Photo: ©WHO

Trans fats elimination in Ukraine: from policy to action

Key findings from the FEEDcities project on levels of trans fats, salt and potassium in commonly available foods in Ukraine

Introduction

Trans fats, or trans-fatty acids (TFAs), are unsaturated fatty acids that come in two forms: natural and industrial. Natural trans fats are present in small amounts in meat and dairy products. Industrially produced trans fats, commonly found in processed foods such as baked and fried food items, are a major public health concern as they are linked to noncommunicable diseases (NCDs) such as cardiovascular disease, and increased risk of death from coronary heart disease *(1)*.

WHO has recognized the urgent need to eliminate industrially produced trans fats from the food supply due to their harmful effects on public health. In response, the Organization launched the REPLACE action package in 2018, a comprehensive roadmap that guides countries in eliminating trans fats through regulatory measures, monitoring and public awareness campaigns *(2)*. This initiative aligns with WHO's broader objective of reducing preventable deaths from NCDs and improving global health outcomes by ensuring healthier food environments for all populations.

WHO initiated the FEEDcities project in Ukraine, which aimed to assess the urban food environment to understand the nutritional composition of commonly consumed foods, specifically focusing on the content of TFAs, salt, potassium and total fat. FEEDcities serves as a tool to support policy-makers and public health authorities in monitoring, regulating and improving food environments, helping to create healthier food systems by identifying harmful food components and promoting compliance with WHO dietary guidelines.

Ukraine on the way to eliminating TFA

Since 2020, Ukraine has been implementing measures to eliminate industrially produced TFAs[1] from food products in the interests of public health. In that year, the Ministry of Health of Ukraine (MoH) issued Order No. 1613 *(3)*, mandating that the presence of TFAs should not exceed 2 g per 100 g of total fat in food products. This regulation is fully in line with European Union legislation and WHO best practices for the elimination of TFAs.

Since 2020, Ukraine has been implementing measures to eliminate industrially produced TFAs from food products in the interests of public health

To ensure compliance with these measures and obtain the WHO Validation Certificate for Trans Fat Elimination *(4)*, Ukraine has taken steps to build national capacity to measure and monitor TFAs in the food supply. This work is being done in cooperation with stakeholders, including the WHO Regional Office for Europe, the WHO Country Office in Ukraine, the MoH and the State Service of Ukraine on Food Safety and Consumer Protection (DPSS). Ukraine has already established an initial infrastructure for assessing the content of TFAs in all types of food products, which is an important component for monitoring and ensuring compliance with the new regulations.

Even in the context of the current war and resulting humanitarian crisis, caused by the full-scale invasion of Ukraine by the Russian Federation, WHO emphasizes the importance of food producers' compliance with national requirements to reduce the use of TFAs in food. Investing in people's health and well-being remains crucial in times of war.

[1] From here on, the abbreviation TFA refers to industrially produced trans-fatty acids.

Fig 1. Key facts about TFA consumption

More than
278 000
deaths each year globally can be attributed to the intake of TFAs *(5)*.

Trans fats clog arteries, increasing the risk of heart attacks and death.

TFAs can be found in margarine, vegetable shortening, vanaspati ghee, fried foods, and baked goods such as crackers, biscuits and pies.

<2.2 g

WHO recommends that adults limit their consumption of trans fats to less than 1% of total energy (calories) intake, which is less than 2.2 g per day for a 2000-calorie diet *(1)*.

It is feasible to replace TFAs with healthier fats or oils without affecting food's cost, taste or availability *(6)*.

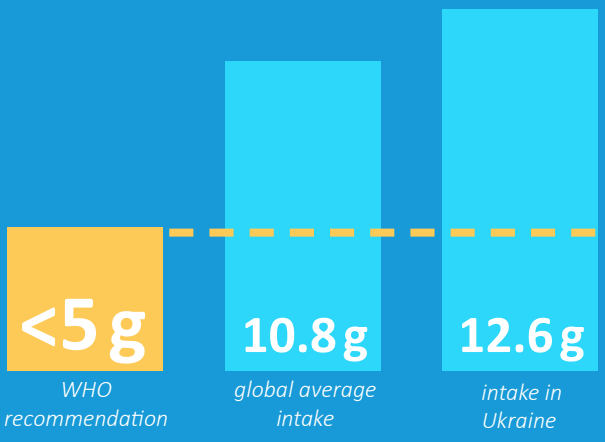
Fig 2. Key facts about salt intake

1.89 million
deaths each year are attributed to excessive salt intake *(7)*.

The main health impacts associated with the consumption of high-salt foods are increased blood pressure, increased risk of cardiovascular disease, stomach cancer, obesity, osteoporosis and kidney disease *(8)*.

For adults, WHO recommends less than 5 g/day of salt (just under a teaspoon) *(7)*.

The global average salt intake for adults is 10.8 g per day. Available data shows that in Ukraine, the salt intake of the adult population was 12.6 g/day in 2019 *(9)*.



Reducing salt intake is one of the most cost-effective strategies for promoting health and reducing the NCD burden.

Fig 3. Key facts about potassium intake

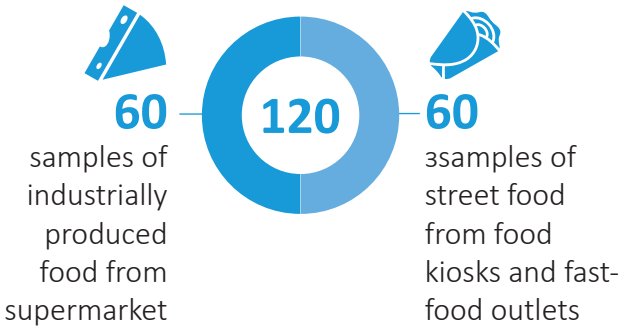
Potassium is vital for cellular function and electrolyte balance and is found in large quantities in fruits, vegetables, dairy products, seafood and legumes.

The recommended intake for adults is an average of
3 510 mg/day *(10)*

WHO recommends increasing dietary potassium intake to reduce blood pressure and the risk of cardiovascular disease, stroke and coronary heart disease in adults.

FEEDcities project in Ukraine

WHO conducted the first FEEDcities project in Ukraine in 2023, which aimed to assess the level of TFAs in commonly available foods from supermarkets (industrially produced food), food kiosks and fast-food outlets ("street food"[2]) in the country. This document is based on the full research project results, which are presented in «FEEDcities project: the food environment in cities in eastern Europe and central Asia – Ukraine» *(11)*. The FEEDcities project also collected data on salt, potassium and total fat levels in these foods. This is the first study of its kind in Ukraine, and the data will be used to monitor the enforcement of the new TFA regulations and inform further policy development to create healthier food environments. This project has the potential to serve as a model for long-term monitoring to support policy implementation and amendments.



The FEEDcities project design included 120 food products: 60 samples (25 categories) of industrially produced food from supermarkets and 60 samples (14 categories) of street food from food kiosks and fast-food outlets. Experts selected foods that could potentially contain TFAs. To analyse the samples, WHO collaborated with two state laboratories that were pre-qualified to analyse TFAs using the WHO Simplified protocol for measuring trans-fatty acids content as a percentage of total fatty acids in food products *(12)*.

Key findings from the FEEDcities project

- Over 30% (37 of 120) of the products selected for TFA analysis (products with potential TFA content) exceed the maximum permitted value of 2 g of TFA per 100 g of fat *(11)*.

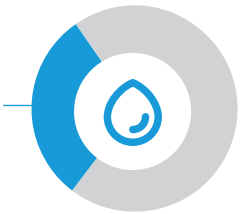
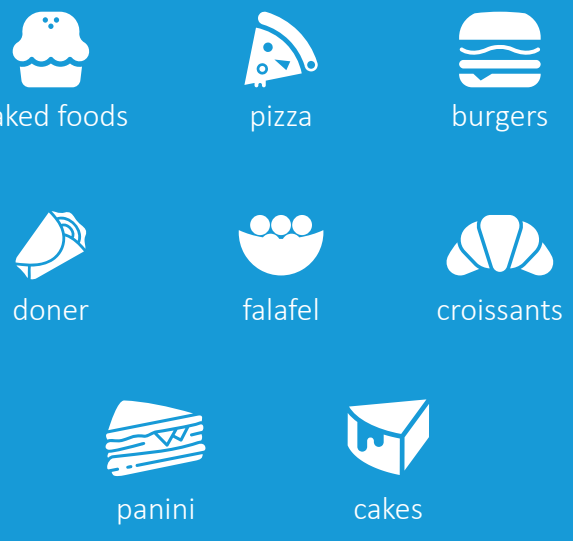


Fig 4. Industrially produced food categories in which samples exceeded TFA value

Fig 5. Street food categories in which samples exceeded TFA value



[2] This category is referred as "homemade food" in the FEEDcities report.

- These results demonstrated that some food producers likely did not take advantage of the three-year transition period granted by the legislator in 2020 to stop using TFAs in food production processes.

- Consumers cannot protect themselves from TFA consumption through "informed choice" since the range of foods that exceed the maximum permitted TFA value varies greatly and producers may exceed the legal limit of TFAs. Thus, state monitoring and control is essential in protecting the population from this risk factor.

Full FEEDcities project report

- Total fat was also measured and is provided for reference to understand another risk factor – excessive energy (calories) intake from high-fat foods. Although there is no direct correlation between high TFA and high fat, consumers can choose foods with a lower energy value to maintain good health.

- Many food products contained high sodium levels, with 6 out of the 39 food categories analysed exceeding half or surpassing the maximum daily recommended amount of sodium in a single serving (burgers, hot dogs, doner/shawarma, falafel, pizza and industrially produced chips).

- Based on FEEDcities results, it is recommended that individuals limit the consumption of ultra-processed foods[3], as they are usually rich in salt.

- Additionally, the analysed foods generally had low levels of potassium. Mean sodium-to-potassium ratios were above the recommended value of 1 in all street food samples, and in 18 out of the 25 collected industrial foods. However, some traditional foods containing vegetables (such as shawarma and falafel) provided relevant amounts of this nutrient at around a quarter of the minimum daily recommendation.

Table 1. Top five industrially produced food products (purchased in supermarkets) that were most often found to contain amounts of TFA above the legally permitted value

Category	Minimum TFA, per 100 g of total fat, g	Mean TFA, per 100 g of total fat, g	Maximum TFA, per 100 g of total fat, g
Dairy (yoghurt) desserts	2.31	14.1	25.89
Frozen syrnyky[4]	3.61	3.51	3.72
Hard cheese	2.79	4.09	5.39
Frozen croissant	0.31	9.68	19.04
Margarine	0.11	10.07	20.03

Source: Data from WHO Regional Office for Europe (2025) *(11)*.

TFA was found at levels above the legally permitted value in at least in one product out of the 2–8 analysed in the following categories: falafel, croissants, burgers and doner.

[3] According to the Cambridge dictionary, ultra-processed foods are defined as those: "prepared using industrial processes, usually involving a large number of ingredients, many of which would not normally be used in preparing or cooking food at home" *(13)*.

[4] Syrnyky are traditional Ukrainian cheese pancakes made from fresh farmer's cheese (which is similar to cottage cheese or quark) with flour, eggs and sugar *(11)*.

Table 2. Top 5 street food products (food purchased from fast-food outlets and kiosks) that were most often found to contain amounts of TFA above the legally permitted value

Category	Minimum TFA, per 100 g of total fat, g	Mean TFA, per 100 g of total fat, g	Maximum TFA, per 100 g of total fat, g
Cakes	0.94	2.19	5.75
Panini	0.78	3.84	9.89
Pizza	0.18	2.62	7.04
Savoury pastries	0.66	3.26	8.49
Sweet pastries	0.00	7.45	28.01

Source: Data from WHO Regional Office for Europe (2025) *(11)*.

TFA was found at levels above the legally permitted value in at least in one product out of the 2–8 analysed in the following categories: falafel, croissants, burgers and doner.

Table 3. Top 5 food categories that exceed half or surpassed the maximum daily recommended amount of sodium[5] in a single serving (converted to salt)

Category	Mean serving size, g	Minimum salt per serving, g	Mean salt per serving, g	Maximum salt per serving, g
Burgers	180	1.55	2.64	3.78
Hot dogs	324	4.08	5.55	6.91
Doner	424	4.68	6.83	8.97
Falafel	398	4.23	4.27	4.31
Chips	75	1.86	2.58	3.30

Source: Data from WHO Regional Office for Europe (2025) *(11)*.

[5] To convert sodium to salt, the following formula was used: salt (in grams) = sodium (in grams) × 2.5.

Fig 6. Next steps for national stakeholders

1. Continue to develop the capacity of laboratories to analyse TFAs in food products.
2. Ensure the availability and applicability of state monitoring and control of the food market, taking a risk-based approach.
3. Ensure further dialogue with food producers to encourage them to eliminate TFAs and comply with the legislation.
4. Implement the necessary measures to obtain the WHO Validation Certificate for Trans Fat Elimination *(4)*. To obtain validation, countries must demonstrate that they have implemented a trans-fat policy based on best practices and have established an effective monitoring and control system.
5. Promote intersectoral collaboration and partnerships between government agencies, food producers, civil society organizations, academia and international partners to address nutrition-related NCD challenges.
6. Promote the application of the WHO global sodium benchmarks for different food categories *(14)* as a guide for countries and industry to reduce the sodium content in different categories of processed foods *(15)*.

Acknowledgments

This document was written by Andrii Skipalskyi and Olha-Mariia Alimenko (WHO Country Office in Ukraine). Special thanks go to Jarno Habicht (WHO Representative and Head of the WHO Country Office in Ukraine), Gauden Galea (Strategic Advisor to the Regional Director, Special Initiative on Noncommunicable Diseases and Innovation, WHO Regional Office for Europe), Kremlin Wickramasinghe (Regional Advisor, Nutrition, Physical Activity and Obesity) and Clare Farrand (Technical Officer, Nutrition, WHO Regional Office for Europe) for their technical review and input into this document.

The WHO Regional Office for Europe and the WHO Country Office in Ukraine coordinated the preparation of this document within a Biennial Collaborative Agreement covering 2024–2025 between the Government of Ukraine and the WHO Regional Office for Europe.

Photo: WHO

References

1. Trans fat. In: World Health Organization [website]. World Health Organization; 2024 (https://www.who.int/news-room/fact-sheets/detail/trans-fat).
2. REPLACE trans fat. In: World Health Organization [website]. World Health Organization; 2024 (https://www.who.int/teams/nutrition-and-food-safety/replace-trans-fat).
3. Про затвердження Правил додавання вітамінів, мінеральних речовин та деяких інших речовин до харчових продуктів. Міністерство охорони здоров'я України; [On the approval of the Rules for the addition of vitamins, minerals and certain other substances to food products. Ministry of Health of Ukraine] 2020 (https://zakon.rada.gov.ua/laws/show/z0891-20#Text) (in Ukrainian).
4. WHO's trans fat elimination validation program is now open for country applications. In: World Health Organization [website]. World Health Organization; 2024 (https://www.who.int/news/item/14-04-2023-who-trans-fat-elimination-validation-program-is-now-open-for-country-applications).
5. Global Burden of Disease Collaborative Network. Global Burden of Disease study 2019 (GBD 2019): dietary risk exposure estimates 1990–2019. Seattle: Institute for Health Metrics and Evaluation; 2021 (https://doi.org/10.6069/CK3C-DY06).
6. NCD 'best buys' and other effective interventions. Geneva: World Health Organization; 2018 (https://iris.who.int/handle/10665/364167). Licence: CC BY-NC-SA 3.0 IGO.
7. Sodium reduction. In: World Health Organization [website]. World Health Organization; 2024 (https://www.who.int/news-room/fact-sheets/detail/salt-reduction).
8. WHO global report on sodium intake reduction. Geneva: World Health Organization; 2023 (https://iris.who.int/handle/10665/366393). Licence: CC BY-NC-SA 3.0 IGO.
9. STEPS Ukraine Factsheet: Dietary habits of adults aged 18–69 years. In: WHO Regional Office for Europe [website]. WHO Regional Office for Europe; 2024 (https://www.who.int/europe/publications/m/item/steps-ukraine-factsheet-dietary-habits-of-adults-aged-18-69-years).
10. Guideline: potassium intake for adults and children. Geneva: World Health Organization; 2012 (https://iris.who.int/handle/10665/77986).
11. FEEDcities project: the food environment in cities in eastern Europe and central Asia – Ukraine. Copenhagen: WHO Regional Office for Europe, 2025 (https://iris.who.int/handle/10665/381781). Licence: CC BY-NC-SA 3.0 IGO.
12. Simplified protocol for measuring trans-fatty acids content as a percentage of total fatty acids in food products. Geneva: World Health Organization; 2023 (iris.who.int/handle/10665/366690). Licence: CC BY-NC-SA 3.0 IGO.
13. Ultra-processed. In: Cambridge dictionary [website]. Cambridge; 2024 (https://dictionary.cambridge.org/dictionary/english/ultra-processed#google_vignette).
14. WHO global sodium benchmarks for different food categories, 2nd edition. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376545). Licence: CC BY-NC-SA 3.0 IGO.
15. New WHO benchmarks help countries reduce salt intake and save lives. In: World Health Organization [web site]. World Health Organization; 2024 (https://www.who.int/news/item/05-05-2021-new-who-benchmarks-help-countries-reduce-salt-intake-and-save-lives).