

A CHALLENGE TO NUTRITION COMMUNICATORS: SOME MISMATCH BETWEEN FOOD LABEL CLAIMS AND HEART HEALTH 'ROUND TABLE' MESSAGES

Margaret Ashwell¹, Ursula Arens¹, Sigrid Gibson², Anne de la Hunty¹ and Michele Sadler³

¹Ashwell Associates, Ashwell St, Ashwell, Herts SG7 5PZ

²SigNurture Ltd, Guildford, Surrey GU1 2TF

³Rank Nutrition Ltd, Bethersden, Kent TN26 3DP

The trouble with listing and bullet-pointing information is that it is difficult to wean the reader away from the impression that there is meaning to the order of information, because order usually imparts emphasis and significance.

The latest list that food industry decision-makers and communicators are all checking (for emphasis and significance), is the EU register on nutrition and health claims (7). But to what extent do the EU authorised health claims relating to diet and heart health match the dietary messages that nutrition communicators are giving to the public?

THE 1993 ROUND TABLE MODEL OF DIET AND HEART DISEASE

More than 20 years ago, the British Nutrition Foundation challenged one of the authors (MA) to find a model to communicate the complexities of the many dietary factors known to influence the risk of coronary heart disease. A moment of inspiration led to the 'Round Table' model. We all know that King Arthur placed his knights at a round table so that no one knight could declare superiority over another. So if you want to present many factors, without ranking significance, you place them at a round table.

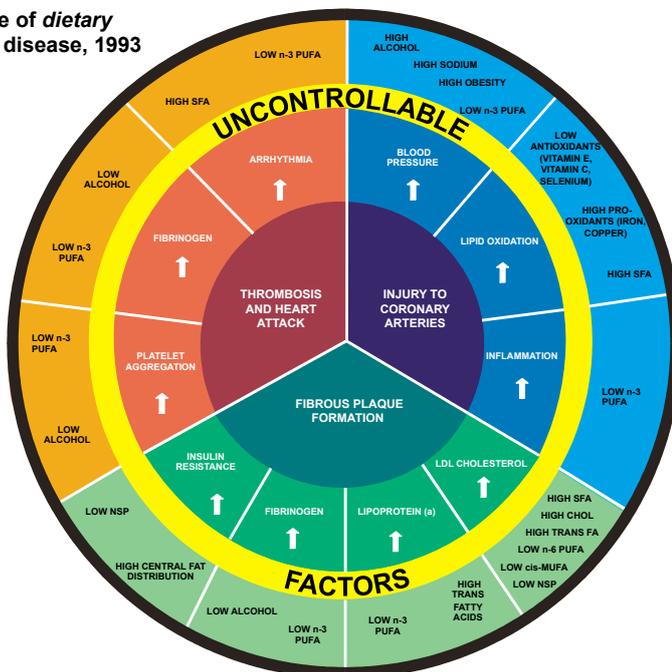
This Round Table model (rather than lists and boxes of information) allowed the inclusion of the

many dietary factors that had beneficial (or adverse) effects on the principal physiological risk factors which impacted upon pathological events. The model also gave clarity to the fact that multi-component parts of the diet influenced different aspects of risk. It was not possible 20 years ago and still remains the case, to provide precise rank orderings of food/nutrient components relating to the risk of coronary heart disease. The positioning of the individual physiological and dietary factors in the Round Table avoided the communication of any time-sequencing or hierarchy and the format of the model allowed for the insertion (or removal) of factors over time (see Figure 1).

When the report was first published (1), the model was welcomed by many health and industry professionals as an 'aide memoire' and as a pragmatic tool in the discussion and communication of this complicated topic. Its popularity led to an extended and updated second edition (2) and, later, three variant models with three alternative 'outer rings' to detail obesity related factors, activity-related factors and pharmacological factors (4).

Figure 1: A Round Table of dietary factors related to heart disease, 1993

Abbreviations
 •SFA saturated fatty acids;
 •MUFA monounsaturated fatty acids;
 •Chol Cholesterol;
 •PUFA polyunsaturated fatty acids;
 •NSP, non-starch polysaccharides



THE 2013 ROUND TABLE MODEL OF DIET AND HEART HEALTH

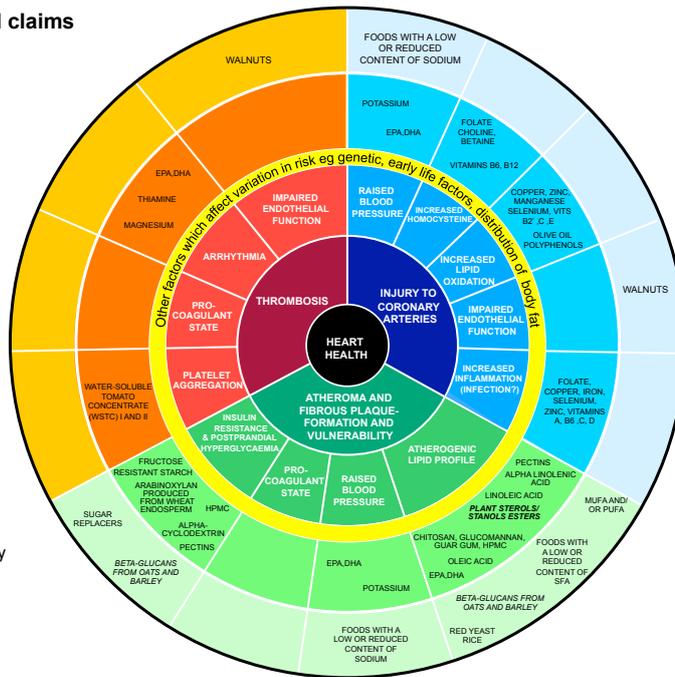
We have taken the opportunity to update the Round Table model of diet related factors, making its name more positive in doing so (see Figure 2). So what are the differences in the factors portrayed in the original Round Table model, published in 1993, compared with the updated version?

The pathological events remain broadly the same (injury to coronary arteries, atheroma and fibrous plaque formation and vulnerability, and thrombosis). Among the physiological risk factors, additions include increased plasma homocysteine, impaired endothelial function and procoagulant state. Of particular note is the fact that factors such as LDL cholesterol and lipoprotein(a)

Figure 3: EU authorised claims related to heart health

Key
 •EU article 13.1 or 13.5 claims in regular case
 •EU Article 14.1 claims in italics

Abbreviations
 •SFA saturated fatty acids;
 •MUFA monounsaturated fatty acids;
 •PUFA polyunsaturated fatty acids;
 •HPMC Hydroxypropyl methylcellulose



on the WHO report, also includes factors with adverse effects.

At the core of the model, the pathological events form three anchor points for discussion of dietary risk factors of heart disease. In contrast to Figure 2, which is based on WHO advice, nearly all of the EU authorised claims in Figure 3 relate to the pathologies of injury to coronary arteries and atheroma and fibrous plaque formation and vulnerability; there are fewer claims that relate to reducing the risks of thrombosis. Thus Figure 3 gives a more restricted impression of the dietary factors which affect heart health than that given in Figure 2.

Similarities

Of the claims relating to the maintenance of normal cholesterol levels (included in the atherogenic lipid profile), there are three common nutrient/diet factors cited in both the WHO Model (Figure 2)

and the EU Claims Register (Figure 3). These are linoleic acid (n-6 PUFA), alpha linolenic acid and plant sterols/stanols. Another health benefit, the reduction of elevated homocysteine, is associated with folate in both information sources.

Omissions

Perhaps the most surprising omissions in the food ring of Figure 3 are wholegrain cereals and fruit and vegetables. Submissions were made, but these claims were rejected on the grounds that these food groups were not sufficiently characterised. Further, EFSA requires evidence of cause and effect and did not accept epidemiological evidence alone as sufficient to substantiate a health claim. Further, the EU Claims Register does not permit any health claims for some food components that are mainstays of many functional foods, such as soy protein. Submissions were made, but the claims were not authorised.

Additions

Beta glucans from oats and barley and sugar replacers were not included in the WHO report, but are included in the EU register. Perhaps the research evidence has become more convincing since 2003?

Unfamiliar food components and foods

Some of the items with authorised EU health claims are for food ingredients that will not be familiar to consumers, and that can be consumed only as components of specifically formulated functional foods or as food supplements (for example betaine, choline, chitosan and pectins). These items will come as a surprise to most nutrition communicators too, as will the inclusion of foods/food supplements such as walnuts, red yeast rice (a traditional Chinese food fermented with *Monascus purpureus* which contains the active ingredient monacolin K) and water soluble tomato concentrate.

official alteration of a risk factor for the disease in question.

EFSA has defined a risk factor as an independent predictor of disease risk supported by a biologically plausible mechanism (6). Very few risk factors are supported by sufficiently strong evidence for this purpose - raised blood LDL cholesterol is one such factor. However, low blood HDL-cholesterol, elevated blood concentration of triglycerides and elevated blood homocysteine concentration, for example, though associated with an increased risk of CHD, have not been generally shown to reduce the risk of CHD with modification. To be awarded disease risk reduction claims, such risk factors would need to be supported by human studies validating their association with the risk of CHD in the context of the particular nutritional intervention that is the subject of the claim. Hence EFSA's determination of physiological risk factors is particularly strict.

Though we have retained the 'physiological risk factor' ring, many of the items presented in the ring devoted to physiological risk factors in Figure 3 (such as increased homocysteine) do not have sufficiently strong evidence to be considered as independent risk factors by EFSA and thus represent beneficial physiological effects as distinct from risk factors. Therefore Article 14.1a claims have been distinguished from Article 13.1 and 13.5 claims in Figure 3.

WHAT IS THE MATCH BETWEEN GENERAL PRUDENT DIET RECOMMENDATIONS AND EU AUTHORISED CLAIMS DEMONSTRATED BY THE ROUND TABLE MODEL OF HEART HEALTH?

Differences

A basic difference, arising from the way the evidence was collected, is that all the EU authorised claims are for components and foods with beneficial effects on heart health, while Figure 2, based

CONCLUSIONS

Our comparison of the dietary components which are included in the WHO Round Table Model of Heart Health (Figure 2) and those which have EU authorised health claims (Figure 3) has shown many differences because of the different approaches used to generate them. Although consumers might not be aware that claims for wholegrain cereals and fruit and vegetables were not authorised, the lack of such claims is likely to result in more specific claims based on their nutrient content rather than potential health benefits of the foods in their entirety.

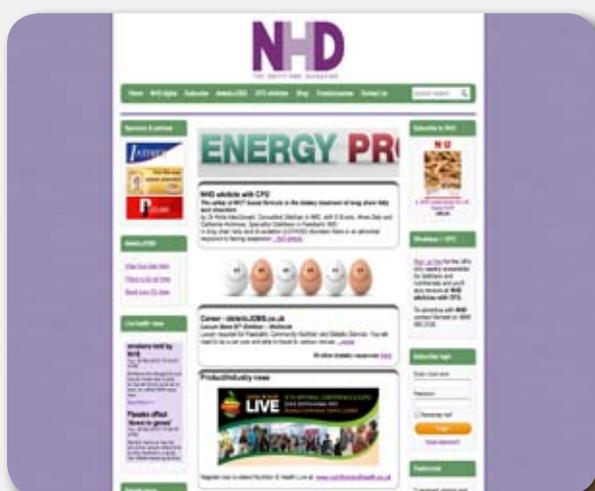
Health professionals will have to communicate the key messages on the links between diet and

heart health at the same time that consumers will be receiving the specific and sometimes diverse messages on their food and drink products. So, has the whole claims approval process led to useful diet/health messages from the consumers' perspective? Will it help with achieving beneficial dietary changes? This mismatch between general prudent diet recommendations and authorised claims will generate new demands on health professionals. We hope that our latest Round Table models in Figures 2 and 3, which highlight the differences, will be helpful as an 'aide memoire' to those who need to know about the relationship between food and food components and heart health, including nutrition communicators and food industry personnel.

References

- 1 Ashwell M, Ed (1993). Diet and Heart Disease; A Round Table of factors. London, British Nutrition Foundation
- 2 Ashwell M, Ed (1997). Diet and Heart Disease: a Round Table of Factors. London, Chapman & Hall
- 3 Ashwell M (2011). Shape: the waist-to-height ratio is a good, simple screening tool for cardiometabolic risk. *Nutrition Today* 46(2): 85-89
- 4 Ashwell M, Hardman A and Oliver M (2000). Cardiovascular disease risk: a round table approach. how do factors related to diet, obesity, activity and drugs contribute to a combined strategy for prevention? *Proc Nutr Soc* 59(3): 415-6
- 5 British Nutrition Foundation (2013). Nutrition and Development: Short and Long Term Consequences for Health, Wiley-Blackwell
- 6 EFSA (2011). General guidance for stakeholders on the evaluation of Article 13.1, 13.5 and 14 health claims. *EFSA Journal* 9(4): 2,135
- 7 European Union (2011). EU register on nutrition and health claims. www.ec.europa.eu/nuhclaims
- 8 European Union (2007). Corrigendum to Regulation (EC) 1924/2006 on Nutrition and Health Claims made on Foods. Official Journal of the European Union, 18th January 2007, L12/3
- 9 Sadler MJ (Editor) (in press). Foods, nutrients and food ingredients with authorised EU health claims. Cambridge, UK, Woodhead Publishing Ltd
- 10 Thanassoulis G and Vasan R (2010). Genetic Cardiovascular Risk Prediction: Will We Get There? *Circulation* 122(22): 2,323-233
- 11 WHO/FAO Expert Consultation (2003). Diet, nutrition and the prevention of chronic diseases. Geneva, World Health Organisation

NHDmag.com Your essential resource



Discover new features and dietetic resources with an easy-to-navigate layout