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Evidence-based Culinary Nutrition to Reduce Reliance (but not eliminate) UPFs

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Outline of today

- Background: why do we talk about cooking?
- Cooking in the modern food system
- Food Agency and connections between cooking, diet quality and health
- Group activities

Background – Why do we talk about cooking?

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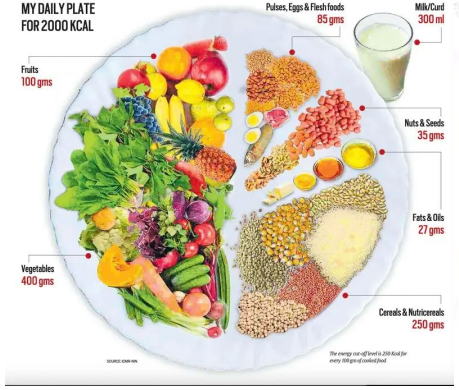
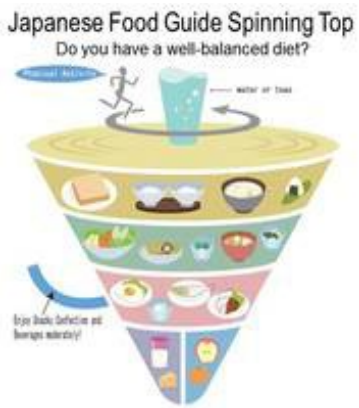
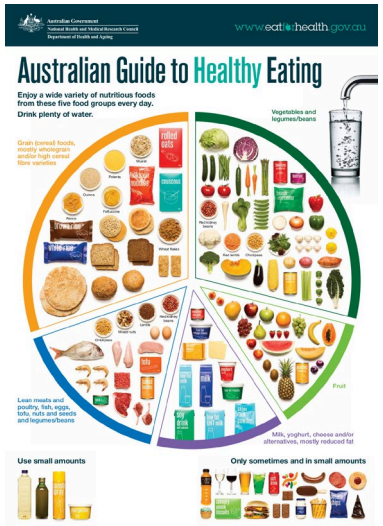
- Unhealthy diet – one of the leading causes of death globally
  - $8 trillion in annual hidden health and economic cost
- A healthy diet = protection against malnutrition in all its forms, and NCDs
- Food-based dietary guidelines promote health and prevent disease







Sources: FAO 2024, WHO 2020

Background – Why do we talk about cooking?

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- **Food & cooking skills are needed to translate dietary guidelines into meals**

ChatGPT ‘cooking’ it

Background – Why do we talk about cooking?

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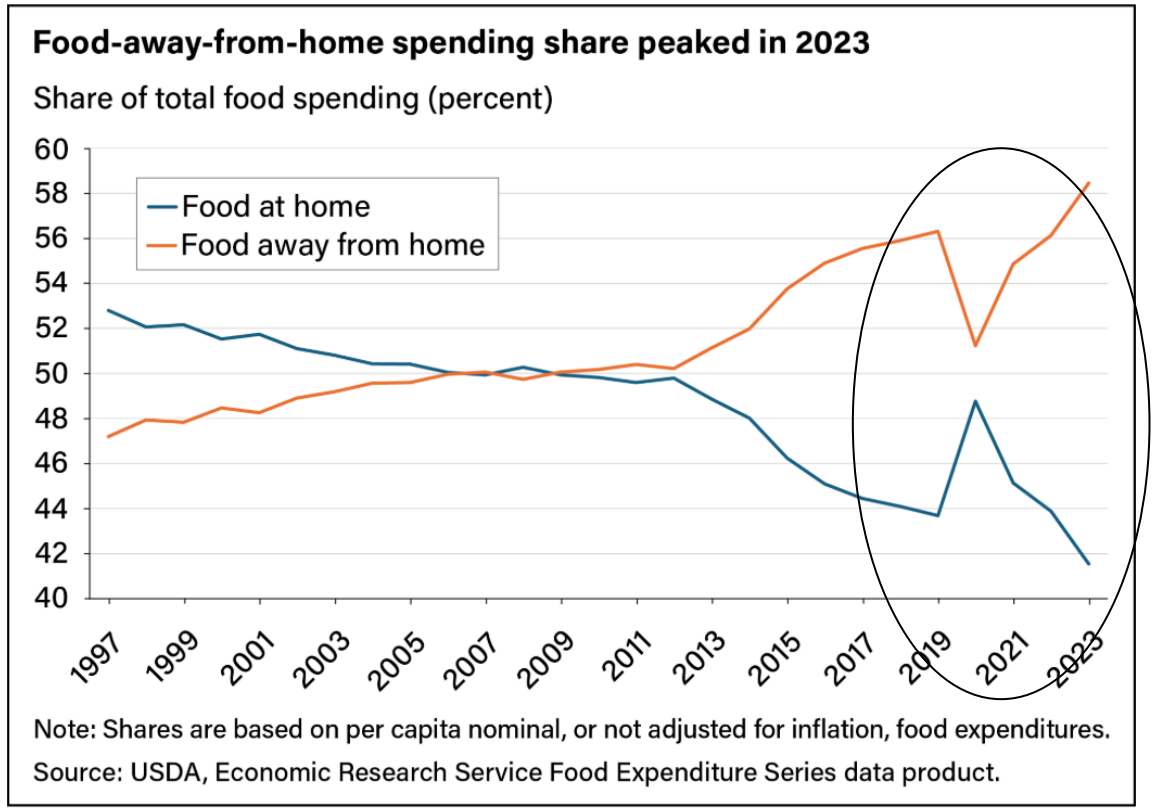
- The way food is prepared influences nutrient absorption, digestibility, safety, and the formation of harmful compounds
- Cooking more frequently is generally associated with better diet and health outcomes

Source: Hassan et al 2019, Wolfson et al., 2020

Background – Why do we talk about cooking?

- Decline in home cooking
  E.g. Energy consumed from home food sources and time spent in food preparation decreased significantly for all socioeconomic groups between 1965–1966 and 2007–2008.

- Increase in out of home eating



Source: Smith et al., 2013, Landais, 2023

Which leads us to…

- **Culinary Nutrition**
  - is the applied practice of integrating culinary arts with food and nutrition science to support improved nutrition-related health outcomes. It involves translating evidence-based nutrition principles into practical, context-specific food-skills interventions that enhance individuals' or groups' abilities to select, procure, prepare, cook, and consume foods (i.e. **food literacy**) aligned with health goals.

Source: Croxford, et al. *Nutrients* (2024)

The complex food system and the “culinary transition”

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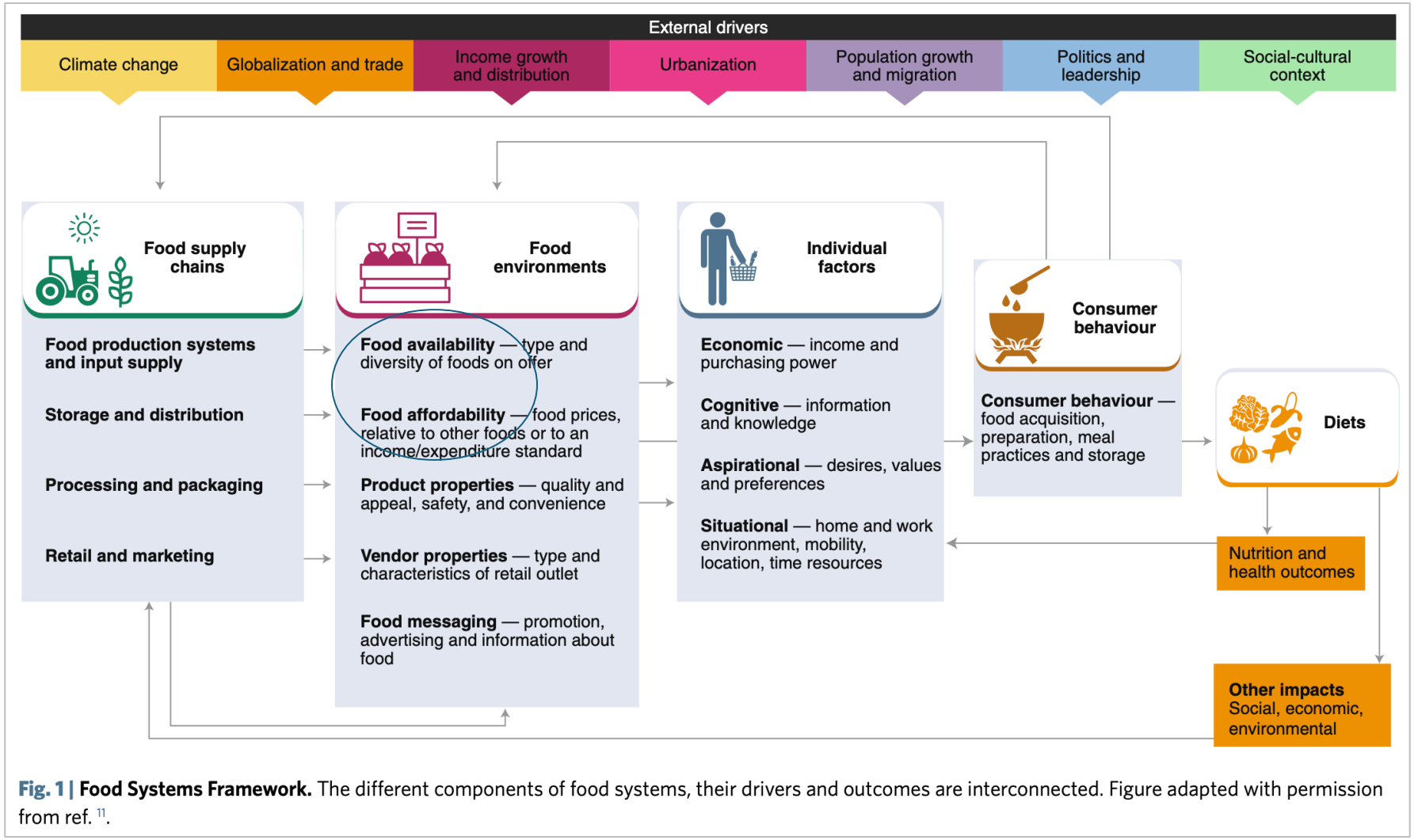

Fig. 1 | Food Systems Framework. The different components of food systems, their drivers and outcomes are interconnected. Figure adapted with permission from ref. [11].

Source: Fanzo et al., *Nature Food* (2020)

What does it mean ‘to cook’?

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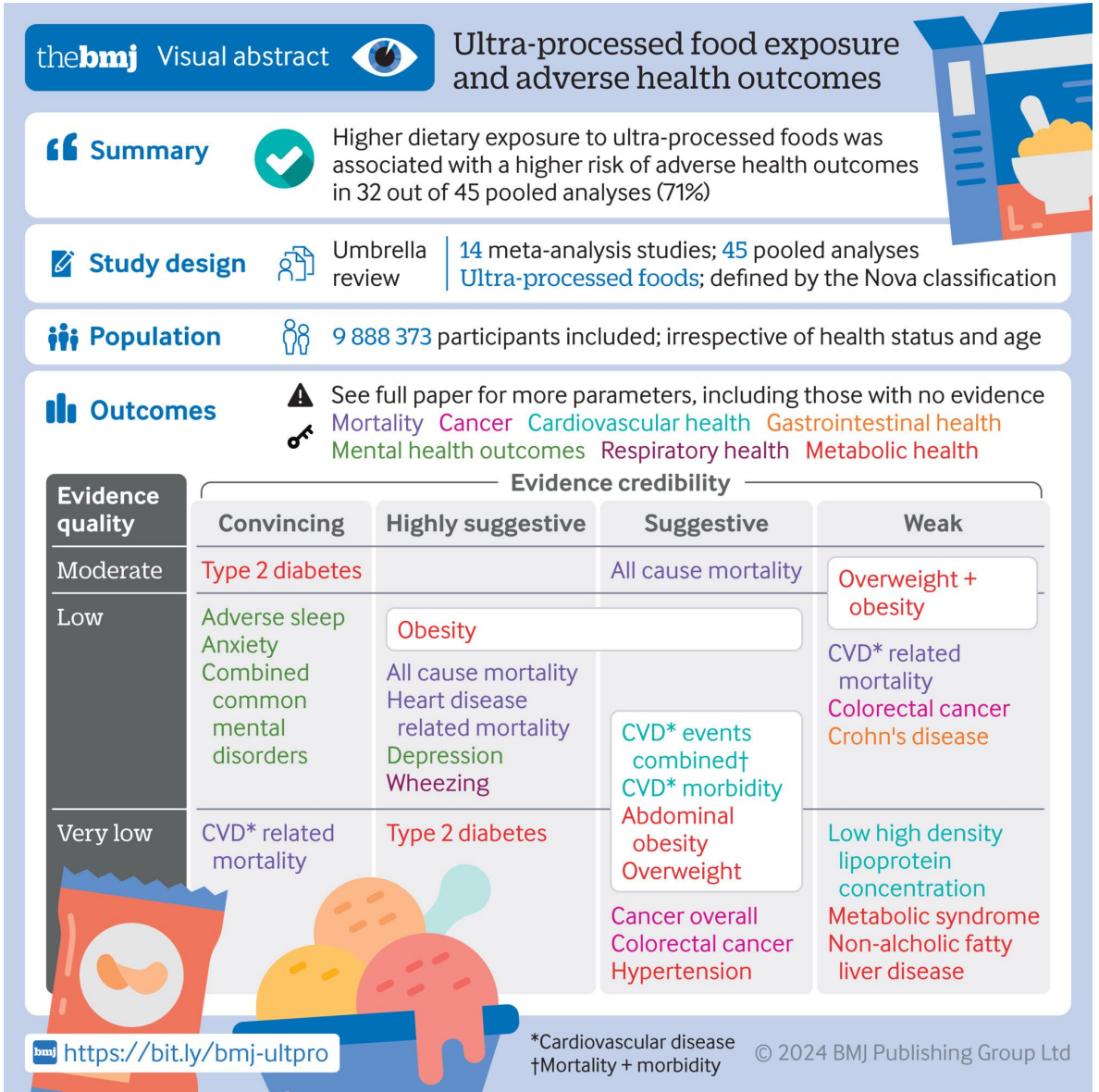
Ultra-processed foods (UPFs)

Unprocessed or minimally processed foods	Processed culinary ingredients	Processed foods	Ultra-processed foods
Foods which did not undergo processing or underwent minimal processing technics, such as fractioning, grinding, pasteurization and others.	These are obtained from minimally processed foods and used to season, cook and create culinary dishes.	These are unprocessed or minimally processed foods or culinary dishes which have been added processed culinary ingredients. They are necessarily industrialized.	These are food products derived from foods or parts of foods, being added cosmetic food additives not used in culinary.
			
Legumes, vegetables, fruits, starchy roots and tubers, grains, nuts, beef, eggs, chicken, milk	Salt, sugar, vegetable oils, butter and other fats.	Bottled vegetables or meat in salt solution, fruits in syrup or candied, bread, cheeses, purees or pastes.	Breast milk substitutes, infant formulas, cookies, ice cream, shakes, ready-to-eat meals, soft drinks and other sugary drinks, hamburgers, nuggets.

Source: Oliveira et. al, *Frontiers in Nutrition (2022)*

Ultra-processed foods and health



Source: Lane et al., *BMJ* (2024)

Ultra-processed foods and health

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	Number of studies	Total number of participants	Number of cases or events	Risk Ratio (95% CI)	I^2
Crohn's disease	4	960 638	886	1·90 (1·40–2·59)	33%
Abdominal obesity	4	47 589	3492	1·33 (1·24–1·42)	0%
Dyslipidaemia	4	28 814	6619	1·26 (1·12–1·43)	56%
Type 2 diabetes	12	445 133	30 939	1·25 (1·18–1·34)	49%
Depression	6	275 355	13 189	1·23 (1·08–1·39)	84%
Chronic kidney disease	5	272 097	11 831	1·22 (1·09–1·36)	62%
Overweight or obesity	8	541 297	47 143	1·21 (1·15–1·26)	26%
Coronary heart disease or mortality	8	478 968	23 137	1·19 (1·07–1·33)	89%
All-cause mortality	20	859 769	123 877	1·18 (1·12–1·25)	79%
Cardiovascular disease or mortality	19	848 904	51 071	1·18 (1·10–1·26)	81%
Hypertension	6	114 344	15 669	1·17 (1·08–1·26)	21%
Cerebrovascular disease or mortality	7	467 849	9932	1·14 (1·06–1·23)	16%
Colorectal cancer	4	954 765	11 194	1·10 (0·99–1·23)	74%
Ulcerative cancer	4	960 638	1850	1·08 (0·88–1·34)	37%
All-cancer mortality	9	695 822	34 406	1·01 (0·96–1·07)	48%

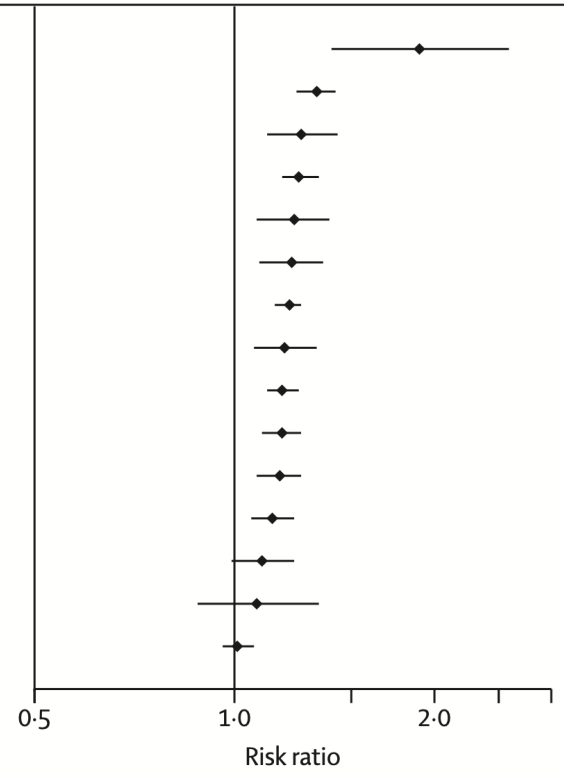

Figure 4: **Results from meta-analyses of prospective studies assessing associations between highest versus lowest exposure to the ultra-processed dietary pattern and risk of chronic disease outcomes**
Error bars are 95% CIs.

Source: Moneiro et al., *The Lancet* (2025)

Sales of ultra-processed food

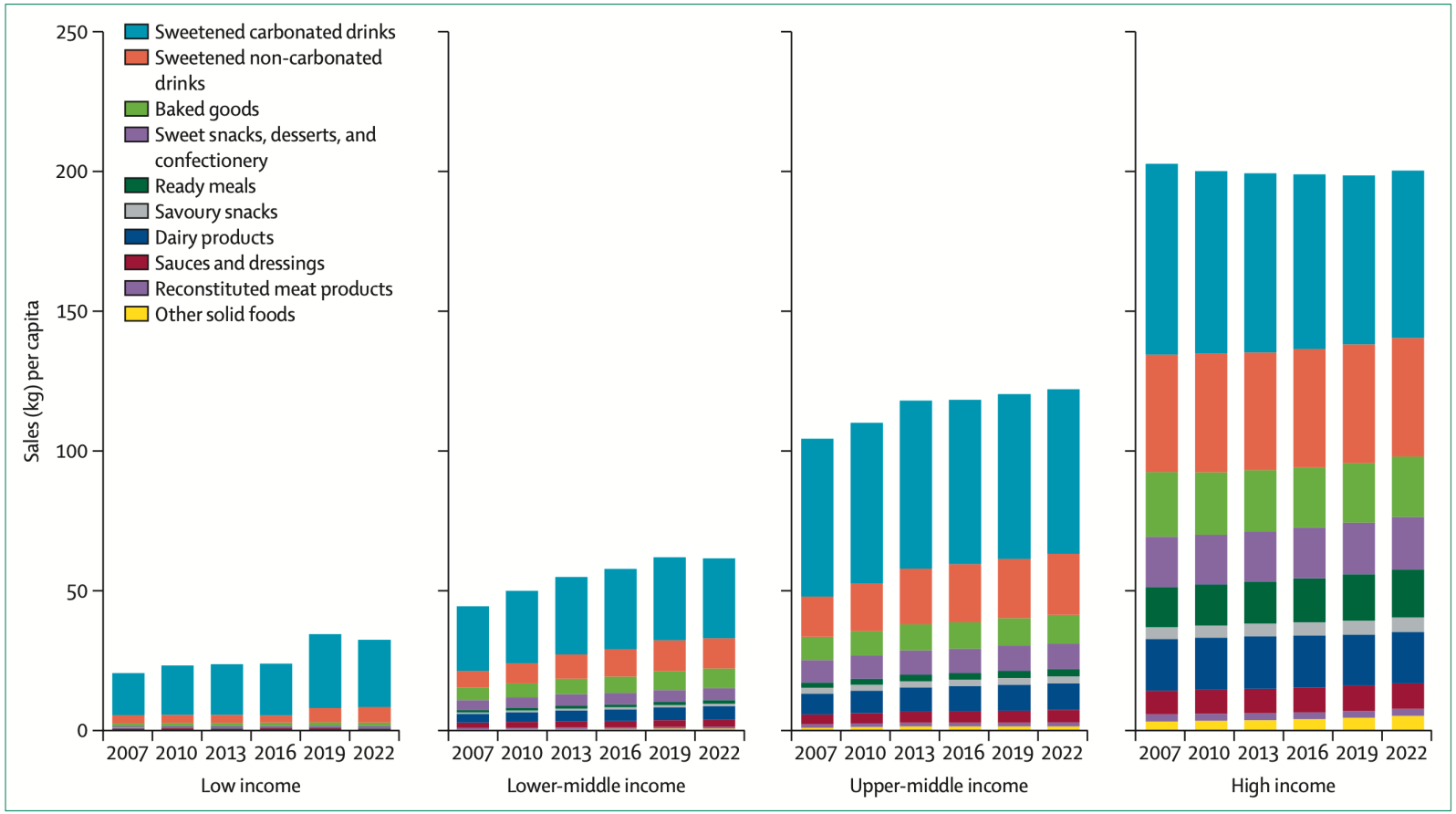

Figure 2: **Time trends in Euromonitor International's food sales data of UPFs (in kg per capita) in 93 countries grouped according to income levels, 2007–22**
The correspondence between the ten grouped categories of UPFs and the original Euromonitor categories is shown in the appendix (p 3). Countries' income groups are based on their gross national income per capita in 2022 and the World Bank's income classification (appendix pp 4–5). The density of drink products is assumed to be 1 kg/L. UPFs=ultra-processed foods.

Source: Monteiro et al., *The Lancet (2025)*

Intake of ultra-processed food

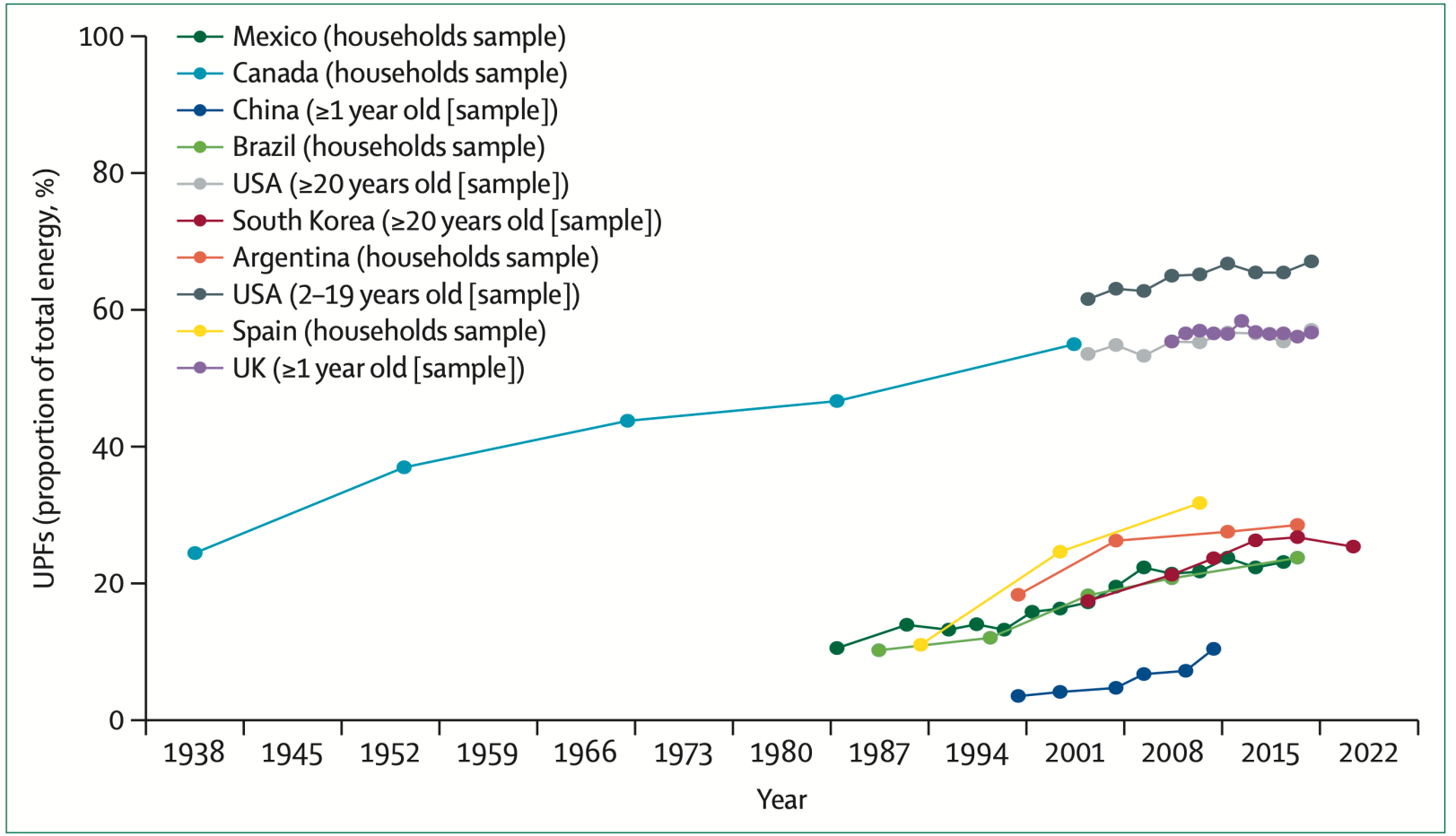

Figure 1: **Time trends in the share of UPFs in nine countries estimated from repeated national food purchase or food intake surveys**

Source: Monteiro et al., *The Lancet (2025)*

UPFs comprise a majority of food intake even when people cook at home

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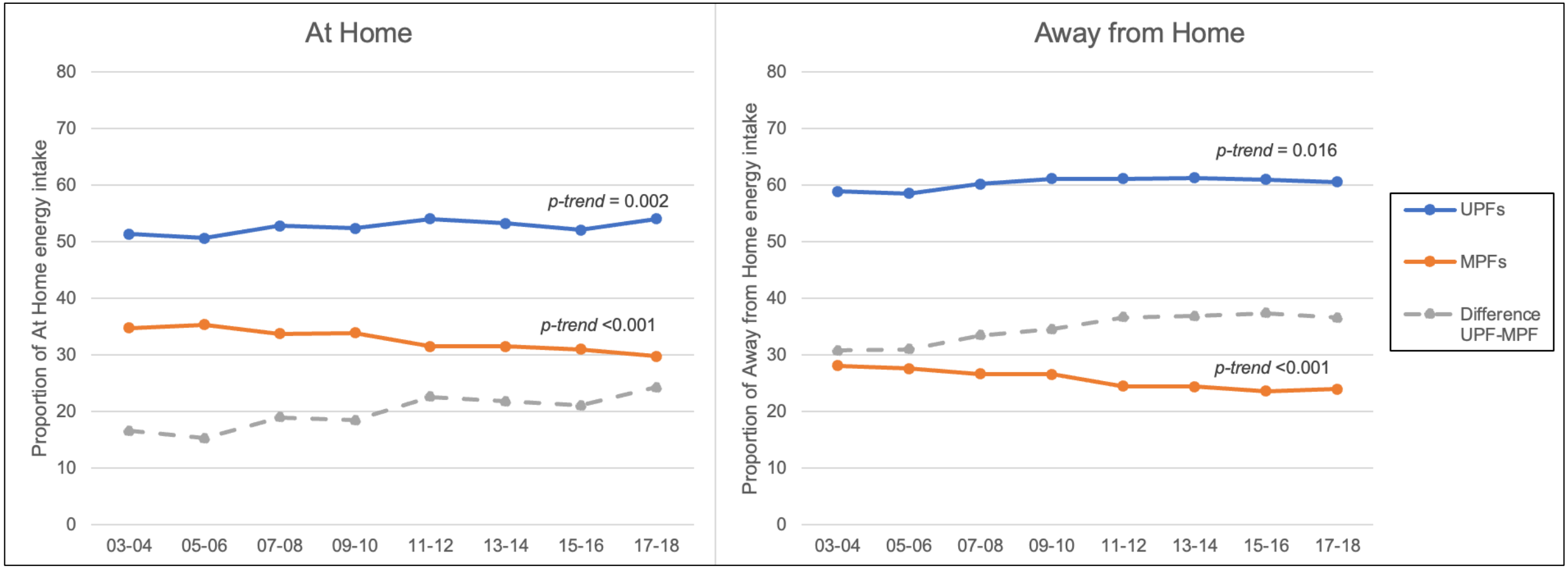
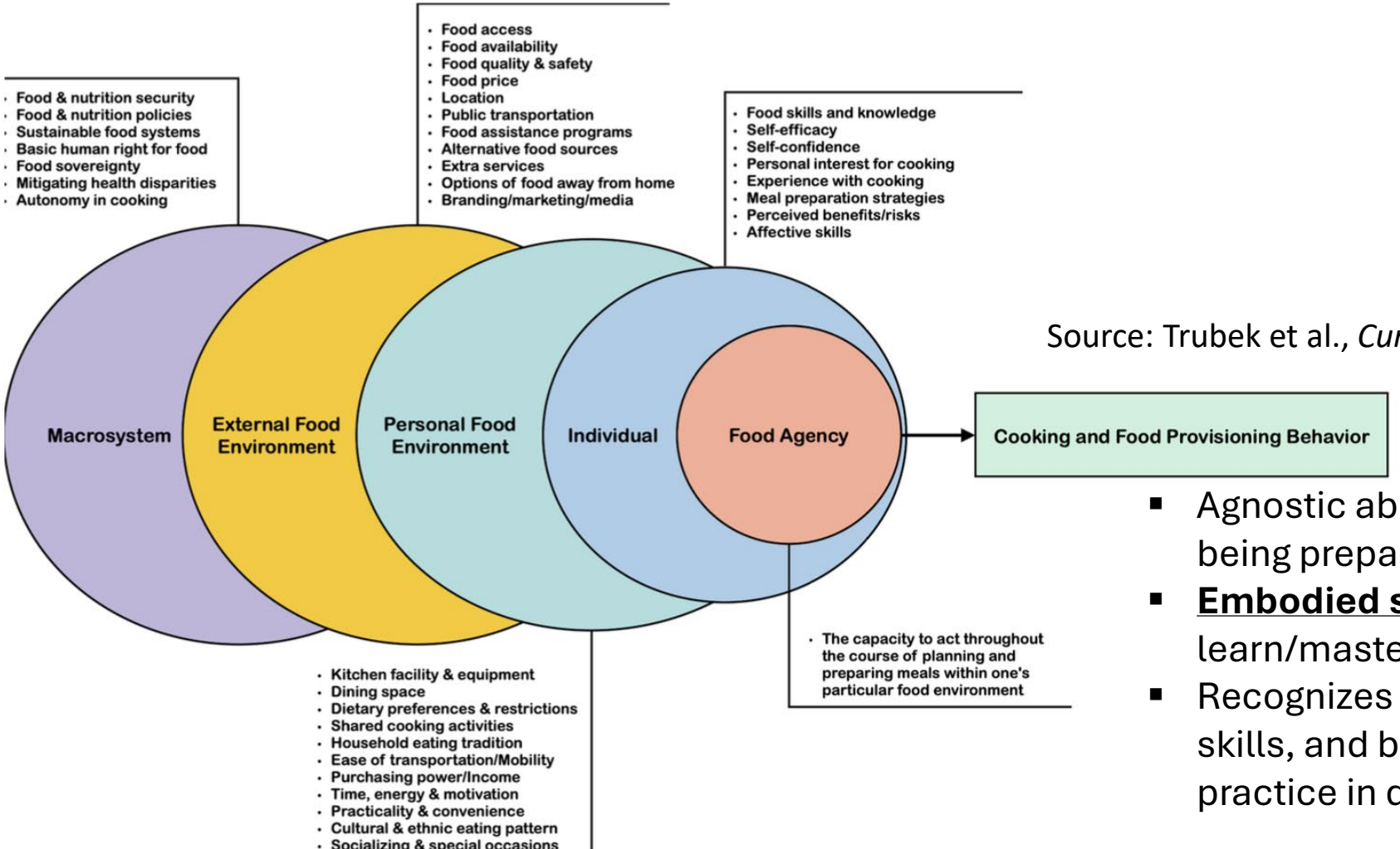


Note: Results from generalized linear models with gamma family and log link adjusted for sex, age (continuous), race and ethnicity, education level, and household income. Proportion of at home energy intake from the Nova groups calculated among those who consumed any food at home (n=34,482). Proportion of away from home energy intake from the Nova groups calculated among those who consumed any food away from home (n=26,245).
MPFs= unprocessed/ minimally processed foods; UPFs= ultra-processed foods.

Source: Wolfson et al, *JAND,* (2024)

Food Agency- the capacity to procure and prepare food within one's specific food environment, context, and constraints.



Source: Trubek et al., *Current Environmental Health Reports* (2026)

- Agnostic about healthfulness of the food being prepared
- **Embodied skill** that takes practice to learn/master
- Recognizes difference between possessing skills, and being able to put them into practice in daily life

How often do populations cook?

- People still cook frequently
- Lower income and lower educated more likely to cook most frequently
- Higher income and higher educated more likely to cook “sometimes”

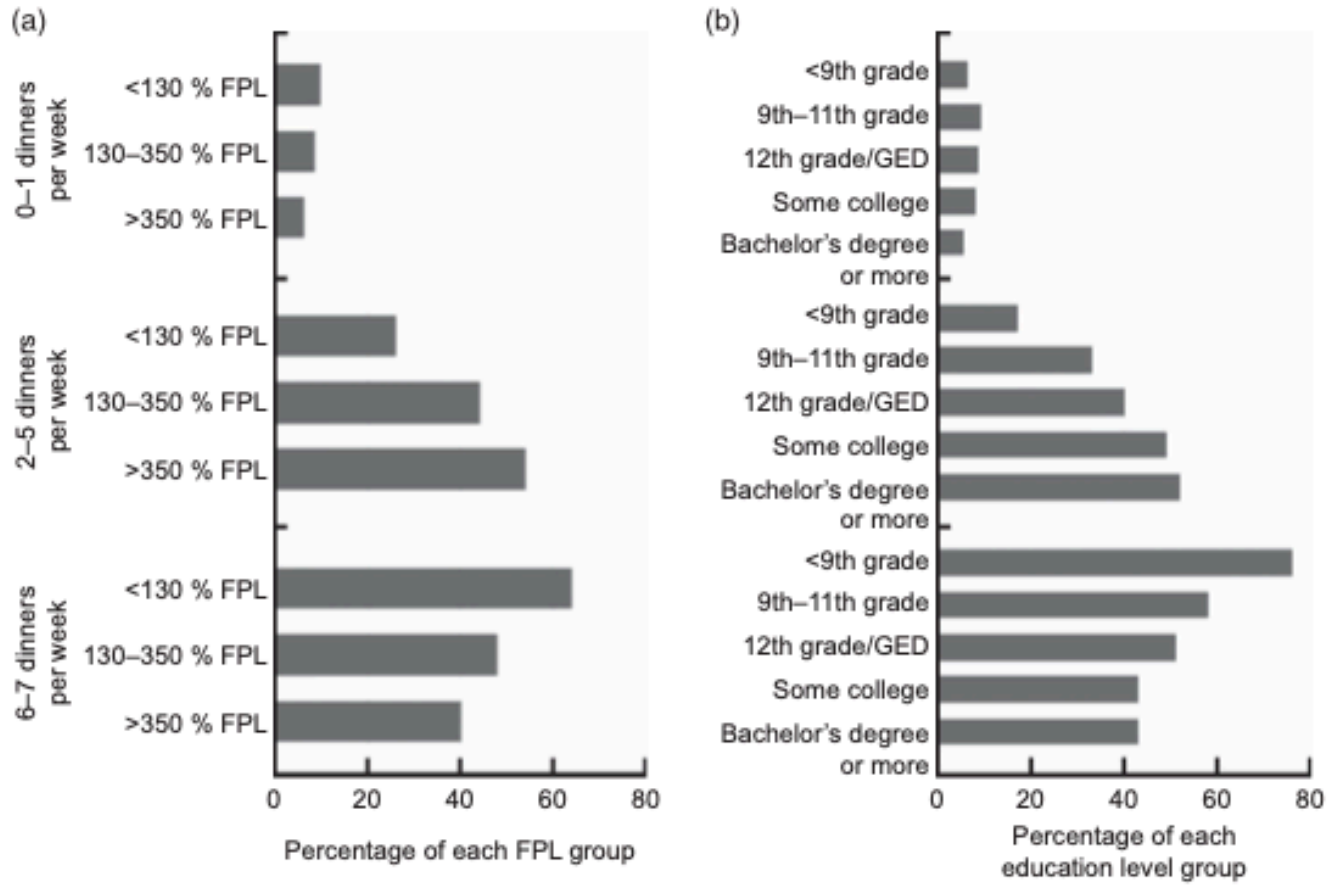


Fig. 1 Socio-economic status (SES) and home dinner preparation in the USA; National Health and Nutrition Examination Survey (NHANES) 2007–2008. We plotted the percentage of each SES group, stratified by (a) federal poverty level (FPL) and (b) education level, in each dinner category (0–1, 2–5 or 6–7 dinners cooked at home per week). The corresponding numbers are found in Table 3; all differences were significant at $P < 0{\cdot}001$ by the Wald χ^2 test (GED, general equivalency degree)

Source: Virudachalam et al. *Public Health Nutrition* (2013); Wolfson et al. *Public Health Nutrition* (2015)

What about the Swiss?
menuCH - Nutrition Survey Switzerland

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menuCH study

- cross-sectional population-based study,
- conducted in 2014 – 2015,
- first national nutrition survey in Switzerland,
- 2 x 24-hour dietary recalls (24HDR),
- 1 x lifestyle questionnaire,
- weighting strategy: 2057 participants represent the target population across all regions.

menuCH
Nationale Ernährungserhebung
Enquête nationale sur l'alimentation
Sondaggio nazionale sull'alimentazione

Figure 2: menuCH study logo *(Federal Food Safety and Veterinary Office, 2014)*.

Sources: Bochud M et al, FSVO (2017) and Chatelan A et al, Nutrients (2017)

How often to the Swiss cook?

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Grouping variable	Group	Cooks a hot meal at home – weekdays	Cooks a hot meal at home – weekend	Average cooking time	Share with long cooking time >40 min
Total	All adults	63%	73%	38 min	41%
Gender	Men	49%	60%	32 min	31%
Gender	Women	77%	86%	43 min	50%
Age	18–34 years	60%	72%	34 min	29%
Age	35–49 years	64%	79%	40 min	44%
Age	50–64 years	61%	70%	39 min	44%
Age	65–75 years	70%	67%	38 min	51%
Language region	German-speaking Switzerland	60%	72%	37 min	41%
Language region	French-speaking Switzerland	69%	76%	39 min	41%
Language region	Italian-speaking Switzerland	70%	71%	36 min	37%
Household situation	Not published	–	–	–	–

How often to the Swiss cook?

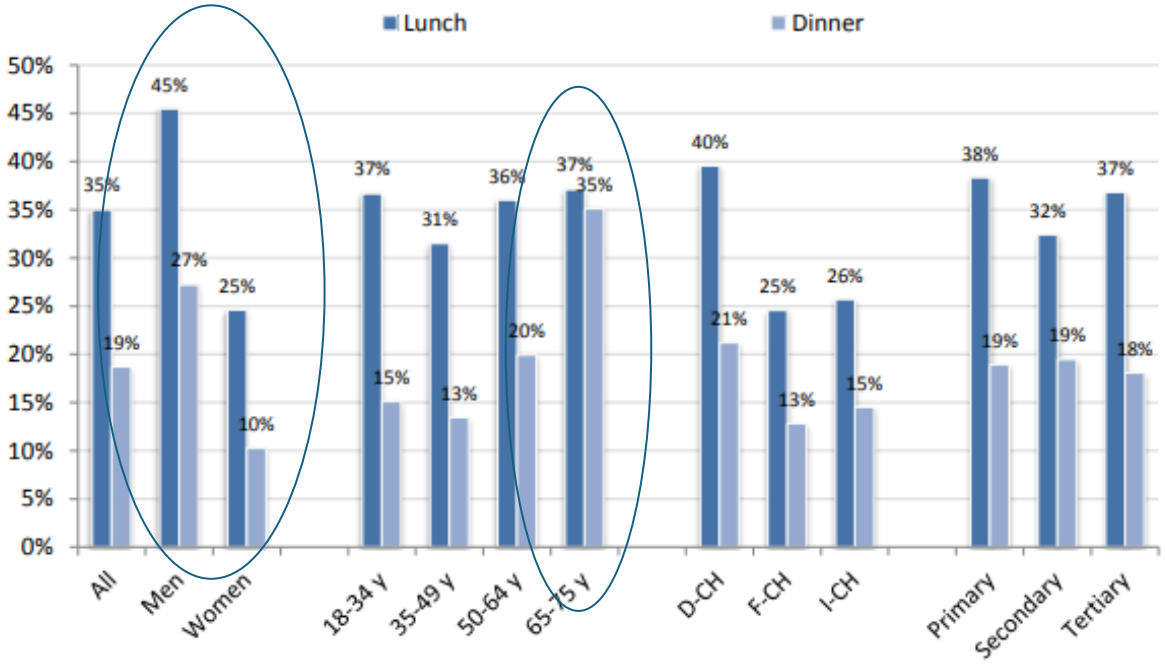

Figure 37 Relative frequencies (%) of ~~never self~~-cooking hot meals at home for lunch or for dinner, overall, by sex, age groups, linguistic region and educational level.

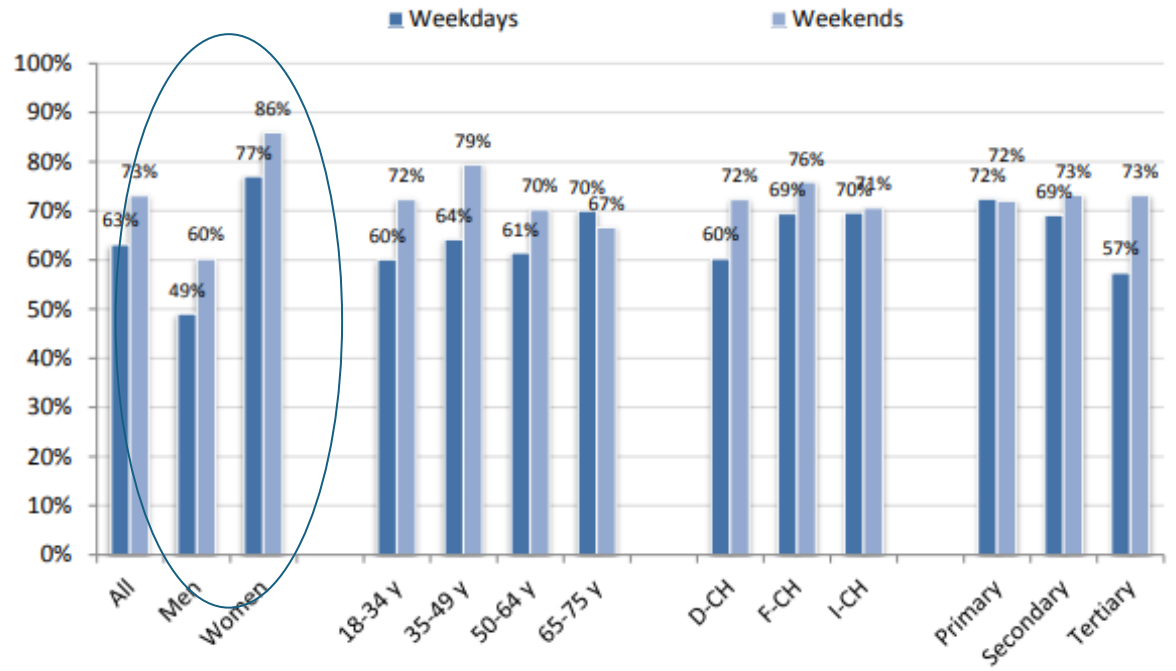

Figure 38 Percentage (%) of days with self-cooking hot meals at home during weekdays (Monday to Friday) and weekends (Saturday and Sunday), overall, by sex, age groups, linguistic region and educational level.

Source: Bochud M et al, FSVO (2017)

How often to the Swiss cook?

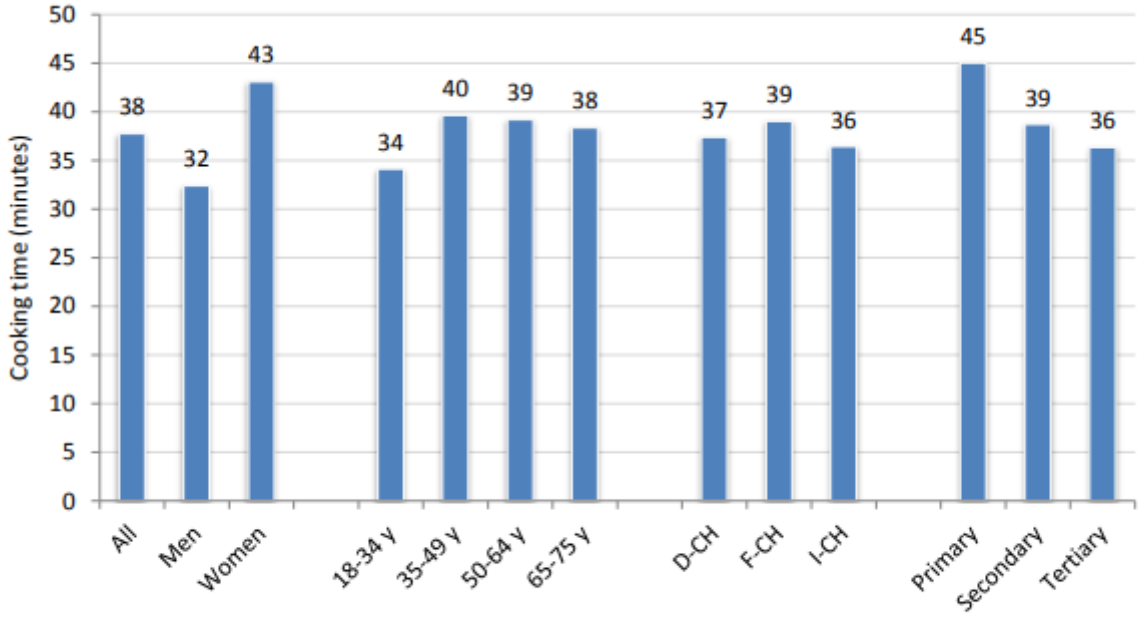

Figure 39 Average time (in minutes) spent to prepare hot meals, overall, by sex, age groups, linguistic region and educational level.

Source: Bochud M et al, FSVO (2017)

Cooking more frequently is associated with better diet quality (HEI score)

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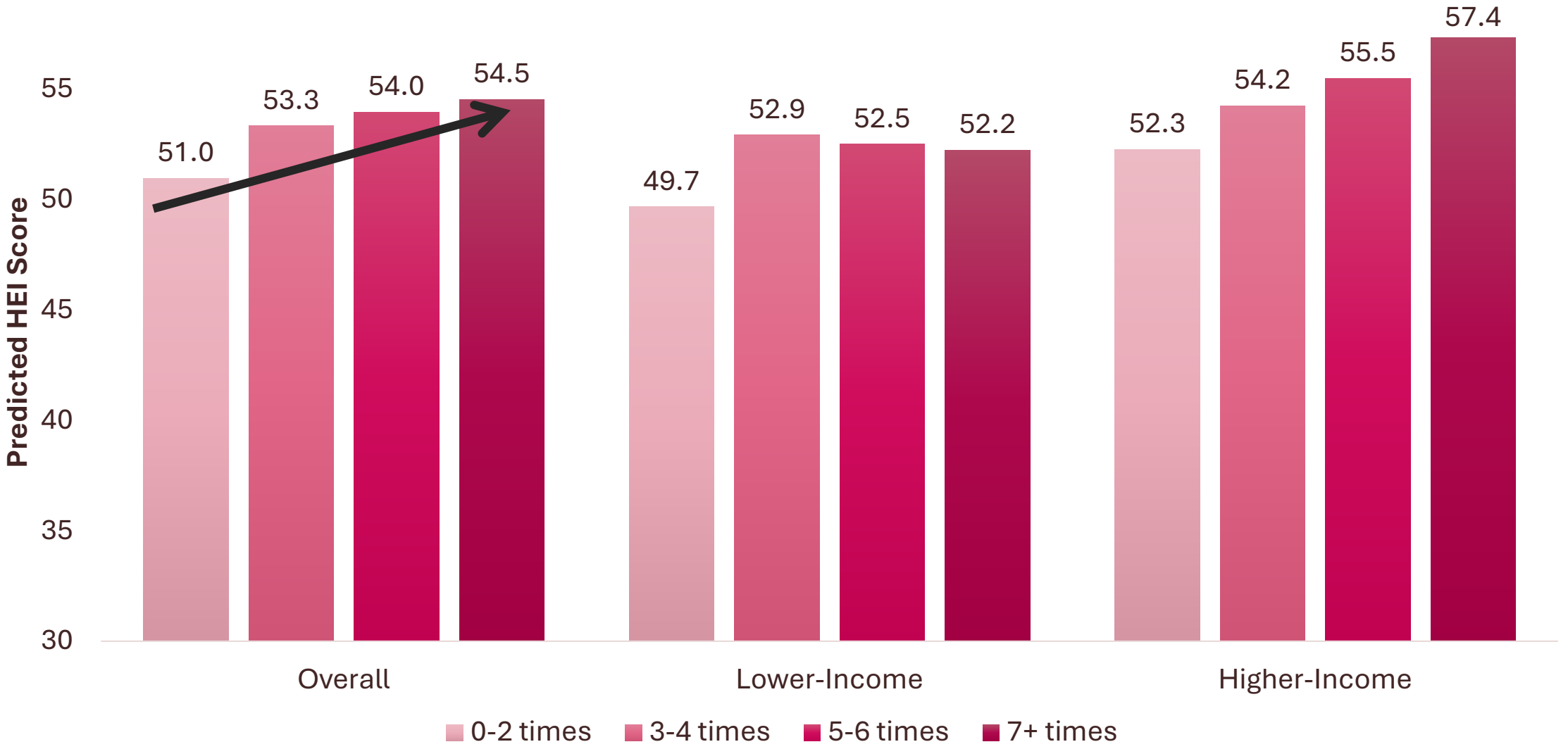

Source: Wolfson, Leung & Richardson, *Public Health Nutrition* (2020)

Cooking more frequently is associated with less UPF consumption. But UPF intake is high regardless of cooking frequency.

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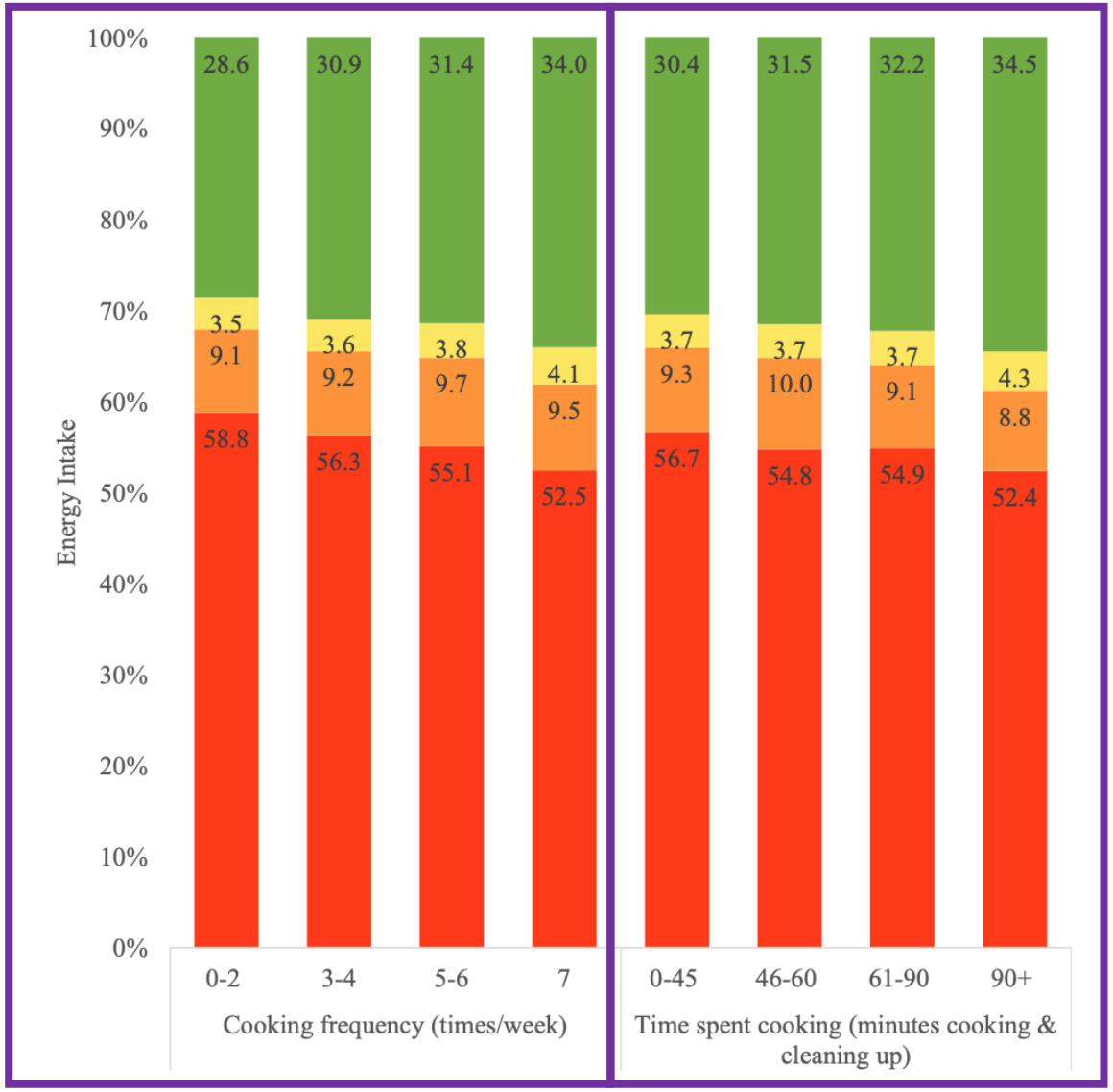


Group 1: Unprocessed or minimally processed foods
Group 2: Processed culinary ingredients
Group 3: Processed foods
Group 4: Ultra-processed foods

Source: Wolfson, et al, *JAND* (2024)

Activity 1: The Strategic Convenience Challenge

Scenario

A family needs dinner tonight.

Constraints:

- 20 minutes
- Two hungry children
- Budget-conscious
- Limited energy after work

Current meal:

- Frozen chicken nuggets
- Fries
- Soft drink

Challenge

Your goal is to:

- Reduce reliance on UPFs where possible.
- Improve nutritional quality.
- Maintain convenience.
- Stay realistic.

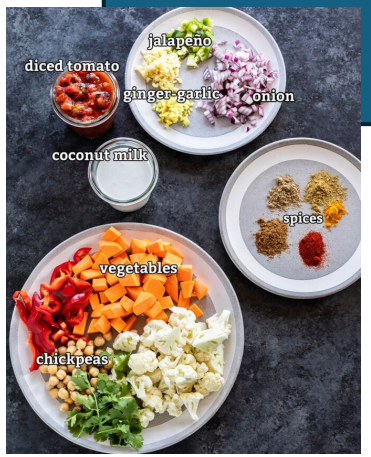
Option A

Make Thai curry completely from scratch.

Ingredients

- garlic
- ginger
- lemongrass
- chilli
- coriander
- spices
- coconut milk
- vegetables
- rice

Estimated prep: 45-60min

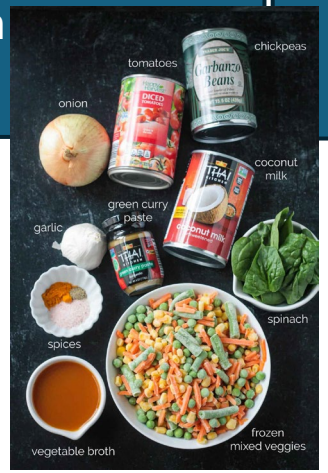


Option B

Use:

- curry paste
- canned chickpeas
- frozen and fresh vegetables
- rice (potentially micorwavable pack)

Estimated prep: 10-15 min



Option C

Ready meal curry

3 minutes

Group task: What are the advantages and disadvantages of each option? 10’

	A: Scratch		B: Strategic Convenience		C: Ready Meal	
	+	-	+	-	+	-
Time	• Can this realistically be prepared on a busy weekday?					
Cost	• Is it affordable?					
Nutrition	• Does it improve diet quality?					
Taste	• Will people enjoy eating it?					
Convenience	• How much effort, planning, and preparation is required?					
Food Skills	• Could someone with basic cooking skills prepare it?					
Acceptability	• Would children/family members actually eat it?					
Accessibility	• Can ingredients be easily obtained?					
Sustainability	• What are the environmental implications?					
Repeatable	• Would someone actually make this again next week?					

Activitiy 2: Which convenience products would you keep? 10’

- Curry paste
- Canned beans
- Frozen vegetables
- Bagged salad
- Frozen fish
- Pre-cut vegetables
- Ready-made sauces
- Instant noodles
- Frozen pizza
- Chicken nuggets

1. Which convenience foods or ingredients would you keep?
2. Which foods would you replace?
3. Which foods are ultra-processed foods (UPFs)?
4. Which foods are minimally processed or processed foods that support healthy cooking?
5. What trade-offs are you making?
6. Where do you draw the line between helpful convenience and excessive reliance on UPFs?

Activity 3: You versus others 10’

Many people will say:

- I'd happily eat instant noodles after a long day.
- I'd eat a protein bar for lunch.
- I'd have frozen pizza once or twice a week.

But:

- Would you feel comfortable eating this every day? (personal behaviour)
- Would you feel comfortable feeding this to your child every day? (family)
- Would you feel comfortable recommending this to the population every day? (public guidance)

Key points for using UPFs /convenience foods to help, not hinder

- Use convenience to help you cook when convenience is important.
- Add vegetables – fresh, frozen, canned – whatever !
- Convenience should support cooking, not replace it.
- Strategic shortcuts are better than all out UPFs meal or take-out.

Final thoughts

Evidence based culinary nutrition is not about eliminating convenience

It is about using convenience strategically to:

- increase vegetables
- increase legumes
- increase home food preparation
- improve food agency
- reduce reliance on highly processed ready meals and UPFs

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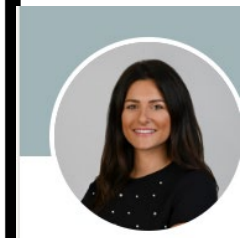
Thank you!

Questions?

Let's connect on LinkedIn



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