



Canned Beans

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Replacing Protein Foods for Canned Beans Increases Shortfall Nutrient Intakes and Improves Diet Quality in Adults

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A recently published [study](#)¹ in Medical Research Archives, the journal of the European Society of Medicine, demonstrates that replacing commonly consumed protein foods² with one and two servings of canned beans³ significantly increased shortfall nutrient intakes and improved diet quality in adults in the United States.

WHEN SUBSTITUTING AS NOTED ABOVE, RESULTS SHOWED:

- **Dietary fiber** increased by **30%** and **51%**.
- **Iron** increased by **7%** and **13%**.
- **Magnesium** increased by **7%** and **12%**.
- **Potassium** increased by **6%** and **10%**.
- **Folate** increased by **7%** and **12%**
- The US typical dietary pattern led to **12%** and **15%** higher total **Healthy Eating Index**

OTHER NOTABLE OUTCOMES:

- **Canned beans contributed negligible amounts of total sugar** and no added sugar per 138.5 total calories, while concurrently being a substantial source of protein.
- While sodium contribution is elevated, the **sodium to potassium ratio is greater than 1.0**, thus, falling into recommendations set forth by the American Heart Association to add more potassium-rich foods to dietary patterns to blunt the effects of sodium.⁴

BEAN BENEFITS? THEY'RE IN THE CAN!

- **94% of the beans purchased at retail are canned beans**, according to Nielsen Consumer LLC.⁵
- **Canned beans and chickpeas are shelf-stable**, which reduces food waste and favorably impacts the environment. It is estimated that up to 40% of the US food supply is wasted,⁶ contributing approximately 6% of total US greenhouse gas (GHG) emissions.⁷ This demonstrates the importance of choosing foods that help minimize food waste, like canned beans and chickpeas.
- **Steel cans are one of the safest and most sustainable options for food packaging**, locking in nutrition while reducing food waste.
- **Steel food cans have the highest recycling rate of any food packaging (58%)**. Most other materials can only be recycled a few times — if at all — before losing quality and being sent to landfill. In fact, more than 75% of all steel ever produced is still in use.⁸
- **Canning safely locks in the inherent nutritional value of beans and chickpeas**,⁹ preserving their plant-based protein, fiber, and micronutrients without the need for preservatives or refrigeration, making them both a sustainable and nutritious pantry staple.

1. PAPANIKOLAOU, Yanni; PAPANIKOLAOU, Ava; SLAVIN, Joanne. Replacing Protein Foods for Canned Beans Increases Shortfall Nutrient Intakes and Improves Diet Quality in Adults. *Medical Research Archives*, [S.l.], v. 13, n. 9, oct. 2025. ISSN 2375-1924. Available at: <<https://esmed.org/MRA/mra/article/view/6993>>. Date accessed: 09 oct. 2025. doi: <https://doi.org/10.18103/mra.v13i9.6993>.

2. The protein foods composite was based on all foods within the USDA protein foods category (i.e., meats, poultry, eggs, seafood, nuts, seeds and soy products).

3. Beans included kidney beans, black beans, chickpeas and pinto beans

4. American Heart Association. (2024, June 10). A primer on potassium: <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sodium/potassium>

5. The Nielson Company (2025). NielsonIQ Retail Measurement. August 2025

6. (2025, January 13). Food loss and waste. U.S. Food and Drug Administration. <https://www.fda.gov/food/consumers/food-loss-and-waste>

7. Harwood, A., Mao, S., Ringland, M., & Zurita, J. (2023, May 24). *Refed's new estimates on food waste in the United States: 2020-2021, trends, and covid-19 impact*. ReFED. <https://refed.org/articles/refed-s-new-estimates-on-food-waste-in-the-united-states-2020-2021-trends-and-covid-19-impact/>

8. Can Manufacturers Institute. CannedGood.com <https://cannedgood.cancentral.com/> (Accessed 6/16/25)

9. Z. Boz, R. Uyar, F. Erdogdu. Heat Treatment of Foods. Principles of Canning. Science Direct. 2014, Pages 160-168. doi.org/10.1016/B978-0-12-384730-0.00156-7

Abstract

BACKGROUND

Limited research has assessed nutrient and diet quality implications resulting from the replacement of protein-rich foods with canned beans.

OBJECTIVE

The purpose of the present modeling analysis was to examine shortfall nutrient intakes and diet quality when isocalorically substituting protein foods with canned beans, including kidney beans, black beans, chickpeas, and pinto beans.

METHODS

A modeling analysis was completed in free-living US adults using data from What We Eat in American 2001-2018, the dietary component of the United States (US) National Health and Nutrition Examination Survey.

RESULTS

The isocaloric substitution of protein foods with 1 and 2 servings of canned beans daily to the US typical dietary pattern significantly improved shortfall nutrient intakes. Intake of dietary fiber increased by 30% and 51%, respectively, with replacement of protein foods with 1 and 2 serving of canned beans, relative to the US typical dietary pattern ($p < 0.0001$). Intake of iron, magnesium, potassium, and folate increased in the range of approximately 6-7% and 10-13% with replacement of protein foods with 1 and 2 servings of canned beans compared to the US typical dietary pattern ($p < 0.0001$). Isocaloric substitution of protein foods with 1 and 2 servings of canned beans with the US typical dietary pattern led to 12% and 15% higher total Healthy Eating Index-2015 scores, respectively ($p < 0.0001$).



CONCLUSION

Replacing commonly consumed protein foods with canned beans significantly increased shortfall nutrient intakes and improved diet quality. Greater canned bean consumption should be considered within future dietary recommendations as a strategy to promote nutrient intake shortfalls and improve deficits with current diet quality scores.



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