivers of Health (SDOH)**
  - Transportation
  - Housing security
  - Food security
  - Financial stability
  - Social service connections
- Can impact as much as 50% of our health<sup>1</sup>
- RWJF estimates social needs account for as much as 80% of health outcomes<sup>2</sup>

## Bronfenbrenner's Ecological Systems Theory



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1. Whitman A, De Lew N, Chappel A, Aysola V, Zuckerman R, Sommers BD. *Addressing Social Determinants of Health: Examples of Successful Evidence-Based Strategies and Current Federal Efforts.*; 2022.

2. Manatt, Phelps & Phillips, LLP. Medicaid's role in addressing social determinants of health. Robert Wood Johnson Foundation. Feb. 1, 2019.. <https://www.rwjf.org/>



# Historical Structural Drivers of Health

## Structural Racism

The normalization and legitimization of an array of dynamics (historical, cultural, institutional and interpersonal) that routinely advantage White people while producing cumulative and chronic adverse outcomes for people of color



# Current Structural Drivers of Health

## Healthcare Access

Lower reimbursement rates for Medicaid compared to private insurance lead many specialists, including neurologists, to avoid accepting Medicaid patients, limiting access to care

## Hospital closures

Hahnemann University Hospital in Philadelphia closed due to financial strain

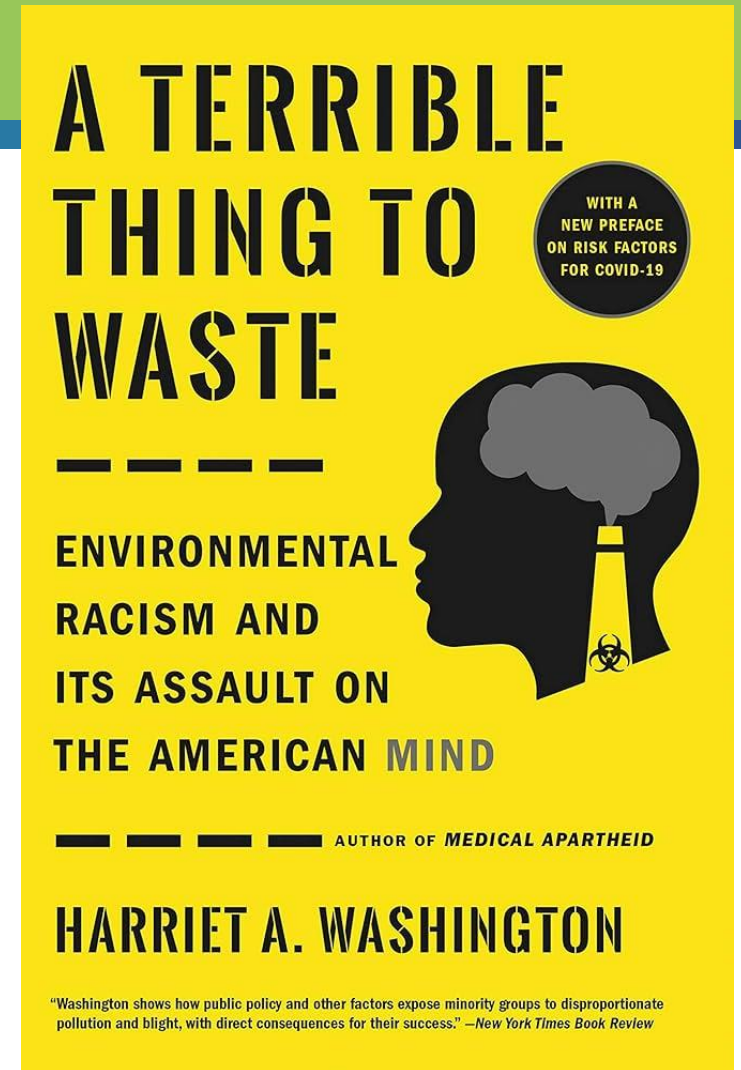




# Current Structural Drivers of Health

## Environmental Racism

- Policies, practices, or conditions that disproportionately expose communities of color to environmental hazards, leading to adverse health outcomes.
- Historically rooted in discriminatory practices such as redlining, poor zoning regulations, and neglect of minoritized neighborhoods.
- Higher exposure to particulate matter in minoritized neighborhoods is linked to an increased risk of stroke, Parkinson's disease, and Alzheimer's disease.



# Current Structural Drivers of Health

## Flint, Michigan (2014)

- Water supply was switched to the Flint River without proper corrosion control, causing lead to leach into the water supply
- Over 100,000 residents, predominantly Black and low-income, were exposed to high levels of lead, a potent neurotoxin
- In October 2015, local and state officials admitted the crisis and switched back to Detroit water supply

## Neurological impacts of lead exposure

- Developmental delays
- Cognitive decline
- Stroke risk





# Racial Disparities in Neurology

**Specialty Care:** Black and Hispanic patients are less likely to be seen by outpatient neurologists trained in the specialty than White patients—Parkinson's disease, multiple sclerosis, headache, cerebrovascular disease, and epilepsy (Neurology 2017).

**Epilepsy:** Black patients and other people of color, as well as those of lower socioeconomic status, are much less likely to have access to surgery for epilepsy (Neuro Clin Pract 2018).

**Movement Disorders:** Black patients and other people of color, as well as those of lower socioeconomic status, are referred at a later stage of their disease for DBS for PD (Ann Neuro 2022).

**Dementia:** Black, Hispanic, and Asian patients in California were significantly less likely than White people to receive an early diagnosis of dementia (JAMA Neuro 2021).

**Dementia:** African Americans are less likely to receive anti-amyloid therapy for Alzheimer's disease due to a higher risk of side effects like ARIA from the APOE  $\epsilon$ 4 allele, lower rates of cortical amyloid positivity on PET imaging, and underrepresentation in clinical trials (Nature Reviews Neurology 2022)

# The impact of structural and social drivers of health (S/SDOH) on cognition

- Lifecourse impact of S/SDOH
  - Educational inequity, poverty
  - Neighborhood disadvantage
  - Structural racism (segregation, reduced access to healthcare)
- Macrosystemic Influences (e.g., policies, cultural norms) perpetuate biases, shaping access to health promoting resources across the lifespan


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## REVIEW ARTICLE

Alzheimer's & Dementia®  
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

## The structural and social determinants of Alzheimer's disease related dementias

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# What can we do as neurologists?

Advocate for policies addressing structural determinants of health, including improved access to imaging and specialist care in underserved communities.

Participate in outreach programs to increase clinical trial diversity.

Address implicit bias in clinical settings to ensure equitable care for all patients.





# How can we promote equity in patient care?

- **Self-Reflection**
  - Practice self-awareness daily.
  - Seek feedback from colleagues and patients.
  - Journal experiences to uncover biases and improve practices.
  - Engage in discussions with colleagues about equity in care.
  - Complete implicit bias training and health disparities education.





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# Questions

