



A literature review by the EC Joint Research Centre (JRC) on:

Front-of-pack nutrition labelling schemes

Jan Wollgast

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2020

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Front-of-pack nutrition labelling schemes: a comprehensive review

S Storcksdieck genannt Bonsmann, G Marandola, E Ciriolo, R van Bavel,
J Wollgast (2020)

Increasing interest in FOP nutrition labelling

- Increasing rates of overweight/obesity
- Substantial health and economic burden due to dietary risks
-> cardiovascular diseases, cancer, diabetes



Find more: <https://ec.europa.eu/jrc/en/health-knowledge-gateway/societal-impacts/burden>





- FOP nutrition labelling increasingly considered by public authorities among the tools to support strategies for prevention
 - Informing consumers with a view to promoting healthier choices
 - Incentivising producers to reformulate food products










JRC study – objectives and scope

- Map relevant FOP schemes in Europe and beyond
- Review scientific literature for evidence on effects of FOP schemes:
 - on consumers' awareness, acceptance, understanding, and use;
 - on food purchases;
 - on diet and health;
 - on food reformulation and innovation;
 - other potential intended or unintended effects or impacts.
- Identify knowledge gaps

Overview of FOP schemes

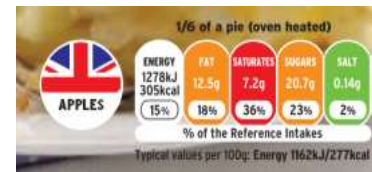
Front-of-pack schemes providing nutrition information (including mandatory schemes)				
Country	FOP scheme name and reference	What does the scheme look like on pack? (provide a picture if possible)	Implemented (using) or proposed	Voluntary or Mandatory
FOP schemes in multiple European countries				
EU	Reference Intakes (RI) (formerly Guideline Daily Amounts (GDA)) http://www.referenceintakes.eu/understanding-label.html		Implemented	Voluntary
Czech Republic, Poland	Choices logo https://www.choicesprogramme.org/		Implemented	Voluntary
Sweden, Norway, Denmark, Iceland, Lithuania, North Macedonia	The Keyhole Nyckelhållet (Sweden since 1989) Nøkkelhullet (Norway since 2009) Nøglehullet (Denmark since 2009) Skráargatið (Iceland since 2013) Rakto skylutė (Lithuania agreement 2013) Kryžianka (North Macedonia agreement 2015) Legal references: Sweden: www.livsmedelverket.se/globalassets/om-oss/lagsiftning/livsmedelsinfo-till-konsum-markning/livsf-2015-1-particular-symbol-eng.pdf Norway: https://lovdata.no/forskrift/2015-02-18-139 Denmark: https://www.retsinformation.dk/Forms/R0710.aspx?id=200252 Lithuania: https://sam.lrv.lt/lt/veiklos-sritys/visuomenes-veikatosprieziura/mityba-it-fizinis-aktyvumas-2/rakto-skylyte-sveikataipalankesni-maisto-produktai-1/keyhole-criteria-2017-en		Implemented	Voluntary
France, Belgium (Announced in Spain, Germany, the Netherlands, Luxembourg)	Nutri-Score https://www.santepubliquefrance.fr/Sante-publique-France/Nutri-Score https://www.health.belgium.be/fr/le-nutri-score Legal reference https://www.legifrance.gouv.fr/eli/arrete/2017/10/31/SAP1730474A/jo/texte https://health.belgium.be/fr/arrete-royal-nutri-score		Implemented	Voluntary

Front-of-pack schemes providing nutrition information (including mandatory schemes)				
Country	FOP scheme name and reference	What does the scheme look like on pack? (provide a picture if possible)	Implemented (using) or proposed	Voluntary or Mandatory
Croatia	"Healthy Living" (Živjeti zdravo) Guarantee Mark https://www.hjz.hr/wp-content/uploads/2016/10/Ljetna-prehrana-LowRes.pdf https://www.hjz.hr/wp-content/uploads/2015/06/Healthy-Living-Food-criteria.pdf		Implemented	Voluntary
Estonia	Rimi kitchen's ABC system http://www.sinurimi.ee/elumaitseb/toitumisnustaja/ The A-tagged component is balanced in terms of nutrition within the recommended range, when consuming these meals, you do not have to worry about exaggerating it. The B-labeled ingredient is approaching the recommended amount for a balanced diet, and should be used moderately. The content of the C-labeled ingredient in the meal exceeds the recommended nutritional standard. These products could be consumed in small quantities; ensure that other foods in the diet contain less of the same ingredient.		Implemented	Voluntary
Finland	Heart Symbol https://www.sydanmerkki.fi/en		Implemented	Voluntary
Italy	Nutrinform Battery		Proposed	Voluntary
Portugal	Semáforo Nutricional (Nutritional traffic lights) https://missao.continente.pt/o-fazemos/saude-educacao/leituras-rotulos-etiquetas		Implemented	Voluntary
Slovenia	"Little Heart" sign http://zasrce.si/clanek/i53/ The aim of the project is to label food products of outstanding qualities with the heart label and thereby increase the supply of foods that have a beneficial effect on health (health claims) or beneficial nutritional properties (nutritional claims) low content of fat, salt, added sugar, that have a low energy content, a favourable ratio of fatty acids, and a high dietary fibre content.		Implemented	Voluntary
Spain	Eroski Multiple Traffic Light (Spanish retailer) http://revista.consumer.es/web/es/20071001/pdf/alimentacion.pdf		Implemented	Voluntary

<https://data.jrc.ec.europa.eu/dataset/ee4aa355-2e2f-4419-a1ee-b2041eda1486>

Overview of FOP schemes in Europe

- Currently six FOP schemes in use or developed by public sector/NGOs:
 - Keyhole logo (Sweden, Denmark, Lithuania, Iceland, Norway, and the former Yugoslav Republic of Macedonia)
 - Nutri-Score (France, Belgium; announced in Spain, The Netherlands, Luxembourg, Germany)
 - Multiple Traffic Light combined with Reference Intakes (UK; also used in Ireland)
 - Finnish Heart Symbol
 - Slovenian 'Little Heart' sign
 - Croatian 'Healthy Living' logo
- Italian FOP scheme based on Reference Intakes proposed



Overview of FOP schemes in Europe

- Private sector FOP schemes:
 - Reference Intakes label (found in most/all countries)
 - Choices logo (Czech Republic, Poland)
 - Additionally, retailers in Estonia, Portugal, and Spain have implemented FOP schemes on their own-brand products based on Multiple Traffic Lights colour-coding



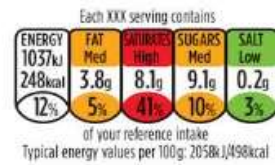
FOP schemes characteristics

Nutrient-specific labels

Numerical



Colour-coded



Summary labels

Endorsement



Graded



REDUCTIVE

EVALUATIVE

FOP schemes and the consumer

- Important to note upfront the ‘average consumer’ does not exist
- Consumers differ by health conditions, age, education, cognitive skills and other attributes
- Their behaviour is also – though somewhat predictably - biased by factors such as loss aversion, overconfidence, (time) scarcity, information overload and present bias (myopia)
- Nonetheless, most consumers declare they find FOP labelling helpful, with older and overweight people more likely to report a need for a FOP label

Attention to FOP schemes

- Self-reported consumer attention to familiar labels usually high (60%+)
- Few objective assessments available indicate lower rates of consumers really looking at FOP labels when shopping
- Using sufficient contrast and size to stand out on busy food packages can help attract consumers' attention to FOP labelling
- Attention also higher when FOP label type and location on pack do not change, and if label introduction accompanied by awareness/education efforts
- Women, younger adults, nutritionally knowledgeable people and individuals with health focus more likely to read FOP labels

Preference on FOP schemes

- Regarding acceptance of a label : liking and attractiveness seem important
- Consumers tend to prefer FOP schemes that use colours, typically indicating nutrient levels or overall nutritional quality
- Consumers generally prefer simple, evaluative over reductive schemes
- However, different studies show preference for different schemes
- Preferred FOP schemes tend to be the one implemented in the country of study
- Acceptance is not a sufficient condition for its effectiveness

Understanding of FOP schemes

- Most FOP labels have positive effect on consumer ability to identify healthier option (compared to 'no FOP label' situation)
- Majority of laboratory and field studies suggest interpretative schemes that use colour-coding help consumers of various ages, socio-economic status, and cultural background the most in identifying more healthful products; inclusion of a grading element can also be effective.

Impact of FOP schemes on purchasing

- Studies looking at intention to purchase show FOP nutrition labelling can improve nutritional quality of food choices and shopping baskets
- Evaluative FOP schemes with colour-coding and/or a grading indicator appear most promising
- Evidence on actual shopping behaviour is difficult to obtain - real-time purchasing decisions influenced by multitude of factors beyond FOP labels
- But both experimental and fewer real-life studies show that FOP labels can help to improve nutritional quality of shopping basket.
- Importance of combination with communication campaigns.

Impact of FOP schemes on reformulation

- Some evidence that FOP labels influence product composition towards more healthful choices
- But mostly self-reported by industry

Impact of FOP schemes on diet & health

- Difficult to directly measure effects of FOP nutrition labelling on diet and health in real life and prove causality (complex and long term studies needed covering several years)
- Instead, modelling studies are used in an attempt to fill knowledge gap
- These suggest a positive effect: consistently and extensively shifting towards products with more favourable nutrient profiles (as indicated by better FOP label scores or presence of endorsement logos) would reduce intakes of energy and nutrients of public health concern whilst potentially increasing intakes of dietary fibre and whole grain products

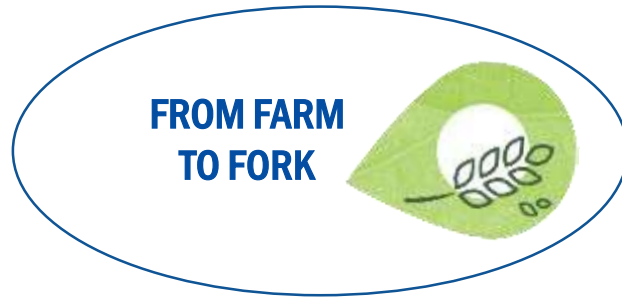
Knowledge gaps - suggestions for future research

- More real-life research is needed on the effects of FOP nutrition labelling on consumers' actual shopping behaviours and dietary intakes
- More data needed on how FOP labels encourage/incentivise food producers to innovate and improve nutritional quality

Concluding remarks

- FOP nutrition labelling is only one among many factors affecting consumer food preferences, purchases, and overall dietary choices
- Studies reviewed (experimental, empirical and modelling studies) confirm the potential of FOP schemes to help consumers make health-conscious food choices and to improve the nutritional quality of the shopping basket and suggest a positive effect on consumers' diet and health.
- FOP nutrition labelling has the potential to incentivise food product reformulation and innovation
- Difficulty to collect empirical evidence of effect on diet & health ≠ evidence for lack of effect
- The availability of FOP nutrition labelling will also affect its potential in improving food and overall dietary choices

Outlook - Front-of-pack nutrition labelling



"The Commission will explore new ways to give consumers better information, including by digital means, on details such as where the food comes from, its nutritional value, and its environmental footprint."

- Farm to Fork Strategy (May 2020)



Proposal for a harmonised **mandatory front-of-pack nutrition labelling** to enable consumers to make health conscious food choices (2022)



-> JRC support to Farm to Fork Strategy including on FOP nutrition labelling

Keep in touch



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Thank you



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