Are mobile applications a solution for the assessment of fatty acid intake?

To the editor In their excellent review, Siniarski and Gajos[1] underlined the immense importance of omega-3 polyunsaturated fatty acids (PUFAs) in the treatment of patients with cardiovascular diseases (CVDs) and indicated the potential limitations of the contradictory results of clinical trials. In their conclusions, the authors highlighted actual dietary recommendations for the intake of fatty acids and identified populations that can benefit the most from changes in PUFA intake.

In fact, the profile of consumed fatty acids is more important for the prevention of CVDs than total fat intake.[2] The risk of coronary artery disease may be reduced by 2% to 3% by replacing 1% of energy intake from saturated fatty acids (SFAs) with PUFAs.[3] According to the current guidelines, SFA intake should be reduced to less than 10% of total energy intake, whereas the intake of trans fatty acids should be as low as possible.[2]

These recommendations should be communicated to all cardiac patients, but the question is: Is there any tool that would enable them to follow these guidelines in practice? And is the information about the dietary source of each fatty acid sufficient without detailed calculation of the fatty acid profile? We may expect that in the future, mobile applications, instead of tedious calculations, will be used to support patients with dietary choices.[4] Unfortunately, most of the currently available applications have not been validated in clinical settings.

Recently, we performed a comparative validity study of popular mobile applications against the Polish reference method in the assessment of energy and macronutrient content intake.[5] Our results revealed that the evaluated applications tended to overestimate energy intake, whereas over- and underestimations were observed with regards to macronutrients intake. Thus, we cannot expect that the currently available popular mobile applications will be reliable tools for the assessment of fatty acids intake.

Considering the role and the significance of dietary habits (including fatty acid profile) on cardiovascular risk, there is an urgent need for providing validated, easy-to-use, and widely available tools for nutrition assessment. The development and validation of high-quality mobile applications is of great importance not only for therapeutical reasons (patients with CVDs) but also due to the limited access to dietary counseling and poor nutritional knowledge of the general population.

ARTICLE INFORMATION

AUTHOR NAMES AND AFFILIATIONS Agnieszka Bzikowska-Jura, Piotr Sobieraj (AB-J: Department of Medical Biology, Medical University of Warsaw, Warsaw, Poland; PS: Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw, Warsaw, Poland)

CORRESPONDENCE TO Agnieszka Bzikowska-Jura, DHSc, Department of Medical Biology, Faculty of Health Sciences, Medical University of Warsaw, ul. Litewska 14/16, 00-575 Warszawa, Poland, phone: +48 22 116 92 50, email: agnieszka.bzikowska@wum.edu.pl

CONFLICT OF INTEREST None declared.

HOW TO CITE Bzikowska-Jura A, Sobieraj P. Are mobile applications a solution for the assessment of fatty acid intake? Pol Arch Intern Med. 2022; 132: 16170. doi:10.20452/pamw.16170

REFERENCES

1 Siniarski A, Gajos G. Polyunsaturated fatty acids in cardiovascular diseases: uncertainty prevails. Pol Arch Intern Med. 2021; 131: 716-723.

2 Mach F, Baigent C, Catapano AL, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk: the Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and European Atherosclerosis Society (EAS). Eur Heart J. 2020; 41: 111-188.

3 Astrup A, Dyerberg J, Elwood P, et al. The role of reducing intakes of saturated fat in the prevention of cardiovascular disease: where does the evidence stand in 2010? Am J Clin Nutr. 2011; 93: 684-688.

4 Robert C, Erdt M, Lee J, et al. Effectiveness of e-health nutritional interventions for middle-aged and older adults: systematic review and meta-analysis. J Med Internet Res. 2021; 23: e15649.

5 Bzikowska-Jura A, Sobieraj P, Raciborski F. Low comparability of nutrition-related mobile apps against the Polish reference method – a validity study. Nutrients. 2021; 13: 2868.