

Abstract

# Short-Term Effects of Crackers on Glycemic Index and Glycemic Responses: A Randomized Clinical Trial in Healthy Adults <sup>†</sup>

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**Abstract:** Introduction: This study aimed to determine the glycemic index (GI)/glycemic load (GL) of three crackers made with different flours. A control cracker (CC), with a 30% *w/w* substitution of wheat by whole wheat flour (WWC) and with a 30% *w/w* substitution of wheat by sunflower seed flour (SFC), differing significantly in protein and fiber content, is compared to the reference D-glucose drink. Methods: In a randomized, controlled, crossover design, 11 healthy participants (23.5 (1) years; seven women; BMI 23 (1) kg/m<sup>2</sup>) were randomly assigned to receive three cracker meals (CC, WWC, and SFC), all containing 50 g of available carbohydrates and 50 g of D-glucose as a reference drink. Results: SFC provided medium GI, low GL values (GI: 56 on glucose scale, GL: 6 per serving), whereas WWC and CC provided high GI, medium GL values (GI: 77 and 90 on glucose scale, respectively; GL: 11 and 12 per serving, respectively). Both SFC and WWC provided lower postprandial glucose concentrations, lower glucose excursions, and lower peak glucose values compared to glucose and CC. All crackers were pleasurable and increased satiety when compared to glucose, without any significant differences between them. Conclusion: SFC and WWC, regardless of soluble fiber and/or protein content, attenuated postprandial glycemic response and improved subjective satiety, which may offer advantages for body weight and glycemic control. This trial was registered at Clinicaltrials.gov: NCT05702372.

**Keywords:** crackers; sunflower seed flour; whole wheat flour; glycemic index; glycemic responses



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