

# FEEDcities project

The food environment in cities in eastern Europe and central Asia

## Armenia

### Goal of the study

Characterize the food environment in Yerevan, Armenia to assess the content of **trans-fatty acids (TFA)**, **salt**, and **total sugars** in ready-to-eat (RTE) and non-ready-to eat (non-RTE) food items offered in fast-food outlets, kiosks and supermarkets.

### Characteristics of the study

Study area	Study period	Included vendors	Samples collected
Yerevan (capital city)	September 2024 – January 2025	Kiosks, fast-food outlets, bakeries and supermarkets	<b>116</b>

### Nutrients analyzed



$n = 32$  items /  
102 samples



$n = 22$  items /  
74 samples

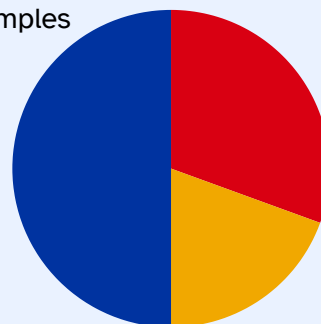


$n = 17$  items /  
48 samples

### Food categories per collected samples

Homemade RTE  
( $n = 17$  items)  
68 samples

Industrial RTE  
( $n = 10$  items)  
30 samples

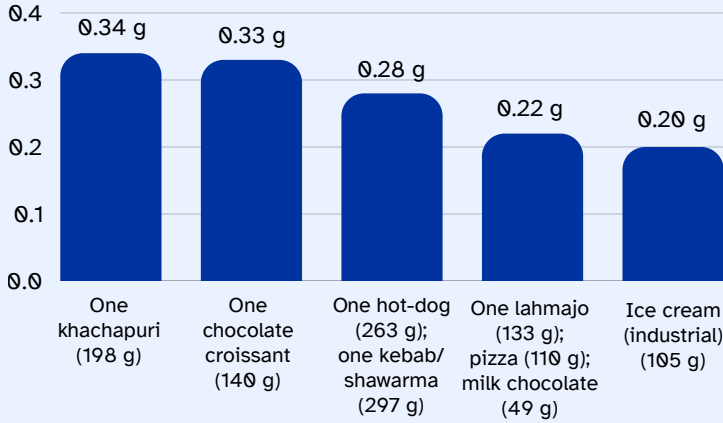


Industrial non-RTE  
( $n = 6$  items)  
18 samples

# Results

Five food items (alone or in combination) with the highest values in each nutrient category are presented below

## Grams of TFA per serving



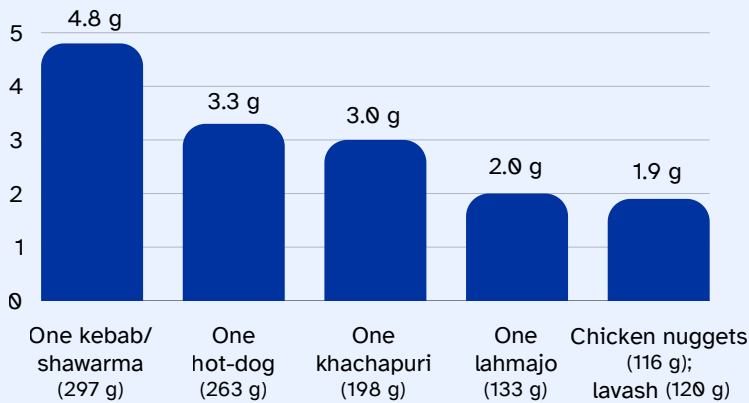
### WHO recommendation for TFA intake (1)

Less than **1% of total energy** (less than **2.2 g per day** for a 2000-calorie diet)

### WHO best-practice recommendation (2)

**2 g of iTFA** per 100 grams of total fat in all foods

## Grams of salt per serving

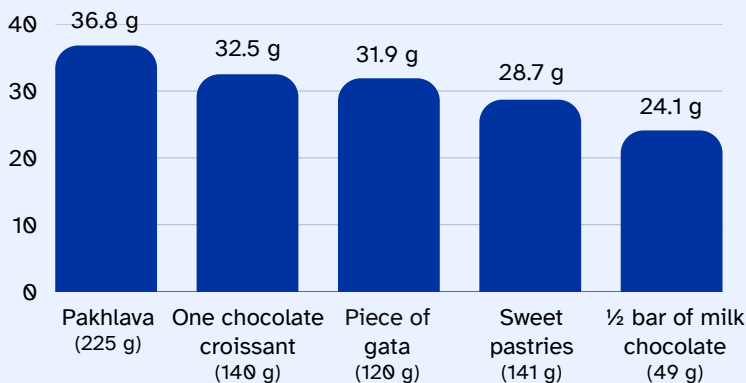


### WHO recommendation for salt intake (3)

Less than **5 g of salt per day** (equivalent to less than 2 g of sodium, or just **under a teaspoon**)



## Grams of sugar per serving



### WHO recommendation for free sugars intake (4)

Less than **10% of total energy** (**50 g or 12 teaspoons**); less than 5% of total energy intake for additional health benefits











# Implications for real life












**! While most of the food items tested in this study for TFA, salt and sugar do not exceed recommended maximum daily intake, their cumulative intake throughout the day might result in excess.**

Two options of plausible diet using the combination of the food items tested in this study are illustrated below to demonstrate the total cumulative intake of TFA, salt and sugar in a day.

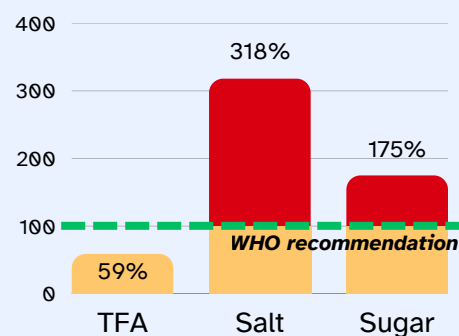
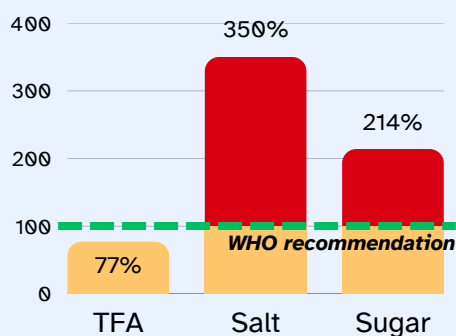
## Option 1

	TFA (g)	Salt (g)	Sugar (g)
<b>Breakfast</b>			
 Hot-dog (260 g)	0.3	3.3	-
 Pakhlava (120 g)	0.2	-	35.2
 Coffee with 1 teaspoon of sugar	-	-	4.0
<b>Lunch</b>			
 Kebab (300 g)	0.3	4.8	-
 Bread (200 g)	0.0	2.6	-
 Juice (200 ml)	-	-	23.0
<b>Snack</b>			
 Salty snack (40 g)	0.0	1.2	-
 Ponchik (100 g)	0.2	-	16.5
 Tea with 1 teaspoon of sugar	-	-	4.0
<b>Dinner</b>			
 Khachapuri (200 g)	0.3	3.0	-
 Dumplings/pelmeni (160 g)	0.2	2.6	-
 Piece of milk chocolate (50 g)	0.2	-	24.1
<b>Total in grams</b>	<b>1.7</b>	<b>17.5</b>	<b>106.8</b>

## Option 2

	TFA (g)	Salt (g)	Sugar (g)
<b>Breakfast</b>			
 Lavash (200 g)	0.0	3.5	-
 Cheese (50 g)	-	1.2	-
 Coffee with a piece of milk chocolate (50 g)	0.2	-	24.1
<b>Lunch</b>			
 Burger (230 g)	0.2	3.5	-
 French fries (170 g)	0.1	0.8	-
 Ketchup (40 g)	0.0	0.8	3.1
<b>Snack</b>			
 Coffee with 1 teaspoon of sugar	-	-	4.0
 Chocolate croissant (140 g)	0.3	-	32.5
<b>Dinner</b>			
 Two lahmajos (260 g)	0.4	4.2	-
 Chicken nuggets (120 g)	0.1	1.9	-
 Ice cream (100 g)	0.2	-	23.8
<b>Total in grams</b>	<b>1.3</b>	<b>15.9</b>	<b>87.5</b>

% of the recommended maximum daily intake



## Policy recommendations



**Introduce national sodium reduction targets** for processed and homemade foods, supported by national benchmarks (3, 5).



**Conduct consumer awareness campaigns and nutrition education** to increase public knowledge on healthy eating and empower individuals to make informed choices.



**Improve food labelling** by mandating the disclosure of salt, sugar, saturated fat, and TFA content, and considering front-of-pack nutrition labelling systems (6).



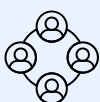
**Implement legislative or regulatory measures to eliminate industrially produced TFA** by limiting them to no more than 2% of total fat content in all foods, and establish mechanisms for monitoring and enforcement (1, 2).



**Engage food vendors and manufacturers** to promote healthier cooking practices and improve access and affordability of healthy fats and oils.



**Explore fiscal policies** such as taxes on sugar-sweetened beverages and other unhealthy products to reduce consumption and promote reformulation (4, 7, 8).



**Foster cross-sectoral collaboration** to integrate these measures within national strategies on health, food safety, and education, ensuring coherence and sustainability of policy actions.

## References

1. Saturated fatty acid and trans-fatty acid intake for adults and children: WHO guideline. Geneva: World Health Organization; 2023 (<https://iris.who.int/handle/10665/370419>). License: CC BY-NC-SA 3.0 IGO.
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6. Manual to develop and implement front-of-pack nutrition labelling: guidance for countries on the selection and testing of evidence-informed front-of-pack nutrition labelling systems in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2020 (<https://iris.who.int/handle/10665/336988>). License: CC BY-NC-SA 3.0 IGO.
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8. Food taxes for a healthy diet: time for action. Copenhagen: WHO Regional Office for Europe; 2025 (<https://iris.who.int/handle/10665/382433>). License: CC BY-NC-SA 3.0 IGO.