

no: 3

date: 15/06/2012

title **Food labelling and its influences on food choices**

authors

Dr Heather Yeatman

Associate Professor in Public Health
School of Health Sciences
University of Wollongong
Email: hyeatman@uow.edu.au

Ms Eva van der Want

School of Health Sciences
University of Wollongong

policy issue

In 2002, it became mandatory for food producers in Australia to provide a Nutrition Information Panel (NIP) on the back of food packages.¹ However, research has shown that consumers often misinterpret NIPs or do not use them at all.^{2,3} Health advocates have begun to consider one form of NIPs - Front-of-Pack labelling (FoPL) - as a means of supporting healthy food choices.⁴

There are more than 20 FoPL formats in use worldwide. The information they provide varies considerably (for example summaries of key ingredients or detailed information about them), as do the strategies underpinning their use.⁵ Three FoPL formats are commonly used in the Australian market – National Heart Foundation (NHF) Tick, The Daily Intake Guide (%DI), and Glycaemic Index (GI) Symbol.⁶ Each of them have a different logo, which may cause confusion among consumers. To prevent this, the Australian Government accepts that an easily understood, uniform FoPL system is needed.⁷ The recent Government-funded review of food labelling (led by federal former health minister, Dr Neal Blewett AC) recommended that the Traffic Light System (TLS) be adopted. The Government did not support this as the preferred option.⁸ The food industry has also been reluctant to adopt it.^{9,10} With the prevalence of obesity still rising, and the Government still debating the possible benefits of uniform FoPL, food labelling to support healthy food decisions has become a contentious issue.

what does the evidence say?

Several studies have looked specifically at FoPL formats. One study assessed Nutrition Information Panel use and consumers' understanding of it.¹¹ It revealed that people mostly focus on one nutrient and have difficulty making an assessment of all the ingredients. This may be because they do not have the nutritional knowledge needed to use Nutrition Information Panels effectively.¹² Time constraints while shopping may be another reason people do not take full advantage of Nutrition Information Panels.¹³ From this research, we learn that FoPL needs to be simple and have some interpretative elements so that it is quick and easy for consumers to use.¹⁴

One European study tested eight different FoPL logos and found that European consumers preferred a simple logo format.¹⁵ In another study, researchers asked consumers to compare two food options and choose the healthier product.¹⁶ They found that consumers performed the task more quickly and with similar accuracy when a simple logo was provided. However, in a review of the Australian and New Zealand literature on the use of food labels (published in 2007), researchers found that consumers commonly reported using food labels, but their understanding of them was fairly poor.¹⁷

Some research has also been done comparing the difference between informative and interpretative logos. Informative logos, such as the % Daily Intake Guide, provide information about the nutritional characteristics, while interpretive logos, such as traffic lights, give an evaluation of the healthiness of the food.¹⁸⁻²⁴ Because the Traffic Light System interprets nutritional information, these logos are often considered simpler than informative logos. One of the most noteworthy studies in this field asked 790 Australian consumers to compare two versions of the Traffic Light System and two versions of the % Daily Intake Guide (coloured and monochrome).²⁵ Consumers indicated that they preferred the % Daily Intake Guide tabs, largely because they were familiar with them. Interestingly though, consumers were 3 to 5 times more likely to identify healthier foods using the Traffic Light System. Similar results were seen in a German study.²⁶ There is one peer reviewed study that contradicts this. It shows that consumers understood the % Daily Intake Guide and the Traffic Light System equally well.²⁷ Both logos enabled 85% of the participants to identify the healthiest option.

Colour is an important element in interpretative systems such as the Traffic Light System, and colour coded labels have been found to be more effective in steering people to healthy choices than monochrome labels.²⁸ In a choice experiment conducted in Britain, researchers found that people were willing to pay more in order to avoid having a shopping basket with red colours (unhealthy food options).²⁹

There is considerable research investigating the reasons why people might misinterpret logos on food labels (for an extended overview of this matter, see van Kleef & Dagevos 2012).³⁰ One reason is that logos provide nutrient information either by serving size or per 100g. In Australia, the current % Daily Intake Guide displays nutrient information per serving size. Research from the consumer advocacy group CHOICE reveals large discrepancies in the serving sizes for different products.³¹ Consumers may not be aware that serving sizes are not regulated in Australia, and hence the presentation of % Daily Intake Guide may be misleading or confusing. In a

review of more than two decades of research looking at the factors that influence people's decisions to use food labels, researchers found that there were few consistent factors.³² There is some evidence to suggest that being female and highly educated have a positive effect on label use.^{33,34} There is also some evidence to show that minority groups rarely use FoPL.³⁵

what is the quality of the evidence available?

There is a substantial evidence base in the area of food labelling. Most research has been performed in the US and Europe, however, there are also some Australian studies. Despite the large number of studies, there are many disputes about what works best in the food labelling arena. This could be because of gaps and limitations in the current evidence, including a paucity of research on minority and low income groups and a lack of research over longer periods.^{36,37}

Many studies in this area assess self-reported use of food labels. This may be problematic because it leads to over reporting.³⁸⁻⁴⁰ One study conducted in Britain found that consumers tended to over report their use of labels by about 50% if they were self-reporting as opposed to being observed whilst shopping.⁴¹

Another problem with the research in this field is that it is difficult to determine the role that logos play in the decision-making process. There are many psychological processes – both on a subconscious and conscious level – at play when choosing whether or not to buy a product. Research has shown that price and taste tend to be more important factors than food labels in decision-making.^{42,43}

Another limitation of the evidence base in this field is that there is little real-world research. Putting people in experimental conditions means they do not experience the same time pressures and financial motivations as they do in normal shopping experiences.⁴⁴ Although there are some studies showing no differences in results produced in real world and experimental conditions, we should still be careful extrapolating findings to real life.^{45,46}

what does this mean for policymakers?

Although there is considerable research in this field, there are still many uncertainties about the impact of food labelling on people's food choices. However, we may carefully conclude that a simple, colour coded, interpretative logo, such as the Traffic Light System, is best understood by consumers. This does not necessarily mean that consumers will use this system. To ensure a Traffic Light System has maximum impact on consumer food selections, governments need to consider accompanying educational and social marketing initiatives. Importantly, FoPL can also have positive effects on food composition as manufacturers adjust their recipes to position their products in the best manner. Currently, this may be the most immediate impact of an interpretative, colour Front of Pack labelling initiative.

key readings

1. Blewett, N., Goddard, N., Pettigrew, S., Reynolds, C., & Yeatman, H. (2011). *Labelling logic - review of food labelling and policy*. Commonwealth Department of Health and Ageing, Canberra. Online publication, viewed 20/4/2012, <http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/labelling-logic>
2. Mhurchu, C. N., & Gorton, D. (2007). Nutrition labels and claims in New Zealand and Australia: A review of understanding and use. *Australian and New Zealand Journal of Public Health*, 31(2), 105-112.
3. Kelly, B., Hughes, C., Chapman, K., Louie, J. C., Dixon, H., Crawford, J., et al. (2009). Consumer testing of the acceptability and effectiveness of front-of-pack food labelling systems for the Australian grocery market. *Health Promotion International*, 24(2), 120-129. doi:10.1093/heapro/dap012 IOM
4. Institute of Medicine. (2011). *Front-of-package nutrition rating systems and symbols: Promoting healthier choices (phase II)*. Washington, DC: The National Academies Press.
5. van Kleef, E., van Trijp, H., Paeps, F., & Fernandez-Celemin, L. (2008). Consumer preferences for front-of-pack calories labelling. *Public Health Nutrition*, 11(2), 203-213. doi:10.1017/S1368980007000304
6. Cowburn, G., & Stockley, L. (2005). Consumer understanding and use of nutrition labelling: A systematic review. *Public Health Nutrition*, 8(1), 21-28.
7. Grunert, K. G., & Wills, J. M. (2007). A review of European research on consumer response to nutrition information on food labels. *J Public Health*, 15, 385-399.

references

- ¹ Mhurchu, C. N., & Gorton, D. (2007). Nutrition labels and claims in New Zealand and Australia: A review of understanding and use. *Australian and New Zealand Journal of Public Health*, 31(2), 105-112.
- ² Cowburn, G., & Stockley, L. (2005). Consumer understanding and use of nutrition labelling: A systematic review. *Public Health Nutrition*, 8(1), 21-28.
- ³ Paterson, D., White, B., & Marshall, J. B. (2003). *Food labelling issues: Quantitative research with consumers Evaluation Report Series No. 4*. Food Standards Australia New Zealand, Canberra. Online access, viewed 14/6/2012, <http://www.foodstandards.gov.au/scienceandeducation/publications/evaluationreportseries/foodlabellingissuesquantitativeresearchconsumersjune2003/>
- ⁴ van Kleef, E., & Dagevos, H. (2012). The growing role of front-of-pack nutrition profile labelling: A consumer perspective on key issues and controversies. *Critical Reviews in Food Science and Nutrition*, In press, viewed 14/6/2012, <http://www.mcb.wur.nl/NR/rdonlyres/AD18BC6CED0F-4B54-AE6D-481F16353E3A/155099/VanKleefandDagevosFrontofPacknutritionlabellingpap.pdf>
- ⁵ IOM (Institute of Medicine). (2010). *Front-of-package nutrition rating systems and symbols:Phase I report*. Washington, DC: The National Academies Press.
- ⁶ Blewett, N., Goddard, N., Pettigrew, S., Reynolds, C., & Yeatman, H. (2011). *Labelling logic - review of food labelling and policy*. Commonwealth Department of Health and Ageing, Canberra. Online publication, viewed 20/4/2012, <http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/labelling-logic>

- ⁷ Legislative and Governance Forum on Food Regulation (convening as the Australia and New Zealand Food Regulation Ministerial Council). Response to the recommendations of labelling logic: Review of food labelling law and policy (2011). Catherine King, MP (Chair). Online publication, viewed 20/4/2012,
[http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/ADC308D3982EBB24CA2576D20078EB41/\\$File/FoFR%20response%20to%20the%20Food%20Labelling%20Law%20and%20Policy%20Review%209%20December%202011.pdf](http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/ADC308D3982EBB24CA2576D20078EB41/$File/FoFR%20response%20to%20the%20Food%20Labelling%20Law%20and%20Policy%20Review%209%20December%202011.pdf)
- ⁸ Ibid
- ⁹ Australian Food and Grocery Council. (2012). *Front-of-pack labelling – building a national scheme: Objectives, principles, governance*. 22 March 2012. AFGC Barton
- ¹⁰ Blewett, N et al (2011).
- ¹¹ Paterson, D et al (2003).
- ¹² IOM (Institute of Medicine). (2011). *Front-of-package nutrition rating systems and symbols: Promoting healthier choices (phase II)*. Washington, DC: The National Academies Press.
- ¹³ Grunert, K. G., & Wills, J. M. (2007). A review of European research on consumer response to nutrition information on food labels. *J Public Health*, 15, 385-399.
- ¹⁴ Blewett, N et al (2011).
- ¹⁵ van Kleef, E., van Trijp, H., Paeps, F., & Fernandez-Celemin, L. (2008). Consumer preferences for front-of-pack calories labelling. *Public Health Nutrition*, 11(2), 203-213. doi:10.1017/S1368980007000304
- ¹⁶ Feunekes, G. I., Gortemaker, I. A., Willems, A. A., Lion, R., & van den Kommer, M. (2008). Front-of-pack nutrition labelling: Testing effectiveness of different nutrition labelling formats frontof-pack in four European countries. *Appetite*, 50(1), 57-70. doi:10.1016/j.appet.2007.05.009
- ¹⁷ Mhurchu, C. N., & Gorton, D. (2007).
- ¹⁸ van Kleef, E., & Dagevos, H. (2012).
- ¹⁹ Borgmeier, I., & Westenhofer, J. (2009). Impact of different food label formats on healthiness evaluation and food choice of consumers: A randomized-controlled study. *BMC Public Health*, 9, 184. doi:10.1186/1471-2458-9-184
- ²⁰ Carter, O., Mills, B., & Phan, T. (2011). An independent assessment of the Australian food industry's daily intake guide 'energy alone' label. *Health Promotion Journal of Australia*, 22(1), 63-67.
- ²¹ Grunert, K. G., Wills, J. M., Fernandez-Celemin, L. (2010). Nutrition knowledge, and use and understanding of nutrition information on food labels among consumers in the UK. *Appetite*, 55(2), 177-189. doi:10.1016/j.appet.2010.05.045
- ²² Kelly, B., Hughes, C., Chapman, K., Louie, J. C., Dixon, H., Crawford, J., et al. (2009). Consumer testing of the acceptability and effectiveness of front-of-pack food labelling systems for the Australian grocery market. *Health Promotion International*, 24(2), 120-129. doi:10.1093/heapro/dap012
- ²³ Lobstein, T., Davies, S. (2009). Defining and labelling 'healthy' and 'unhealthy' food. *Public Health Nutrition*, 12(3), 331-340. doi:10.1017/S1368980008002541
- ²⁴ Louie, J. C., Flood, V., Rangan, A., Hector, D. J., Gill, T. (2008). A comparison of two nutrition signposting systems for use in Australia. *New South Wales Public Health Bulletin*, 19(7-8), 121-126.
- ²⁵ Kelly, B et al. (2009).
- ²⁶ Borgmeier, I, et al (2009).
- ²⁷ Grunert, K et al. (2010).
- ²⁸ Kelly, B et al. (2009).
- ²⁹ Balcombe, K., Fraser, I., & DiFalco, S. (2010). Traffic lights and food choice: A choice experiment examining the relationship between nutritional food labels and price. *Food Policy*, 35, 429-436.
- ³⁰ van Kleef, E., & Dagevos, H. (2012).
- ³¹ CHOICE. (2011). *Examination of serving sizes of selected food products in Australia* Choice, Tempe, NSW.

- ³² Drichoutis, A. C., Lazaridis, P., & Nayga, R. M. (2006). Consumers' use of nutritional labels: A review of research studies and issues. *Academy of Marketing Science Review, vol. 9, online publication, viewed on 14/6/2012.* <http://www.amsreview.org/articles/drichoutis09-2006.pdf>
- ³³ Drichoutis, A. C., et al (2006).
- ³⁴ Ranilovic, J., & Baric, I. C. (2011). Differences between younger and older populations in nutrition label reading habits. *British Food Journal, 113*(1), 109-121.
- ³⁵ Signal, L., Lanumata, T., Robinson, J. A., Tavila, A., Wilton, J., & Ni Mhurchu, C. (2008). Perceptions of New Zealand nutrition labels by Maori, pacific and low-income shoppers. *Public Health Nutrition, 11*(7), 706-713. doi:10.1017/S1368980007001395
- ³⁶ Borgmeier, I., & Westenhoefer, J. (2009).
- ³⁷ Drichoutis, A. C., Lazaridis, P., & Nayga, R. M. (2006).
- ³⁸ Grunert, K. G., & Wills, J. M. (2007).
- ³⁹ Grunert, K. G., Wills, J. M., & Fernandez-Celemin, L. (2010).
- ⁴⁰ Mhurchu, C. N., & Gorton, D. (2007).
- ⁴¹ Grunert, K. G., Wills, J. M., & Fernandez-Celemin, L. (2010).
- ⁴² Darmon, N., Ferguson, E. L., & Briend, A. (2002). A cost constraint alone has adverse effects on food selection and nutrient density: An analysis of human diets by linear programming. *The Journal of Nutrition, 132*(12), 3764-3771.
- ⁴³ Drichoutis, A. C., Lazaridis, P., & Nayga, R. M. (2006). Consumers' use of nutritional labels: A review of research studies and issues. Consumers' use of nutritional labels: A review of research studies and issues. *Academy of Marketing Science Review, 9* (MISSING INFO)
- ⁴⁴ IOM (Institute of Medicine). (2011).
- ⁴⁵ Sacks, G., Tikellis, K., Millar, L., & Swinburn, B. (2011). Impact of 'traffic-light' nutrition information on online food purchases in Australia. *Australian and New Zealand Journal of Public Health, 35*(2), 122-126. doi:10.1111/j.1753-6405.2011.00684.x; 10.1111/j. 1753-6405.2011.00684.x

© Australian Healthcare and Hospital Association, 2013. All rights reserved.

contact

Dr Anne-marie Boxall
Director
Deeble Institute
Australian Healthcare and Hospitals Association
E: aboxall@ahha.asn.au