**Question:** E13-176

**OUTCOME:** 1 – Population Health

**Topic:** Front-of-Pack Labelling

**Type of Question:** Written Question on Notice

**Senator:** McKenzie

**Question:**

Professor Halton indicated during estimates that she would provide a copy of the research into a comparison of DIG and the star system. Hansard pg 42

**Answer:**

A copy of the 'Proposed Front-of-Pack Food Labelling Designs: Quantitative Research Outcomes' can be found at Attachment A, and online at:
http://www.health.gov.au/internet/main/publishing.nsf/Content/foodsecretariat-front-of-pack-labelling-1

The overall Front-of-Pack Label design tested in this research (based on recommendations from the qualitative research) was shown to have significantly higher potential to influence food purchase decisions than either a) current information available on food packs, or b) the existing Daily Intake Guide.

# PROPOSED FRONT-OF-PACK FOOD LABELLING DESIGNS: QUANTITATIVE RESEARCH OUTCOMES

17 April 2013
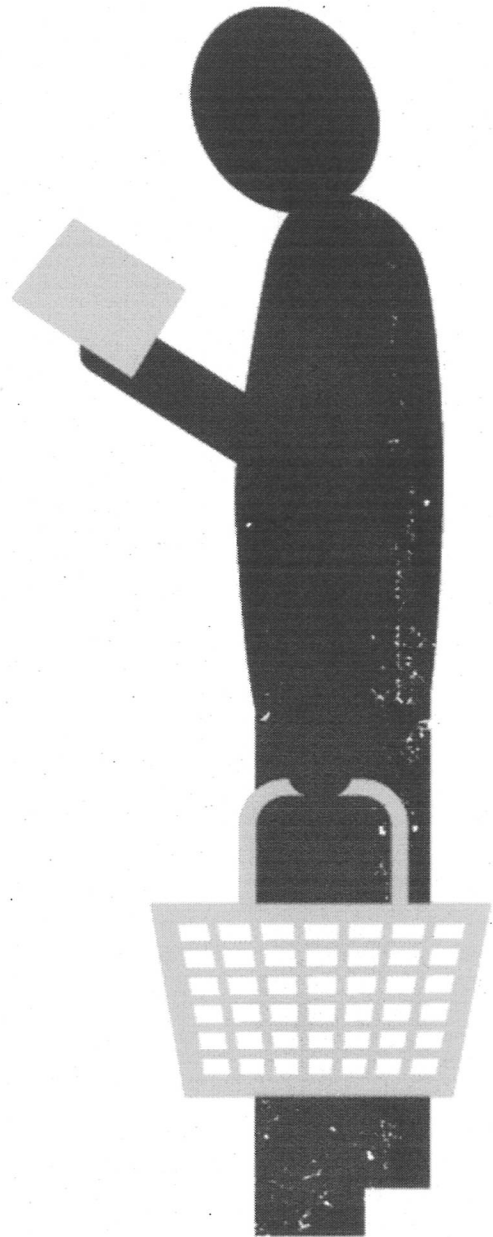
# 1.  EXECUTIVE SUMMARY

*NOTE: This report presents recommendations 'from the consumer perspective', based on the claimed needs and attitudes of consumers when it comes to food and nutrition. These needs and attitudes may not always align with medical, nutritional and related literature. We acknowledge that this literature needs to be taken into account in any decision on a final FoPL design and content.*

This report is based on quantitative research amongst a representative sample of n=1,089 Australian consumers, conducted following an initial qualitative stage. The objectives of the quantitative research were a) to validate key recommendations from the qualitative component in regards to design and information contained within an optimal FoPL system, b) to build upon the qualitative insights, by further testing and fine-tuning proposed FoPL design components, and c) gain some understanding into the potential impact of the proposed FoPL on consumer food purchase choices.

Supporting the qualitative findings, evidence in this report suggests a strong level of support for a FoPL system. Over 90% of our consumer sample felt that a FoPL concept was a good idea. Furthermore, when it comes to influencing food purchase choices, consumers attributed a similar perceived importance to a FoPL system as to more fundamental purchase drivers, such as the taste and price of the food. A FoPL system was seen as something that would be more important in driving food purchase choices than the brand of the food or the level of convenience associated with a particular food.

The Overall FoPL design tested in this research (based on recommendations from the qualitative research) was shown to have significantly higher potential to influence food purchase decisions than either a) current information available on food packs, or b) the existing Daily Intake Guide.

Respondents showed a reasonable level of understanding of the Overall proposed FoPL design, rating a mean score of around 7/10 (0-10 scale, where 10 means "completely understand" what label is communicating), which is the same score as the existing Daily Intake Guide received from respondents in regards to understanding. Note also that limited information was provided about the label or its interpretation. For example, although the broad concept of the star rating system was communicated, details were not provided around the underlying algorithm. Likewise, detailed explanation of the meaning of some of the components of the labels presented (e.g. "DI %", "Low/Medium/High") were not provided. Assuming that the FoPL system will be launched in parallel with a public education campaign, there is no strong evidence that consumers would have trouble understanding the labels. There were two noteworthy demographics where mean scores for understanding were slightly (but statistically significantly) lower than the broader population  - retirees and consumers in NSW. A public education campaign may need to pay additional attention to these groups.

Consumers are likely to have varying degrees of reliance on a FoPL system when buying different food groups. The food groups for which consumers are most likely to use FoPL to inform their food purchase choice are cereals, snacks, convenience meals, biscuits, and juices/drinks, while purchase decisions around fresh foods (fruits and vegetables, and meats) are least likely to be impacted by FoPL.

The quantitative research provided robust and representative support for most of the design recommendations emerging from the qualitative component, as well as providing additional recommendations. Overall design recommendations from the qualitative research that are supported here:

- A box to enclose all elements of design

- The grey backed design option tested (Tank design)

- Be presented as a stacked display with star rating element sitting above nutrient elements

- Use of the 'Health Star Rating' name

- Incorporate the slider in the star design element

- Express all values as per 100 grams

- Include the term "kilojoules" rather than "energy"

Additional design recommendations assuming a label with "fixed" negative nutrients (i.e. the same nutrients across all food groups):

- Use "Low/Medium/High" rather than "DI %": consumers find the former easier to understand and quicker to read

- Consider including six nutrients in the label (including Kilojoules): Although respondents rated "5 nutrients" as the optimum number, there is evidence that six nutrients may be optimal in order to include all of the key information that consumers want to see (in particular, an emerging need to include both "Total Fats" and "Saturated Fats", as discussed below). Note also that the current DIG label often includes both Total Fats and Saturated Fats. If FoPL will replace DIG, inclusion of six nutrients may ensure that there is no perceived detriment in the amount and usefulness of information on the front-of-pack

- Include "Total Sugar", rather than "Sugars": Although these terms are intended to have the same meaning, the former is more easily understood by consumers and was consistently attributed more value.

- Include "Total Fat" and "Saturated Fat": both of these nutrients were considered amongst the most important to include (indeed, "Total Fat" was consistently seen as more important than "Saturated Fat").

- Include "Sodium": At an overall level (i.e. when discussing a label without reference to specific food group), Sodium was not considered one of the more important nutrients (in fact, it was 9th out of 14 nutrients in the list in importance). However, Sodium was considered important when referring to certain food groups (e.g. pre-prepared/convenience meals). Overall, there was a surprising lack of importance attributed to Sodium. A potential reason for this is that a portion of consumers may not be making the connection between "Sodium" and "salt", the latter of which has more negative health connotations (note that this is a hypothesis only and would need to be supported by further research).

- Include one positive nutrient, adapted by food group: Positive nutrients were important to consumers, but our results suggest that consumer needs for positive nutrient information differed markedly across food types. While fibre was "overall" (i.e. without reference to a food group) the

most important positive nutrient, the picture changed when talking about meats/chicken/fish (where protein was by far the most important), Dairy (calcium), and juices & drinks (Vitamin C). Interestingly, no positive nutrients were considered important when referring to pre-prepared/convenience meals. Further research may be needed to go into all food groups in detail to determine which positive nutrients are most important for each food type (from a consumer perspective).

Evidence presented here suggests that, of the two core elements of the proposed FoPL (namely, the star ratings and nutrient elements), the star ratings element appears to contribute the most importance or impact on consumers. This is most evident when comparing respondents' ratings of the extent to which the two different elements would influence their food purchase decisions. Specifically, mean ratings for the nutrient element (in terms of influence on food purchase decisions) were lower than for existing nutritional information on food packaging, while mean ratings for the star element were significantly higher than either existing information or the nutrient element. Note however, that mean ratings of the *complete* label (i.e. star and nutrient elements combined) are higher still, suggesting that the nutrient element does add to the overall impact of the proposed FoPL label.

# 2. RESEARCH BACKGROUND AND METHODOLOGY

## 2.1 RESEARCH CONTEXT

The development and introduction of a system of comparative front-of-pack labelling (FoPL) for food stems from an agreement by the Legislative and Governance Forum on Food Regulation to support recommendation 50 of the Labelling Logic: Review of Food Labelling Law and Policy (2011). The recommendation states that the FoPL scheme is designed to guide consumer choice towards healthier food options and to guide choice in a number of ways:

1. By enabling direct comparison between individual foods that, within the overall diet, may contribute to the risk factors of various diet-related chronic diseases.

2. By being readily understandable and meaningful across socio-economic groups, culturally and linguistically diverse groups and low literacy/low numeracy groups.

3. By increasing awareness of foods that, within the overall diet, may contribute positively or negatively to the risk factors of diet-related chronic diseases.

The following design principles have been set for FoPL development:
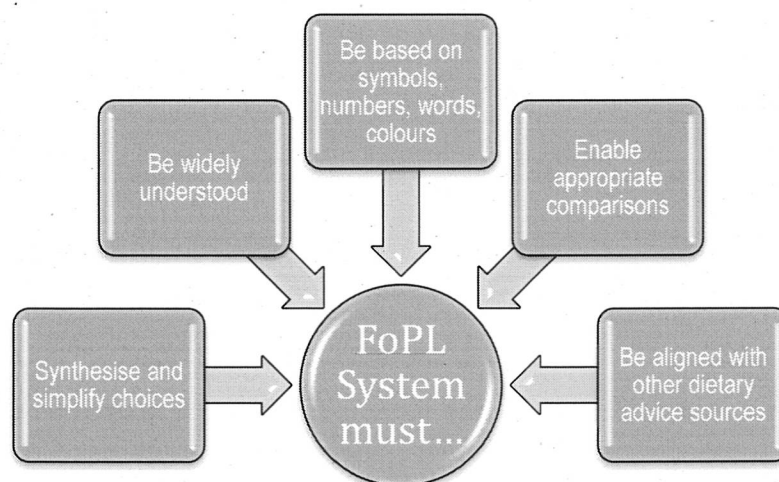


In addition it is a requirement that the system be based on elements that inform choice by assessing both health-benefit and health-risk associated food components; and that the system comprise both the FoPL scheme and consumer education elements.

## 2.2 PRELIMINARY FINDINGS FROM THE QUALITATIVE RESEARCH PHASE

This report was preceded by a qualitative stage of research, of which the detailed objectives included an understanding of:

- Consumers' knowledge, attitudes, intentions and behaviour regarding food labelling and purchase choices

- Consumers' ability to accurately use and understand proposed design elements (interpretive and nutrient)

- The likely impact of the proposed FoPL system on consumer choices

- Guidance for further design development.

Of relevance to this report were the key preliminary findings related to optimal design of a FoPL system. On the basis of the qualitative findings as to consumer preference and the extent to which the overall design will facilitate healthier food choices, the optimal FoPL design (which was subject to confirmation by the quantitative phase of the study) is likely to have the following design features:

- A box to enclose all elements of design

- The grey backed design option tested (Tank design)

- Be presented as a stacked display with star rating element sitting above nutrient elements

- Use of the 'Health Star Rating' name

- Incorporate the slider / number in star design element

- Express all values as per 100 grams

- Include the three 'negative nutrients' of saturated fat, sodium and total sugar (nb: use of term sugar/s in interpreted to mean total sugar)

- Include the term "kilojoules" rather than "energy"

With regard to the inclusion of positive nutrients – further consideration and testing was needed (also to be delivered through the quantitative study) as to:

- What are the 'positive nutrients' of relevance to include (and by food group)

- Whether relevant 'positive nutrients' should be included alongside the 'negative' nutrients

- Whether 'positive nutrients' should be included but separated from 'negative' nutrients, or

- Whether nutrient information should be restricted to the three 'negative' variables only

These, and additional, questions were explored in this study (see next section for research objectives).

## 2.3 OBJECTIVES OF THIS RESEARCH

Broadly speaking, there were three key aims of the quantitative study:

1. To test and validate the design recommendations emerging from the qualitative stage of the research: The qualitative research was intentionally designed to be "exhaustive" (in terms of the different consumer demographics and segments that were included and whose reactions to the proposed FoPL designs were sought), but not necessarily "representative". Hence, the design recommendations emerging from the qualitative phase needed to be tested amongst a more representative sample of Australian consumers, in order to ensure that ultimate FoPL design recommendations accurately reflected the needs and attitudes of all consumers.

2.  <u>To build upon insights gained in the qualitative research, by further optimising the FoPL design</u>: Including an understanding of which positive and negative nutrients are most important to consumers (and by key food group), as well as testing various FoPL designs to determine which were clearest and most meaningful to consumers.

3.  <u>To gain some understanding as to whether the new FoPL system would have an impact on consumer behaviour</u>:  while detailed modelling of consumer behaviour and purchasing in response to the FoPL system was outside the scope of this study, a number of metrics were included to determine whether the proposed FoPL would have a significant influence on consumers' food purchasing, and also whether the proposed FoPL system would have more or less influence on consumers than existing nutritional information found on food packaging or labelling systems (specifically the current "Daily Intake Guide").

The specific objectives of quantitative component of the study were to:

- Test and optimise the Star Rating element of the label

- Test and optimise the Nutrient element of the label, including:

  - The relative importance of stars versus nutrient elements for consumers

  - Consumer perception of relative importance of different positive and negative nutrients and which should be included on the label, and how/whether this differs by food groups and consumer segment

  - Consumer perception of relative importance of negative and positive nutrients to overall health

  - The use of specific variants of terminology (e.g. "energy" versus "kilojoules")

  - The use of "Daily Intake" versus "Low/Medium/High" as indications of nutrient content

  - Optimal number of nutrients to include on the label

- Test and optimise a "complete" label (designed based on insights from qualitative component of the research), including:
  - Test four variants of a complete FoPL to determine which is most meaningful to consumers
  - Determine whether the new label would have a greater influence on consumer purchase choices than existing information found on food packaging and other labelling schemes (specifically the Daily Intake Guide)

The next section highlights the methodology used to address these objectives.

## 2.4 METHODOLOGY

### 2.4.1 Broad approach

A 25 minute online survey was conducted amongst a sample of n=1,086 respondents, randomly invited from an online access panel (see sample demographics section for a breakdown of the sample). Quantitative fieldwork was undertaken between the 4th and 8th March.

In addressing the research objectives, the quantitative survey was designed such that the FoPL system could be tested both holistically, as well as in its components parts. The general approach to addressing the objectives outlined in the previous section was to:

- Break down the labelling system into its component parts and test each of these component parts in isolation: these "components parts" consisted of the "star-rating" element and the "nutrient" element (note that these, and all other components and labels tested in the research, can be seen in the following *Stimulus* section). The key metrics used to test the label components were: the extent to which the components would influence purchase choice; the extent to which consumers would read the labels if they were available; and which component variants were most meaningful to consumers.

- Then test "complete" labels (consisting of all component parts arranged into different variants, designed to emphasise different components of the label): These complete labels were based on qualitative insights into optimal design and information required in a FoPL system.

Given the subject matter of the survey, a considerable amount of visual stimulus was presented and tested amongst respondents. This stimulus is shown in the next section.

### 2.4.2 Stimulus

The various labels (or components of labels) that were tested in the survey are detailed below.

Two images showed variants of the star rating system, which were used to distinguish consumer response between a star rating alone compared to a 'star rating with slider' mechanism.

Images were used to determine difference in consumer response between the terms "Kilojoules" versus "Energy".

Images were used to measure understanding, amount and type of nutritional information and meaningfulness of the labels denoting the amount of the nutrient (i.e. "Low/Medium/High" and "DI")

Images were used to assess whether "Per100g" or "Per 175g serve" was most meaningful to consumers.

Three images below were used to assess consumers' understanding, potential impact on purchase choice and overall meaningfulness of the three key ways of denoting nutrient amounts (i.e. "Low/Medium/High", "DI" or simply neither of these).

Four images were presented as part of the final section of the survey in which a "complete" FoPL label was evaluated. The "Original" was used as a base case, and was assessed in regards to potential influence on purchase behaviour and the extent to which this influence was greater or less than nutritional information and existing labelling systems (i.e. Daily Intake Guide) on food packaging. The "Original" label shown below was designed based on the preliminary recommendations emerging from the qualitative phase in regards to optimal label design and nutrient information.

The image below was used in the last section of the survey so that the proposed FoPL label could be compared to the existing Daily Intake Guide in terms of understanding, usefulness, and impact on food purchase choices.

*Existing Daily Intake Guide*



PER 100g SERVE

## 2.4.3 Sample Demographics

The broad demographic breakdown of the sample is shown in Table 1, which shows a good mix of demographics. Note that the slight skew towards females reflects sampling quotas which favoured main grocery buyers (at least 70% of the sample was to be "the person mainly or jointly responsible for the majority of the grocery shopping in your household"

*Table 1.  Key Demographics*

| Characteristic | Frequency % |
|---|---|
| Gender | |
| Male | 43 |
| Female | 57 |
| Age | |
| 18-24 years | 13 |
| 25-29 years | 8 |
| 30-34 years | 9 |
| 35-44 years | 17 |
| 45-54 years | 18 |
| 55-64 years | 17 |
| 65-75 years | 11 |

| Characteristic | Frequency % |
|---|---|
| 75+ years | 8 |
| State/Territory of residence | |
| NSW | 30 |
| Victoria | 27 |
| Queensland | 18 |
| Western Australia | 10 |
| South Australia | 11 |
| Tasmania | 3 |
| ACT | 1 |
| Northern Territory | 1 |
| Area of residence | |
| Capital city | 57 |
| Regional centre | 25 |
| Country town | 12 |
| Rural or remote locality | 6 |
| Highest level educational attainment | |
| Year 9 or below | 4 |
| Year 10 or 11 | 14 |
| Year 12 or high school equivalent | 18 |
| TAFE certificate or diploma | 35 |
| Bachelors degree | 16 |
| Postgraduate qualification | 9 |
| Don't know/prefer not to say | 1 |
| Current situation | |
| Working full-time | 29 |
| Working part-time | 21 |
| Home duties | 11 |
| Retired | 23 |
| Student | 6 |
| Not in the workforce | 8 |
| Other | 2 |
| Working Industry | |
| Agriculture, forestry and fishing | 3 |
| Manufacturing | 4 |
| Electricity, gas and water supply | 1 |
| Construction | 6 |
| Accommodation, cafes and restaurants | 2 |
| Transport and storage | 5 |
| Government | 8 |
| Education | 10 |
| Health and community services | 14 |
| Mining | 2 |
| Other | 41 |
| Don't know/prefer not to say | 5 |
| Household Description | 14 |
| Young single or couple (no children) | 9 |
| Young family (oldest child under 6 years) | 11 |
| Middle family (oldest child 6-15 years) | 21 |
| Mature family (oldest child over 15 years) | 37 |

| Characteristic | Frequency % |
|---|---|
| Mature single or couple | 7 |
| Other (Please Specify) | 2 |
| Don't know/prefer not to say | |
| Origin Aboriginal or Torres Strait Islander | |
| Yes | 2 |
| No | 97 |
| Don't know/prefer not to say | 1 |
| Annual Personal Income | |
| Up to $20,000 | 25 |
| $20,001 to $35,000 | 19 |
| $35,001 to $50,000 | 14 |
| $50,001 to $75,000 | 13 |
| $75,001 to $100,000 | 9 |
| $100,001 to $150,000 | 3 |
| $150,001 to $200,000 | 1 |
| More than $200,000 | 0 |
| | 17 |
| Annual Household Income | |
| Up to $20,000 | 7 |
| $20,001 to $35,000 | 14 |
| $35,001 to $50,000 | 13 |
| $50,001 to $75,000 | 17 |
| $75,001 to $100,000 | 15 |
| $100,001 to $150,000 | 11 |
| $150,001 to $200,000 | 4 |
| More than $200,000 | 2 |
| Don't know/ prefer not to say | 17 |

*Key demographic questions: S1-S3, D1-D12.*

*RESEARCH FINDINGS*

## 3.1 NOTES ON STATISTICAL TESTING AND REPORTING

Note that throughout this report, results are reported as statistically significant if differences are found to be significant at an alpha rate of 0.05. Statistical differences are indicated by "**", and refer to a difference from the overall mean (unless indicated otherwise).

Note also that any consistent differences found by demographics are also reported where appropriate.

## 3.2 BASELINE BEHAVIOUR AND ATTITUDES TOWARDS EXISTING NUTRITIONAL INFORMATION

Three questions were used to establish 'baseline' levels of use and perceptions of nutritional information on food packs. These questions were asked before presentation of any labels (and indeed, before any detailed mention of what the rest of the survey were about). The mean rating scores for these questions were then compared to ratings later in the survey (i.e. in response to various label elements and complete labels). The questions examined:

* The extent to which consumers look at existing nutritional information on food packs

* The influence of existing nutritional information on food purchases

* Whether the amount and type of information is too little, too much, or just right

The baseline results are shown below (note that although these questions are useful in understanding existing attitudes/behaviour towards nutritional information on food packs, they are most useful in later sections when evaluating the change in potential attitudes and behaviours relating to the proposed FoPLs, or components of the labels). The chart below shows mean scores for the frequency with which consumers look at existing nutritional information on food packaging and also their claimed level of influence of existing nutritional information on their food purchase choices (both means.

*Chart 1. Baseline Levels of Frequency of Use and Influence of Nutritional Information*
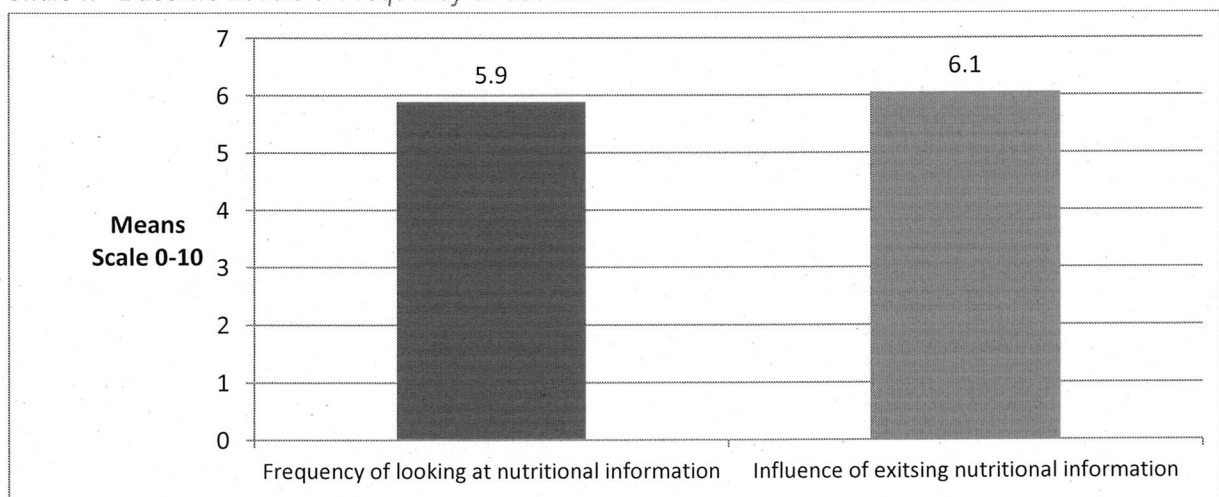


C1. How often do you look at the nutritional information on food packaging? (0=Never, 10=Every time I buy a food)
C2. To what extent does the current nutritional information on food packaging influence your food purchase choices? (0=It has no influence, 10=It has a very strong influence)

As can be seen in Chart 1 above, mean scores on both questions (around 6 out of 10) suggest a medium level of reliance on existing nutritional information.

Chart 2 (below) also shows the extent to which consumers feel that there is too little, too much, or just the right amount of nutritional information on existing food packaging. Note that in the scale used for this question, the "ideal" rating is "5", representing "just the right" amount of information.

Chart 2. *Baseline Level of Extent to Which Nutritional Information Available on Food Packs is Appropriate for Consumer Needs*
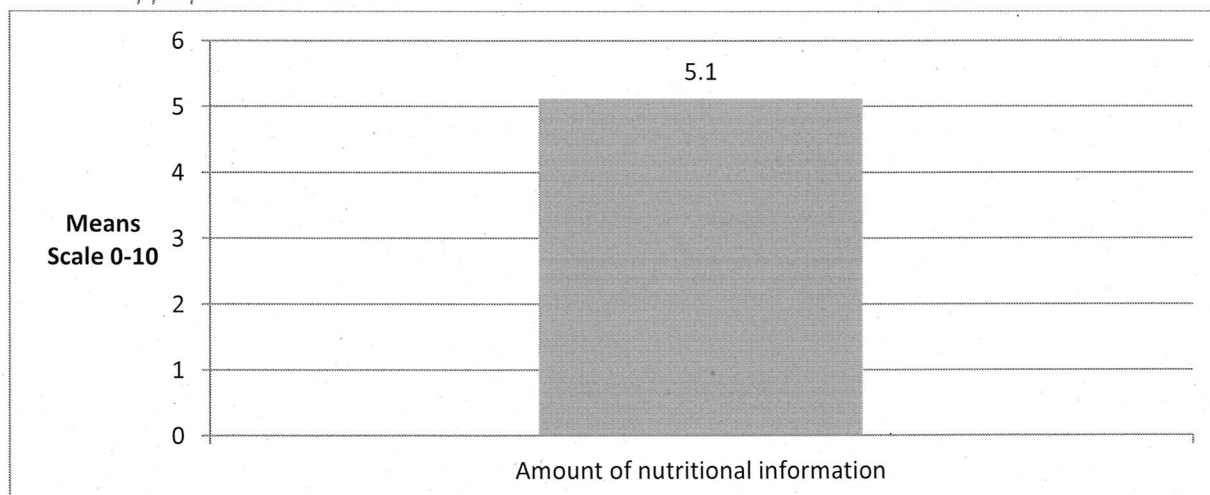


C4. *Please indicate whether the amount of nutritional information currently found on food packaging is too much, not enough, or just right for your needs? (0=A lot less than I need, 5=just right for my needs, 10=A lot more than I need).*

Average ratings were just over 5, suggesting that consumers currently feel that they have close to the "right" amount of information for their needs (if anything, slightly more than they need). Note however, that this result needs to be interpreted with caution – we often find that consumers "don't know what they don't know", and often re-evaluate the extent to which their needs are met when presented with new concepts, information, products or services which can enhance their daily lives (this is, in fact, something that we find in this research – as can be seen in subsequent sections where we examine the potential impact of proposed FoPL on consumer purchase choices).

## 3.3  OPTIMISING STAR RATING DESIGNS

The first key element of the FoPL system that was tested is the Star Rating. Respondents were presented with an image and given a brief explanation of the rating system (where it would be found and how it would be interpreted).

Respondents were then asked to provide rating of how often they would look at the label and the extent to which the label would influence their food purchase choices if the star rating system was present on the front of all food packs.

The results are shown in Chart 3 (below), where mean scores provided on both measures for the star ratings are compared to baseline mean scores (i.e. pre-exposure to FoPL components).

*Chart 3.    Health Star Rating Frequency and Influence.*
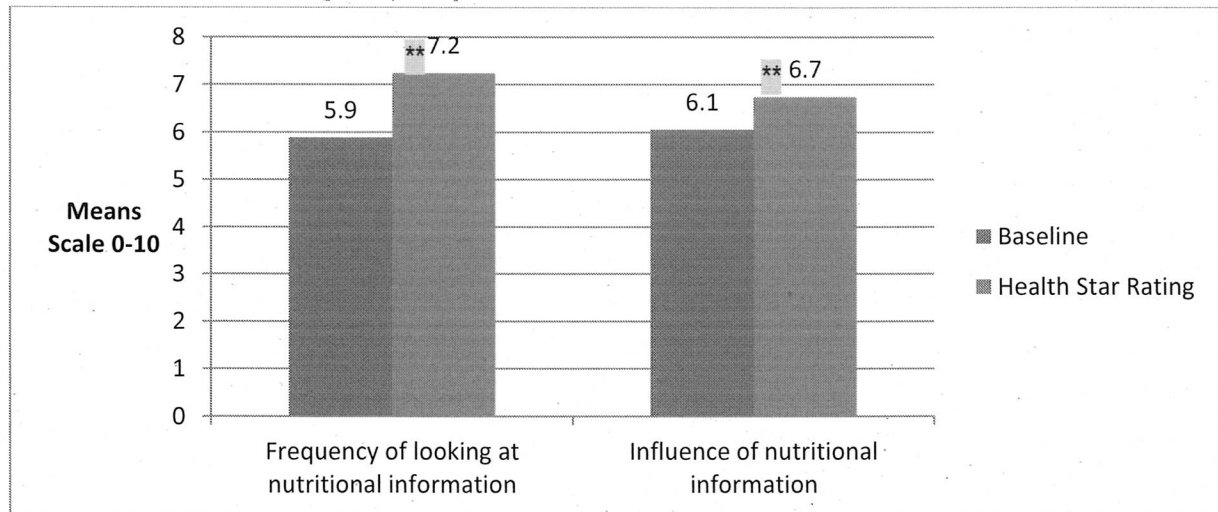


C1. How often do you look at the nutritional information on food packaging? (0=Never, 10=Every time I buy a food)
C2. To what extent does the current nutritional information on food packaging influence your food purchase choices? (0=It has no influence, 10=It has a very strong influence)
ST2a. Imagine that all packaged food items that you buy have a nutritional "star rating" label such as the one shown above on the front of the pack. How often would you look at the label when purchasing food? (0=Never, 10=Every time I buy a food)
ST2b If it were present on food packaging, to what extent would a star rating label such as the one above influence your food purchase choices? (0=It has no influence, 10=It has a very strong influence)

The results in Chart 3 show a statistically significant increase compared to current baseline levels in both the frequency that consumers expect to check the label, and the extent to which they feel the label will influence their food purchase choices.

Consumers were then shown two designs distinguished by a slider mechanism. Respondents were asked to select the design that they felt was most meaningful to them.

The results shown in Chart 4, below detail that a significantly higher proportion of the sample felt that the 'stars with slider' variant was most meaningful.

*Chart 4.    Comparison of Original Star design to Stars with a Slider Mechanism*
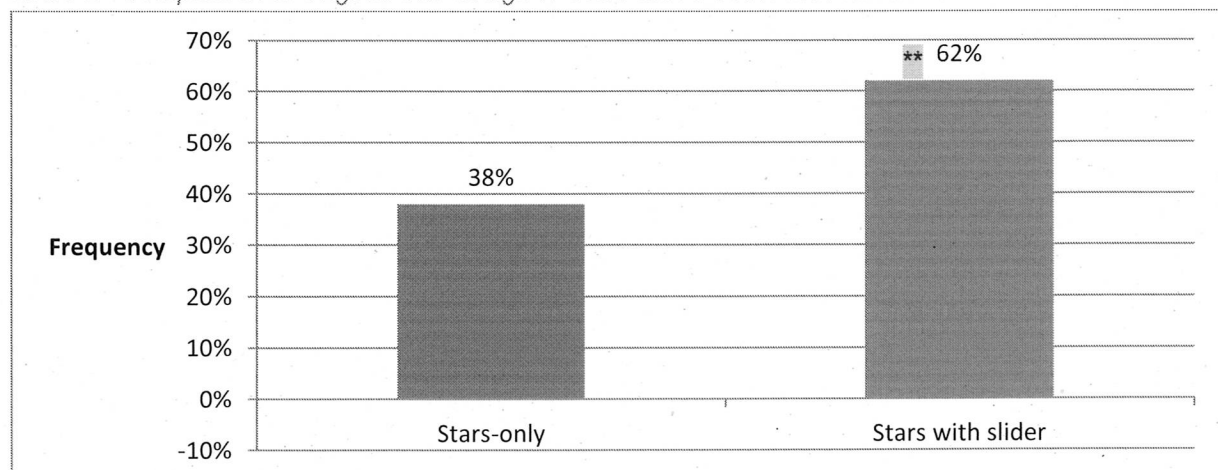


ST3a. Which of the two designs is more meaningful to you?