



Greek Action Plan on Food Reformulation and issues and barriers encountered

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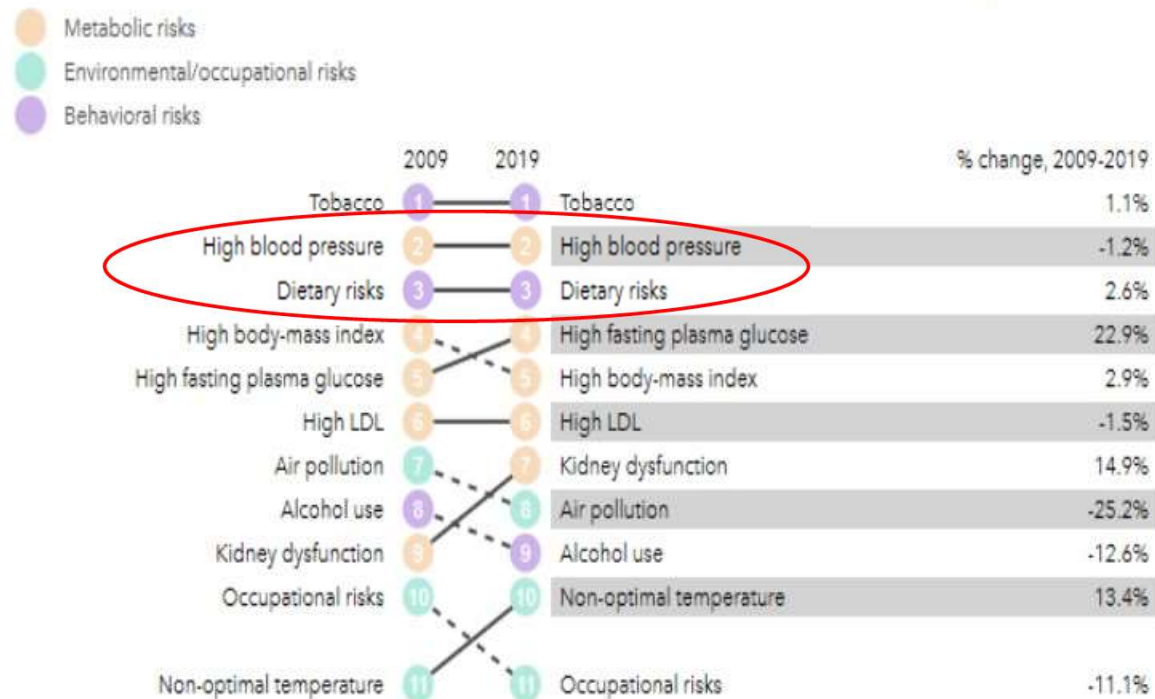
Directorate of Risk Assessment and Nutrition

Hellenic Food Authority

EUREMO - Food reformulation: reducing salt, sugars and trans-fats, 15 January 2021

Global Burden of Disease (GBD) Data from Greece

What risk factors drive the most death and disability combined?



Top 10 risks contributing to total number of DALYs in 2019 and percent change 2009-2019, all ages combined

Source:

<http://www.healthdata.org/greece>

The SING (Salt Intake in Northern Greece) Study

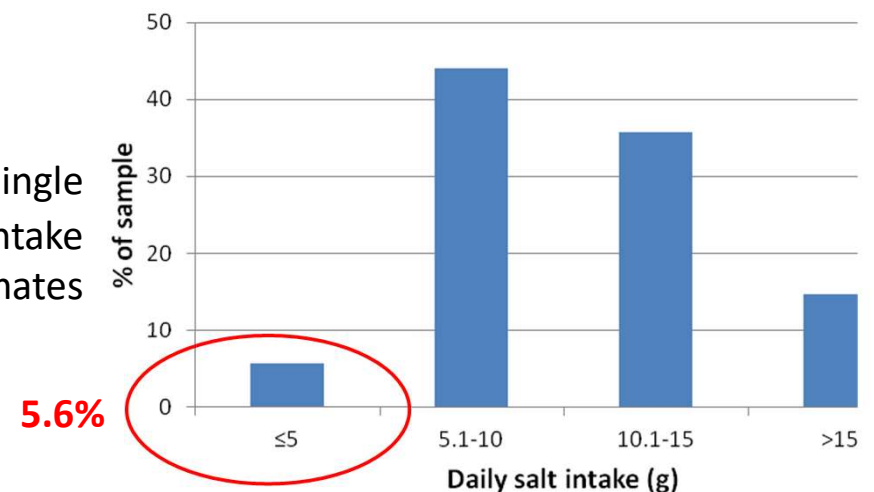
Mean salt, Na & K intakes and their ratio (**24h urine collection - Gold Standard method** – adults only)

	Total (n=252)	Men (n=114)	Women (n=138)
Dietary estimates			
Sodium intake† (mg/24h)	4220 (1745)	4694 (1855)	3828 (1548) **
Potassium intake† (mg/24h)	3303 (1247)	3589 (1321)	3067 (1134)*
Na/K intake ratio (mg/mg)	1.34 (0.51)	1.37 (0.48)	1.32 (0.53)
Salt intake (g/day)	10.7 (4.4)	11.9 (4.7)	9.7 (3.9) **

Results are presented as means (SD). *p≤0.001; **p≤0.0001 vs. men

† Intake values were calculated by multiplying urinary excretion values by 1.05 for Na and by 1.3 for K

Distribution of single 24h salt intake estimates



Source: Vasara E, Marakis G, Breda J, et al. *Nutrients* 2017;9(4):417.

The GRECO Study – sodium intake in children

Sodium intake	% of participants
Low total Na intake (< 1500 mg/d)	56.1%
Moderate total Na intake (1500–2200mg/d)	20.9%
High total Na intake (> 2200 mg/d)	23%

- Cross-sectional, population-based survey
- 4580 children aged 10-12 y (♂ 49%, ♀ 51%)
- Calculation of sodium intake with the use of **semi-quantitative food frequency questionnaire** (excluding salt added at table and during cooking)

Source: Magriplis E, Farajian P, Pounis GD et al. J Hypertens. 2011;29(6):1069-76.

Salt Reduction Strategy



- Data collection (salt intake and major dietary sources, knowledge & attitude)
- Raising awareness: public (adults & teenagers) and health professionals
- Reducing salt content of foods and meals / setting benchmarks
- Monitoring and evaluation

The Salt Reduction Strategy 2016-2020: endorsed by the Management Board of the Hellenic Food Authority and the Hellenic Ministry of Health

https://www.efet.gr/files/stratigiki_meiosis_alatiou.pdf

Knowledge, attitude and behaviour of Greek consumers towards salt – EFET survey

Do you read the nutrition information on food packaging?

Always	24.7%
More than half of the times	23.9%
Less than half of the times	22.7%
Never	28.3%
Do not answer	0.4%

What is the main source of salt In the diet of adults in Greece?

Salt added during cooking	38.2%
Meat and cured meat	20.4%
Cheese	16.5%
Salt added at the table	15.8%
Bread	3.5%
I do not know	5.6%

Source: Marakis G, Tsigarida E, Mila S et al. Public Health Nutr. 2014;17(8):1877-93.

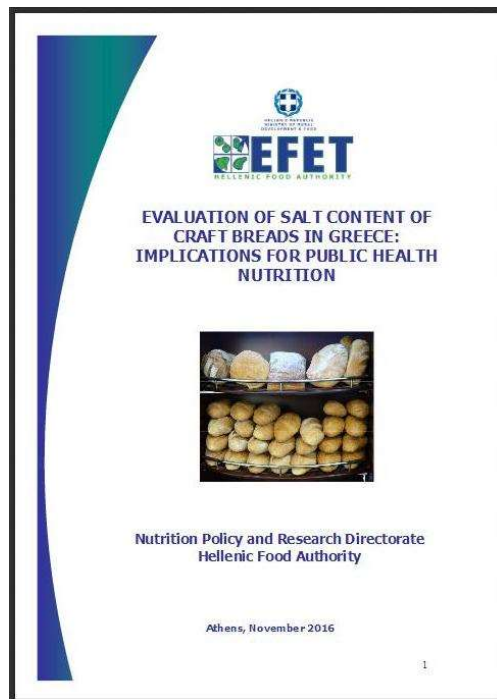
Major food sources of Na in adults: the Hellenic National Nutrition and Health Survey (HNNHS)

Ranking	Food group	% total	% cumulative
1	Processed grains & cereals	18.3	18.3
2	Cheese	12.8	31.1
3	Fast-Food	9.2	40.3
4	Non-starchy vegetables	6.7	47.0
5	Red meat	6.3	53.3
6	Fish & Shellfish	4.7	58.0
7	Olive oil & Olives	4.4	62.4
8	White meat	4.2	66.6
9	Processed red meat	4.2	70.8
10	Wholegrain cereals	4.0	74.8

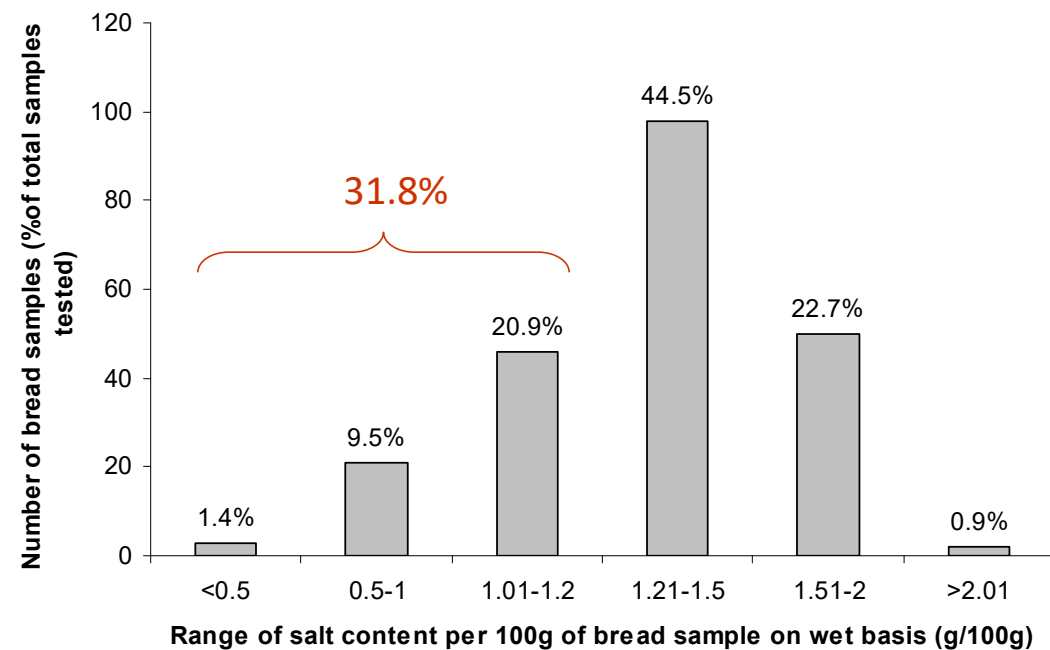
- Food consumption data from 2389 participants, collected with 24-hour recalls
- Over 50% of the population (to 79%) had sodium intake exceeding the 2300 mg/day UL recommendation (**from food only** - not from salt added during cooking or table salt).

Source: In press. Data kindly provided by Dr. Magriplis

Variations of salt content in processed foods in Greece – craft bread



http://www.efet.gr/images/efet_res/docs/nutrition/s1.pdf



Number (and percentage) of samples within specific salt content ranges

Salt Reduction Actions in Bread

- Protocol of commitment (type of MoU) between the Hellenic Food Authority (EFET) and the Hellenic Federation of Bakers (OAE)
- Agreed on commitment: Max level of salt in **all types of bread – 1.2g salt per 100g of bread as sold** – on a **voluntary** basis.
- Bakeries that committed to that, were allowed to have the logo “Less salt – Better Health” for consumers’ information in their shops



Bakers' Survey regarding salt reduction

- Survey in **70 bakeries** located in Serres and Kavala prefectures (north Greece)
- Indicative findings from the participating bakeries:
 - 85.7% believe that salt reduction in bread is **important**
 - 20.0% would **not be willing** to reduce salt content in bread
 - 68.6% were **aware of** the existence of an MoU between EFET and Hellenic Federation of Bakers
 - 60.0% of those who are aware of the MoU, **knew** that the max salt level agreed applies to **all types of bread**
 - 15.7% of those who are aware of the MoU, **knew** that the max level of salt in all types of bread is **1.2%**
- **Conclusion:** although not nationally representative, this survey highlights the difficulties in communicating successfully MoU and/or encouraging voluntary actions

Source: Unpublished data, kindly provided for this workshop by Ms. L. Kontopoulou, University of Thessaly (supervisor of Ms. M. Parasiadou - BSc final year project)

Variations of salt content in processed foods in Greece – cheese & processed meat

Types of Cheese	N	Salt content range (g/100g)		Salt content – mean (%)
		Min	max	
Feta cheese	34	1.2	5.1	2.5
White cheese	34	0.9	3.3	2.2
Semi-hard	30	1.6	3.0	2.1
Hard cheese	34	0.8	4.0	2.2
Whey cheese	12	0.3	2.0	1.0
Sliced cheese	51	0.8	3.5	1.8
Grated cheese	15	1.7	8.8	4.5

Source: Data from product labels (Nov 2018)

Types of processed meat	N	Salt content range (g/100g)		Salt content – mean (%)
		min	max	
Pork gyros	6	1.7	2.7	2.17
Chicken gyros	8	0.7	3.3	2.03
Burgers	6	1.0	2.2	1.38
Sausages	7	2.0	3.7	2.86
Kebabs	7	2.0	2.5	2.14
Ham	9	2.2	3.2	2.72
Smoked turkey	10	2.2	2.7	2.53

Source: Analytical data (EFET) (Dec 2017)

Salt Reduction – catering sector

- **MoU** between Hellenic Food Authority and Hellenic Chefs Club for salt reduction and TFA elimination
- **Reduction by 30%** of salt in meals (as reported by members of Hellenic Chefs Club)
- **Guide** to use herbs instead of salt in popular Greek dishes
 - **Social media** of the Hellenic Dietetic Association / nutrition-related & public health-related **conferences**
<https://www.efet.gr/files/fylladioEN.pdf>
- Participation in Gastronomy Forum & TV programs
 - Presenting the facts about salt and cooking with no salt (**from theory to practice**)



Challenges in salt reduction

- Technological constraints?
- Fear of rejection of products low in salt by consumers?
- Doubt on scientific evidence casted by scientific articles using flawed methodologies and picked up by articles in magazines for lay people
→ encouraging the use of salt

High-Salt Diet Beneficial for Immune System

MARCH 19, 2015
Jacquelyn Gray

Recognize Greatness. Recognize a Giant of Dermatology.

MD Part of the HCP Live Network

All Specialties

NEWS CONDITION CENTERS CONFERENCE COVERAGE PEER EXCHANGE MEDIA

ΕΠΙΔΟΡΡΙΟ

Ζεστή Σοκολάτα με Κανέλα

Σε ένα καθαρό και στεγνό πιάτο ανακατεύουμε σχεδόν 1 κουπιά γάλα κομμάτι σε Άπαρα, 30 γραμμάρια ζεστή ζάχαρη, 1 κουπιά σοκολάτα και 1/4 κ.γ. μάρκα Όραση. Βάζουμε το πιάτο στο φούνο για 1 λεπτό, ανακατεύουμε καλά με κουτάλι και σερβίρουμε με κανονικό αυγ 1 κ.γ. θαλασσίνο αλάτι.

• ΕΝΑ ΚΥ. ΑΛΑΤΙ ΑΝΑΔΕΙΧΝΕΙ ΑΥΤΟΓΛΥΚΗ ΓΛΥΚΟΤΕΥΣΗ ΑΥΤΟΝ ΤΟΝ ΕΠΙΔΟΡΡΙΟΝ.

WOMENHEALTHMAG.COM 57

Recipe suggestion for hot chocolate beverage: **“add 1 teaspoon of sea salt”**

healthline

Low Salt Intake Can Be Harmful

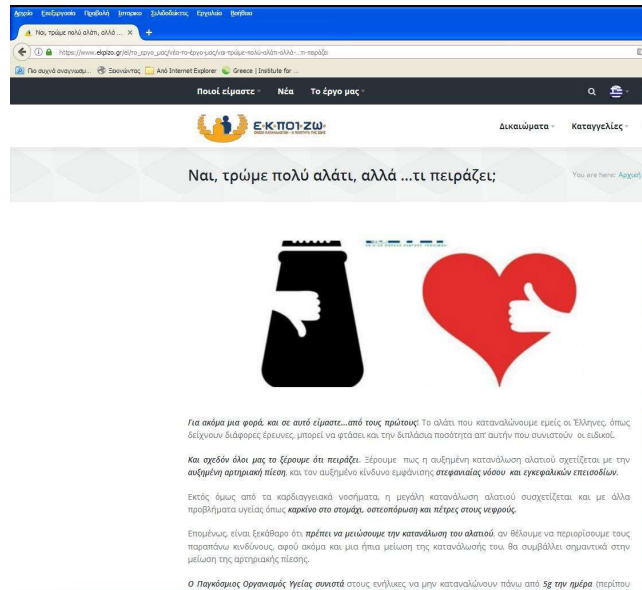
There is some evidence suggesting that a low-salt diet can be downright harmful.

The negative health effects include:

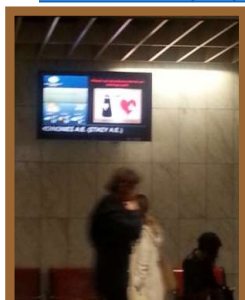
- **Elevated LDL cholesterol and triglycerides:** Salt restriction has been linked to elevated LDL (the “bad”) cholesterol and triglycerides (12 %).
- **Heart disease:** Several studies report that less than 3,000 mg of sodium per day is linked to an increased risk of dying from heart disease (13 %, 14 %, 15 %, 16 %).
- **Heart failure:** One analysis found that restricting salt intake increased the risk of dying for people with heart failure. The effect was staggering, with a 160% higher risk of death in individuals who reduced their salt intake (17 %).
- **Insulin resistance:** Some studies have reported that a low-salt diet may increase insulin resistance (18 %, 19 %, 20 %, 21 %).
- **Type 2 diabetes:** One study found that in type 2 diabetes patients, less sodium was associated with an increased risk of death (22 %).

BOTTOM LINE:
A low-salt diet has been linked to higher LDL and triglyceride levels, and increased insulin resistance. It may increase the risk of death from heart disease, heart failure and type 2 diabetes.

Salt reduction – indicative consumer awareness initiatives



<https://www.ekpizo.gr/oi-δράσεις-μας/διατροφή-υγεία/ναι-τρώμε-πολύ-αλάτι-αλλά-τι-πειράζει>



EFET Spot

<https://www.efet.gr/index.php/el/consumers/diatrofi/alati-lipara-sakxara>



https://www.efet.gr/files/Alati_20_09_2011.pdf

5 simple steps towards meeting the target of less than 5g of salt per day

These are the steps...

- #1 Read food labels and choose those with less salt
- #2 Ask your local baker to prepare bread with less salt
- #3 When dining out, request that your salad/dish be served without added salt
- #4 Gradually replace salt with fresh or dried herbs, when cooking
- #5 Avoid adding extra salt to your plate

And remember...

- Eating less salt is important for all, not just those with hypertension
- Himalaya salt and other types of specialty salts contain predominantly sodium chloride, just like table salt
- ... of salt refers to both the salt we add and the sodium hidden in processed and that naturally occurring in unprocessed foods
- If a food contains 0.5g of salt or less per 100g, then it is low in salt

Less Salt Better Health

<https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/news/news/2016/11/greece-moves-to-raise-awareness-about-salt-consumption>

Trans fatty acids

1- What are trans fatty acids?
Trans fatty acids (TFAs) are a type of unsaturated fatty acids. They are industrially produced from oils which are partially hydrogenated either for technological purposes (e.g. better texture or prolonged shelf life) or for cost reduction. TFAs are also naturally present in small amounts in foods derived from ruminants, such as dairy products or meat from cows, sheep or goats.

2. Indicative Foods that may contain TFAs according to World Health Organization
The presence of TFAs in food is not easily perceived by the consumer with regard to taste.
Sources of TFAs include: partially hydrogenated fats (e.g. margarine, shortening), meat fat from cows / sheep / goats, and butter.

3. How TFAs affect human health?
TFAs increase LDL (bad) cholesterol levels in blood serum. High TFAs may also contribute to the development of atherosclerosis. There is a possible association between high TFAs consumption and other health problems such as diabetes and some types of cancer. TFAs also increase HDL (good) cholesterol levels in blood serum.

4. Recommendations & Ways to Reduce TFAs in our diet
TFAs do not have any health benefits.
EFSA: In the context of a nutritionally adequate diet, the intake of TFAs should be as low as possible.
WHO: Daily intake of TFAs should be <1% of the total energy intake. For <1000-calorie diet, this is <2.2 g/day.
Ways to reduce TFAs: Read labels, avoid products with partially hydrogenated oils, choose products with natural oils, use liquid oils instead of solid fats, and avoid fried and deep-fried foods.

5. Current situation:
Only one-third of Greeks are aware of TFAs. There are specific standards for certain categories of foods that can be placed in scope categories with regard to their TFA content (<1.1%). The Commission Regulation (EU) No 2019/644 specifies that in household, the content of TFAs other than TFAs naturally occurring in list of animal origin, in food intended for the final consumer and food intended for supply to retail, shall not exceed 2 grams per 100 grams of fat. An increased consumption of TFAs is, according to WHO, responsible for more than 200,000 deaths per year worldwide.


FACTS

- Adverse effects of TFA on cardiovascular health are beyond any dispute
- \uparrow TFA \rightarrow \uparrow LDL , \downarrow HDL , \uparrow TAG
- **Prevalence of dyslipidaemia in Greece:** according to HNNHS, 20.7% of the population is dyslipidaemic, with 59.0% (no sex differences) receiving treatment. Lipid status awareness was 35.5% (64.5% unaware).

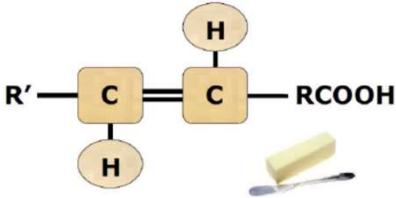
Source: Magriplis E, Panagiotakos D, Mitsopoulou AV et al. Eur J Prev Cardiol. 2019;26(18):1957-1967

https://www.efet.gr/files/infographic_eng.png

Knowledge, attitude and behaviour of Greeks towards trans fatty acids



ΓΝΩΣΕΙΣ, ΣΤΑΣΗ ΚΑΙ ΣΥΜΠΕΡΙΦΟΡΑ
ΤΩΝ ΕΛΛΗΝΩΝ ΣΧΕΤΙΚΑ ΜΕ ΤΑ ΤΡΑΝΣ
ΛΙΠΑΡΑ



Διεύθυνση Διατροφικής Πολιτικής και Ερευνών

Αθήνα, Μάιος 2015

- **Regarding dietary fat recommendations**, four out of ten consumers were not aware of any
- 47.3% of the population believes that they **consume the right amount of fat** in their diet
- **Only 1/3** of Greek adults is aware of the term “*trans fat*”
- Only **half** of those who are aware of the term “*trans fat*” believe that the dietary intake of trans fatty acids should be reduced
- Only **half** of those who are aware of the term “*trans fat*” believe that they do not exist naturally
- **Major dietary sources** of trans fat (according to participants’ beliefs) are: croissants, cheese pies made with puff pastry and gateaux-type cakes

Source: <https://www.efet.gr/files/trlip.pdf>

Levels of *trans* fatty acids in foods in Greece

Food (indicative)	N of samples	Total TFA	i-TFA
Cheese pies (total) from bakeries	30	2.80±2.14	2.38±2.15
- made with puff pastry	11	4.09±2.17	3.72±2.31
- made with shortcrust pastry	10	2.75±2.24	2.36±1.98
- made with phyllo pastry	9	1.28±0.50	0.76±0.57
Pizza (brand label and from bakeries)	12	1.53±0.65	0.11±0.36
Meat products (from fast food chains)	10	0.69±0.71	0.61±0.74
French fries (from fast food chains)	5	0.45±0.33	0.45±0.33
Cakes	20	0.72±0.46	0.20±0.29
Cookies/ biscuits	15	0.81±0.77	0.53±0.74
Croissants (50% from bakeries, 50% brand label)	10	0.81±0.51	0.30±0.41
Sweet Pastries (<i>bougatsa</i>) from bakeries	5	4.25±2.19	3.93±2.20

Source: Marakis G, Fotakis Ch, Tsigarida E et al. Journal of Consumer Protection and Food Safety 2020; 15, 373–381

Conclusions

- Strong political commitment
- Continuous awareness-raising campaigns for consumers and food manufacturers/food caters
- Food reformulation carefully done to ensure food safety
- Close collaboration between governmental bodies, food business operators, academics/research teams, food technologists, nutritionists and consumer associations
- Voluntary initiatives may not always be the ideal way to proceed with food reformulation