



W1109 Consultation about beta-glucan and blood cholesterol health claims

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The Dietitians Association of Australia (DAA) is the national association of the dietetic profession with over 6000 members, and branches in each state and territory. DAA is a leader in nutrition and advocates for food and nutrition for healthier people and healthier nations. DAA appreciates the opportunity to provide feedback on W1109 Consultation about beta-glucan and blood cholesterol health claims by FSANZ.

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DAA interest in this consultation

DAA is the peak professional body for dietitians in Australia and responsible for the Accredited Practising Dietitian (APD) program as the basis for self-regulation of the profession.

DAA advocates for a safe and nutritious food supply in which the community has confidence and which meets the nutritional needs of all Australians, including groups with special needs.

As experts in nutrition, APDs assist the general population and groups with special dietary needs to meet their nutritional needs. APDs also assist with the translation of food labels and nutrition content claims.

Recommendations

DAA wishes to make this submission in relation to W1109 – Consultation regarding β -glucan and blood cholesterol health claims.

DAA recommends that

- Any claim relating to β -glucan and blood cholesterol (GLHC or HLHC) should consider the viscosity of the β -glucan (a function of molecular weight and solubility) as the key determinant of allowing a claim for functionality. This includes foods from barley, where high viscosity would confer positive functional effects.
- The literature identifies papers where oats and oat bran are used to deliver the β -glucan. Therefore, oats and oat bran should not need to determine viscosity to allow a claim – as they will have a higher viscosity. However, there is no risk if the β -glucan claim should remain for other products, if they can show a high viscosity, even in an extracted form, as they will confer a cholesterol lowering benefit.
- FSANZ should consider any confusion created by altering the claim from ' β -glucan', however including oats/oat bran is unlikely to be negative (even if β -glucan remains an option) as the use of the food versions are consistent with the Australian Dietary Guidelines use of encouraging foods, rather than nutrients alone.

Discussion

DAA wishes to raise a number of issues relevant to Questions 1 and 2 outlined below. Specifically

- a) As described in the FSANZ consultation paper, DAA also recognises the potentially reductionist approach of ascribing the changes in physiological

measures of cholesterol to β -glucan; when clearly, experiments have been performed using consumption of oats, oat bran and barley whole foods (or added as additional ingredients in whole foods) rather than consumption of the isolated substance.

- b) The effects of (1,3) (1,4) β -glucan in relation to cholesterol lowering are substantiated for high molecular weight (MW) β -glucan where viscosity, implicated in the mechanism of action, is a function of molecular weight and solubility.

High quality studies exist demonstrating that the cholesterol lowering function of β -glucan is significantly reduced where either MW or solubility are decreased. The cut off for MW may be around 250kDa¹ as substantiated for oats and oat products. The slightly lesser (although still positive) effects shown with some barley β -glucans may be due to the ratio of 1,3 and 1,4 linkages affecting solubility².

- c) Any product which cannot show high MW or solubility of β -glucan is highly unlikely to show any effects in cholesterol lowering and this should be the defining feature allowing the GLHC or HLHC. Commonly, extracted β -glucan is less likely to be able to demonstrate high viscosity (as MW will be decreased such as that found in studies on oat-based liquids³). We recommend that whole grain oats/products should not be required to demonstrate MW and therefore by default have an overarching claim. However, demonstrating MW would be necessary for highly processed or mixed foods.
- d) Although the effects of barley and its functional β -glucan have been investigated in fewer studies, there are no negative results and the totality of evidence is positive towards barley β -glucan and cholesterol lowering. DAA makes no comment on the volume of evidence used by FSANZ to ensure substantiation of claims however removal of barley may create confusion in the public. DAA recommends that barley should not be removed from the claim as the sum of the evidence does not dispute that it is valuable in lowering cholesterol, assuming that a high MW and appropriate solubility are maintained. Barley is also highlighted as one of the grains to consume more of in the Australian Dietary Guidelines.

1. What do you consider to be the best approach for managing this food-health relationship in the Code, given the outcomes of the systematic review for the food-health relationship for a HLHC about β -glucan (see Section 7.1)? Please give reasons for your response.

DAA understand that the scientific dossiers for each GLHC and HLHC will need updating from time to time as new evidence comes to light. However, we are concerned that the constant changing of claims has the potential to reduce trust and credibility of GLHCs and HLHCs overall as a result.

Some products currently making β -glucan GLHC/HLHCs may no longer be able to make these claims. This may be particularly relevant for mixed foods with various amounts of oats/oat bran as an ingredient. If the common wisdom around oats/barley/ β -glucan and cholesterol lowering has already been affected, then removing β -glucan claims from products may indeed cause consumer confusion. For example, if the products may still contain β -glucan from oats with physicochemical properties, and in sufficient quantities likely to lead to physiological effect.

This is an important consideration for any future updates of any other GLHC/HLHC currently approved in Standard 1.2.7. DAA considers that the claim around β -glucan need not be removed, however the wording of oats and oat bran should be allowed. The proviso of a minimum of 1g β -glucan content would still prove a prudent minimum “dose” or oats/oat bran serves containing this amount of β -glucan.

2. What do you consider to be the impacts of amending the Code for consumer understanding of β -glucan, oats and barley and blood cholesterol?

Given currently the claims for β -glucan have been made primarily on oat products any change to a claim is unlikely to make a difference to consumer understanding of the role oats plays in cholesterol lowering. However, removing such a claim from barley products may cause confusion and those who understand the role of β -glucan and that barley provides β -glucan.

Undertaking consumer market research to determine consumer opinion and developing an education campaign may assist.

3. Do you consider that such amendments to the Code would be consistent with dietary guidelines and other relevant public health messages? Why/why not?

Although it is likely that β -glucan is the primary component of oats and barley responsible for cholesterol lowering, encouraging consumption of grain foods, especially whole grains such as oats and barley is consistent with current guidelines and relevant public health messages.

Guideline 2 of The Australian Dietary Guidelines encourages consumption of whole grain foods, with oats and barely specifically mentioned. While the guidelines do not recommend specific ingredients/nutrients, such as β -glucan, the background report does provide the following B grade evidence statement:

“Consumption of cereal foods (especially wholegrains and those with fibre from oats or barley) is associated with a reduced risk of cardiovascular disease in adults”

Thus, foods with a high fibre content could continue to make content claims related to dietary fibre, which may further encourage consumption of these valuable foods.

4. What do you consider to be the impacts on the food industry of such an amendment?

Given the current limited use of the claim, impacts on industry will be limited at the present time. However, manufacturers and suppliers of β -glucan supplements and oat/barley products using the relevant GLHC/HLHC will have impacts related to packaging.

References

1. Wolever TMS, Tosh SM, Gibbs AL, *et al.* Physicochemical properties of oat β -glucan influence its ability to reduce serum LDL cholesterol in humans: A randomized clinical trial. *Am J Clin Nutr* 2010; 92(4):723–732.
2. Ibrugger S, Kristensen M, Poulsen MW, *et al.* Extracted oat and barley β -glucans do not affect cholesterol metabolism in young healthy adults. *J Nutr*; 2013: 143, 1579-85.
3. Cugnet-Anceau C, Nazare JA, Biorklund M, *et al.* A controlled study of consumption of β -glucan enriched soups for 2 months by type 2 diabetic free-living subjects. *Br J Nutr*; 2010: 103(3):422-8.