ScanOats

OAT β-GLUCANS REDUCE POSTPRANDIAL GLUCOSE PEAKS ACROSS FOOD MATRICES: A DOSE-RESPONSE ANALYSIS

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on behalf of the ScanOats consortium

Lantmännen

LUND UNIVERSITY

THE ORIGINAL OATLY!



Declaration of interest
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Mette Axelsen is employed by Oatly AB.


OATS AND
HEALTH CLAIMS
OAT β- GLUCANS
POSTPRANDIAL BLOOD GLUCOSE

AUTHORISED HEALTH CLAIM, 2011

Consumption of β-glucans from oats or barley as part of a meal contributes to the reduction of the blood glucose rise after that meal.

The claim may be used only for foods which contain at least 4 g of beta-glucans from oats or barley for each 30 g of available carbohydrates in a quantified portion as part of the meal.

EFSA NDA Panel, 2011. *EFSA Journal* 9:2207





SCIENCE MUST MEET CONSUMERS

1. **Health benefits**
   → if the dose is set too high, consumers may never learn about the benefit

2. **Accessibility**
   → if only highly enriched products qualify, many everyday oat foods are excluded.

3. **Affordability**
   → if only niche or premium products can qualify, affordability may be a limiting factor.

NEW OPINION ON THE SUBSTANTIATION OF A LOWER DOSE

ScanOats

2026

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efsa JOURNAL

SCIENTIFIC OPINION

Oat beta-glucans and reduction of postprandial glucose peak: Evaluation of a health claim pursuant to Article 13(5) of Regulation (EC) No 1924/2006

EFSA Panel on Nutrition, Novel Foods and Food Allergens (NDA) | Dominique Turck | Torsten Bohn | Montaña Cámara | Jacqueline Castenmiller | Stefaan de Henauw | Karen-Ildico Hirsch-Ernst | Angeles Jos | Alexandre Maciuk | Inge Mangelsdorf | Breige McNulty | Androniki Naska | Kristina Pentieva | Frank Thies | Ines Drenjančević | Ionut Craciun | Alfonso Siani

Correspondence: Ask a Question

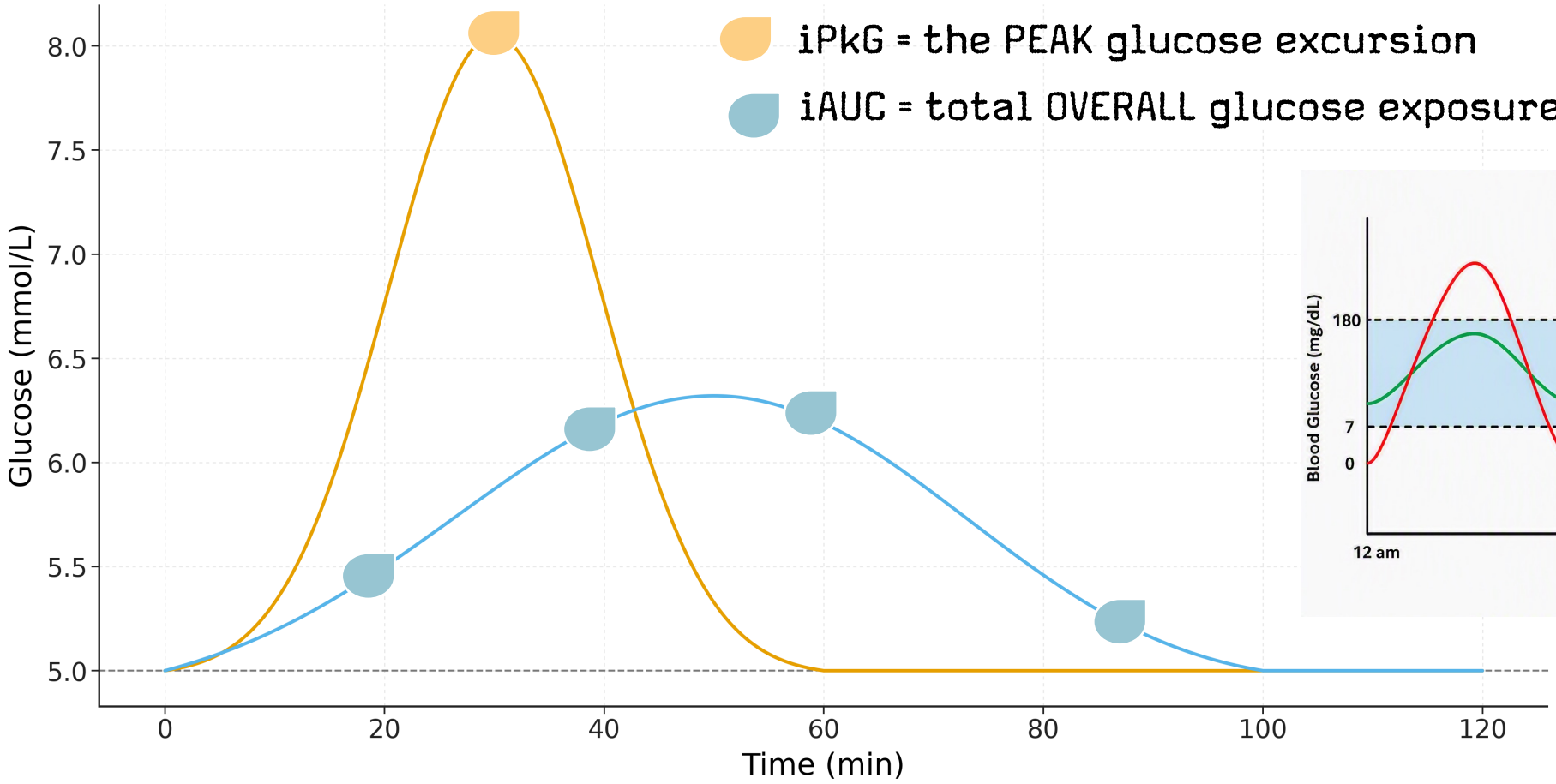
The declarations of interest of all scientific experts active in EFSA's work are available at https://open.efsa.europa.eu/experts.

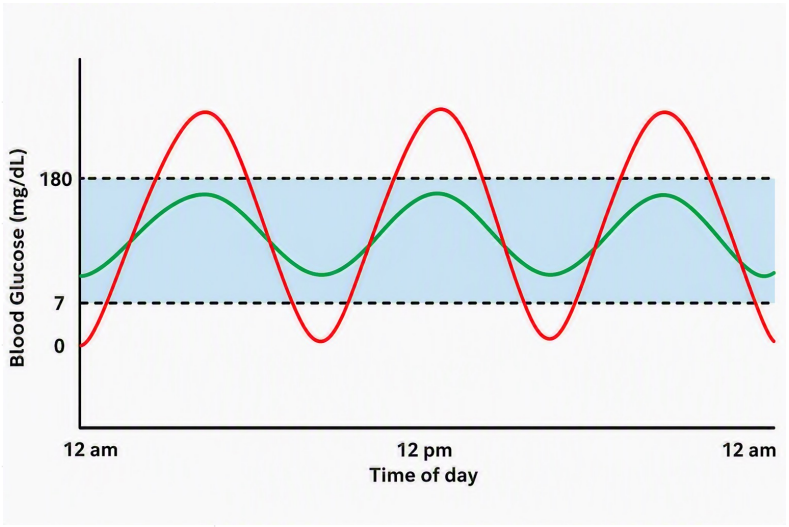
Abstract

Following an application from ScanOats, submitted for authorisation of a h claim pursuant to Article 13(5) of Regulation (EC) No 1924/2006 via the Compe Authority of Ireland, the EFSA Panel on Nutrition, Novel Foods and Food Aller (NDA) was asked to deliver an opinion on the scientific substantiation of a h

EFSA NDA Panel, 2026.
EFSA Journal 24:e9942

New outcome: Incremental Peak Glucose (iPkG)





Illustrative examples only. Curves do not represent measured data.

Food constituent: OAT β-GLUCAN

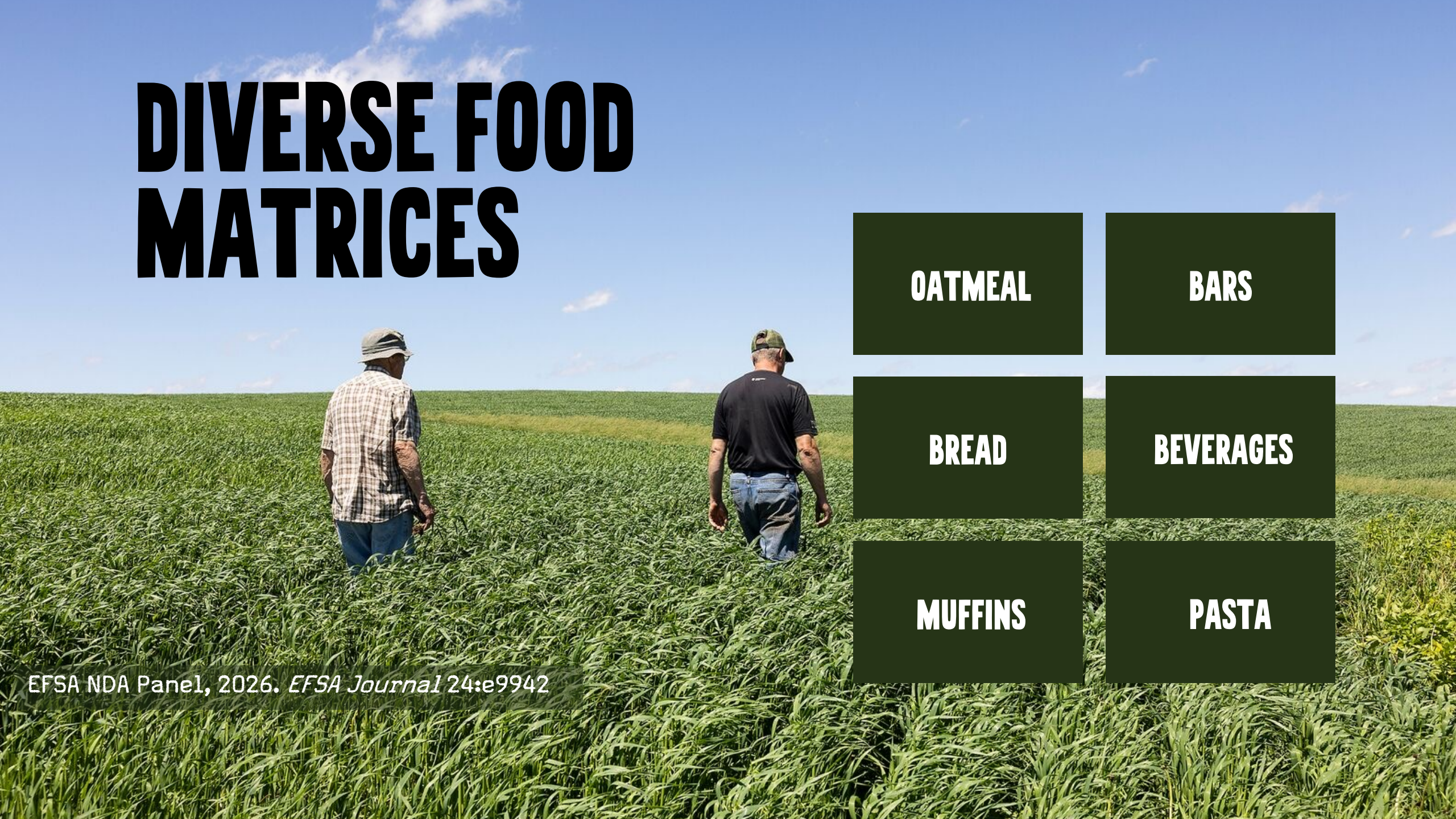
New evidence base:

- 16 intervention studies
- 55 trial comparisons (strata)

Dose: 1.0-6.5 g OBG per 30 g avCHO

EFSA NDA Panel, 2026. *EFSA Journal* 24:e9942

DIVERSE FOOD MATRICES



- OATMEAL
- BARS
- BREAD
- BEVERAGES
- MUFFINS
- PASTA

EFSA NDA Panel, 2026. *EFSA Journal* 24:e9942



DOSE RESPONSE BY FOOD MATRIX

A post hoc analysis to explore whether the dose-response differs by food matrix:

- Oats/oatmeal
- Other foods

OAT B-GLUCANS DELIVERED BY OATS/OATMEAL (5 STUDIES, 23 STRATA)

STUDY	FOOD MATRIX	OBG SOURCE/FORM	OBG DOSE RANGE (g/30 g avCHO)	SIGNIFICANT REDUCTION IN iPkG? Significant strata relative to total strata
Wolever et al. 2020	**Instant oatmeal**	Oat bran β-glucan	1.17-2.34	3 out of 3 strata
Wolever et al. 2018	**Instant oatmeal**	Oat bran β-glucan	1.27-2.96	5 out of 5 strata
Wolever et al. 2019	**Old-fashioned oats, steel-cut oats, instant oats**	Native OBG in oats	1.69-1.75	2 out of 3 strata
Wolever et al. 2016	**Oatmeal**	Native OBG in oats	1.77-2.73	3 out of 4 strata
Zhu et al. 2020	**Pearled oats and whole-grain oats**	Native OBG in oats with (4 studies) or without (4 studies) cooked rice	0.96-2.28	4 out of 8 strata (the studies without cooked rice)

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OAT β-GLUCANS DELIVERED BY OTHER FOODS (11 STUDIES, 32 STRATA)

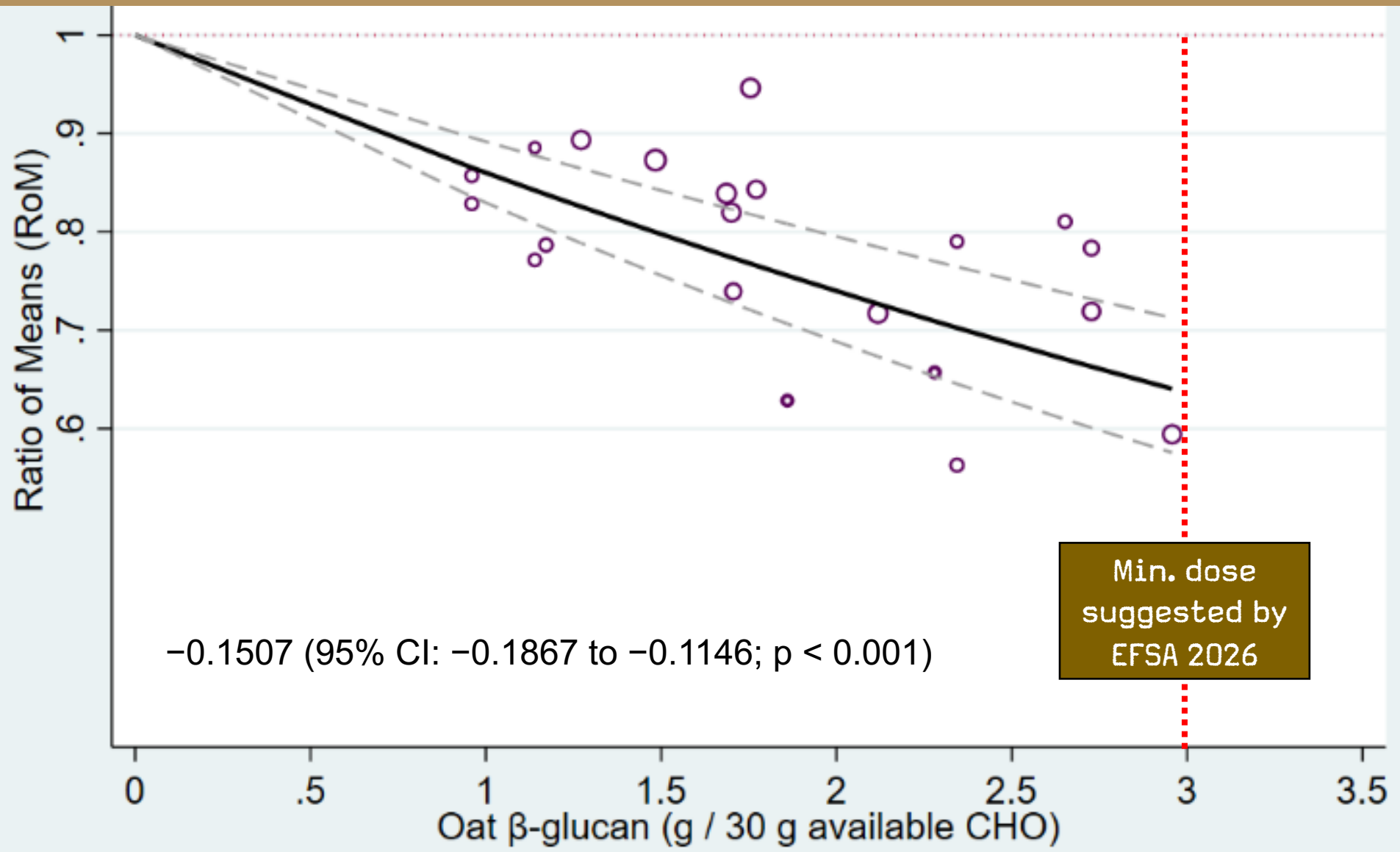
STUDY	FOOD MATRIX	OBG SOURCE/FORM	OBG DOSE RANGE (g/30 g avCHO)	SIGNIFICANT REDUCTION IN iPkG?
Regand et al. 2009	**Crisp bread and pasta**	Wholegrain oats	1.88-2.86	0 out of 2
Ekström et al. 2017	**Bread**	Refined oat fibre	1.92-4.11	3 out of 3
Rieder et al. 2019	**Bread**	Oat bran	1.93-4.35	2 out of 3
Hossain et al. 2025	**Glucose drink**	Purified OBG	2.0-4.0	2 out of 3
Kwong et al. 2013a	**Glucose drink and viscous gels**	Purified OBG, varying MW	2.4	3 out of 5
Kwong et al. 2013b	**Glucose drink**	Purified OBG, varying MW	2.4	2 out of 4
Hartvigsen et al. 2014	**Wheat bread**	Purified OBG	2.52	1 out of 1
Holm et al. 1992	**Durum semolina pasta**	Oat bran	2.88	0 out of 1
Regand et al. 2011	**Baked bars**	Oat bran with varying MW	3.15-4.89	3 out of 6
Revheim et al. 2024	**Bread**	Oat flower + purified OBG	4.32	1 out of 1
Lan-Pidhainy et. 2007	**Oat bran muffins**	Oat bran with varying MW	6.48	3 out of 3

EFSA NDA Panel, 2026. *EFSA Journal* 24:e9942



EFFECT ON INCREMENTAL PEAK GLUCOSE

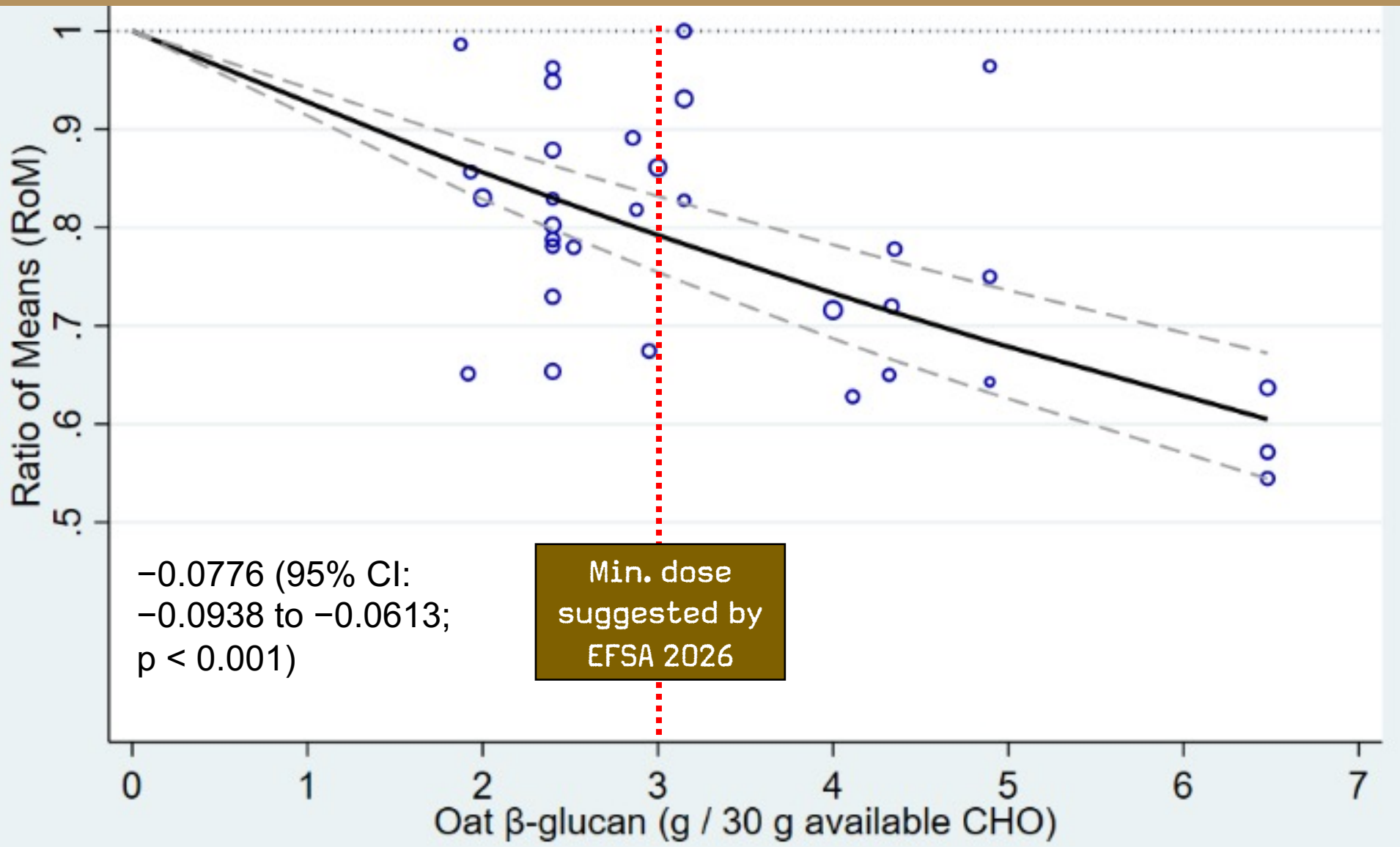
OAT B-GLUCANS DELIVERED BY OATS/OATMEAL



EFFECT ON INCREMENTAL PEAK GLUCOSE

OAT B-GLUCANS DELIVERED BY OTHER FOODS





DOSE-RESPONSE BY FOOD MATRIX

Estimated reduction in iPkG per additional 1 g OBG / 30 g avCHO

OATS / OATMEAL	OTHER FOODS
14.0%	7.5%

Lowest dose with a significant effect in an individual study

- 1.2 g/30 g avCHO ioats/oatmeal
- 1.9 g/30 g avCHO (other food matrices
  - *No lower doses were tested in the other-matrices group*



PROPORTION OF STRATA SHOWING SIGNIFICANT REDUCTIONS IN iPkG – ALL MATRICES COMBINED:

≥ 1.2 g	**37/51 significant (73%)** Cooked and pearled oats, bread and a glucose-based drink already effective
≥ 2 g	**27/38 significant (71%)** Evidence expands to drinks, gels, bars and muffins
≥ 3 g	**11/15 significant (73%)** No greater consistency of effect



A REMARKABLY CONSISTENT SIGNAL

DESPITE SUBSTANTIAL METHODOLOGICAL DIVERSITY

KEY REMAINING QUESTION:
WHAT IS THE EFFECTIVE DOSE?



BIOLOGICAL EFFICACY

REGULATORY CERTAINTY

CONSUMER RELEVANCE

ACCESS TO EVERYDAY FOODS

EFSA's response to scientific comments: *EFSA Supporting Publication* 2026:EN-10161.

CONCLUSIONS AND FUTURE DIRECTIONS

- Dose-dependent reductions in iPkG were observed across food matrices, while the magnitude of the response appeared to vary by matrix.

- Next step: The condition of use will be lowered from the current 4 g OBG/30 g avCHO, while the final dose remains a policy decision by EU Member States.

- This case highlights how coordinated industry–academic collaboration can advance regulatory science and enable more accessible consumer-relevant health claims.



EFSA's scientific assessment 2026

EFSA's response to scientific comments

THANK YOU!

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ScanOats