

To: FNS.FoodPlans@usda.gov
Re: Thrifty Food Plan and SNAP Benefit Adequacy

To Whom It May Concern,

Thank you for the opportunity to comment on the Thrifty Food Plan and SNAP benefit adequacy. I am an Assistant Research Scientist at the Indiana University Ostrom Workshop in Political Theory and Policy Analysis.

I would like to share key findings from my research on the Thrifty Food Plan and SNAP benefit adequacy, conducted over the last five years at Indiana University.

1. The Thrifty Food Plan does not cover the costs of adequately nutritious diets for individuals experiencing lactose intolerance, type 2 diabetes, kidney disease or pregnancy.
2. The recent increase in SNAP benefits to 115% of the Thrifty Food Plan budget is still insufficient for households, particularly those with individuals managing these common dietary illnesses, needs and restrictions.
3. The objective function, data inputs and constraints used in the current Thrifty Food Plan calculation prohibit our ability to model diets appropriate for individuals with lactose intolerance, type 2 diabetes and/or kidney disease and for pregnant and nursing mothers.

In summary, the Thrifty Food Plan model, data inputs and constraints need restructured to allow for modeling nutritionally adequate and culturally appropriate diets for Americans, and particularly individuals who are managing lactose intolerance, type 2 diabetes, kidney disease and/or pregnancy. This will most likely require a new objective function, disaggregating the food groups, and removing the cost constraint, as well as increasing calorie amounts for females up to the amounts for males of the same age. Please see below (and attached) for additional details, recommendations and pertinent literature.

Sincerely,

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DETAILED COMMENTS

1. The Thrifty Food Plan does not cover the costs of adequately nutritious diets for individuals experiencing lactose intolerance, type 2 diabetes, kidney disease or pregnancy.

Using a minimum cost model and dietary recommendations associated with lactose intolerance, type 2 diabetes, and pregnancy, we find that a nutritious diet is not affordable with the Thrifty Food Plan (TFP) budget for individuals with these common dietary needs and restrictions.¹ Lactose intolerance, type 2 diabetes, and pregnancy models for 20-50 year old females all return minimum food costs above the TFP budget allocation. Results indicate that equalizing the TFP budget allocations between men and women would better accommodate the heterogeneous needs of households in need of food assistance.

Recent research under review at the Journal of Nutrition in Gerontology and Geriatrics indicates that older adults age 51+ cannot afford a nutritious diet when managing lactose intolerance, type 2 diabetes, or chronic kidney disease.² When average consumption patterns are incorporated as a proxy for palatability, the TFP is even less adequate for older adults with these common dietary needs to afford nutritious and culturally appropriate diets.

2. The recent increase in SNAP benefits to 115% of the Thrifty Food Plan budget is still insufficient for households, particularly for individuals managing common dietary illnesses, needs and restrictions.

Minimum cost nutritious diets for pregnant females age 20-50 cost at least 149% of the TFP,¹ without incorporating average consumption patterns as a proxy for palatability. Minimum cost nutritious diets for adults age 51+ with lactose intolerance, type 2 diabetes or chronic kidney disease cost at least 119% of the TFP and as much as 143% of the TFP budget.

When average consumption patterns are incorporated into the calculation and a weighted absolute minimum proportions model is used with the cost constraint removed, nutritious and culturally appropriate diets for older adults age 51+ cost as much as 140% of the TFP for those *without* dietary restrictions.² For individuals with lactose intolerance, the cost is 144-167% of the TFP. For individuals with type 2 diabetes, the cost is estimated to be 119-181% of the TFP. And for individuals with chronic kidney disease, the estimated costs are as much as 120% of the TFP, though it is impossible to find feasible solutions with recommended energy (calorie) intake.²

3. The objective function, data inputs and constraints used in the current Thrifty Food Plan calculation prohibit our ability to model diets appropriate for individuals with lactose intolerance, type 2 diabetes and/or kidney disease and for pregnant and nursing mothers.

The current objective function ($MIN Z = \sum_i W_i (\ln X_i - \ln T_i)^2$) used for the TFP calculation requires an array of manual adjustments that are not transparent nor supported by public

policy.^{3,5} A weighted minimum absolute proportions model ($MIN Z = \sum_i W_i | \frac{X_i - T_i}{T_i} |$) is a superior objective function that provides better goodness-of-fit to average consumption patterns and greater variety in diet plans, and does not require manual adjustments to reach feasible solutions.⁴

Secondly, the current aggregation of food groups and categories makes it impossible to model appropriate diets for individuals with chronic kidney disease, and extremely difficult to model diets for individuals with lactose intolerance or type 2 diabetes. For instance, fruits that are high in potassium are combined with fruits that are low in potassium, such that we cannot select low-potassium options for individuals with chronic kidney disease who need to limit potassium intake.² Moreover, the milk products food group does not currently contain nondairy options needed to model appropriate diets for individuals with lactose intolerance. Approximately 25% of Americans experience lactose intolerance, and rates are relatively high among Black, Asian, and Hispanic populations; therefore, the dietary constraints forcing three servings of milk products, combined with the lack of nondairy options creates a critical point of institutional discrimination in the TFP calculation and the resulting market baskets that include over three servings of fluid milk, on average.³

RECOMMENDATIONS

1. Minimum recommendations for the Thrifty Food Plan revision:
 - a. Provide transparency to the public on data inputs, constraints and models used to determine the Thrifty Food Plan and maximum SNAP benefits.
 - b. Increase calorie amounts for females to the higher amounts for males of the same age.
 - c. Model diets appropriate for individuals managing chronic dietary illnesses and common dietary restrictions, including lactose intolerance, type 2 diabetes, chronic kidney disease, and pregnancy. This will require disaggregating food groups and categories and their associated nutrient profiles and prices to allow more flexibility in modeling diets, as well as incorporating nondairy milk options.
2. Additional recommendations for the Thrifty Food Plan revision:
 - a. Remove the cost constraint.
 - b. Use the weighted minimum absolute proportions objective function.
 - c. Widely gather and test recipes to transform consumable market baskets into purchasable market baskets.
3. Ideal recommendations for the Thrifty Food Plan revision:
 - a. Implement a transparent and accessible approach to modeling that empowers state administrators to calculate appropriate diet plans for SNAP applicants. A calculation performed with Excel and Java could be implemented in every SNAP office across the U.S.
 - b. Incorporate the costs of organic and fairly produced and traded commodities, in order to model food costs that support national and global food security.

BIBLIOGRAPHY

1. Babb, A., Wasserman, J., Knudsen, D. and S. Lalevich, 2019. An Examination of Medically Necessary Diets within the Framework of the Thrifty Food Plan. *Ecology of Food and Nutrition*. 58(3):236-246. <https://doi.org/10.1080/03670244.2019.1598978>
2. Babb, A.M., Valliant, J.D., Burris, M., and D.C. Knudsen. “SNAP benefits and the Cost of Adequate Nutrition for Older Adults” In Review at *Journal of Nutrition in Gerontology and Geriatrics*.
3. Babb, A.M. 2019. America’s “Thrifty Food Plan”: Hunger, Mathematics, and the Valuation of Nutrition Assistance. *Annals of the American Association of Geographers*, <https://doi.org/10.1080/24694452.2019.1664889>
4. Babb, A., Knudsen, D. and S. Robeson, 2019. A critique of the objective function utilized in calculating the Thrifty Food Plan. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0219895>
5. Babb, A.M. 2021. “The Politics of SNAP Mathematics” In *Administering and Managing the U.S. Food System: Revisiting Food Policy and Politics*. Eds. Hoflund, B.A., Jones, J.C., and M.C. Pautz.