



The State of Food is Medicine in 2025

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FOOD IS MEDICINE INSTITUTE

CHRONIC DISEASES IN AMERICA

6 IN 10

Adults in the US
have a **chronic disease**



4 IN 10

Adults in the US
have **two or more**

THE LEADING CAUSES OF DEATH AND DISABILITY
and Leading Drivers of the Nation's **\$3.5 Trillion** in Annual Health Care Costs



HEART DISEASE



CANCER



CHRONIC LUNG
DISEASE



STROKE



ALZHEIMER'S
DISEASE



DIABETES



CHRONIC
KIDNEY DISEASE

Public Interest in Food and Nutrition

Comprehension of the link between nutrition and health is high

90% of respondents agree that eating more healthy foods is important to prevent the onset of many health conditions.

86% of respondents agree that eating healthy foods should be a priority for treating major health conditions.

81% of respondents agree that their health depends on what they eat on a regular basis.

Diet-related medical conditions are a priority

75% of respondents agree that the United States has much higher rates of diet-related medical conditions compared to other countries.

63% of respondents agree that diet-related medical conditions are the costliest health conditions in the U.S. health care system.

76% of respondents agree that diet-related medical conditions are one of the top priorities facing the health of the U.S. population.

National poll of 3,009 U.S. adults

Ridberg et al., Health Affairs 2025

Public Confusion



**INTERMITTENT
FASTING**



KETO



PALEO



VEGETARIAN



VEGAN



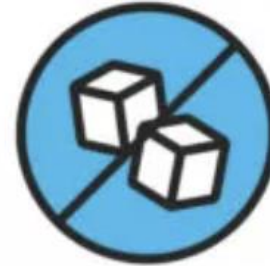
MEDITERRANEAN



RAW



LOW CARB

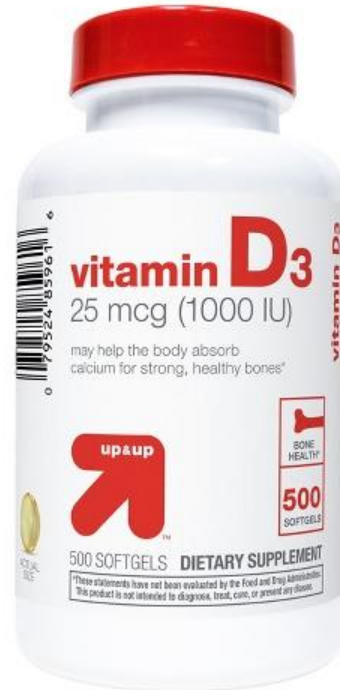
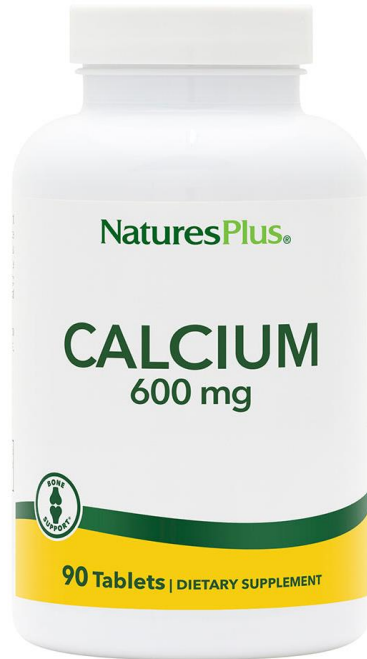


NO SUGAR



LOW FAT

Nutrition and Health: Oversimplified Targets

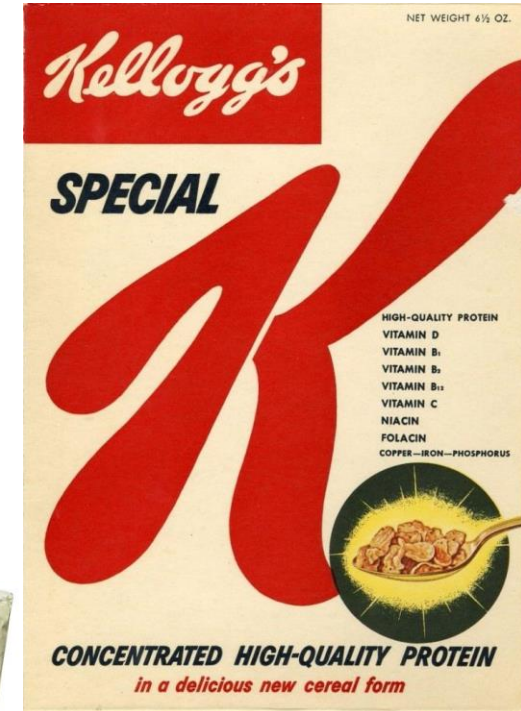


Mozaffarian D., Adv Nutr 2019

Nutrition and Health: Oversimplified Targets



- Low calorie = “Less weight gain”
- Fat free = “Healthy”
- Low saturated fat = “Healthy”
- Vitamin fortified = “Good for you”

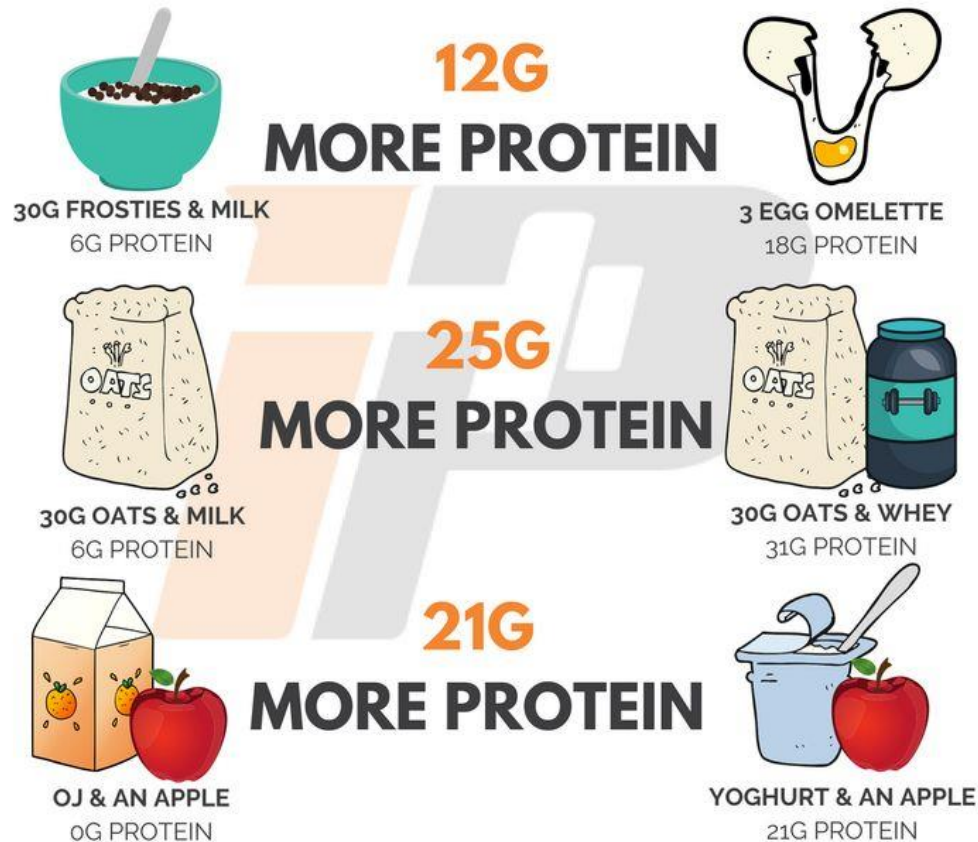


Nutrition and Health: Oversimplified Targets

PROTEIN BREAKFAST

IRONPARADISEFITNESS.COM

BREAKFAST SWAPS TO INCREASE PROTEIN

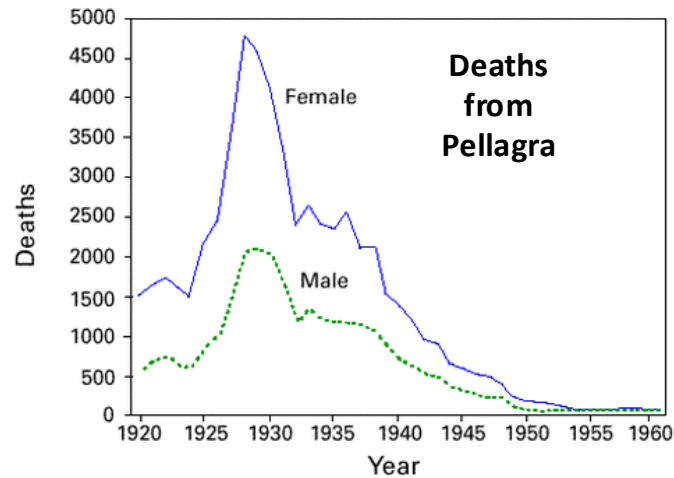


20th Century: Discovery of Vitamins

U.S. Pellagra Epidemic



Dr. Joseph Goldberger



Mozaffarian et al., BMJ 2018; Public Health Reports 1941; JAMA 1941; JAMA 1942

World War II



President Franklin D. Roosevelt



1941 National Nutrition Conference for Defense

- New standards/expansion for **vitamin enriched flour**
- Creation of Recommended Daily Allowances (**RDAs**)
- First **RDA-based Dietary Guidelines**

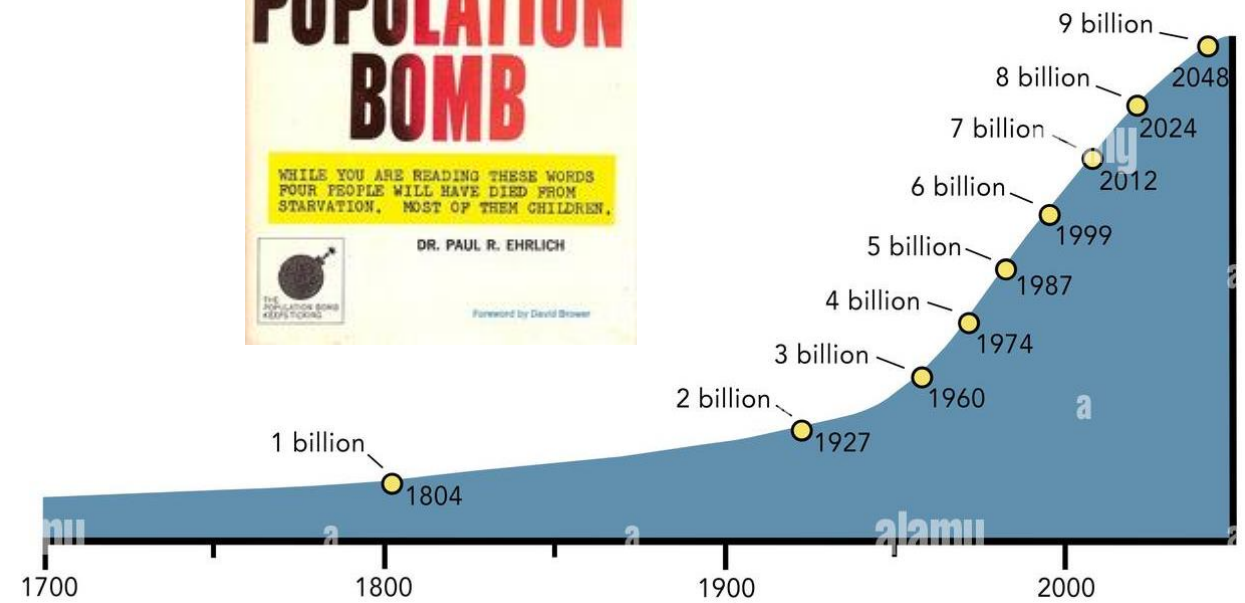
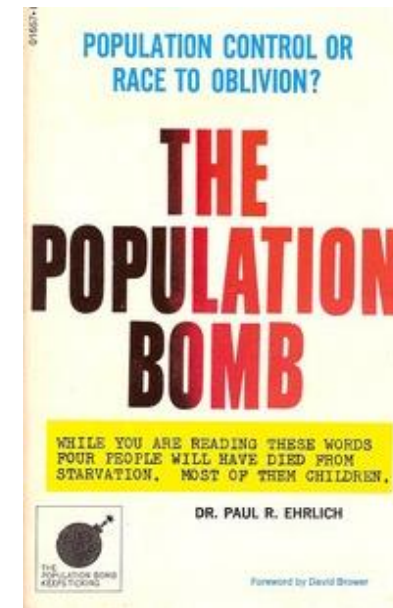
Population Explosion: Need for Calories

WWII: 30 million deaths from hunger



Soviet Union	7 to 9 million
– Of which, under German control	6 to 7 million
– Under Soviet control	1 to 2 million
Bengal province, India	2.1 million
Henan province, China	2 million
Java	1.3 to 2.4 million
Vietnam	1 million
Greece	300,000
Austria	100,000
Netherlands	15,000 to 25,000

Global population explosion



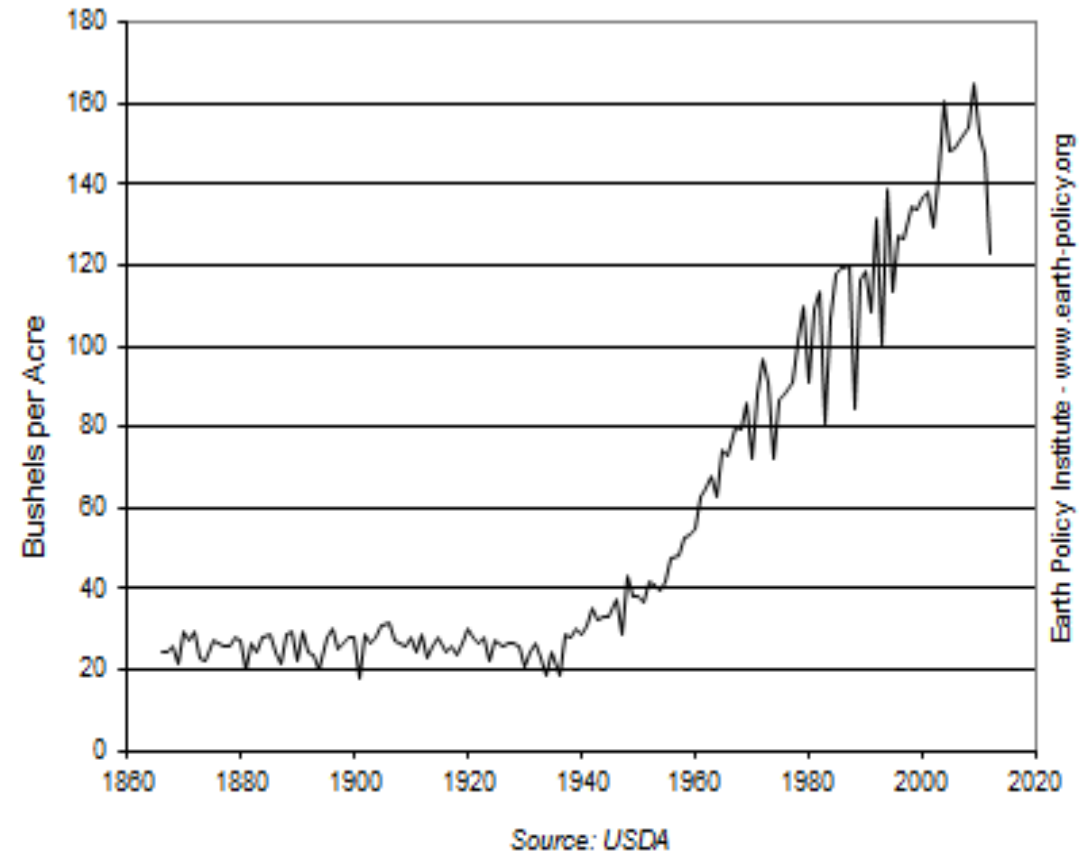
The Green Revolution



Norman Borlaug

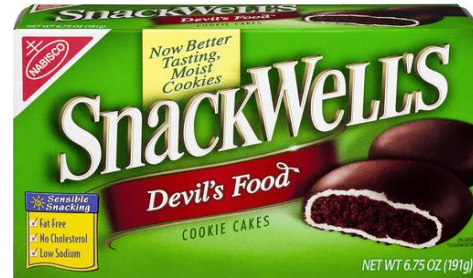
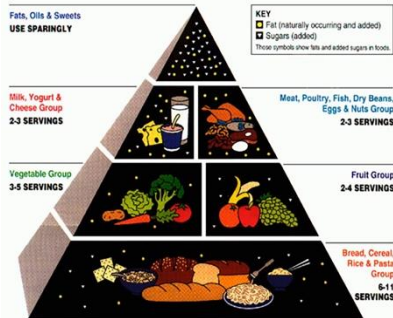
- Intensive breeding and mono-cropping of wheat, rice, and corn
- Synthetic nitrogen-based fertilizers
- Synthetic pesticides (e.g., DDT)
- Intensive irrigation

U.S. Corn Yields, 1860-2020



Rise of Ultra-Processing

1980 Low-Fat Guidelines



Tobacco Giants: Consolidation of Big Food



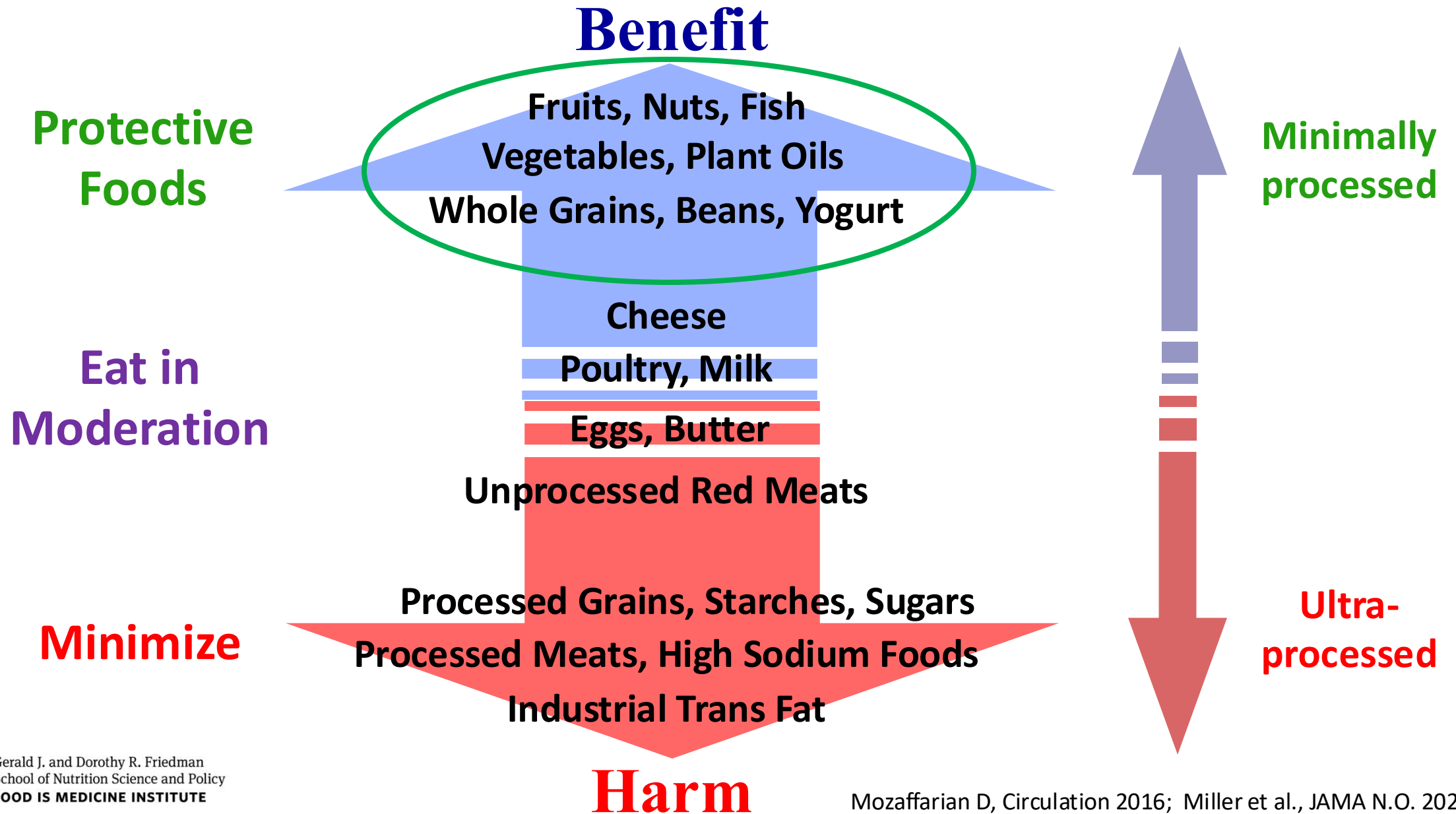
Philip Morris



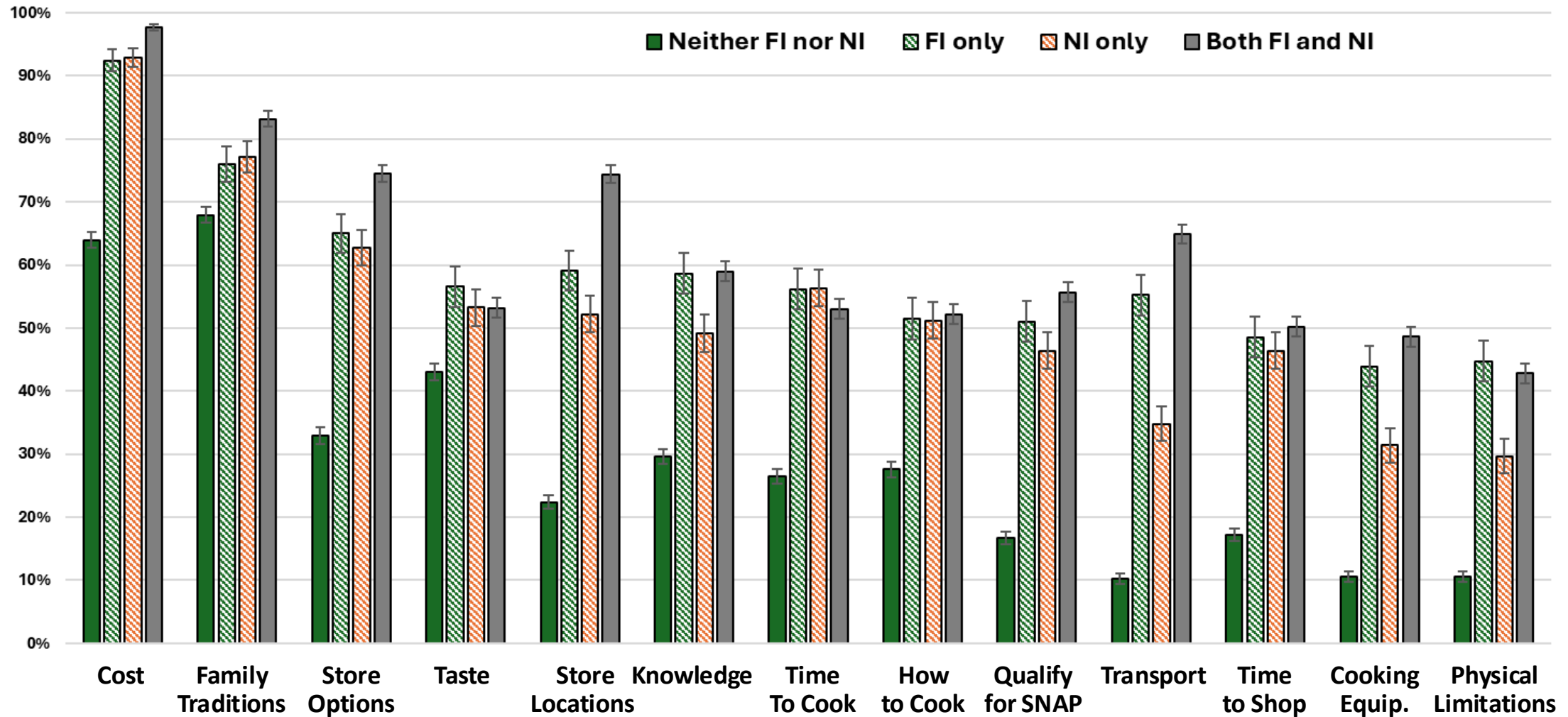
A 20th Century Food System, with 21st Century Problems



Science-Based Priorities for Healthy Eating

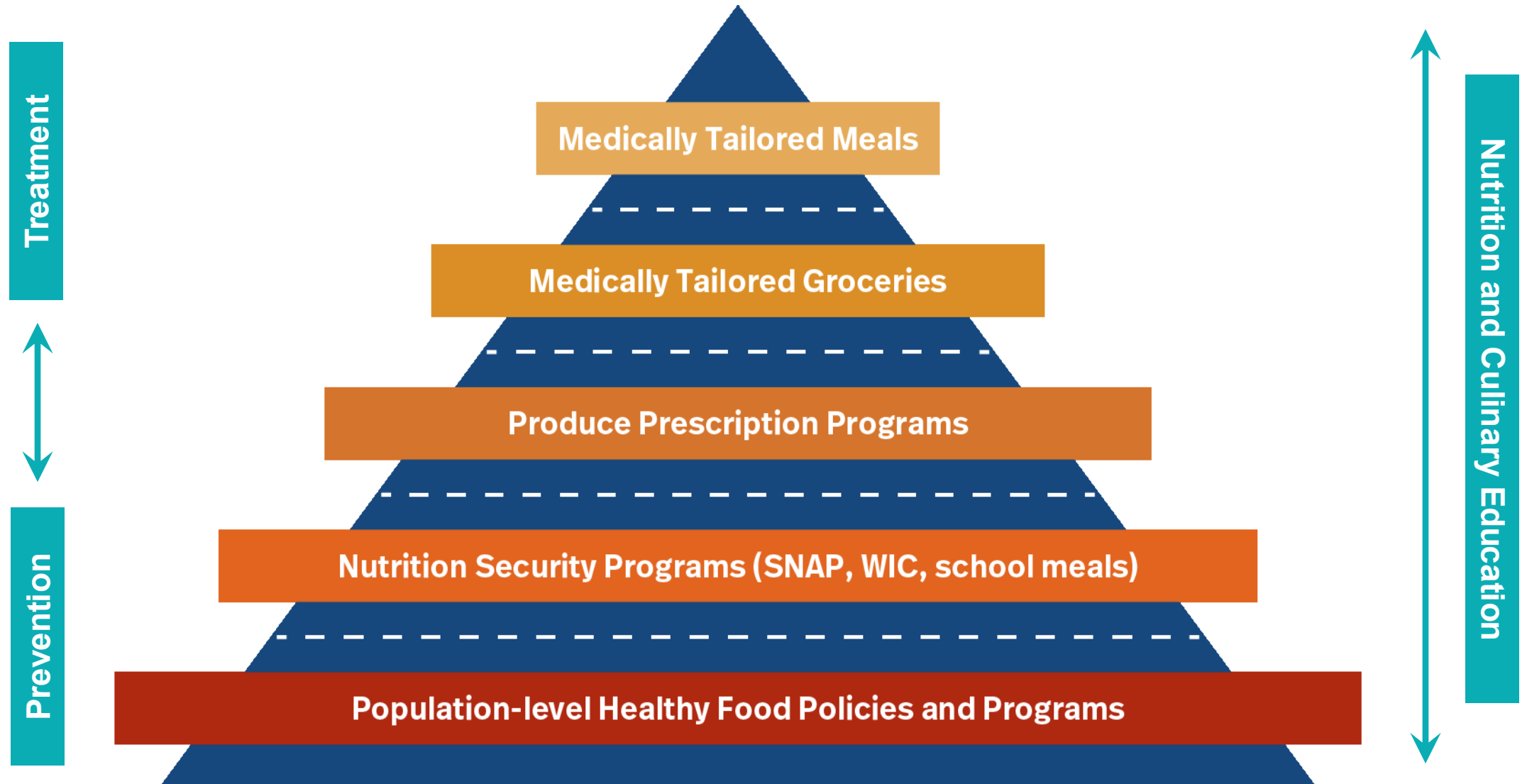


Barriers to Healthy Eating: A National Survey



Craig et al., AJCN 2025 in press

Food is Medicine



Mozaffarian et al., Nature Medicine 2022

Food is...

Flavor

Joy

Family

Culture

Medicine

Dignity

Ultra-Processed Foods and Additives: State Bills in 2025

- **Bans on certain additives in foods**
 - Arkansas*, Connecticut, Louisiana, Maryland, West Virginia*
- **Bans on certain additives or ultra-processed food in schools**
 - Arizona*, California**, Massachusetts, New Jersey, Virginia*, West Virginia*, Utah*
- **Required warning labels on foods with certain additives**
 - Florida, Pennsylvania, Louisiana*, Texas*
- **Required reporting on use of self-GRAS substances in foods**
 - New Jersey, New York, Pennsylvania

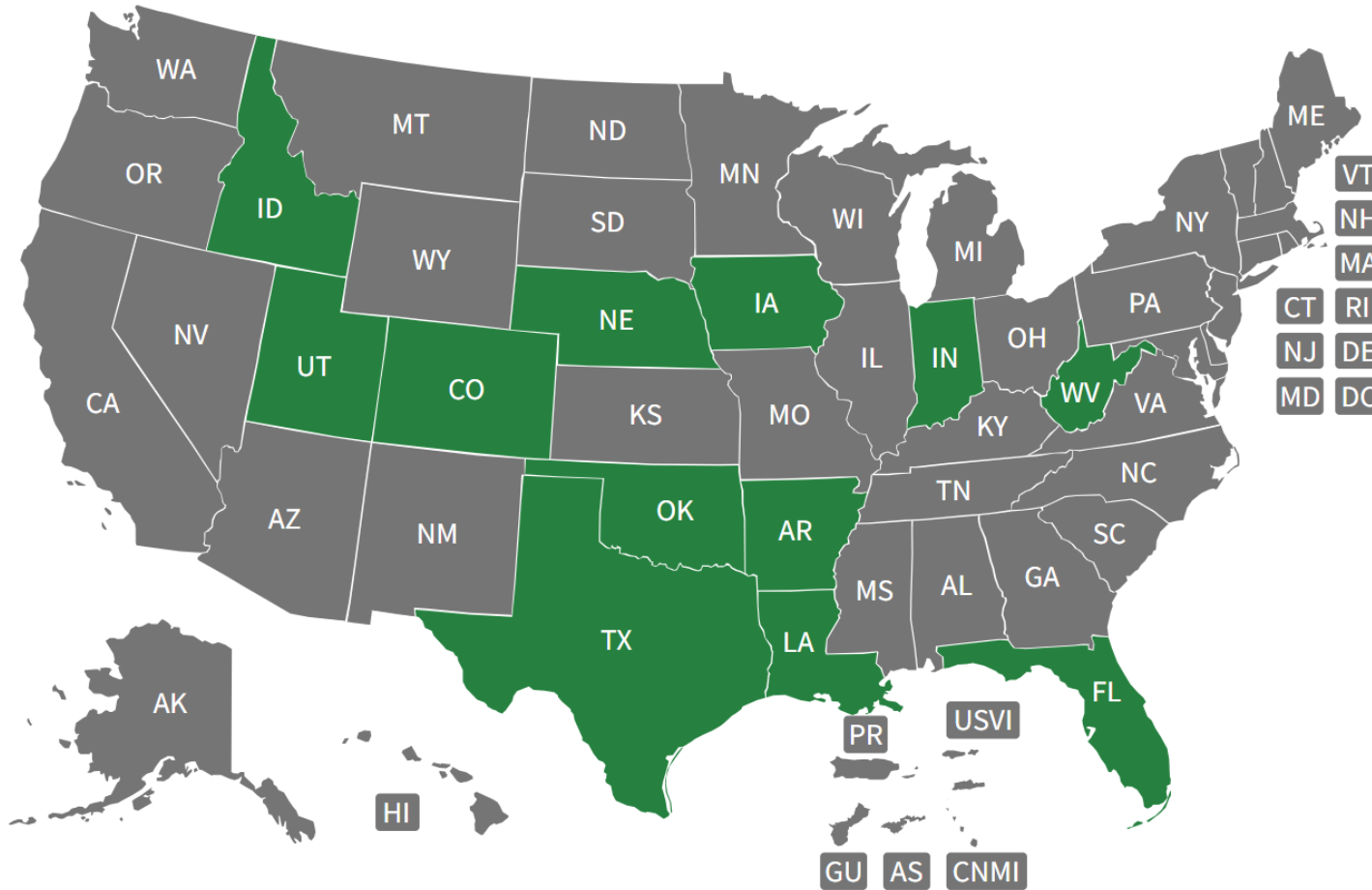
* *Enacted into law*

** *Passed/pending signature*

Courtesy of Emily Broad Leib, Harvard

SNAP: Approved State Waivers in 2025

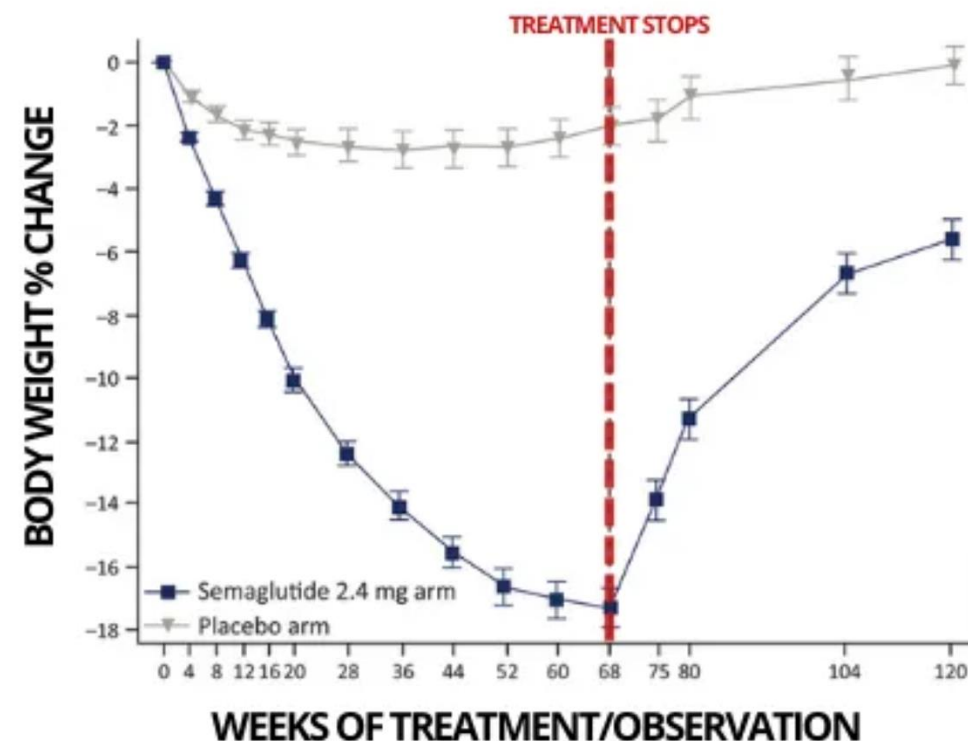
Arkansas
Colorado
Florida
Idaho
Indiana
Iowa
Louisiana
Nebraska
Oklahoma
Texas
Utah
West Virginia



Starting in 2026, these states will implement and evaluate restrictions on purchasing soda or soda and candy in SNAP

GLP-Agonists in 2025: Costs, Side Effects, Adherence, Weight Regain

- **High costs:** \$600 billion/year
- **Side effects**, e.g. gastrointestinal
- **Muscle and bone loss**
- Only **1 in 4** people still take the drug at 1 year
- Off the drug, most lost weight is **regained** within 6-12 months

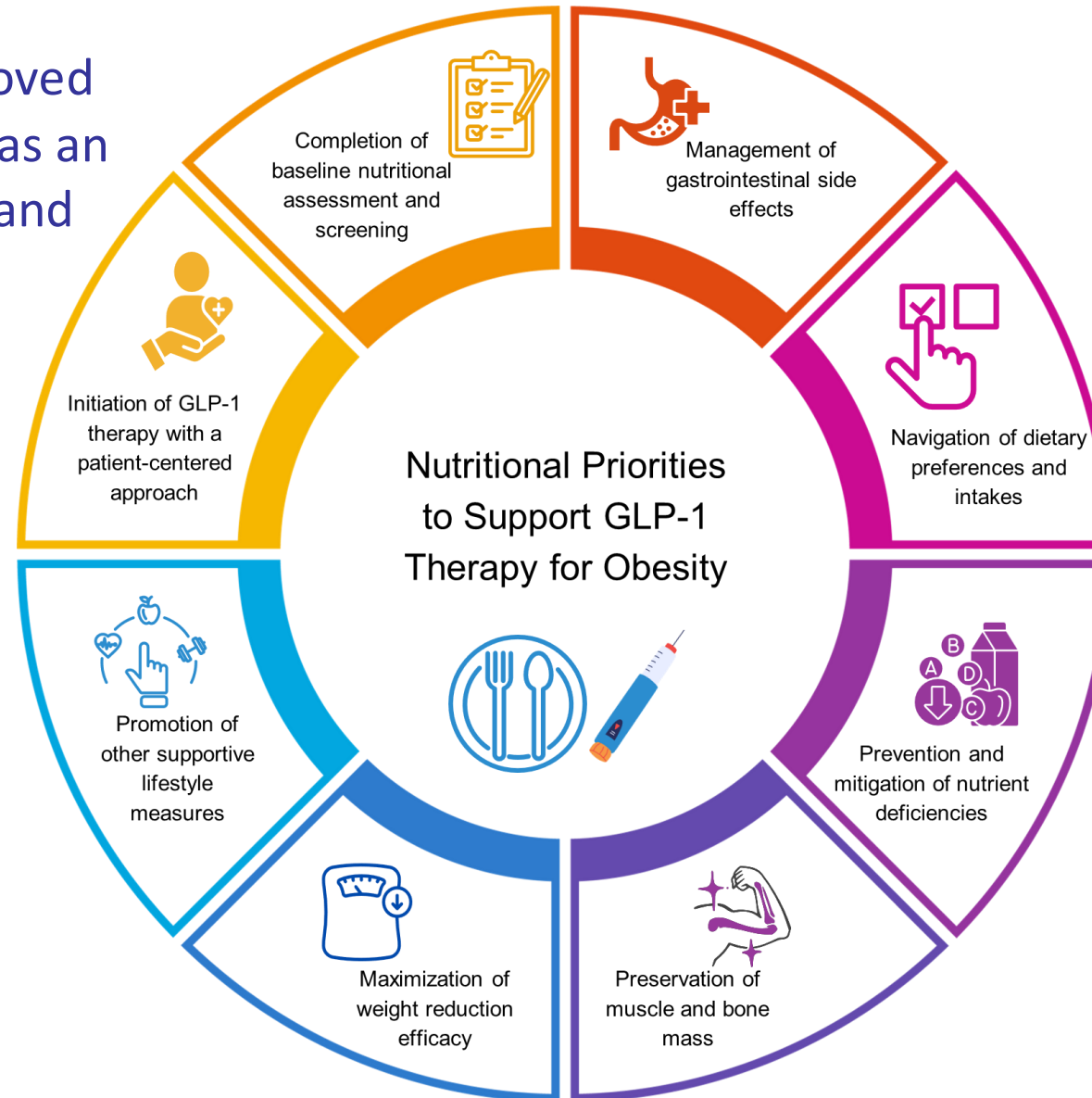


Wilding et al., Diabetes Obes Metab. 2022

Mozaffarian et al., AJCN, AJLM, Obesity, Obesity Pillars, 2025

GLP-1 Agonists, Nutrition, & Lifestyle: A Recipe for Success

GLP-1 drugs are approved for obesity treatment as an **adjunct** to nutrition and lifestyle



Mozaffarian et al., AJCN, AJLM, Obesity, Obesity Pillars, 2025

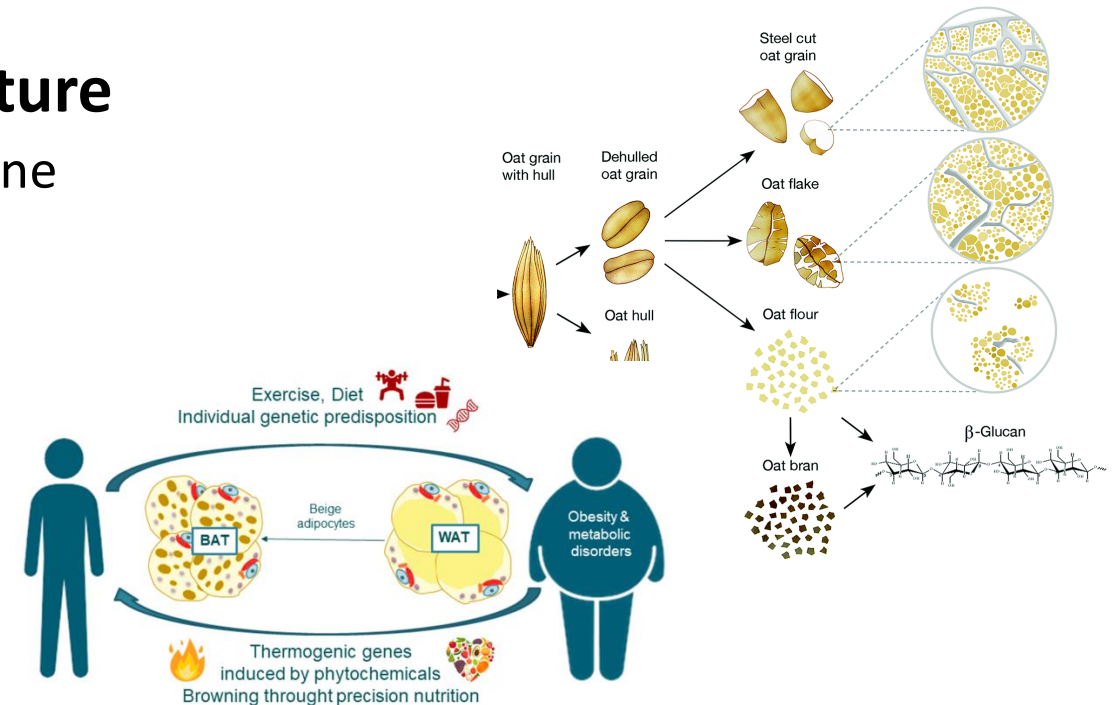
Nutrition Research: Microbiome, Thermogenesis, Epigenetics

- **Acellular Carbs: loss of natural cell structure**

- Rapid digestion in stomach and small intestine
- Rapid glycemia and insulinemia
- Loss of microbial prebiotics
- Calorie shunting from microbiome to host

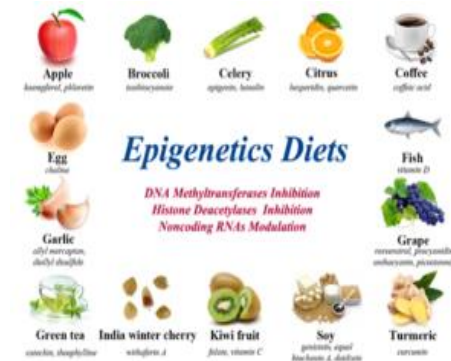
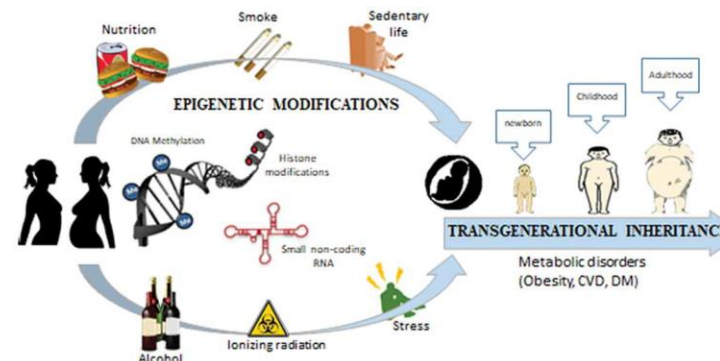
- **Thermogenesis: brown fat, beige fat**

- Phytonutrients
- Microbial metabolites



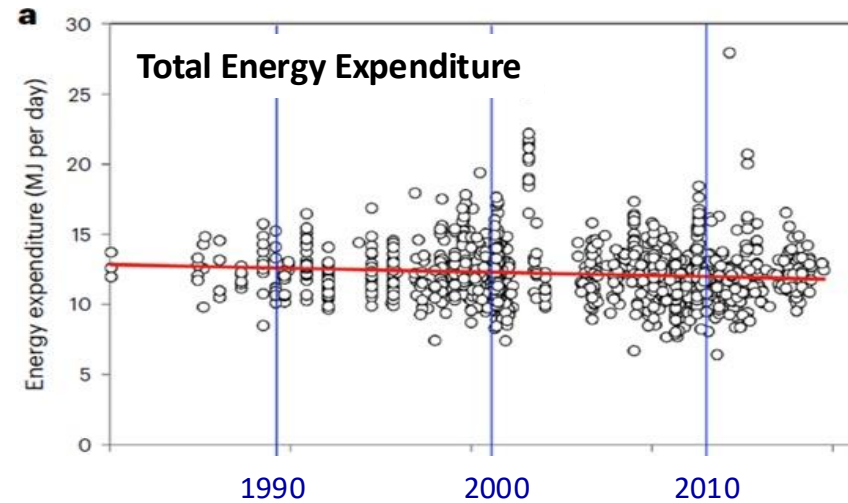
- **Epigenetics**

- Non-coding RNAs
- DNA methylation
- Microbiome

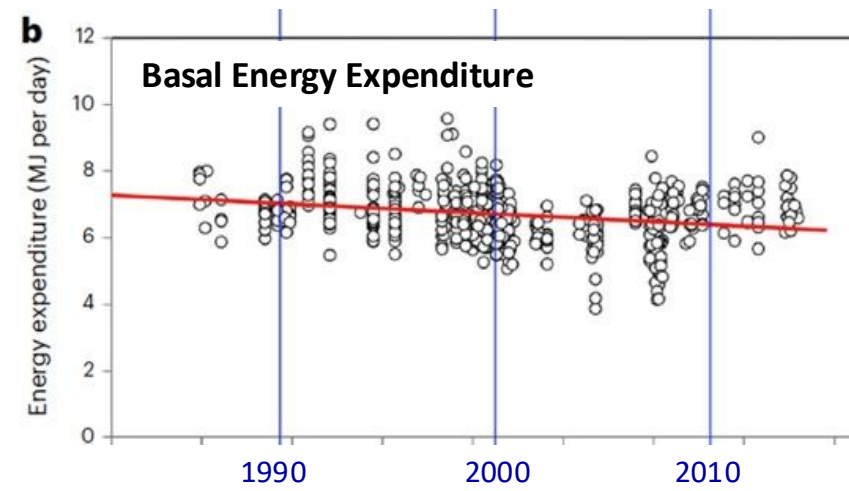
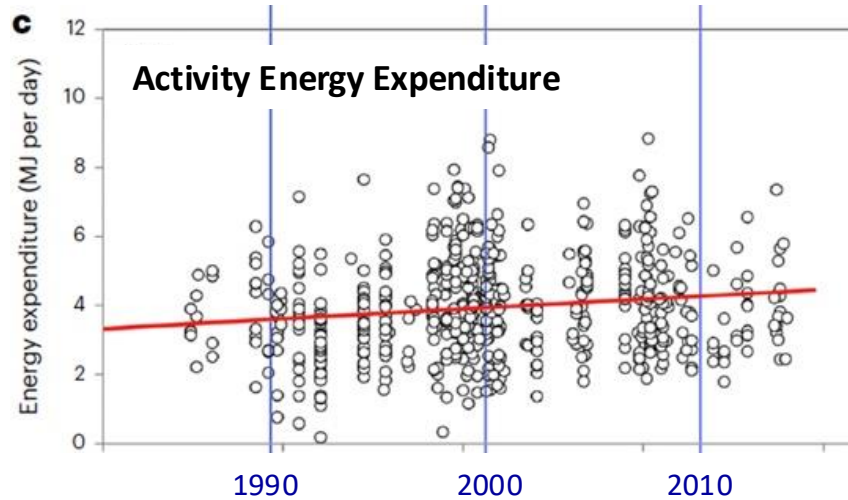


Declining Basal Metabolic Rate Over Time

~ 5,000 USA and
UK adults, with
energy measured
using doubly
labeled water

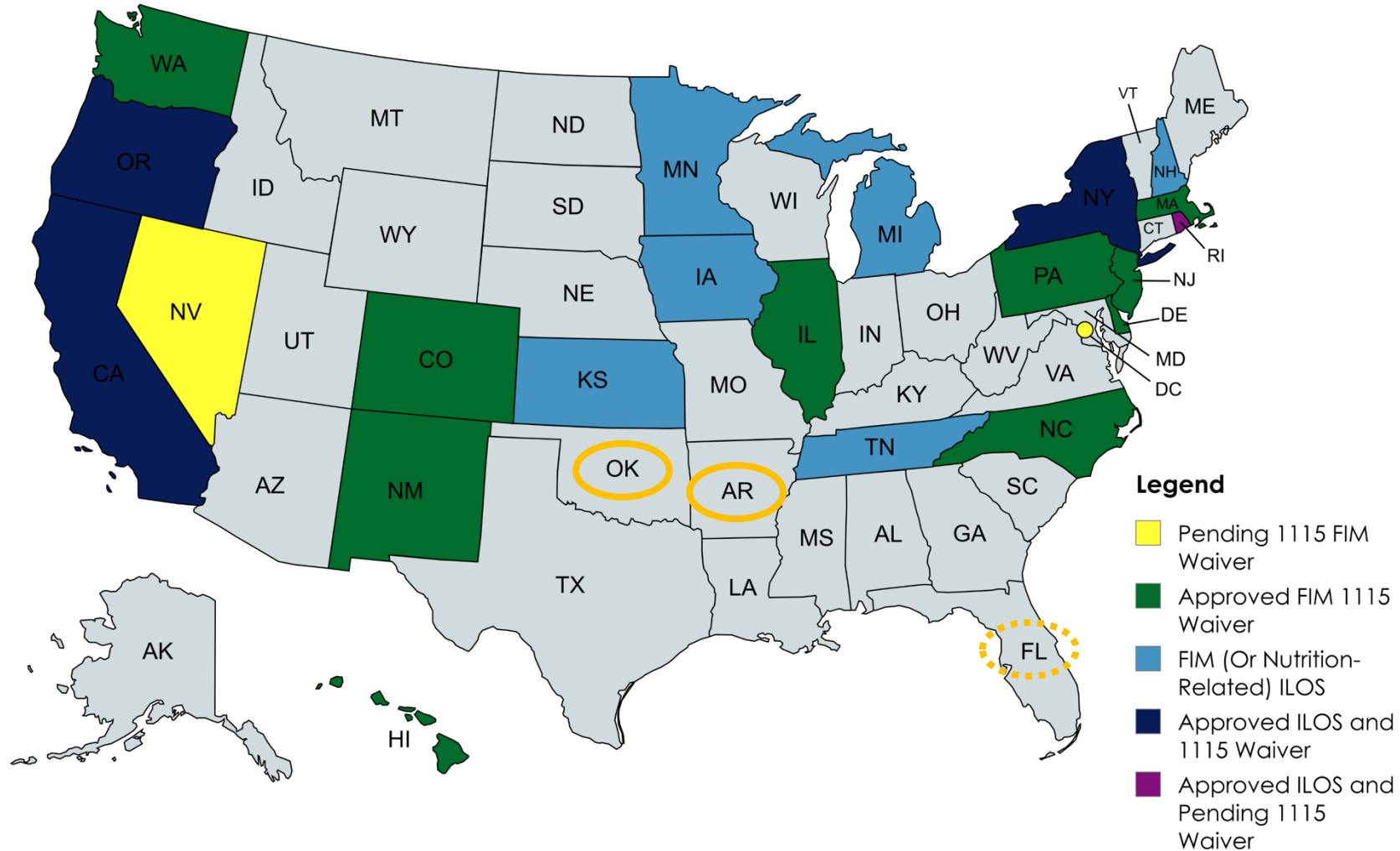


- 222
kcal/day



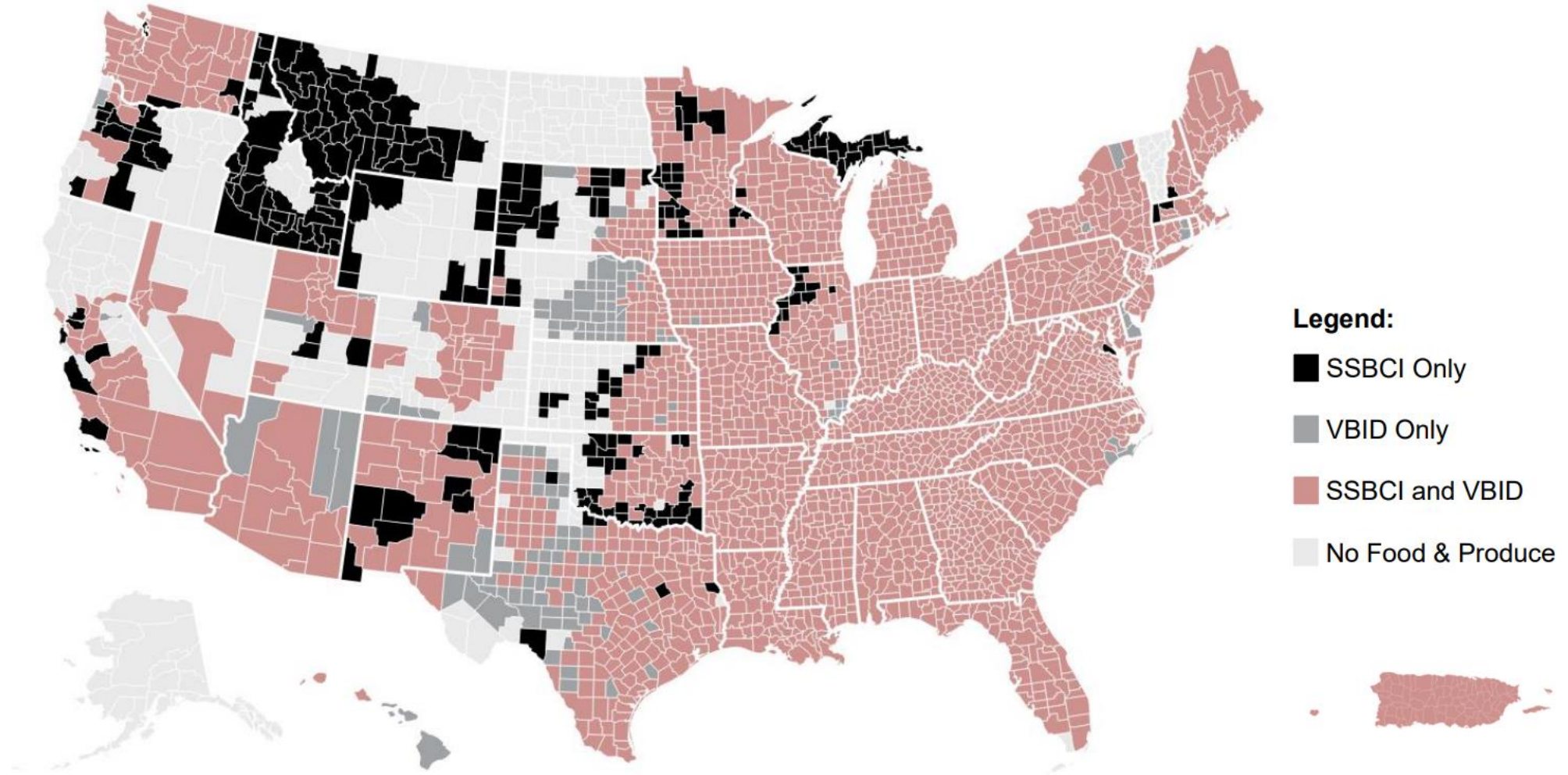
Speakman et al., Nature Metab 2023; McGrosky et al., PNAS 2025

Food is Medicine – Medicaid



Hanson et al., 2024 Health Affairs Scholar

Food is Medicine – Medicare Advantage



Source: ATI Advisory analysis of CMS data, 2024

Food is Medicine – Private Payers, Major Research



<https://tuftsfoodismedicine.org/network-of-excellence>
Health Care x Food



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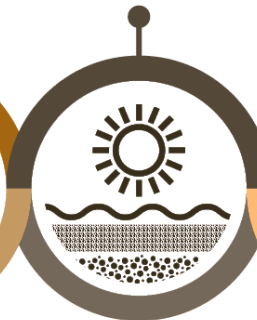
Food is Medicine: Resilient Food Systems ?



MINIMIZE
SOIL DISTURBANCE



KEEP
THE SOIL COVERED



INTEGRATE
LIVESTOCK



MAXIMIZE
CROP DIVERSITY



MAINTAIN
LIVING ROOT YEAR-ROUND



MAHA Commission

Completed:

- MAHA report & MAHA strategy
- Industry agreements to phase out certain artificial dyes
- Directive for FDA to review GRAS rule
- Required reports on current or planned nutrition education across medical training institutions

Pending:

- Dietary Guidelines for Americans
- Closing the GRAS loophole
- UPF definition
- Front-of-Package label
- Whole foods in school meals
- NIH nutrition research funding
- “Food for Health” in health care
- Healthy hospital food
- Requirements for nutrition in medical training
- Exploring limiting food marketing to children

Food is Medicine: Priority Research Questions

- Impact in key populations:
 - Diabetes, cardiovascular disease, kidney disease, complex conditions/high utilization, high risk pregnancy, depression, GLP-1 users
- Tailoring of meals, groceries, and produce
- Nutrition and culinary education mode, intensity, delivery
- Doctors' education, EHR screening, clinical care pathways
- Local community vs. national vendors
- Local food systems and regenerative sourcing

Food is Medicine: Priority Policy Actions

- Dietary Guidelines: limit ultraprocessed foods
- FDA: eliminate GRAS loophole, robust post-market action
- Nutrition security in SNAP, WIC, school meals
- NIH National Institute of Nutrition
- FTC restrictions on food marketing to young children
- National/state soda taxes
- Medicaid 1115 waivers for FIM
- Medicare Advantage – FIM as a Supplemental Benefit
- Medicare FIM demonstrations
- VA, DOD, IHS: FIM care
- Expanded MNT by RDNs
- EHR food and nutrition security screening, clinical care pathways
- Nutrition education for doctors

Food is Medicine: At a Tipping Point ?

