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# Major Shifts in the Obesity Environment

**Publications related to obesity** : 1990-94: 10,600; 2020-2024:145,000

**New effective medications**

**Increased acknowledgment of the role of obesity in related diseases**

- AHA: Cardiovascular-Kidney-Metabolic Health
- American Cancer Society, American Association for the Study of Liver Disease

**Progress in obesity care**

- Office of Personnel Management guidelines

**Progress on the legislative front**

- Treat and Reduce Obesity Act (TROA)

**Obesity-related Policy Systems and Environment Research in the US (OPUS))**

**Robert Wood Johnson Foundation:** ends \$1B X 20 year funding for childhood obesity

# Outline

**Prevalence changes with time in the US and globally**

- Projections

**Rethinking causality and its implications**

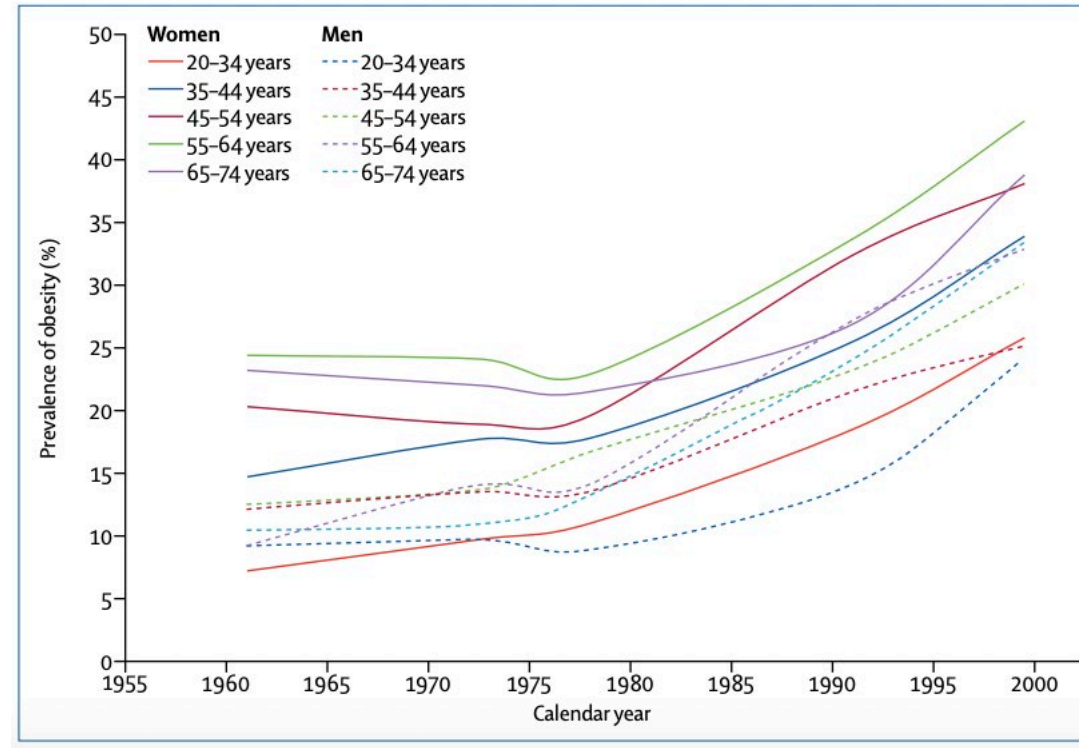
- High fructose corn syrup
- Obesogens and endocrine disruptors

**GLP-1s - implications for prevention and treatment**

**Implications of clinical trials of prevention in children**

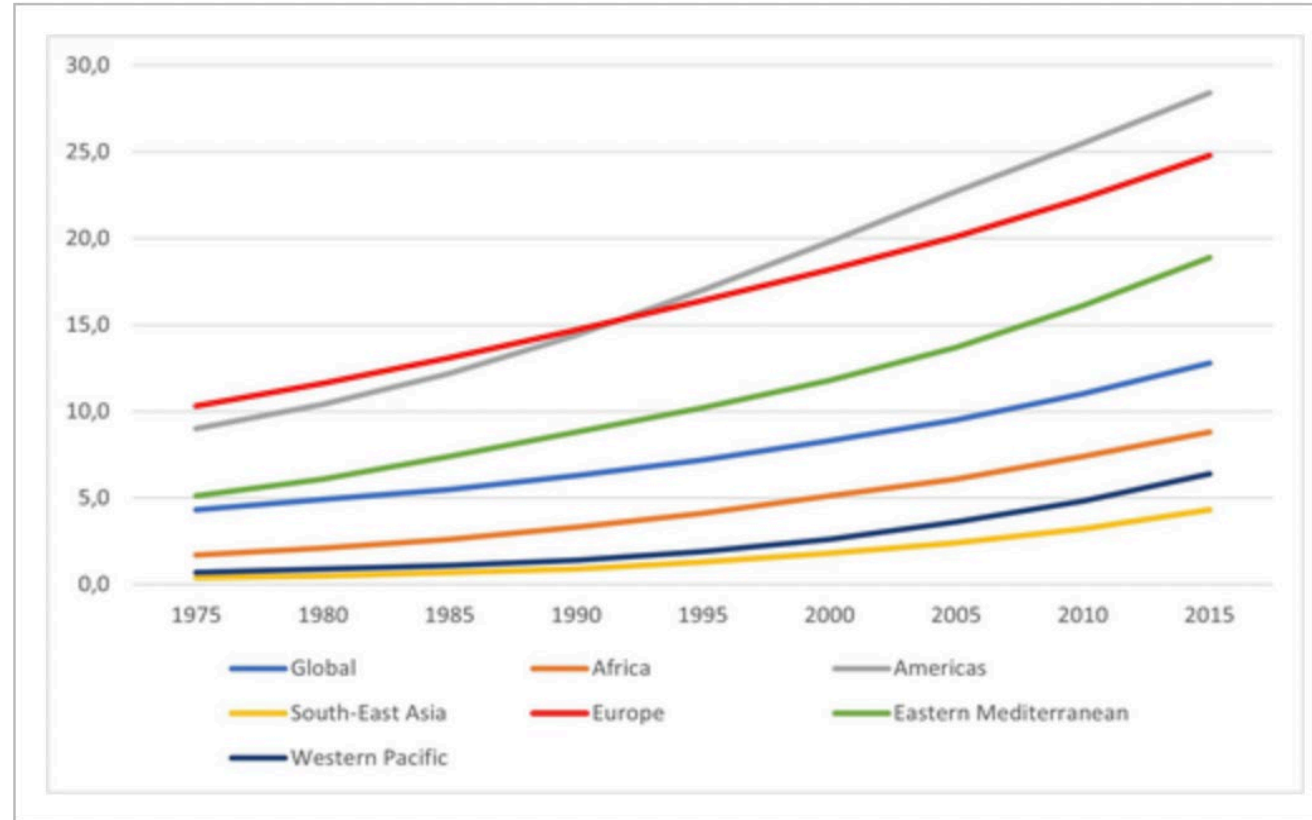
**Moving beyond our causal systems map**

# Changes in the Prevalence of Obesity in the US over Time



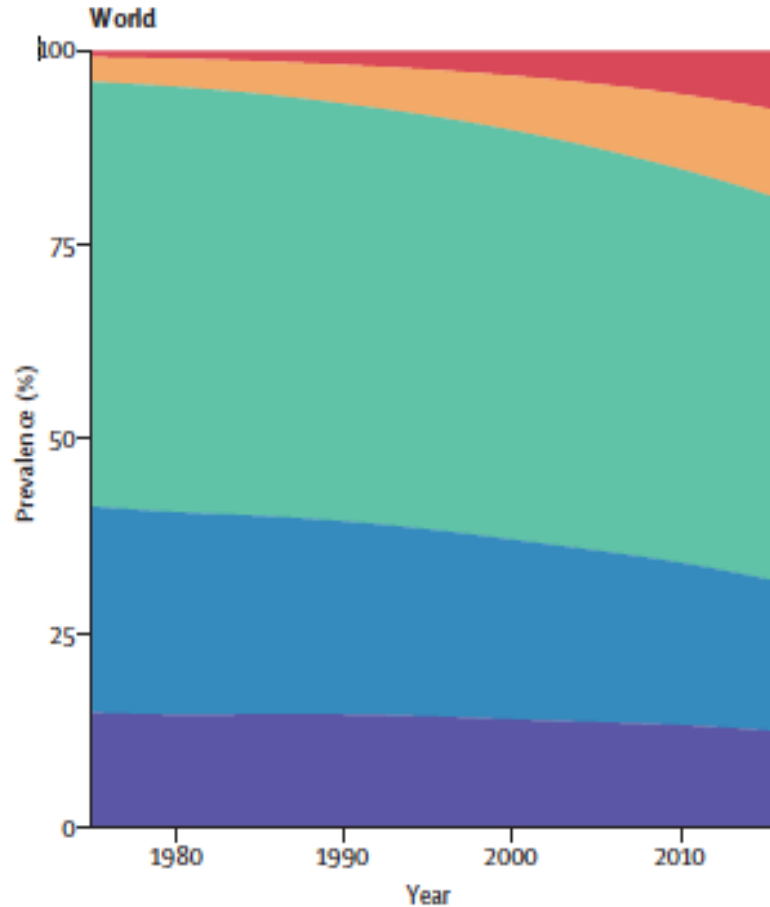
Rodgers A, et al. Lancet Public Health 2018; 3(4): e162

# Global Obesity Prevalence in Adults



Suminska M et al. Obesity Reviews 2022;23:e13440

# Changes in the Prevalence of Obesity and Undernutrition



## Obesity

2 billion people worldwide

\$2 Trillion/year

## Stunting

155 million children with stunting

815 people with chronic undernutrition

Double burden increased in 162 countries.  
Increases are attributable to increases in obesity.  
Whereas decreases in double burden are attributable to decreases in undernutrition.  
US = 8% of global obesity

**NCD risk Factor Collaboration 2024: 403:1027**

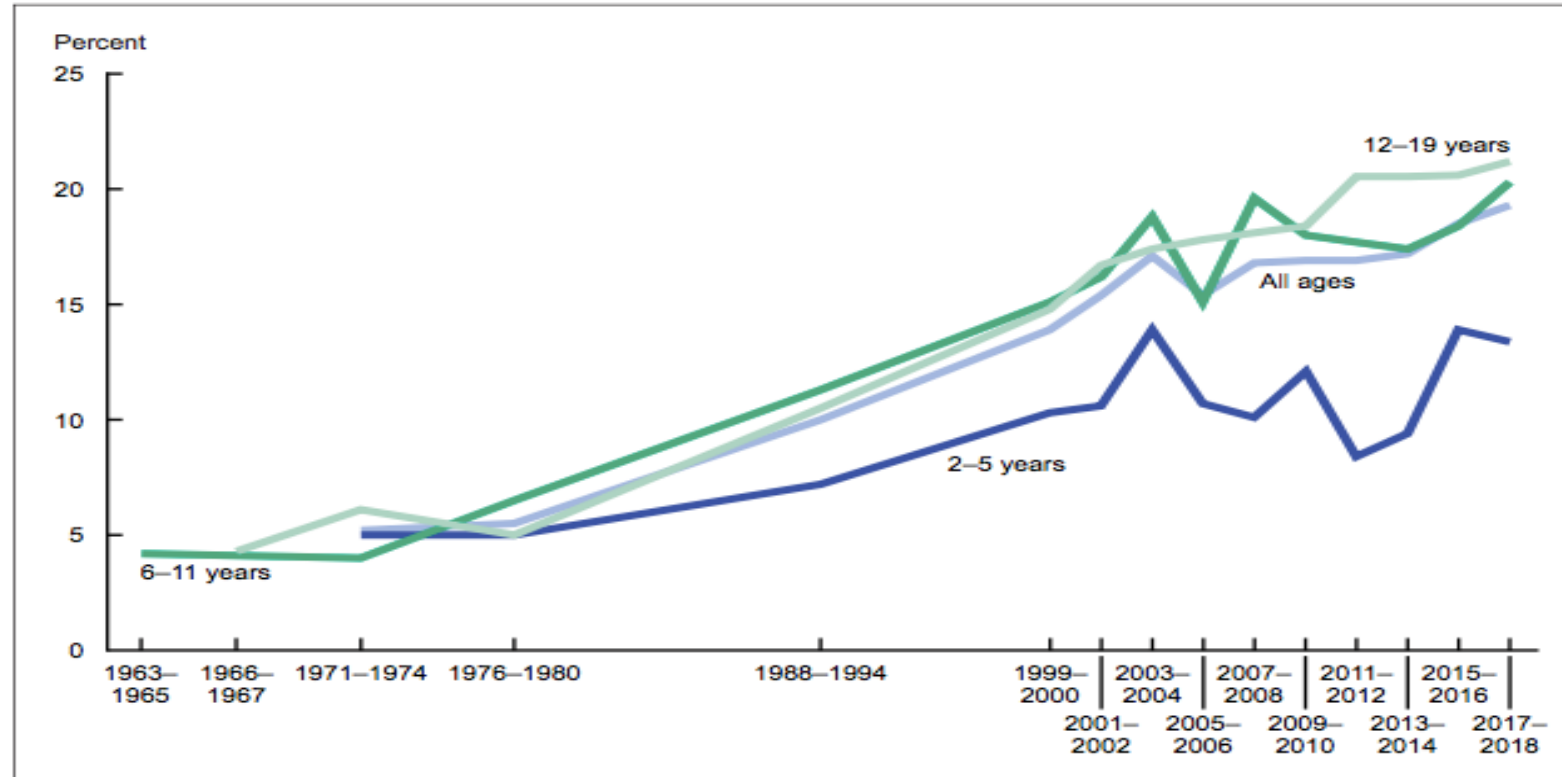
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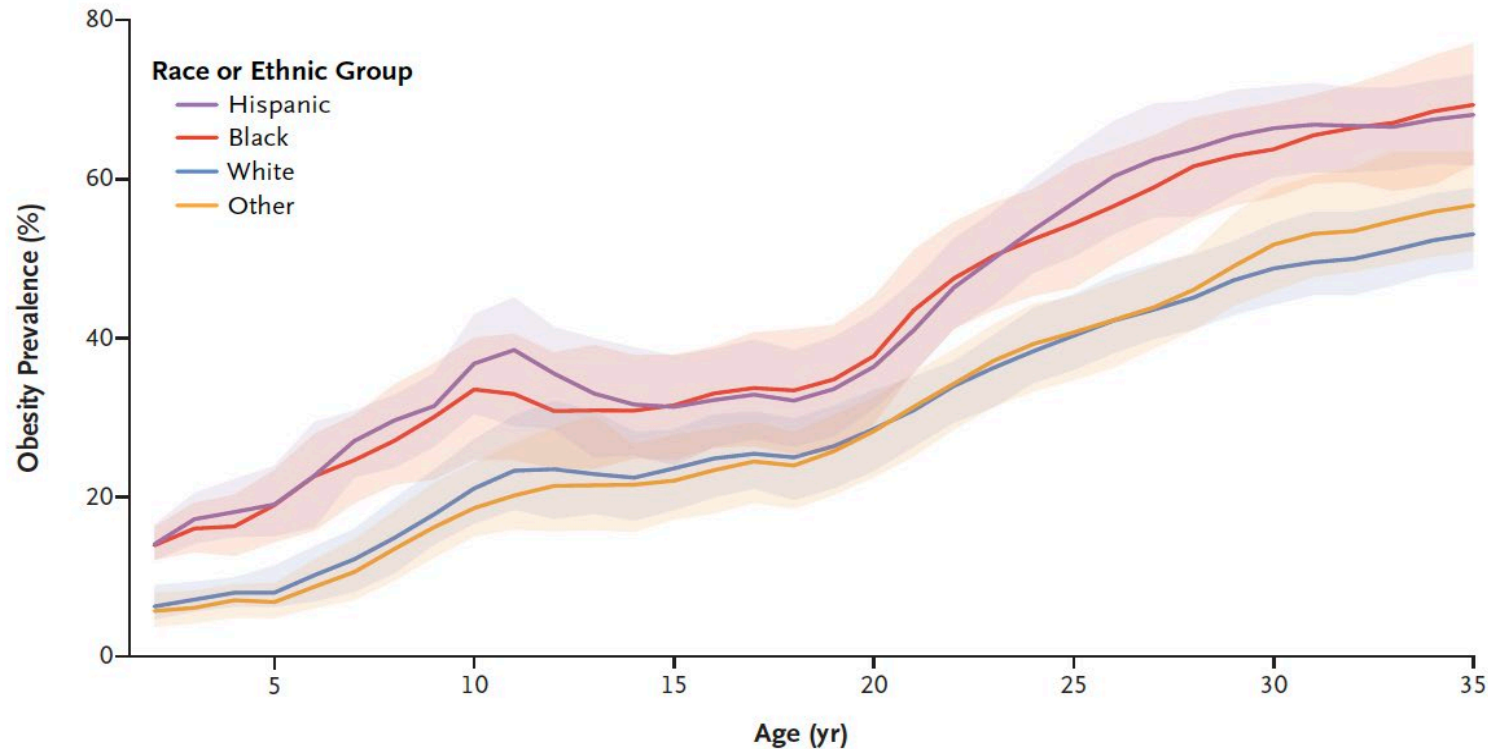


# US Trends in Childhood Obesity 1963-1965 to 2017-2018



Fryar CD et al. Health E-stats. NCHS December 2020

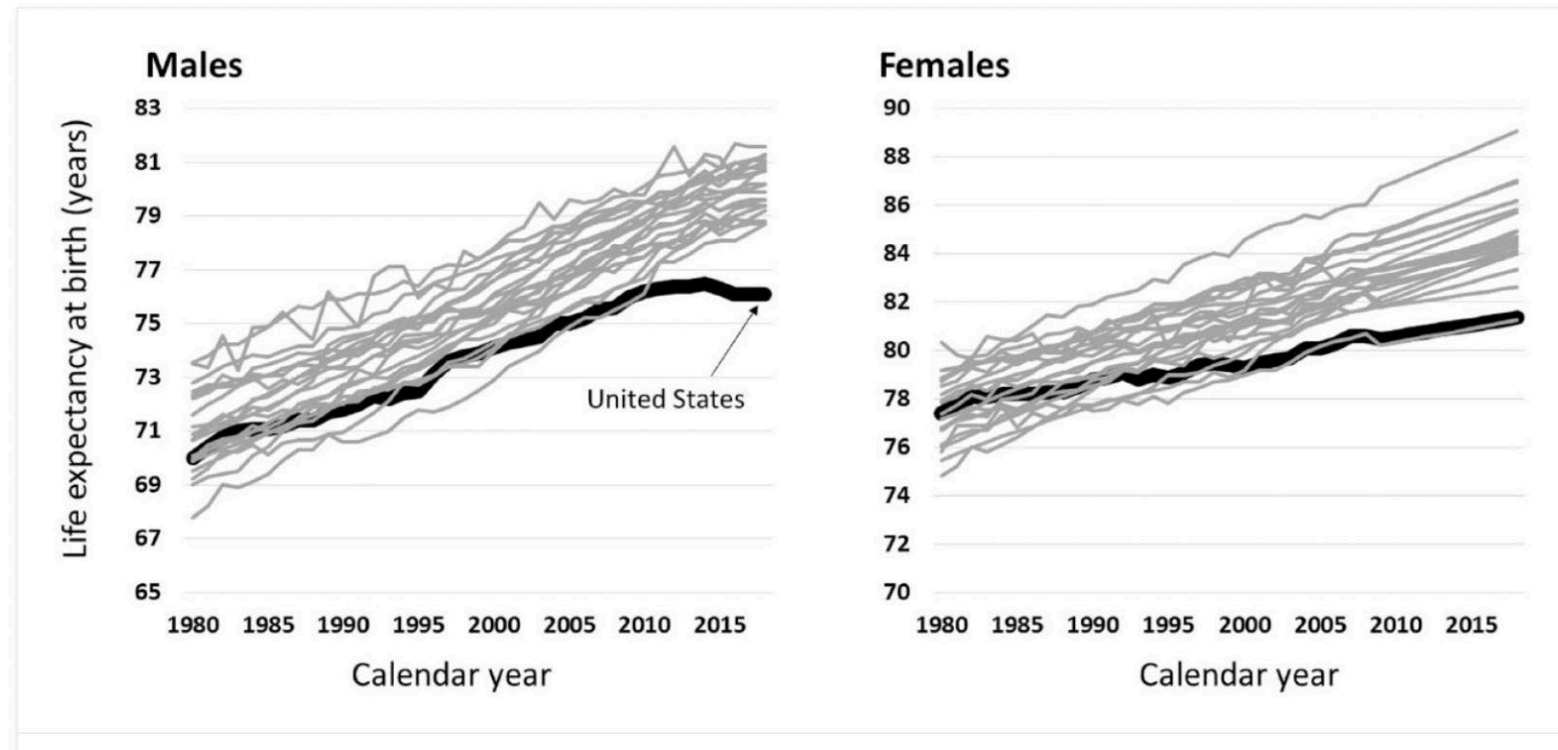
# Predicted Prevalence of Obesity According to Race or Ethnic Group



Ward ZJ et al. NEJM 2017; 377:22

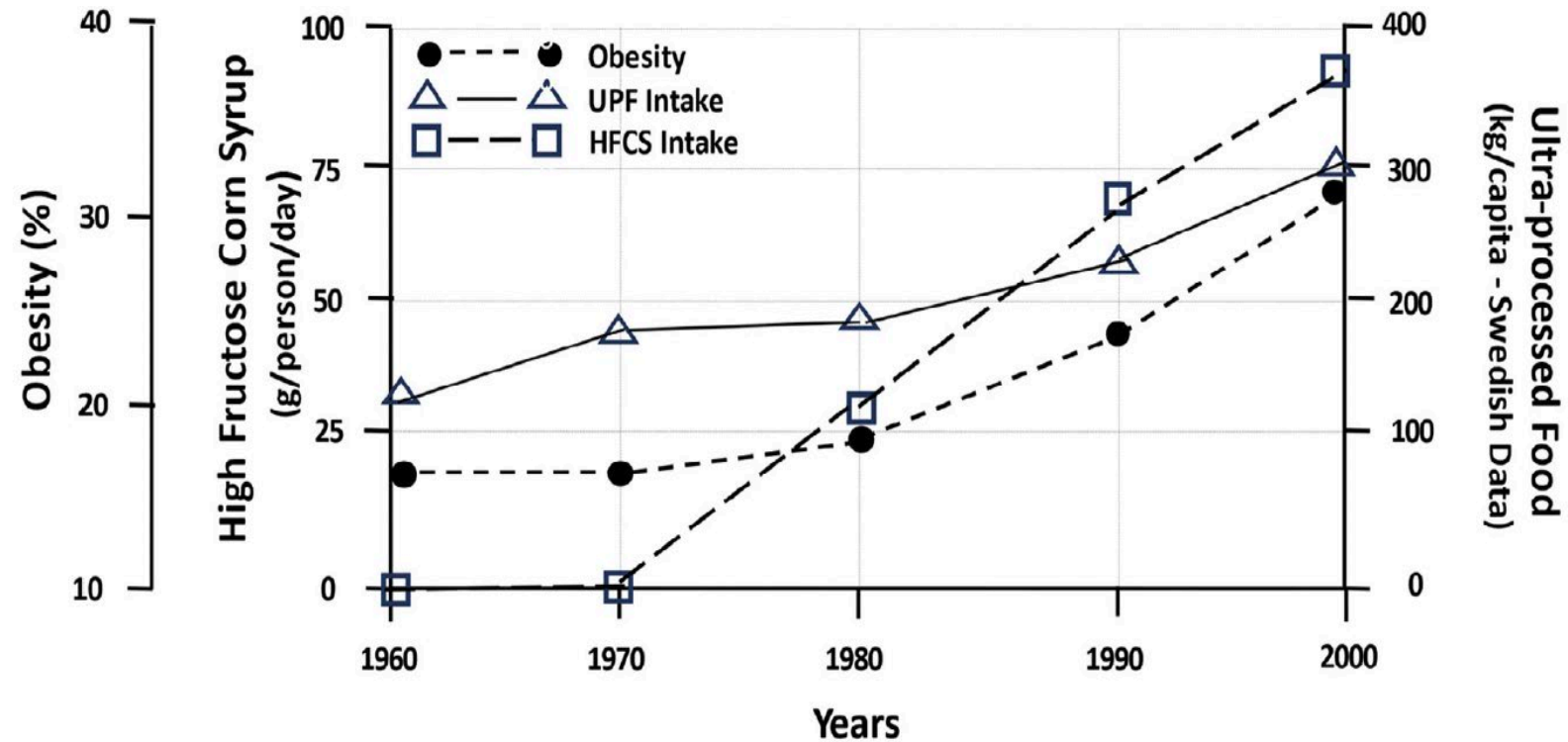


# Life Expectancy at Birth for Select High-income Countries



Montez JK et al. J Health and Social Behavior 2021; 62:286

# Changes in Obesity Prevalence and Intake of HFCS and UPFs.



Bray GA. Obesity 2024; 32:7

# Obesogens, Endocrine Disruptors, and Forever Chemicals

## Fluorochemicals

- Perfluorooctanesulfonic acid (PFOS)
- Polyfluoroalkyl substances (PFAS)
- Manufacturing began in 1970s

## Bisphenol A (BPA), phthalates, and other plasticizers

### Ubiquitous- 16,000 products, 45% tap water

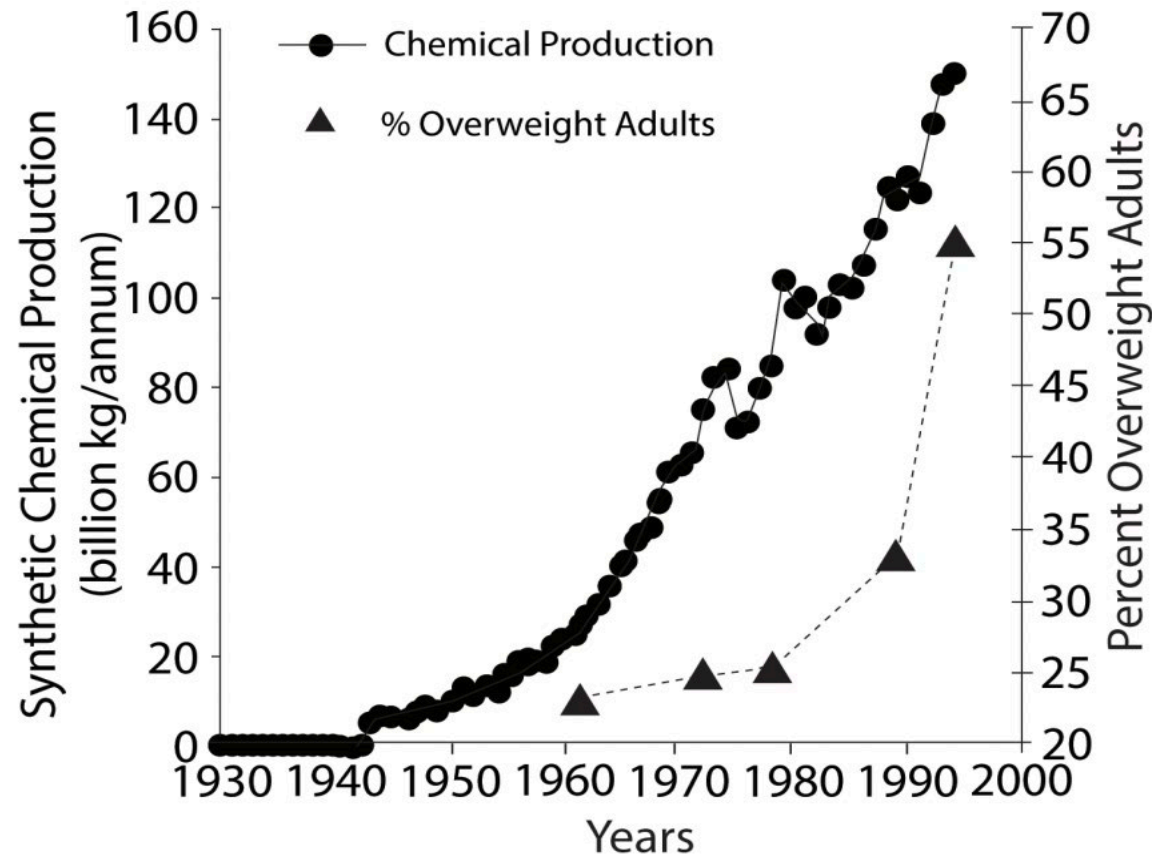
- Significant blood levels in humans
- Significant blood levels in pets, birds, and wild animals

## Health effects

- Obesity, diabetes, liver disease, fetal development
- Impaired immune function
- Early thelarche

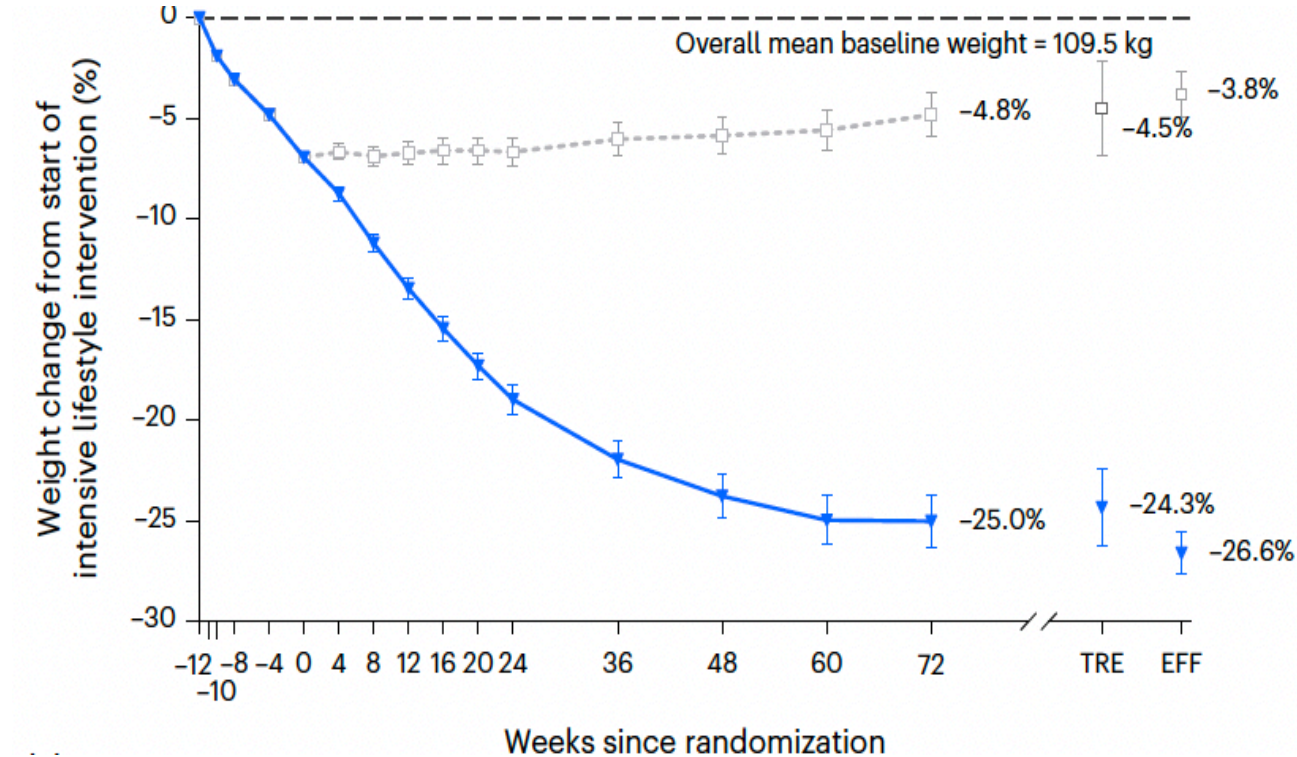
**PFOS and PFAS were not present in blood samples collected before 1969-1971**

# Association of Obesity Prevalence with Chemical Production



Heindel J. NAS Workshop, 2016. Interplay Between Environmental Exposures and Obesity

# Weight Losses with Tirzepatide- Surmount 3



Wadden TA et al. Nature Medicine 2023; <https://doi.org/10.1038/s41591-023-02597-w>

# Challenges in the Use of Obesity Medications

- The new GLP-1 agonists have already transformed obesity care, and with time are likely to alter the entire obesity ecosystem
- Participation in obesity trials and use of obesity medications are associated with racial and socioeconomic disparities and inequities. As a result, disparities and inequities are likely to increase.
- Because drug trials have been limited to physiologic responses, we have limited or no information on how factors like race, culture and socioeconomic class affect the use of medications and therapeutic outcomes
- Medications threaten the importance and application of intensive behavioral therapy
- The bias about the origins of obesity now extends to the use of OMs
- Lipophilic drug metabolism is altered in people with obesity, but has been ignored by the pharmaceutical industry



# Multicenter Trials of Pediatric Obesity Prevention

## Girls Health Enrichment Multi-site Studies (GEMS)

- Two year intervention
- 8-10 yo low income African American girls

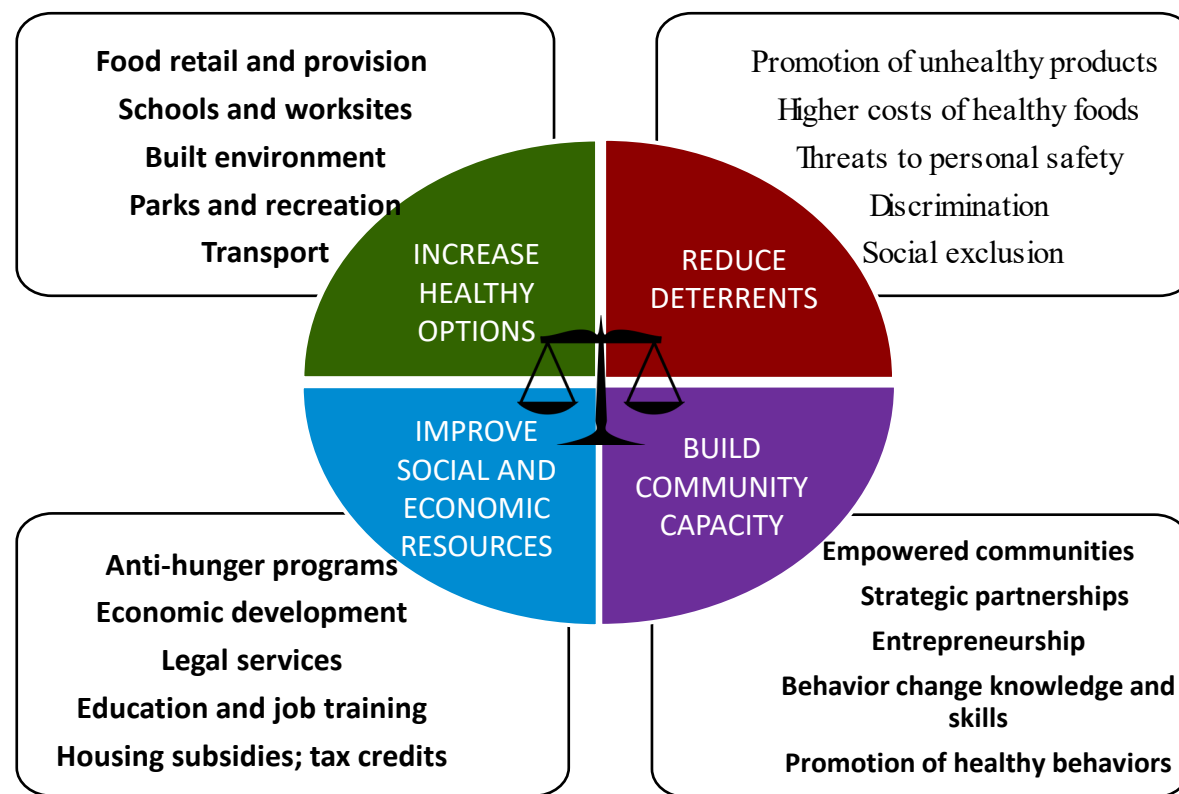
## Childhood Obesity Prevention and Treatment Research Consortium (COPTR)

- Three year intervention
- Low-income African American or Hispanic children
- Preschool (2-5 years) or middle school (11.6 yo)

# Equity Oriented Obesity Prevention Framework

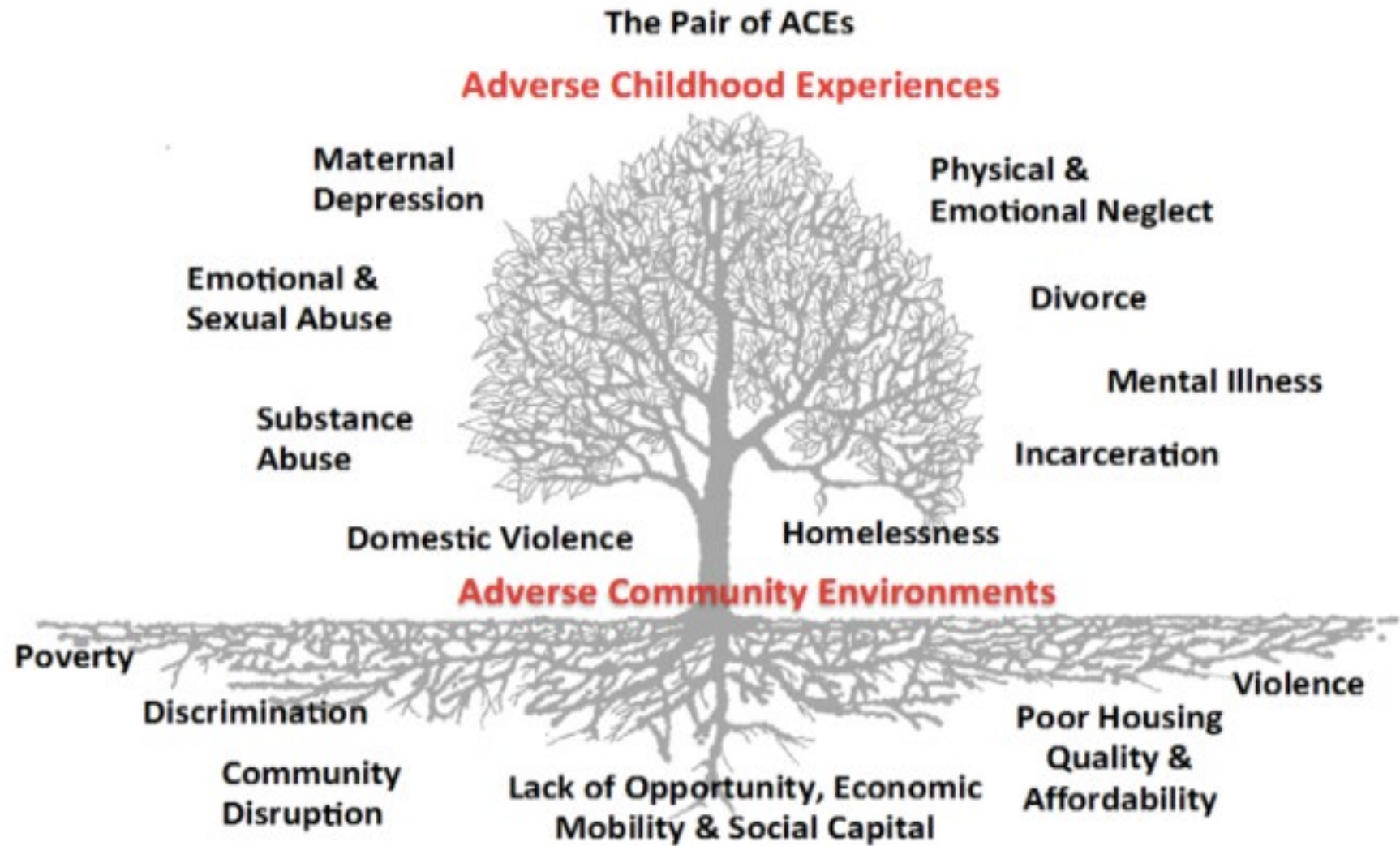
Kumanyika S. AJPH September 4, 2019

## Policy and System Changes



## Individual and Community Resources and Capacity

**See Getting to Equity Toolkit:** <https://gtetoolkit.councilbh.org/>



Ellis WE, Dietz WH. Academic Pediatrics 2017; 17:S86

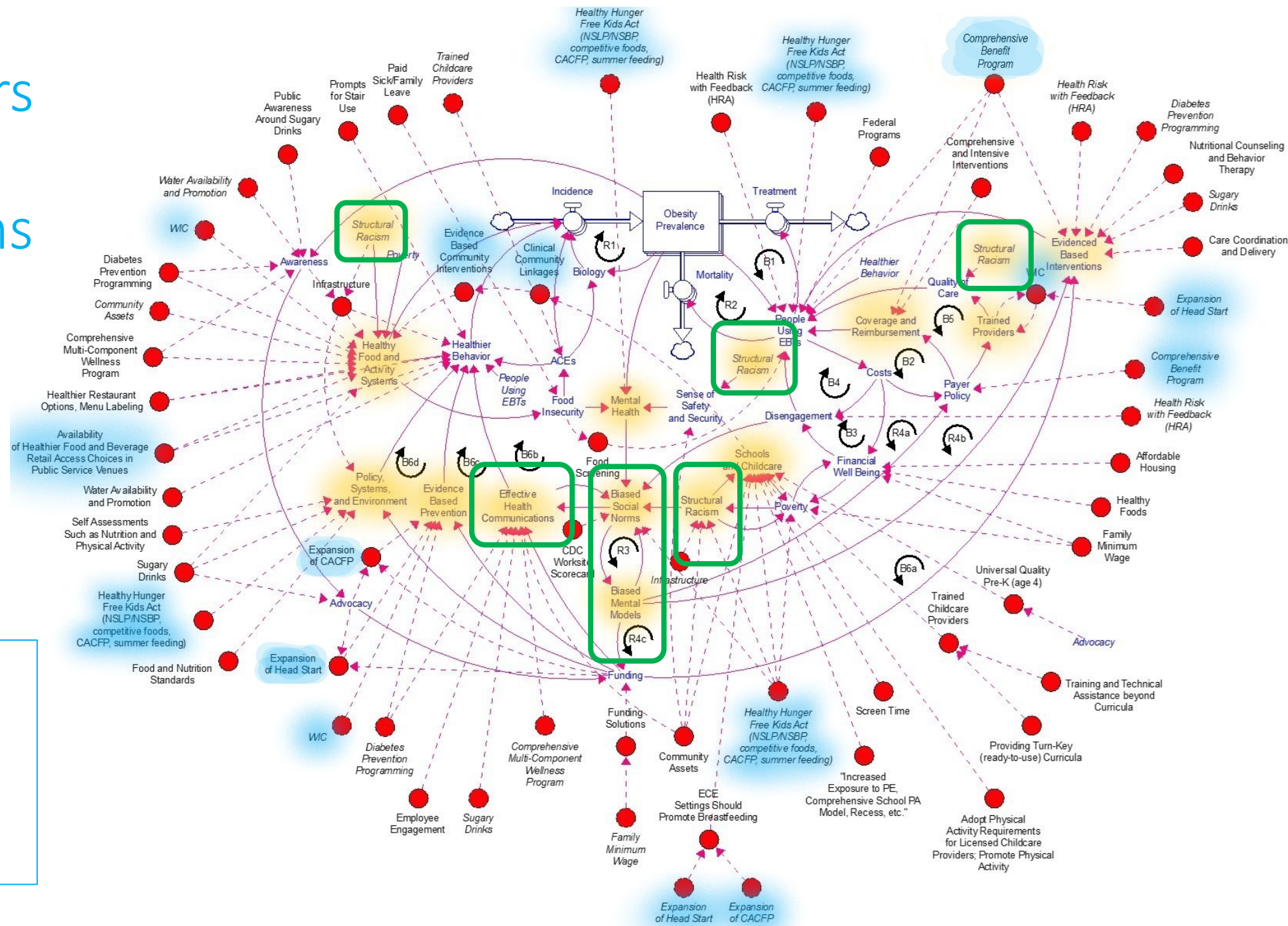
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\*Member priorities highlighted

- - Roundtable priority obesity driver
- - Roundtable priority evidence-based obesity solution







“The focus on social determinants of health needs to be matched with an equal concern for the commercial determinants of health...and the political determinants of health and the interface between these determinants”

**Kickbusch I. Health Promotion International 2012; 27(4):428**

# Conclusions and Opportunities

- Identify effective strategies to reverse reliance on UPFs
- What distinguishes those who are vulnerable to effects of PFAS from those who are resistant?
- The shared interest in obesity by AHA, ADA, ACS, AASLD and health care delivery systems offer collaborative opportunities to focus on prevention and treatment. The RT should convene and drive these efforts
- Identify and highlight successful efforts to address structural racism
- Move beyond the “what” of our causal loop diagram to the “how”
- Increase our focus on the dominant role of industry





# Thank You

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