

IAFNS Sodium Committee Request for Pre-Proposals

Comparison of Food Category Contributors to Sodium Intake from Foods-At-Home vs. Away-From-Home

The Institute for the Advancement of Food and Nutrition Sciences (IAFNS) is a non-profit, 501(c)(3) scientific organization that pools funding from industry collaborators and advances science through the in-kind and financial contributions from public and private sector participants.

The IAFNS Sodium Committee supports collaboration among academic, industry and government scientists; and applied research on the connection between sodium and related nutrients and health.

IAFNS adheres to rigorous procedures to maintain scientific integrity in all work we support. These requirements are described further in the attached TOP Guidelines and 8 Guiding Principles for Scientific Integrity addendums.

Pre-proposals meeting the following criteria will be invited to submit a full proposal (which would include detailed research plans, a budget, and timeline).

1. Team comprised of demonstrated expertise in food and nutrient intake analysis (such as with NHANES/WWEIA/FNDDS), and strong relevant publication record.
2. Clear research approach addressing the research objective.
3. Rough cost estimate and realistic timeframe.

Background

It is well documented that processed foods contribute to sodium intake. A commonly used reference to this point is Harnack et al., 2017 (used by [CDC, 2021](#)), reporting that 71% of sodium intake comes from processed and restaurant foods. This category was considered to capture “sodium added to food outside the home”, i.e., any sodium that was not added in home cooking. The FDA’s voluntary sodium reduction guidance for industry, just finalized in October 2021, similarly uses the Harnack reference, and states: “More than 70 percent of total sodium intake is from sodium added during food manufacturing and commercial food preparation” (FDA, 2021). In leaning on this reference, the contribution from processed and packaged foods is combined with the sodium contribution of restaurant or quick-serve/fast-

food. Understanding the separate contributions of processed and packaged foods (e.g., from a grocery store) compared to restaurant foods, and whether the food category contributions differ across “locations”, may be informative for reducing population sodium intake and for reformulation efforts. For example, if more than half of this sodium comes from restaurants, then efforts may be more effective if focused on that source.

Several studies have used NHANES or Canadian population-level surveys to examine the sodium contributions from food at home (FAH, which includes grocery store purchases) compared to food away from home (FAFH, primarily food-service establishments)¹ (Polsky and Garriguet 2021; Wellard-Cole et al. 2021). In these studies, FAFH contributions to sodium intake are higher compared to FAH contributions. Nguyen and Powell (2014) found that fast-food and restaurant consumption was associated with up to 450 additional mg of sodium per day. Lin et al. (2013) found that the sodium contribution of vegetables consumed away from home was higher than from vegetables consumed at home.

Data from the USDA Economic Research Service indicate that FAFH consumption has increased over time, comprising 34% of calories as of 2011-12 (USDA ERS, 2018). There is an opportunity to further detail the contributions of foods and food categories from FAH and FAFH sources. Understanding this at a timepoint before the onset of COVID-19 will allow the data to serve as a pre-COVID-19 baseline, allowing for future analysis/comparison as the population settles into a ‘new normal’.

References:

Centers for Disease Control and Prevention (CDC). Sodium food sources.
<https://www.cdc.gov/salt/food.htm>.

Harnack et al. 2017. Sources of sodium in US adults from 3 geographic regions. *Circulation*. 135(19):1775-1783. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5417577/>.

Lin et al. 2013. Impact on energy, sodium and dietary fibre intakes of vegetables prepared at home and away from home in the USA. Accessible at:
<https://www.cambridge.org/core/journals/public-health-nutrition/article/impact-on-energy-sodium-and-dietary-fibre-intakes-of-vegetables-prepared-at-home-and-away-from-home-in-the-usa/8A846D321DFBD7FEC8F784B5C768EAB1>

¹ *NHANES definitions:* Food at home (FAH) is purchased at a retail store, such as a grocery store, a convenience store or a supermarket; Food away from home (FAFH) is purchased mainly from food-service establishments, schools and other places, where foods are typically ready to eat and consumed as is.

Nguyen and Powell, 2014. The impact of restaurant consumption among US adults: effects on energy and nutrient intakes. <https://pubmed.ncbi.nlm.nih.gov/25076113/>

Polsky and Garriguet. 2021. Eating away from home in Canada: impact on dietary intake. <https://www150.statcan.gc.ca/n1/pub/82-003-x/2021008/article/00003-eng.htm>.

Wellard-Cole et al. 2021. Contribution of foods prepared away from home to intakes of energy and nutrients of public health concern in adults: a systematic review <https://www.tandfonline.com/doi/abs/10.1080/10408398.2021.1887075?journalCode=bfsn20>

U.S. Department of Agriculture, Economic Research Service (USDA ERS). 2018. America's Eating Habits: Food Away From Home. <https://www.ers.usda.gov/webdocs/publications/90228/eib-196.pdf>.

U.S. Department of Health and Human Services, Food and Drug Administration, Center for Food Safety and Applied Nutrition (FDA). 2021. Voluntary Sodium Reduction Goals: Target Mean and Upper Bound Concentrations for Sodium in Commercially Processed, Packaged, and Prepared Foods: Guidance for Industry. <https://www.fda.gov/media/98264/download>.

Research Objective

The objective of this project is to understand the contributions of food prepared at home (i.e., purchased at a grocery store, to include processed and packaged foods, and other foods), compared to foods prepared away from home (e.g., restaurant and quick-serve foods) to sodium intake, to include the key food category contributors from each source. Understanding these contributions, in totality and at the food category level, may help to better target sodium reduction efforts.

Specific Aims

1. Understand the contribution of foods-at-home (FAH) compared to foods-away-from-home (FAFH) to sodium intake in the US population. FAH is considered food that is purchased at a store (grocery, retail), and then consumed at home. This includes packaged frozen foods. FAFH is food that is pre-prepared such as from restaurants, schools, in-care living facilities. Foods from the prepared foods section of a grocery store may require special handling.
2. Understand these contributions by food category across each of the acquisition locations.
3. Categorization of intake by age and ethnicity groups is of interest, depending upon the degree to which the data support this parsing. The committee is open to considering an age range of 18 years and older.

Additional considerations

- Understanding that National Health and Nutrition Examination Survey (NHANES), and the linked nutrient data are not specific to where foods were acquired, NHANES may or may not be the appropriate option for addressing the question. The committee is open to creative approaches.
- Successful proposals will be comprised of teams with researchers experienced with food databases and related analyses, such as with the NHANES, What We Eat in America (WWEIA), and the Food and Nutrient Database for Dietary Studies (FNDDS), although these databases may or may not be part of the proposed project.
- A focus on food categories that are top contributors to sodium intake may be warranted. Ideally, these food categories are aligned with categories as presented in the FDA voluntary sodium reduction guidance to allow for tracking against these targets (FDA, 2021).
- A focus on FAFH locations such as restaurants may be warranted to reduce scope, as schools, in-care living facilities, and other institutions follow federal requirements for sodium limits.
- Because food consumption patterns have changed dramatically with the onset of COVID-19, it is suggested that the analysis focus on a pre-COVID-19 timeframe. This will allow comparison to dietary choices and patterns during and after the pandemic at a later timepoint.

Pre-Proposal Content

1. **Background:** Briefly describe background relevant to the project and proposed approach to address the research objective.
2. **Research Approach:**
 - Overall methodology
 - Questions to be answered
 - Primary outcomes (and secondary if warranted) clearly identified
 - Research approach in broad terms, including the source of data, methods to be used, and how data will be analyzed and presented.
3. **Research Team:** Principal investigator(s), co-investigators, key team members, and collaborators that may be affiliated but not part of the grant, indicating all potential conflicts of interest.

4. **Investigator Credentials:** Describe the experiences that make you and your team a candidate for carrying out this project. In addition, the CV of the principal investigator(s) is required. Demonstrated success publishing in this topic area in a quality peer-reviewed journal is a minimum criteria.

5. **Estimated budget range and timelines:** Please provide the range of budget, noting that if overhead is necessary, IAFNS limits overhead to 10% of total project costs. IAFNS will cover publication costs separately. Timelines should include both a presentation of results to committee in-person or by webinar and submit date for a final manuscript in a top tier peer-reviewed journal for publication.

6. **References**

Pre-proposals are to be submitted to Marie Latulippe (mlatulippe@iafns.org) by midnight eastern time February 4, 2022. Pre-proposals should be submitted using the template shown below in the addendums, which is provided in a separate document for your use.

Addendum for RFPs
IAFNS's Guiding Principles for Funding Food Science
and Nutrition Research

Background:

The scientific process requires open, transparent examination and honest interpretation of data, regardless of a researcher's affiliation or source of funding. The following Guiding Principles¹ address the potential influence of funding source on scientific research. All projects supported by IAFNS must adhere to these principles.

Guiding Principles for Funding Food Science and Nutrition Research:

In the conduct of public/private research relations, all relevant parties shall:

1. Conduct or sponsor research that is factual, transparent, and designed objectively; according to accepted principles of scientific inquiry, the research design will investigate an appropriately phrased hypothesis and/or question, rather than favor a particular outcome;
2. Require control of the study design, the research itself, and the interpretation of findings to remain with scientific investigators;
3. Not offer or accept remuneration geared to the outcome of a research project;
4. Prior to the commencement of studies, ensure that there is a written agreement that the investigative team has an obligation to attempt to publish the findings within some specified timeframe and the freedom to choose the journal to which the work will be submitted;
5. Require, in publications and conference presentations, full written or oral disclosure, as appropriate of all relevant relationships (financial and non-financial competing interests);
6. Not participate in undisclosed authorship arrangements in publications or presentations;
7. Guarantee accessibility to all data and control of statistical analysis by investigators and appropriate auditors/peer reviewers; when possible, encourage the practice of open science, including depositing data and methodology on a public repository;
8. Require that academic researchers, when they work in contract research organizations or act as contract researchers, make clear statements of their affiliation; require that such researchers publish under the auspices of the contract research organization;
9. Require, in publications and conference presentations, disclosure of whether the funder advised on the study design, conduct of research and/or the development of the manuscript.

Adoption of the Center of Open Science's Transparency and Openness Promotion Guidelines by IAFNS

Background: The Center for Open Science's [Transparency and Openness Promotion \(TOP\) Guidelines](#) provide actionable steps for institutions to practice and promote transparent, reproducible, and rigorous research. IAFNS is a TOP Guidelines signatory. By becoming a signatory, IAFNS is supporting the principles expressed in the guidelines through their implementation by its funded researchers. The TOP Guidelines include eight modular standards for promoting transparent, reproducible and rigorous research, each with three levels of increasing stringency.

TOP Guidelines:

- 1. Data Citation Standards (Level 3):** Cite shared data. Don't publish until it is appropriately cited.
- 2. Data Transparency (Level 2):** Data must be shared to the maximal extent allowed by ethical and legal constraints.
- 3. Analytic Methods (Code) Transparency (Level 2):** Analytic methods (code) must be shared to the maximal extent allowed by ethical and legal constraints.
- 4. Research Materials Transparency Level 2):** Materials must be shared to the maximal extent allowed by ethical and legal constraints.
- 5. Design and Analysis Transparency (Level 2):** The researcher must use reporting guidelines when writing up publications. Equator-network website provides a huge choice of standards for research designs. <http://www.equator-network.org/> The researcher is asked to select one and register the standard you have selected.
- 6. Study Preregistration (Level 2):** When the researcher preregisters his/her study in an independent, institutional registry (e.g., <http://osf.io/>, <https://www.crd.york.ac.uk/prospero/>, <http://clinicaltrials.gov/>), which is encouraged but not required, IAFNS will request a third party (e.g., Center for Open Science) verify that preregistration adheres to the specifications for preregistration before data collection.
- 7. Analysis Plan Preregistration (Level 2):** When the researcher preregisters his/her study analysis plan in an independent, institutional registry (e.g., <http://osf.io/>, <https://www.crd.york.ac.uk/prospero/>, <http://clinicaltrials.gov/>), which is encouraged but not required, IAFNS will request a third party (e.g., Center for Open Science) verify for adherence to preregistered plan (deviations must be transparently reported) before data collection.
- 8. Replication (Level 1):** IAFNS will occasionally put out a call for replication studies as part of our RFP process.

**Template IAFNS Pre-Proposal on
Comparison of Food Category Contributors to Sodium Intake from Foods-At-Home vs. Away-
From-Home**

(2-page maximum, single space, 11 font minimum)

Date: _____

Lead Investigator, affiliated organization for the grant, email, phone	
Overview of approach (1-3 sentences)	

Background (1-3 sentences)

Primary hypothesis

- X

Secondary hypotheses

- X
- Y

Research approach

Investigator credentials of PI, co-PI, co-investigators, and collaborators

Name	Affiliation (Institution and department)	Disclose potential conflicts of interest and all funding sources over \$5,000 (2016+)

Attach PI/co-PI CV or NIH biosketch

Estimated budget and timeline

Range with a clear estimated upper limit to costs inclusive of all direct and if necessary indirect costs (the latter of which are limited to 10%). Publication costs will be covered directly by IAFNS.

Estimated maximum time from agreement to submitted manuscript for publication.