

## Original Article

# The relevance of the Heart Foundation of Australia's dietary recommendations for adult Australians: a comparison of views of general practitioners, cardiologists and dietitians

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**Purpose:** To compare the views of general practitioners, cardiologists and dietitians about the relevance of the Heart Foundation of Australia's dietary recommendations for adult cardiac patients. **Basic procedures:** Quantitative-cross sectional study. Postal questionnaires were self-completed by 248 Victorian general practitioners (30% response), 189 Australia-wide cardiologists (47% response) and 180 Victorian dietitians (45% response). Responses were represented as percentages and analyses of variance were conducted to explore the impact of the independent variables: age, work status and gender on the dependent variable: dietary recommendation. **Main findings:** Approximately half of the recommendations were viewed as strongly important to implement; these related to lean meats, limiting takeaways and cakes/biscuits, and adjusting energy intake. Others of importance were eating fruits, vegetables and fish. However, most of these goals were seen as difficult to achieve. Dietitians appeared to share responses of doctors, except for greater importance of eating fruit and vegetables and a greater difficulty in limiting cakes and biscuits. There was a high level of agreement among the three groups (mean 87%) about patients having difficulty implementing adjusting energy intake. **Conclusions:** There is agreement amongst these professionals that many of the recommendations lack importance, specifically those pertaining to unsaturated oils, low fat dairy products, cholesterol rich foods, intake of legumes and grains and the restriction of salt. This may reflect a need for further nutrition education.

**Key Words:** General practitioners, Cardiologists, Dietitians, Food based dietary recommendations, Food selection recommendations

## INTRODUCTION

Cardiovascular disease is one of the most important public health challenges for the 21st century.<sup>1</sup> In developed countries, cardiovascular disease (CVD) predominantly affects middle-aged and older individuals.<sup>2</sup> However, evidence supporting the positive influence of good nutrition and healthy lifestyle on the reduction of chronic disease risk and ageing is strong.<sup>3,4</sup>

Dietary modelling by the Heart Foundation of Australia has produced a set of dietary recommendations for healthy eating which aims to preserve cardiovascular health.<sup>5</sup> These are summarised in Table 1. Based on this modelling, the recommendations include regular consumption of cereals, fruits, vegetables, legumes, nuts, margarine spreads and a combination of oils from different sources. In addition, lean meat, skinless chicken and a regular intake of fish are recommended. Take-away foods, snacks and cakes should be limited to once weekly.

General practitioners and dietitians have long been recognised as professions with roles in the promotion of good nutrition.<sup>6,7</sup> Cardiologists have recently identified their role to be one of leadership in the promotion of lifestyle changes.<sup>8</sup> Since 1997, the Australian cardiology service pattern has changed from single patient visits, to two thirds being repeat visits.<sup>9</sup> This finding may indicate

increased demand for on-going specialist monitoring from survivors of heart attacks or an increased awareness of the symptoms of cardiovascular disease amongst the population. This increase in demand for consultation services and longer periods of communication may indicate an opportunity for dietary counselling.

Much has been written about low implementation rates of clinical practice recommendations and in particular, those relating to doctors.<sup>10-13</sup> For example, adherence to the Dutch College of General Practice cholesterol recommendations in primary practice has been reported as low, mainly due to the complexity of the guideline and its interruption to the workflow process of general practice.<sup>13</sup> One European investigation reported lack of consistency in recommendations, lack of awareness, lack of agreement, difficulty in changing patients' lifestyles, time constraints and poor outcome-expectancy as major barriers to endorsing many clinical practice recommendations.<sup>14</sup> A systematic review of clinicians' attitudes to clinical

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practice recommendations indicated that clinicians believe that recommendations are helpful sources of advice and good educational tools, but they considered them impractical, too rigid to apply to individual patients, believing they reduced physician autonomy and oversimplified medicine.<sup>15</sup> Little is known about Australian general practitioners', cardiologists' or dietitians' support for national dietary recommendations. In a review of nutritional recommendations for diabetes management, Mann reported inconsistencies across the recommendations and suggested that this contributed to confusion about the scientific evidence for dietary change.<sup>16</sup>

In this study, we examined Australian general practitioners' (GPs) cardiologists' and dietitians' views about the relevance of The Heart Foundation's Healthy Eating Recommendations for adult Australians. We choose to explore the views of these three professional groups because of their day to day involvement in the medical treatment of patients with cardiovascular disease. The three professional groups were asked about perceived importance of the guidelines to clinical practice and how difficult or easy it might be for adult patients to implement the recommendations.

## MATERIALS AND METHODS

This study is a component of a larger study investigating GPs', cardiologists' and dietitians' dietary management practices; and is a quantitative-cross sectional survey which investigated their views about the relevance of the Heart Foundation of Australia's dietary recommendations for adult patients.

The sampling frame for the three professional groups differed. For GPs, a list was created which included all GPs on the Australian Medical Association's OnLine Doctor Search website. A random sample was generated from this list. For cardiologists, a database was provided from the Cardiac Society of Australia and New Zealand. It included those members who permitted their names and

addresses to be circulated for the purpose of research.

The Victorian branch of the dietitians' Association of Australia (DAA) circulated the postal survey to all financial members. Due to cost constraints, at the time of surveying, only Victorian dietitians and GPs were invited to participate. All GPs, cardiologists and dietitians who worked at least eight hours weekly and consulted to adult patients with cardiovascular disease were invited to participate. Ethics approval was granted for this study by the Deakin University Human Research Committee, and conformed with the Declaration of Helsinki (2000).

### *Questionnaire development*

Analysis of narratives from semi-structured interviews with 30 GPs and the Heart Foundation of Australia's Healthy Eating recommendations (Table 1) formed the basis of three questionnaires which were developed to collect quantitative information from GPs, cardiologists and dietitians.

Each of the questionnaires consisted of 19 questions and 159 items. One key section contained questions about the importance of the Heart Foundation of Australia's recommendations (Table 1). Others questions asked about the degree of ease or difficulty with which patients would be able to implement them. Responses for each item were given on a 5-point scale: 'not important' (1) to 'very important' (4), with a fifth neutral or uncertain option. The questionnaires were pre-tested by ten GPs, two cardiologists and three dietitians.

### *Survey administration*

The administration of the GPs' and cardiologists' postal surveys followed the design protocol outlined by Dillman.<sup>17</sup> For the dietitians' study, the DAA emailed an introductory letter to all Victorian financial members, then posted the survey to every financial member, and finally emailed one reminder letter to all potential participants.

**Table 1.** The Heart Foundation's Healthy Eating Recommendations: Med J Aust 2001; 175:57-85

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- Use **spreads** instead of butter or dairy blends.
  - \*Use **plant sterol** esters as margarine.
  - Use a variety of **oils** for cooking, such as canola, sunflower, soybean and olive oils.
  - Use **salad dressings and mayonnaise** made from oils such as canola, sunflower, soybean and olive oils.
  - Choose **low or reduced fat** milk and yoghurt or calcium-fortified soy beverage.
  - Restrict **cheese and ice-cream** intake to twice a week.
  - Have **fish** (fresh or canned) at least twice a week.
  - Select **lean meat** (trimmed of fat) and chicken (without skin) and limit fatty meats including sausages and delicatessen meats such as salami.
  - Limit **cholesterol-rich foods** such as egg yolks and offal.
  - Incorporate **legumes** into two meals a week.
  - Base meals around **vegetables**.
  - Base meals around **grain-based foods** such as bread, pasta, noodles and rice.
  - Limit **take-away foods** such as pastries, pies, pizza, hamburgers and creamy pasta dishes to once a week.
  - **Limit cakes**, pastries and chocolate or creamy biscuits to once a week.
  - Have 2 serves of **fruit** a day.
  - ▶ Adjust **energy intake** to reduce, maintain/prevent weight gain.
  - ▶ For hypertensive patients, avoid adding **salt** to cooking or at the table.
  - ▶ Items were identified in stage I interviews and added to the questionnaire.
- The data for two recommendations (snack on plain, unsalted nuts and fruit, and limit snack foods such as potato and corn chips to once a week) were unclear; therefore, they were not included in the analysis.

### Measures

Responses were represented as percentages and analyses of variance were conducted to explore the impact of the independent variables: age, work status and gender; on the dependent variable: dietary recommendations; using SPSS version 14.

Scaled items in the three questionnaires were found internally reliable (Cronbach's  $\alpha = 0.83-0.90$ ).<sup>18</sup> Response categories were recoded in the analysis: 'important' as the sum of 'important' and 'very important'; 'difficulty' as the sum of 'difficult' and 'very difficult' for each item. Due to small numbers of male dietitians and female cardiologists, comparisons were not made for gender.

## RESULTS

### Response rates and sample characteristics

Two hundred and forty eight Victorian GPs (30%), 189 Australian cardiologists (47%) and 180 Victorian dietitians (45%) completed the survey questionnaires. The return rate was congruent with other Australian surveys of doctors and dietitians.<sup>19, 20</sup>

Table 2 summarises the characteristics of participants. General practitioners were mostly male, aged 41 years and older, worked more than 35 hours a week, and gained their nutrition education largely through reading journals and books. Cardiologists were mostly male, aged more than 41 years, and gained their nutrition education through reading journals and books. The dietitians were 40 years or younger, most were female and half worked more than 35 hours a week.

### Importance of- and difficulty in implementing the Heart Foundation of Australia's recommendations

Importance of and difficulty in implement are shown in Table 3. The results were grouped by strong agreement for importance (Table 3a) and weak agreement for importance (Table 3b).

#### Strong agreement. (Table 3a)

Eight of the 15 recommendations were viewed as strongly important to implement by the three professional groups;

these related to lean meats, limiting takeaways, cakes and biscuits, eating fruits, vegetables, fish, and low-fat dairy foods. However, most of these goals were seen as difficult to achieve. Where there was strong agreement about the importance of items across the groups, dietitians' views differed from doctors on four out of nine recommendations. These items showed a significantly higher importance rating than given by both groups of doctors. For example, the recommendation selection of lean meat (trimmed of fat) and chicken (without skin) and limit fatty meats including sausages and delicatessen meats such as salami (dietitians=88%, GPs=80%, cardiologists=61%), base meals around vegetables (dietitians=86%, GPs=68%, cardiologists=50%), have 2 serves of fruit a day (dietitians=88%, GPs=75%, cardiologists=60%) and choose low or reduced fat milk and yoghurt or calcium-fortified soy beverage (dietitians=64%, GPs=57%, cardiologists=38%).

#### Weak agreement. Table 3b

Seven of the recommendations were not viewed as important by at least 50% of the three practitioner groups. Table 3b shows the items which had overall weak agreement on importance. There was greater variation in response, as between-group responses were significantly different for six of the nine items. Limiting cholesterol rich foods and using margarine-based spreads and grain-based foods, including legumes and avoiding cheese/ice-cream; was seen as difficult to achieve by all groups. For hypertensive patients to avoid adding salt while cooking or at the table was viewed as weakly important (mean=40.0%) but difficult (dietitians=79%, GPs=61%, cardiologists=58%) to implement. The three groups of professionals agreed that the use of plant sterol products was of little importance (mean=8%) and difficult for patients to implement (mean=47%). There was no significant difference in overall results given by older and younger categories of practitioners or male and female GPs.

**Table 2.** Demographic characteristics of participating general practitioners, cardiologists and dietitians

Characteristic	GPs (%)	Cardiologists (%)	Dietitians (%)
Age			
≤ 40 years	10.8	33.0	63.2
≥ 41 years	89.2	67.0	36.8
Total (n)	248	189	180
Gender			
Male	66.1	88.3	5.6
Work status (hours per week)			
< 35	35.5	16.9	45.0
≥ 35	64.5	83.0	55.0
Nutrition education			
Nutrition lectures during medical education	23.4	24.2	NA
Attended nutrition courses conducted by your professional association	3.6	0.5	NA
Completed certificate course in nutrition	4.0	0.5	NA
Result of reading books, journals etc.	59.7	58.9	NA
Result of attending weight loss clinics	4.4	2.6	NA

Groups are not mutually exclusive, some respondents responded to more than one education item.

GPs = vocationally registered family physicians.

NA = not applicable.

**Table 3.** General practitioners', cardiologists' and dietitians' agreement on the Heart Foundation of Australia's Healthy Eating Recommendations†

Shortened recommendation	Healthy Eating Recommendations (Response %) <sup>§</sup>							
	Recommendation is important to implement				Recommendation is difficult to implement			
	GPs	Cardiologists	Dietitians	<i>p</i> value	GPs	Cardiologists	Dietitians	<i>p</i> value
<b>a). STRONG AGREEMENT ON IMPORTANCE ‡</b>								
Limit take-away foods	81.9	70.0	82.1	0.008ns	<b>54.1</b>	<b>54.8</b>	<b>54.4</b>	0.98ns
Limit cakes, biscuits	73.0	62.4	67.2	0.06ns	<b>60.5</b>	<b>61.0</b>	<b>82.1</b>	<0.001*
Select lean meat & poultry	79.7	61.1	88.3	0.001*	45.9	45.8	47.2	0.85ns
Limit fatty meats	64.5	47.4	60.0	0.002ns	41.1	40.0	46.1	0.60ns
Have fish	71.4	65.8	62.2	0.13ns	<b>55.2</b>	<b>50.5</b>	<b>62.2</b>	0.06ns
Have vegetables	67.7	50.3	85.6	0.001*	<b>62.0</b>	<b>60.2</b>	<b>70.2</b>	0.14ns
Have fruit	75.0	59.8	87.8	0.001*	44.8	35.1	33.7	0.25ns
Choose low fat dairy	57.3	37.6	64.4	0.001*	20.1	20.9	37.4	0.001*
▶ Adjust energy intake	74.9	73.0	75.0	0.90ns	<b>87.1</b>	<b>85.8</b>	<b>87.7</b>	0.84ns
<b>b). WEAK AGREEMENT ON IMPORTANCE ‡</b>								
Limit cholesterol rich foods	38.7	26.5	11.1	0.001*	31.4	32.7	21.1	0.02ns
Have grain-based foods	51.6	31.6	38.9	0.001*	34.6	31.0	48.3	0.002ns
Incorporate legumes	38.7	23.3	40.6	0.001*	<b>68.5</b>	<b>63.2</b>	<b>44.7</b>	0.001*
Restrict cheese and ice-cream	45.6	32.1	25.6	0.001*	<b>56.9</b>	<b>51.1</b>	<b>68.9</b>	0.001*
Use variety of oils	31.5	34.4	38.9	0.27ns	31.0	20.0	18.2	0.001*
Use margarine spreads	31.5	23.8	44.4	0.001*	21.4	18.9	26.2	0.21ns
Use salad dressings & mayonnaise	27.8	26.5	26.7	0.94ns	30.6	20.0	15.0	0.001*
▶ Use plant sterol products	11.7	10.6	1.70	0.001*	47.2	41.1	54.9	0.03ns
▶ Avoid salt	48.0	40.0	32.2	0.005ns	<b>61.3</b>	<b>58.4</b>	<b>78.9</b>	0.001*

†GPs: n = 249; cardiologists: n = 189; dietitians: n = 180.

‡Importance ranked by 50% mean agreement of three professional categories; **high degree of difficulty results are in bold.**

§Importance = sum of 'important' and 'very important'; difficulty = sum of 'difficult' and 'very difficult'.

\*Significant difference, ns = not significantly different at the *p*=0.01 limit.

▶ Items were identified in stage I interviews and added to the questionnaire.

## DISCUSSION

The results of this study extend those of clinical practice recommendations into the area of dietary recommendations. In this study, the three professional groups strongly supported recommendations pertaining to adjusting energy intake to manage body weight, and to restricting high energy foods (take-away foods, cakes, biscuits etc) to once a week. This view on weight maintenance is consistent with the prevalence of overweight and obesity in Australia and the emphasis placed on weight management by the government and professional organisations.<sup>21-23</sup> It is important to point out that the dietary pattern recommended by the Heart Foundation of Australia has multiple components (recommendations) which are equally important. Therefore, the highest degree of effectiveness can be gained by applying all the components as a menu choice.

There was less support than might be expected for the importance of the remaining recommendations especially that of restricting salt intake for hypertensive patients.

This finding is of concern and has implications for the management of biomarkers. Several well-controlled studies have shown an average reduction in blood pressure of 5-7 mm Hg in patients with hypertension, whose sodium intake was reduced to below 90 mmol/day by a 'no-added-salt' eating pattern.<sup>24,25</sup> Moderate dietary sodium restriction also appear to affect diuretic and angiotensin-converting enzyme inhibitor therapy, allowing the doses of these and other drugs to be minimised.<sup>26</sup> The combination of weight loss and a 'no-added-salt' diet may also help to prevent the development of hypertension in those patients with high-normal blood pressure.<sup>24,26</sup> It may also allow for the discontinuation of drugs in some patients whose hypertension has previously been well controlled by pharmaceuticals.<sup>27</sup>

The barriers to implementation of these recommendations were complex and inter-related. A contributing factor to the low level of support for the recommendations may be a doctors' level of nutrition education. The major source of nutrition education for the GPs and cardiolo-

gists in this study was the reading of journals and books. More could be done, particularly by their professional organisations and practice networks, to inform them about food and nutrition. The Cochrane Reviews (a major source of evidence-based medicine resource), often fail to mention dietary change as a management approach for many nutrition-related conditions, and sometimes offer discouraging comments regarding dietary change.<sup>28</sup>

In order for food-based dietary recommendations to be attainable, it is necessary to take into account the context in which they are to be utilised.<sup>29</sup> Our earlier work identified a range of factors which present barriers to the implementation of the Heart Foundation of Australia's recommendations.<sup>30</sup> These include: the belief that the use of cardiovascular medications such as HMG-CoA reductase inhibitors reduced the need for dietary change, the belief that cardiac patients attend cardiac rehabilitation where they receive dietary counselling, possible financial cost incurred by patients for the recommended foods, the perception that healthier food choices are difficult to cook, and the opinion that the recommendations would be perceived as unacceptable by patients from different cultural backgrounds. Comments offered by these professionals suggested that the patient's English language fluency, their access to affordable fresh food, living environment (alone or caring for an ill partner), and the view that the recommendations are not in line with the latest scientific evidence are also major barriers to the implementation of these recommendations. In our view, though, a belief by professionals that the routine use of lipid-lowering cardiovascular medications might override the need for many of these change recommendations may help explain the perceived lack of importance of the guidelines.

A number of studies have shown that the availability of recommendations does not necessarily lead to the support of these recommendations by doctors or allied health professionals.<sup>31-33</sup> Our findings suggest that the Heart Foundation of Australia should rigorously promote the scientific validity of their recommendations to various professional groups, in order to improve the effectiveness of recommendation implementation. Since the formulation of these recommendations in 2001-02, the scientific evidence for healthy food choices has evolved; especially with respect to cheese, oils, soy, nuts, and oats/grains. Our findings suggest that the Heart Foundation of Australia should review the scientific evidence as it may alter the recommendations provided by the Foundation in the future. Although the recommendations are food based, comments provided by health professionals, suggest that there is an urgent need to address the plethora of nutrient/herbal supplements for alleged cardio protection, since people usually turn to their doctor or dietitian for guidance regarding their use.

Further, the practicality of the recommendations should be reviewed. The Heart Foundation of Australia may need to explore the feasibility of the recommendations for particular patient groups. This includes people with limited English fluency and older Australians, in order to identify ways in which their recommendations can be easily incorporate into existing eating and food preparation patterns.

The present study has several limitations. The response rate for the cross-sectional surveys varied from low to moderate (30%-47%), though it was similar to other Australian nutrition studies.<sup>20</sup> Although the three surveys relied on self-reported data; most studies in this field have used this approach, which has been shown to have predictive validity.<sup>34,35</sup> As the cross-sectional study findings report associations between variables rather than causal relationships, use of the study's results might initiate further discussion about these important relationships, and their cause and impact.

## CONCLUSION

While many of these recommendations were strongly supported, there is agreement amongst these professionals that many lack importance, specifically those pertaining to unsaturated oils, low fat dairy products, cholesterol rich foods, intake of legumes and grains and the restriction of salt. Further research is needed to understand cardiovascular dietary interventions of GPs, cardiologists and dietitians for adult patients.

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## AUTHOR DISCLOSURES

Sylvia Pomeroy and Anthony Worsley, no conflicts of interest.

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## 攸關澳大利亞心臟基金會對成年人之飲食建議：比較醫師、心臟科專家和營養師的觀點

**目的：**比較醫師、心臟科專家和營養師針對澳大利亞心臟基金會制訂的成年心臟患者飲食建議的看法。**方法：**定量的橫斷性研究。郵寄問卷為自填式回答，分別給 248 位維多利亞省的醫師(回應率 30%)、189 位全澳的心臟科專家(回應率 47%)和 180 位維多利亞省的營養師(回應率 45%)填寫。回應率以百分比表示，回收問卷以變異分析自變項的影響，分別為年齡、工作狀況和性別，依變項為飲食建議。**結果：**大約有一半的飲食建議項目被強烈認為重要且需要去實行：分別是關於攝取瘦肉、限制速食及蛋糕/餅乾和調整熱量攝取，另外，攝取蔬菜、水果和魚也是很重要的。但是大部分的建議目標看似難以達成。營養師的看法與醫師大體上相似，除了營養師特別強調水果和蔬菜攝取的重要性且認為限制甜點/餅乾是較困難的。對於調整熱量攝取的困難度，三組之間有相當高的一致看法(平均 87%)。**結論：**不少專業人員都認為有些飲食建議的重要性不大，特別是關於不飽和脂肪、低脂乳製品、富含膽固醇的食物、豆類和穀類攝取及限鈉方面。這些反映出執行繼續營養教育的需求性。

**關鍵字：**執業醫師、心臟科專家、營養師、飲食指標、食物選擇建議