



American Society for Nutrition  
*Excellence in Nutrition Research and Practice*

November 13, 2020

Holly Nicaastro, Ph.D., M.P.H.

Christopher Lynch, Ph.D.

Office of Nutrition Research

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

National Institutes of Health (NIH)

Delivered electronically via [nutritionresearch@niddk.nih.gov](mailto:nutritionresearch@niddk.nih.gov)

Re: ([NOT-RM-21-005](#)) Request for Information: Data Science Challenges and Opportunities in the Field of Precision Nutrition

Dear Drs. Nicaastro and Lynch:

The American Society for Nutrition (ASN) appreciates the opportunity to provide information to the National Institutes of Health (NIH) related to Data Science Challenges and Opportunities in the Field of Precision Nutrition. ASN, as the scientific, professional society dedicated to bringing together the world's top researchers to advance our knowledge and application of nutrition, also greatly appreciates the efforts of the NIH to develop the first ever 2020-2030 Strategic Plan for NIH Nutrition Research. ASN represents more than 7,500 nutrition scientists and researchers around the world who work in academia, industry, government, non-profit, and clinical practice settings to help all individuals lead healthier lives.

### ***Invest in Precision Nutrition and Nutrition Research***

ASN, our members, and the entire nutrition research community were excited by the release of the Strategic Plan for NIH Nutrition Research ("Strategic Plan"). The Strategic Plan and this Request for Information related to "Data Science Challenges and Opportunities in the Field of Precision Nutrition" highlight that nutrition research is considered a prominent area of scientific pursuit at NIH. As the agency responsible for conducting and supporting 90% of all federally funded basic and clinical nutrition research, the NIH has profound effects on nutrition research and monitoring, and the health of all Americans. With this recent increased focus on nutrition science at the NIH, we encourage NIH to also provide the necessary investment to support nutrition research and to provide the NIH staff dedicated to nutrition research with the tools and resources they need to fully support these exciting new initiatives.

### ***Engage the Broad Nutrition Research Community***

Nutrition is an important, cross-cutting research priority that allows for promising interdisciplinary research. ASN supports the NIH's current efforts related to precision nutrition, and encourages the agency to engage the entirety of the nutrition research community in these efforts. The ASN membership has a wealth of expertise in nutrition science across the entire research spectrum from basic science to health policy, from discovery to application. Precision nutrition is an important evolving area that builds on community and

global efforts to improve the health of the population. However, there are challenges with moving precision nutrition research findings to the individual level, including the need for behavior change that implements the results of this important and exciting research. ASN recommends a continued investment in community-based participatory research to provide the formative work necessary to develop contextually and culturally relevant messaging regarding the precision nutrition initiative. While often precision nutrition studies are a privilege mainly for high income populations, it is important that this initiative also focuses efforts and messaging on low and middle-income populations. Communicating research's potential and the findings that evolve from the precision nutrition initiative is critical, especially for the most vulnerable populations that all too often bear a disproportionate burden of diet-related chronic diseases and do not have a voice at the table when formulating these types of initiatives. Without a better understanding of how to change behavior we will not see the promise of precision nutrition come to fruition. Additional investments in translational and implementation science research are necessary to show the complexity of people's lives and how to make precision nutrition messages most relevant, especially given inequities and challenges related to the food environment and food accessibility.

### ***Collaborate with Other Federal Agencies***

As encouraged in a recent report "[Strengthening national nutrition research: rationale and options for a new for a new coordinated federal research effort and authority](#)," published in an ASN journal, the *American Journal of Clinical Nutrition*, ASN also encourages the NIH to engage all federal agencies that support nutrition research, including the U.S. Department of Agriculture (USDA), and inform them of these precision nutrition efforts and provide the opportunity for collaboration where possible. ASN stands with a growing coalition of [70+ organizational supporters](#) for strengthening federal nutrition research, including at the NIH. The government must work together to coordinate and complement nutrition research efforts and initiatives to ultimately best help the public. We encourage the NIH to work with other federal agencies to better leverage and harness the potential for the precision nutrition initiative. For example, USDA and the U.S. Department of Health and Human Services (HHS) are largely responsible for development of the *Dietary Guidelines for Americans (DGAs)*, the cornerstone for many federal nutrition programs and policies. NIH can share key learnings from the precision nutrition initiative with USDA and HHS to work together to more effectively shape future editions of the *DGAs* with more targeted nutrition guidance for the current U.S. population, including individuals living with nutrition-related diseases. It is important that the All of Us data used for the precision nutrition efforts include both healthy individuals and individuals living with diet-related diseases since nearly half of the U.S. population now lives with a nutrition-related disease or health condition. Nearly 40% of the adult U.S. population was obese in 2015, 29% had hypertension<sup>1</sup> and more than 12% had

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<sup>1</sup> Prevalence of Obesity Among Adults. Prevalence of Hypertension Among Adults. National Center for Health Statistics (NCHS) Fact Sheet. December 2017.

[https://www.cdc.gov/nchs/data/factsheets/factsheet\\_nhanes.pdf](https://www.cdc.gov/nchs/data/factsheets/factsheet_nhanes.pdf) Accessed September 16, 2019.

diabetes<sup>2</sup>, with even more, 33.9%, living with prediabetes, which can turn into diabetes within 5 years.

### ***Develop and Share Transparent Plans for Precision Nutrition Data***

A few key questions and considerations as we have reviewed the Request for Information: Data Science Challenges and Opportunities in the Field of Precision Nutrition are put forth below that ASN would like the NIH to consider if they have not already done so:

- 1.) Who will have access to the data, and what is the process for applying to access the data?  
Are all private and public groups and individuals going to have access to the data?
- 2.) Will there be an NIH steering committee to evaluate scientific integrity? It is important that nutrition experts partner with data scientists to interpret the data and findings appropriately.
- 3.) Is the data going to be cleaned and managed?  
How will the NIH guarantee data quality? For example, if data is entered as kg, rather than lb., do we depend upon the user to validate the data quality?
- 4.) Where are the details of the data specifics?  
What diet data is being collected, and through what source?  
Is it 24-hr recall, Food Frequency Questionnaire (FFQ), etc.?  
How will covariates such as lifestyle variables be adequately captured in these datasets?
- 5.) Lastly, how will the NIH ensure cross-talk between datasets? When Electronic Health Records became mandatory, they were almost useless because the systems were not compatible with each other.

ASN encourages the NIH to publish more transparent plans on how data to support the precision nutrition initiative will be collected, quality assured, managed and interpreted, and how the evolving findings will be communicated to a variety of stakeholders.

### ***Support the Next Generation of Nutrition Researchers***

Given the vital precision nutrition research being conducted at the NIH, efforts to continue to recruit cutting-edge nutrition researchers to the NIH and to train the next generation of nutrition researchers are of utmost importance. NIH should also support such researchers for

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<sup>2</sup> National Diabetes Statistics Report, 2017. Centers for Disease Control and Prevention.  
<https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf> Accessed September 16, 2019.

training at other appropriate locations including, for example, the USDA Human Nutrition Research Centers that have excellent facilities and trained, experienced staff and investigators conducting precision nutrition research. ASN is well-positioned to actively recruit, support, and help trainees from all over the globe acquire the skills and experience necessary to develop careers as nutrition researchers. As a strong advocate for NIH funding, ASN recognizes that some of the most promising nutrition related research discoveries have been made possible by NIH support. We encourage the NIH to continue to work transparently to implement the precision nutrition initiative with opportunities for continuous input from the external research community and stakeholders such as ASN.

We greatly appreciate the NIH's consideration of ASN's comments as you move forward with the precision nutrition initiative and strategic plan for nutrition research. ASN greatly appreciates the focus on precision nutrition and nutrition research and would be pleased to assist the NIH with these exciting opportunities. ASN welcomes the opportunity to serve as a resource for the NIH moving forward.

Sincerely,

A handwritten signature in black ink, reading "Lindsay H. Allen". The signature is fluid and cursive, with the first name "Lindsay" and last name "Allen" clearly distinguishable.

Lindsay H. Allen, Ph.D.  
2020-2021 President