

# Under the Microscope: Pulses and Health



*Pulses can offer many nutrients and fiber to the diet, contributing to gut health and overall nutrition. They are easy to use, affordable, flavorful and versatile.*

## Pulses Supply Fiber

Pulses are the nutritionally dense, edible seeds of legumes including dry peas, beans, lentils, and chickpeas. Adequate fiber intake is linked to digestive health and reduced risk for nutrition-related chronic conditions including heart disease, stroke, hypertension, obesity, type 2 diabetes and colorectal, gastric and breast cancer.<sup>1</sup> According to the *2020-2025 Dietary Guidelines for Americans*, more than 90% of women and 97% of men ages 19-59 do not meet recommended intakes for dietary fiber. Pulses supply at least 6 grams of fiber per half-cup cooked serving to help meet this shortfall.



## Constipation

About 16 out of 100 adults experience constipation, and the risk rises with age as about 33 out of 100 adults over age 60 are affected.<sup>2</sup> Fiber benefits digestion and helps alleviate constipation by increasing stool bulk and attracting water in the colon, leading to ease of passing stool.<sup>1,2</sup>



**PULSES POINTER:** Boost fiber intake with a savory and sweet snack of roasted chickpeas, pumpkin seeds and dried fruit, dip your favorite crisp vegetables in hummus and make a quick dinner of lentil pasta topped with sauteed onions, black beans and canned tomatoes.

*Increasing fiber by just 9 grams per day, the amount supplied by just a little over one-half cup of pulses,<sup>3</sup> can lead to annual savings of an estimated \$12.7 billion for constipation-related healthcare costs for Americans.<sup>4</sup>*

## Pulses and Gut Health

A high fiber, plant-based eating pattern including pulses improves colon health, reduces inflammation, and increases health-promoting microbiome diversity. It also increases short chain fatty acid (SCFA)-producing bacteria linked to prevention of chronic conditions, especially type 2 diabetes.<sup>5,6,7,8</sup>



**PULSES POINTER:** Make a satisfying, gut-friendly breakfast burrito by filling a toasted corn tortilla with a scrambled egg, pinto beans, salsa and plain yogurt.



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## Pulses and Cardiometabolic Health

Pulses as part of a plant-based eating pattern provide protection for cardiovascular, metabolic, and colon health. They help maintain a healthy weight, reduce low-grade inflammation, and may play a role in managing immune-related conditions.<sup>9,10</sup>



*Pulses are part of a healthful eating pattern that has protective effects against coronary heart disease, stroke, and diabetes.<sup>11</sup>*

### **PULSES POINTER:**

**Add color and texture to your favorite vegetable soup by tossing in dry red lentils, simmer for about 30 minutes.**

## More Pulses Please

Eating more pulses improves the quality of the diet and is an important recommendation to prevent nutrition-related chronic conditions.<sup>12</sup> Given the wide acceptability across almost all eating patterns, healthcare professionals can promote eating more pulses to help manage risk for constipation and chronic diseases.<sup>3,13</sup>



**VISIT** [USAPulses.org/nutrition-professionals](https://USAPulses.org/nutrition-professionals) for more information and [Pulses.org/us/pulse-recipes](https://Pulses.org/us/pulse-recipes) for more ways to enjoy pulses!



## References

1. Quagliani D, Felt-Gunderson P. Closing America's Fiber Intake Gap: Communication Strategies From a Food and Fiber Summit. *Am J Lifestyle Med*. 2016;11(1):80-85. Published 2016 Jul 7. doi:10.1177/1559827615588079
2. NIH. National Institute of Diabetes and Digestive and Kidney Diseases. Who is more likely to become constipated? Available at: <https://www.niddk.nih.gov/health-information/digestive-diseases/constipation/definition-facts>, accessed 1/24/2022
3. USA Pulses. Nutritious. Available at: <https://www.usapulses.org/consumers/nutritious#ref-4>, accessed 2/2/2022
4. Schmier JK, Miller PE, Levine JA, Perez V, Maki KC, Rains TM, Devareddy L, Sanders LM, Alexander DD. Cost savings of reduced constipation rates attributed to increased dietary fiber intakes: a decision-analytic model. *BMC Public Health*. 2014 Apr 17;14:374. doi: 10.1186/1471-2458-14-374. PMID: 24739472; PMCID: PMC3998946.
5. Monk JM, Wu W, Lepp D, et al. Navy bean supplemented high-fat diet improves intestinal health, epithelial barrier integrity and critical aspects of the obese inflammatory phenotype. *J Nutr Biochem*. 2019;70:91-104. doi:10.1016/j.jnutbio.2019.04.009
6. Valdes AM, Walter J, Segal E, Spector TD. Role of the gut microbiota in nutrition and health. *BMJ*. 2018;361:k2179. Published 2018 Jun 13. doi:10.1136/bmj.k2179
7. Rinninella E, Raoul P, Cintoni M, et al. What is the Healthy Gut Microbiota Composition? A Changing Ecosystem across Age, Environment, Diet, and Diseases. *Microorganisms*. 2019;7(1):14. Published 2019 Jan 10. doi:10.3390/microorganisms7010014
8. Wagenaar CA, van de Put M, Bisschops M, et al. The Effect of Dietary Interventions on Chronic Inflammatory Diseases in Relation to the Microbiome: A Systematic Review. *Nutrients*. 2021;13(9):3208. Published 2021 Sep 15. doi:10.3390/nu13093208
9. Mullins AP, Arjmandi BH. Health Benefits of Plant-Based Nutrition: Focus on Beans in Cardiometabolic Diseases. *Nutrients*. 2021;13(2):519. Published 2021 Feb 5. doi:10.3390/nu13020519
10. Grosso G, Mistretta A, Frigiola A, Gruttadauria S, Biondi A, Basile F, Vitaglione P, D'Orazio N, Galvano F. Mediterranean diet and cardiovascular risk factors: a systematic review. *Crit Rev Food Sci Nutr*. 2014;54(5):593-610. doi: 10.1080/10408398.2011.596955. PMID: 24261534.
11. Micha R, Shulkin ML, Peñalvo JL, et al. Etiologic effects and optimal intakes of foods and nutrients for risk of cardiovascular diseases and diabetes: Systematic reviews and meta-analyses from the Nutrition and Chronic Diseases Expert Group (NutriCoDE). *PLoS One*. 2017;12(4):e0175149. Published 2017 Apr 27. doi:10.1371/journal.pone.0175149
12. Mitchell DC, Lawrence FR, Hartman TJ, Curran JM. Consumption of dry beans, peas, and lentils could improve diet quality in the US population. *J Am Diet Assoc*. 2009 May;109(5):909-13. doi: 10.1016/j.jada.2009.02.029. PMID: 19394480.
13. Winham DM, Nikl RR, Hutchins AM, Martin RL, Campbell CG. Dietitians vary by counseling status in bean promotion with type 2 diabetes clients: A pilot study. *Food Sci Nutr*. 2020;8(6):2839-2847. Published 2020 Apr 20. doi:10.1002/fsn3.1578