doi: 10.14306/renhyd.31.1.2989

Freely available online OPEN ACCESS

Revista Española de
Nutrición Humana y Dietética
Spanish Journal of Human Nutrition and Dietetics

www.renhyd.org

RESEARCH ARTICLE – SUPPLEMENTARY INFORMATION

Refined food consumption and the triglyceride-glucose index in adults with type 2 diabetes: Associations across food categories

Consumo de alimentos refinados e índice triglicéridos-glucosa en adultos con diabetes tipo 2: asociaciones según categorías de alimentos

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Received: 16/08/2026; Accepted: 01/11/2026; Published: 16/11/2026

Assigned editor: Malak Kouiti. Departamento de Medicina Preventiva y Salud Pública, Facultad de Medicina, Universidad de Granada, Granada, España.

CITE

Peters Maldonado MP, Fernandez-Flores M, Ramos-Diaz J, Gomez Rutti YY, Guerra Valencia J. Refined food consumption and the triglyceride-glucose index in adults with type 2 diabetes: Associations across food categories. Rev Esp Nutr Hum Diet. 2027; 31(1):e2989, doi: 10.14306/renhyd.31.1.2989

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Table S1: Standardized food examples provided during administration of the Food Groups Frequency Questionnaire (FGFQ).

Food group (English)	Grupo de alimentos (Spanish)	Standardized examples/clarifications (Spanish)	English translation
Whole-fat dairy products	Lácteos enteros	Leches con toda su grasa	Whole-fat milk
Reduced-fat/fat-free dairy products	Lácteos semi/desnatados	Leches a las que se les ha retirado parcial o totalmente la grasa	Milk from which fat has been partially or completely removed
Eggs	Huevos	Huevos de gallina o codorniz	Chicken or quail eggs
Lean meats	Carnes magras	Carnes sin grasa y/o pellejos	Meat without visible fat and/or skin
Fatty meats	Carnes grasas	Pato, panceta, carnes con grasa y/o pellejos	Duck, pork belly, and meat with visible fat and/or skin
White fish	Pescado blanco	Perico, cojinova, tollo	Mahi-mahi (perico), cojinova, and smooth-hound shark (tollo)
Oily fish	Pescado azul	Bonito, jurel, caballa	Bonito, jack mackerel, and mackerel
Vegetables	Verduras	Verduras en general, como lechuga, espinaca, tomate, zanahoria y brócoli	Vegetables in general, such as lettuce, spinach, tomato, carrot, and broccoli
Fruits	Frutas	Todas las frutas dulces o ácidas	All sweet or acidic fruits
Nuts	Frutos secos	Almendras, pistachos, pecanas, nueces	Almonds, pistachios, pecans, and walnuts
Legumes	Legumbres	Menestras: lentejas, frejoles, pallares y garbanzos	Legumes: lentils, beans, lima beans, and chickpeas
Olive oil	Aceite de oliva	Aceite de oliva	Olive oil
Other fats	Otras grasas	Frituras sumergidas en aceite	Foods deep-fried in oil
Refined cereals	Cereales refinados	Arroz blanco, pan[a]	White rice and bread[a]
Whole-grain cereals	Cereales integrales	Arroz integral, pan elaborado con harina integral y galletas elaboradas con harina integral	Brown rice, bread made with whole-grain flour, and crackers made with whole-grain flour
Industrial pastries	Repostería industrial	Postres elaborados con harinas blancas, como queques, tortas, donas y cheesecakes	Desserts made with refined flour, such as cakes, tortes, doughnuts, and cheesecakes
Added sugars	Azúcares	Azúcar de mesa, panela, miel de abeja, chancaca	Table sugar, panela, honey, and chancaca
Alcohol	Alcohol	Cualquier tipo de bebida alcohólica	Any type of alcoholic beverage
Water	Agua	Agua embotellada, hervida o purificada	Bottled, boiled, or purified water

Note: The Spanish wording reflects the standardized examples or clarifications used during questionnaire administration; English translations are provided for reporting purposes. [a] In the local context, “pan” (bread) refers to the commonly consumed bread made with refined wheat flour, unless otherwise specified as whole-grain bread

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Table S2. Diagnostic assessment of the adjusted linear regression models.

Adjusted model	Normality of residuals	Homoscedasticity	Multicollinearity	
	Shapiro–Wilk p-value	Breusch–Pagan p-value	Mean VIF	Maximum VIF
Added sugar – Model 1	0.98025	0.6520	1.14	1.28
Added sugar – Model 2	0.99028	0.6226	1.14	1.30
Industrial pastries – Model 1	0.56505	0.1779	1.15	1.30
Industrial pastries – Model 2	0.63831	0.1239	1.15	1.32
Refined cereals – Model 1	0.31195	0.6625	1.15	1.27
Refined cereals – Model 2	0.44728	0.4479	1.15	1.29
Refined cereals (sensitivity analysis) – Model 1	0.72976	0.7902	1.14	1.31
Refined cereals (sensitivity analysis) – Model 2	0.72976	0.4989	1.16	1.35

Adjusted model 1 included sex, age group (30–51/52–59 years), educational level, diabetes knowledge (<14/≥14 points), abdominal obesity, and regular physical exercise (≥3 times/week). Adjusted model 2 additionally included use of diabetes medication. VIF, variance inflation factor.

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Table S3: Bootstrap assessment of the stability and precision of the associations between refined food consumption and the triglyceride-glucose (TyG) index.

Refined food category	Model 1			Model 2		
	β	Bootstrap SE	BCa 95%CI	β	Bootstrap SE	BCa 95%CI
Added sugars						
No consumption		Reference			Reference	
Any consumption	0.74	0.176	0.35 to 1.06	0.74	0.178	0.36 to 1.07
Industrial pastries						
No consumption		Reference			Reference	
Any consumption	0.52	0.205	0.12 to 0.93	0.52	0.209	0.12 to 0.93
Refined cereals						
<1 time/day		Reference			Reference	
≥1 time/day	0.28	0.143	0.02 to 0.58	0.29	0.147	0.02 to 0.60
Refined cereals — sensitivity analysis						
<4 times/week		Reference			Reference	
≥4 times/week	0.32	0.146	0.05 to 0.62	0.35	0.148	0.08 to 0.66

β represents the difference in mean triglyceride-glucose index (TyG) between the indicated consumption categories. Bootstrap standard errors (SE) and bias-corrected and accelerated (BCa) 95% confidence intervals (CI) were estimated using 5,000 bootstrap resamples. Model 1 was adjusted for sex, age group, educational level, diabetes knowledge, abdominal obesity, and regular physical exercise. Model 2 was additionally adjusted for diabetes medication use.

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