

UPF-IMPACT: Ultra-Processed Food - Investigating Mechanisms, Prevention, and Action for Chronic Disease and Health Transformation

Andrew Bremer

Director, Office of Nutrition Research, Office of the Director

David Shurtleff,

Acting Director, National Center for Complementary and Integrative Health



National Institutes of Health

Office of Strategic Coordination – The Common Fund

OSC (Common Fund) – UPF-IMPACT

Revised Concept Clearance: New Common Fund Program

TITLE: Ultra-Processed Food: Investigating Mechanisms, Prevention, and Action for Chronic Disease and Health Transformation (UPF-IMPACT) Program

Objective: Address the critical need for research to reduce the adverse health effects of UPF consumption, with a focus on cardiovascular disease, metabolic conditions, and obesity, through a two-fold approach to:

1. Investigate the underlying key biological mechanisms through which UPF consumption affects health, chronic disease, and behavior including UPF overconsumption
2. Develop and test real-world, scalable, and sustainable interventions to reduce UPF consumption and improve health among school age children and families at risk of diet-related chronic diseases

Funds Available and Anticipated Number of Awards: \$150 million over 5 years for up to 11 meritorious awards including a research coordinating center (pending availability of funds)

Program Duration: 5 years

Council Action: Vote for approval of the concept for UPF-IMPACT

Revised Proposal Addresses September CoC Feedback

Council of Councils Feedback	Revised Concept
Provide details on scope, structure, NOFO criteria, budget, # of awards, and deliverables.	Refines research goals and deliverables, includes research coordinating center, specifies NOFO criteria & budget.
Address structural barriers in the food environment and policy mechanisms to maximize public health impact.	Includes initiative to develop/test multi-level interventions that address the social, physical, economic, or policy environments.
Address health disparities and food access issues.	Includes initiative focusing on school age children and families who are at risk for diet-related chronic diseases; proposed interventions target environments that contribute to disparities.
Address whether evidence meets the Bradford Hill criteria for causality.	Clarifies how the initiative will add to the Bradford Hill criteria for causality by linking UPF and chronic disease through plausible mechanisms, dose-response relationship, experimental evidence.
RCTs are needed to ensure that UPF effects are not due to calories or potential confounders.	Proposes RCTs to examine the effects of UPF components/attributes on markers of health, disease, and behavior designed to disentangle effects of processing from calories, nutrients, and other confounders.
How will conflicts of interest be managed and scientific independence protected?	Eliminates industry partnership component and clarifies NIH processes for managing conflicts and ensuring scientific independence.

Nova Classification of Foods

1. Unprocessed or Minimally Processed Foods

Edible parts of plants and animals after separation from nature or preserved by minimal processes (no substances added)



2. Processed Culinary Ingredients

Substances extracted from foods or nature and used to prepare, cook and season Group 1 foods



3. Processed Foods

Group 1 foods modified with the addition of Group 2 ingredients aiming food preservation and/or enhancement of its sensory qualities



4. Ultra-processed Foods

Formulations of several ingredients that include original or chemically modified food substances obtained with the fractioning of whole foods and additives used to make the final product palatable or hyper-palatable. The aim is to make convenient, tasteful and low-cost products liable to replace all other Nova food groups



UPFs and the U.S. Chronic Disease Burden

Chronic Disease Burden in the U.S.

- **~60%** have **at least one chronic disease**
- Chronic diseases are the **leading causes** of death and disability in the U.S.
- **~90%** of U.S. healthcare spending is associated with chronic conditions



UPFs comprise 70% of food supply



Cardiovascular Disease



Cancer



Mental Health Disorders



Diabetes



Over Consumption



Obesity

Sources:

[U.S. Food and Drug Administration](#)

[U.S. Centers for Disease Control and Prevention](#)

What is known about associated health effects of UPF consumption?

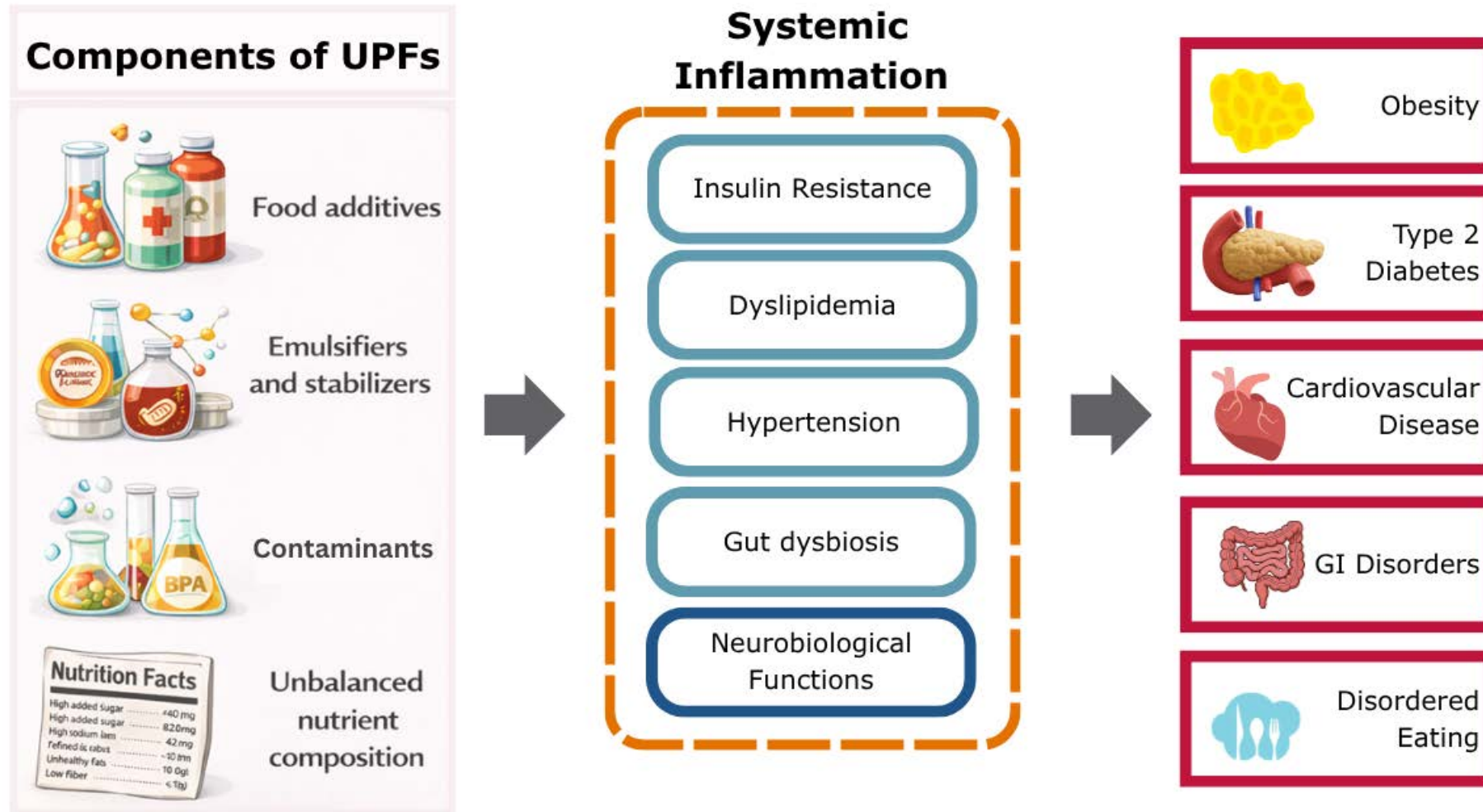
- Majority of evidence related to UPF consumption is almost exclusively from observational studies.
- Only a few randomized controlled mechanistic trials of UPF consumption have been conducted.
- In some studies, the association between UPF consumption and disease were independent of the nutrient content of the foods.
- A 2024 umbrella review of UPF-related research found that the quality of most studies examining the association between UPF consumption and health outcomes as “low” or “critically low.”
- The 2025 Dietary Guidelines Advisory Committee found limited evidence on the health impact of UPFs across the lifespan and called for further research to examine the effects of UPF dietary patterns and their effects on health outcomes.

Dicken et al., 2021, *Nutrients*

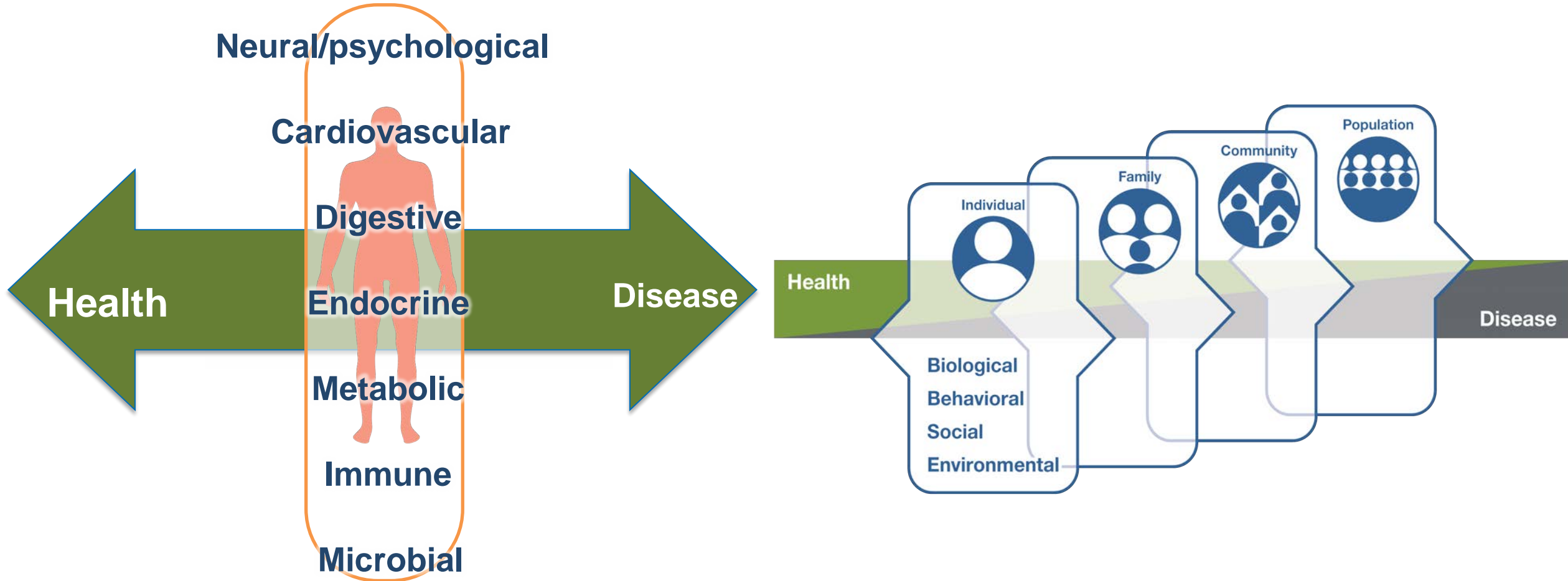
Lane et al., 2024, *BMJ*

HHS and USDA: <https://www.dietaryguidelines.gov/2025-advisory-committee-report>

Emerging Mechanistic Pathways Underlying UPF-associated Diseases

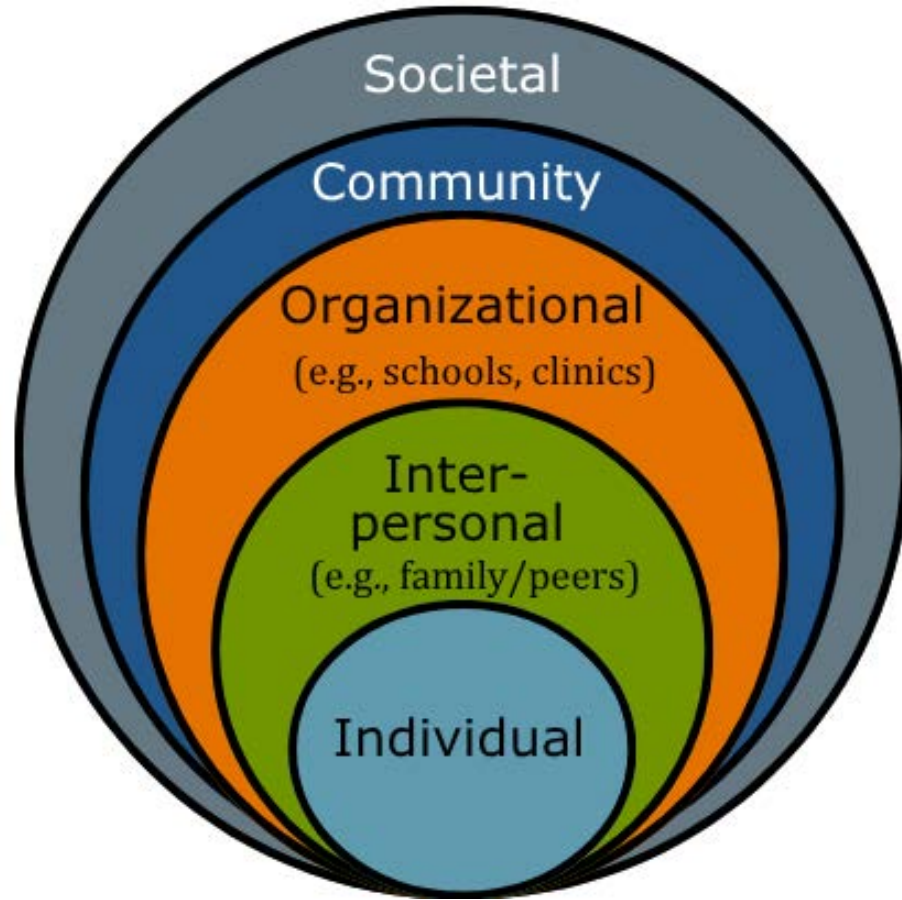


A Whole Person Health Perspective is Warranted



Multi-level Influences and Barriers to Healthy Eating

Multi-level Factors Influencing Healthy Eating



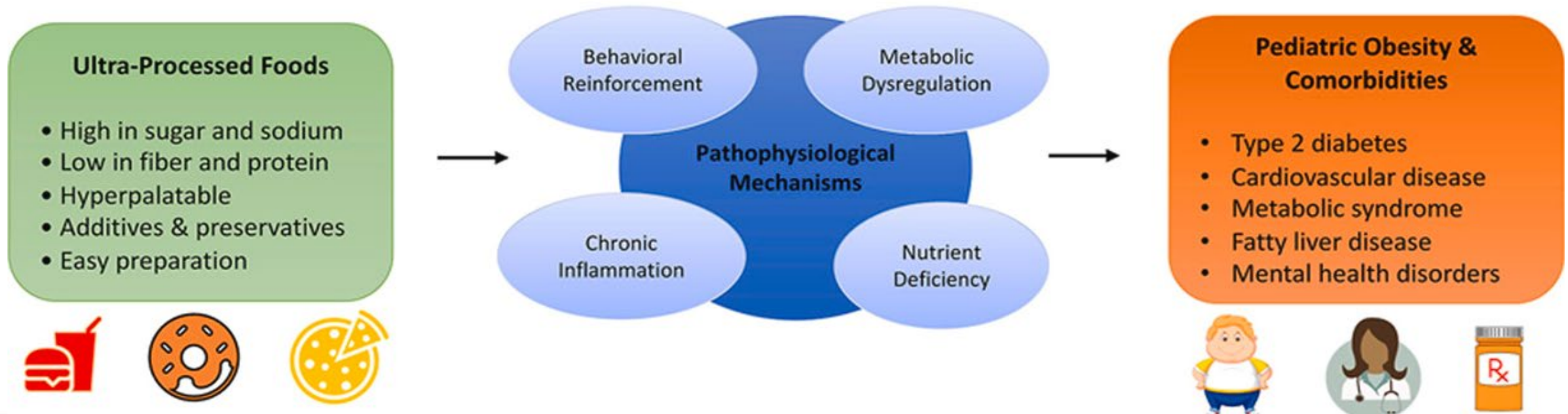
Adapted from Albardan and Platat 2025 Front. Nutr.

Barriers to Healthy Eating

- Exposure to high UPF marketing
- Lack of access for healthy food
- Lack of nutrition education
- Lack of information on food ingredients
- Lack of time for healthy food prep
- Lack of funds

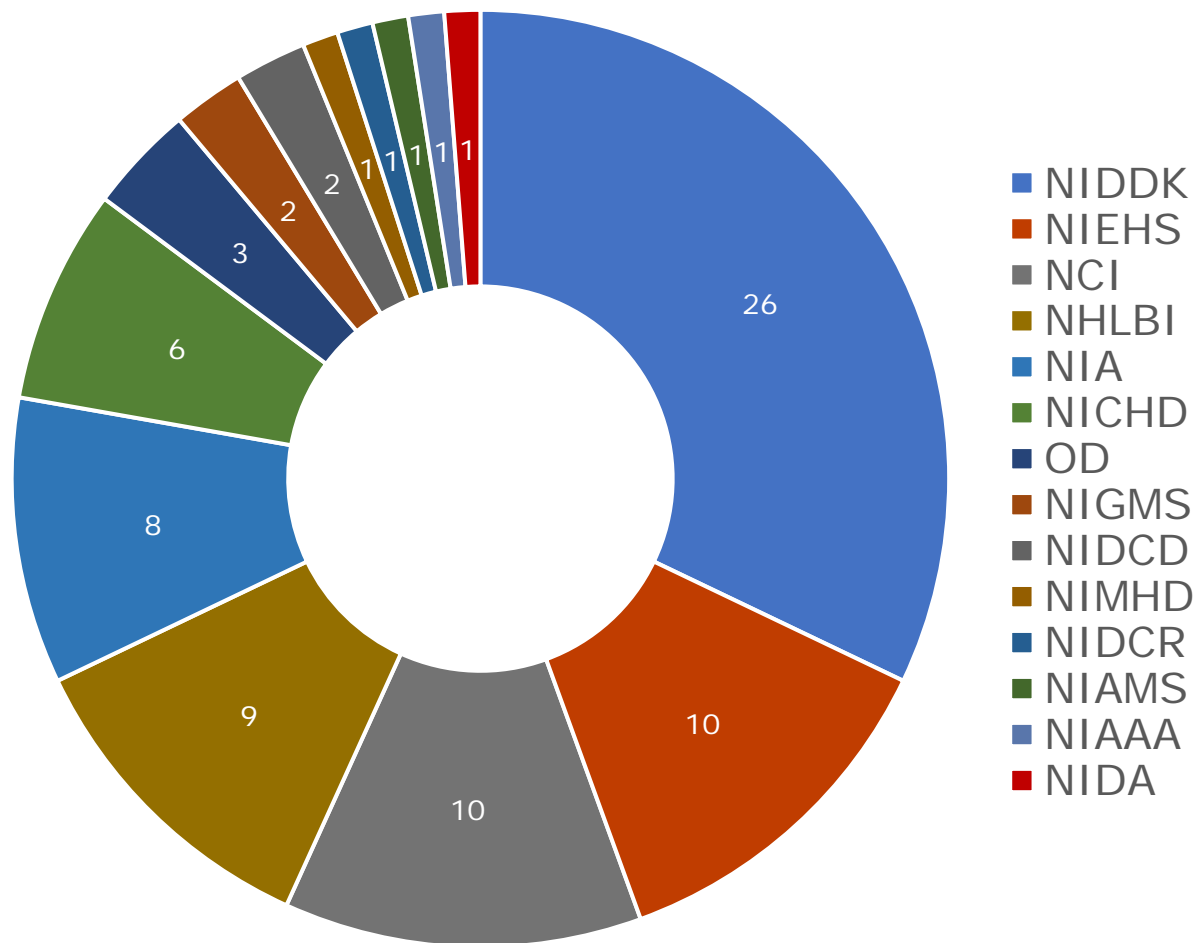
Childhood and Adolescence are Critical Periods for Intervention

- Children experience adverse health outcomes that can track into adulthood
- Children who consume more UPFs have 63% higher odds of having overweight or obesity
- Healthy growth and development requires nutrient dense foods
 - Children are vulnerable to targeted UPF marketing and availability
 - School age children begin to make independent food choices
 - Dietary quality worsens and becomes more difficult to modify over time



NIH-Supported Research on UPF

NIH UPF Portfolio Analysis, FY16-25



Findings

Total direct investment ~\$73 million

81 research projects: includes intramural and extramural

Most studies (>70%) involved human research participants

Less than half of the studies were basic research focused on elucidating biological mechanisms related to UPF consumption and health outcomes

37% of studies were intervention studies aimed at reducing UPF consumption

10% of studies examined food insecurity, food access, and the environment

16% of studies included pediatric populations

*Portfolio analysis provided by:
Libby Walton (ODP), Brama Kowtha (ODP), Nick Jury (ONR), Tanya Agurs-Collins (NCI)

UPF-IMPACT will Address the Research Gaps and Opportunities

- Conducting mechanistic trials
- Developing and evaluating multi-level interventions
- Identifying putative biomarkers of UPF exposure and related physiological processes

Initiative 1: Investigate biological mechanisms by which UPF consumption affects health, disease, and behavior



Study population: School age children 5- to 17- years and adults who regularly consume UPF and are at-risk for diet-related chronic disease



Intervention: UPF components/attributes including nutrient profiles, additives, emulsifiers, contaminants—examine at least 1 component



Mechanistic Outcomes: markers of biological and behavioral processes in one of the following:

- **Physiological processes with a focus on inflammation**
 - Consider interactions with other processes (e.g., microbiome dysbiosis, metabolic regulation)
- **Neurobiological processes and eating behavior**
 - Stress responsivity, reward signaling, food intake rate as possible measures
 - Studies may also consider impact of UPF food presentation characteristics (e.g., packaging design)

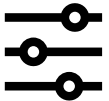


Cross-cutting objective: Identify putative biomarkers of UPF exposure and their relationship to disease processes

Initiative 2: Multi-level Interventions to Reduce UPF Consumption



Study population: School age children 5- to 17- years at increased risk for developing diet-related health conditions and their families



Multi-level Intervention: Target 2 or more levels of influence; include at least 1 environmental intervention



Outcome measures:

- **Primary:** UPF consumption in children
- **Secondary:** At least one additional health or behavioral outcome in children and families should be included as a co-primary or a secondary outcome



Cross-cutting objective: Identify putative biomarkers of UPF consumption and their relationship to health and disease outcomes

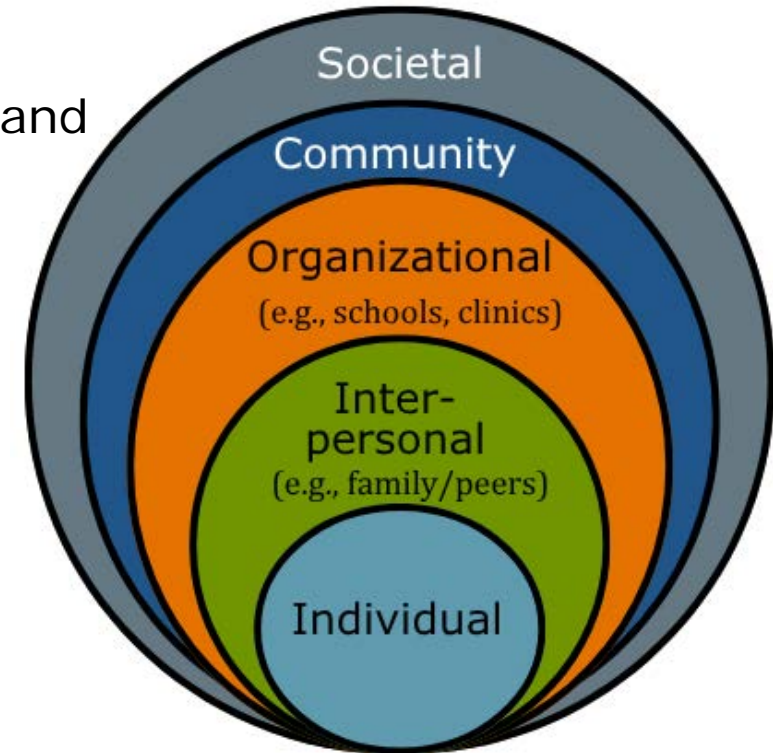


Image: Multi-level Interventions Adapted from Albardan and Platat 2025 Front. Nutr.

Types of Intervention Strategies to Reduce UPF Consumption



- Behavioral counseling
- Nutrition education and skills building
- Improvements in school meals, vending machine options
- Teaching kitchens and community gardens
- Produce prescriptions and whole food vouchers
- State and local policies
 - Marketing, labeling, product placement

Potential Federal and State-Level Policies Poised for Evaluation in Natural Experiments

- **FDA (expected 2026):** Front-of-package nutrition label with “low”, “medium”, and “high” indication for saturated fat, salt, and sugar content
- **Arizona (expected 2026-2027 school year):** Prohibits federally funded school meal program from serving or selling UPF at the school during normal business hours
- **Texas (expected 2027):** Requires warning labels on foods containing 44 specific food additives
- **California (expected 2028):** Phase-out UPF from federally funded school meals starting in 2029 and vendors prohibited from supplying UPF by 2032
- **Louisiana (expected 2028):** Prohibits public/non-public schools receiving state funds from serving food with 15 prohibited ingredients. Requires a QR code to be added to foods containing any of 44 listed ingredients

Initiative 3: Research Coordinating Center (RCC)

I. Study Harmonization and Support

- Coordinate and engage the entire UPF consortium
- Manage common data elements, common measures, and operational definitions
- Provide statistical design and analysis expertise

II. Centralized Research Laboratory Oversight

- Develop and maintain standardized protocols for biospecimen collection and processing
- Coordinate biospecimen collection between Initiative I and Initiative II
- Assay standardization and harmonization

III. Biospecimen and Data Repository Coordination

- Ensure data sharing and repository activities are in alignment with CFDE and FAIR principles
- Ensure data and biospecimens are made available for study investigators

Anticipated Impact

Generate actionable evidence to reduce diet-related chronic diseases and improve health

Deliverables

- Causal mechanistic evidence linking specific UPF components and attributes to overconsumption and health outcomes
- Evidence-based, scalable strategies to reduce UPF consumption among children and families experiencing diet-related health disparities
- Putative biomarkers of UPF exposure and diet-related chronic disease
- Evidence to inform public health programs, practices, and policies
- Data to guide food reformulation efforts

Alignment with Common Fund Criteria



Transformative: Generate high-impact, generalizable evidence to illuminate the understanding of UPF and chronic disease and enable prevention at population scale.



Catalytic: Accelerate translation into clinical, community, and policy settings; generate data to guide food reformulation efforts and create healthier food environments.



Goal-Driven: Deliver actionable evidence to inform programs, practices, and policies.



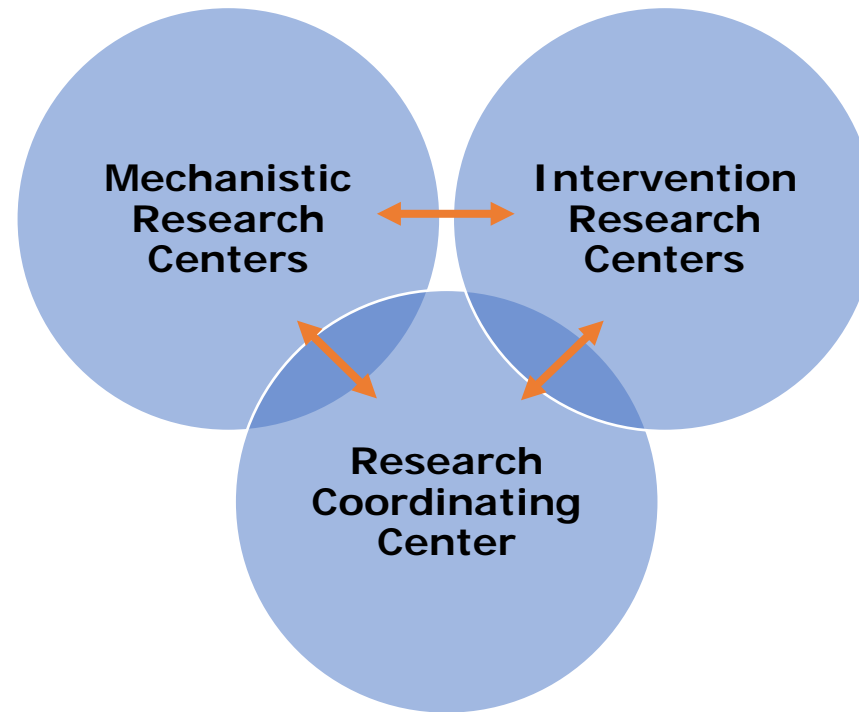
Synergistic: Integrate multi-disciplinary approaches to address complex UPF–health pathways.



Novel: Develop shared resources, biomarkers, and standardized mechanistic measures to advance the broader nutrition research field.

Notices of Funding Opportunity (NOFOs)

- **Mechanistic Research:** UG3/UH3 (anticipated 5 awards)
- **Multi-level Intervention Research:** UG3/UH3 (anticipated 5 awards)
- **Research Coordinating Center:** U24 (anticipated 1 award)



Proposed UPF CF Program Budget*

Initiatives	Lead IC(s)	FY2027	FY2028	FY2029	FY2030	FY2031	Total
NIH RMS/Program Management	WG/ICOs	1,000	1,000	1,000	1,000	1,000	5,000
Mechanistic Research (UG3/UH3)	TBD	7,500	13,500	13,500	13,500	13,500	61,500
Intervention Research (UG3/UH3)	TBD	7,500	14,000	14,000	14,000	14,000	63,500
Research Coordinating Center (U24)	TBD	3,000	3,500	4,000	4,500	5,000	20,000
Totals		19,000	32,000	32,500	33,000	33,500	150,000

(Numbers are in thousands of dollars)

* And availability of funds

NIH Contributors

Office of Nutrition Research

Andrew Bremer, Co-Chair
Nicholas Jury, Coordinator
Samantha Adas

**National Center for
Complimentary
and Integrative Health**
David Shurtleff, Co-Chair
Wen Chen, Coordinator

National Institute on Drug Abuse

Nora Volkow, Co-Chair
Jennifer Hobin, Coordinator
Hoang Le
Alvin Little

**National Institute of Diabetes
and Digestive
and Kidney Diseases**

Griffin Rodgers, Co-Chair
Stavroula Osganian, Coordinator
Kimberlea Gibbs
Mary Evans
Padma Maruvada

Office of Strategic Coordination

Vivian Ota Wang
LeShawndra Price
Maurice Davis
George Papanicolaou
Malgorzata Ochocinska
Emilia Ascanio Carrera
Alicia Cavanaugh
Salsawi Kebede
Jason Shockey
Natalie Vineyard

Office of Disease Prevention

Bramaramba Kowtha
David Murray

Office of Dietary Supplements

Madison Haise
Edwina Wambogo

**National Center for
Advancing Translational
Sciences**

Passley Hargrove
Kihwa Kang

National Cancer Institute

Tanya Agurs-Collins
David Berrigan
Kristina Goddard
Kirsten Herrick
Linda Nebeling

National Heart, Lung, and Blood Institute

Alison Brown
Laurie Donze
Beena Sood

National Institute on Aging

Roberto Flores
Kriti Jain
Maggie Nellissery
Monica Serra

**National Institute of
Arthritis and Musculoskeletal
and Skin Diseases**

Kamil Barbour

Eunice Kennedy Shriver

**National Institute of Child Health
and Human Development**
Sharon Ross

**National Institute of Environmental
Health Sciences**

Abee Boyles

**National Institute on Minority Health
and Health Disparities**

Carlos Garrido

**National Institute of Neurological
Disorders and Stroke**

Adam Hartman

National Institute of Nursing Research

Lauren Oliveira Hashiguchi
Nadra Tyus

**Office of Behavioral and Social
Sciences Research**

Sydney O'Connor

Council Action:

Vote for approval of the concept:

**Ultra-Processed Food:
Investigating Mechanisms,
Prevention, and Action for Chronic
Disease and Health Transformation**



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National Institutes of Health

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