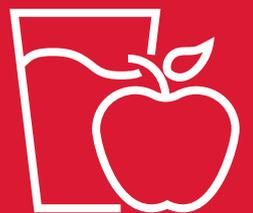


Heart Healthy Eating Patterns



Position Statement

This position statement describes the characteristics of heart healthy eating patterns to improve cardiovascular health and actions required to improve current eating patterns in Australia. Several key Evidence Reviews inform the Heart Foundation's position on heart healthy eating patterns.¹⁻⁶

Heart healthy eating patterns are based on a combination of foods, chosen regularly, over time. This optimal combination is outlined in the Heart Foundation's Heart Healthy Eating Principles which encourage people to eat:

1. Plenty of vegetables, fruits and wholegrains
2. A variety of healthy protein sources especially fish and seafood, legumes (such as beans and lentils), nuts and seeds. Smaller amounts of eggs and lean poultry can also be included in a heart healthy diet. If choosing red meat, make sure the meat is lean and limit to 1-3 times a week.
3. Unflavoured milk, yoghurt and cheese. Those with high blood cholesterol should choose reduced fat varieties
4. Healthy fat choices with nuts, seeds, avocados, olives and their oils for cooking
5. Herbs and spices to flavour foods, instead of adding salt

This style of eating is naturally low in saturated and trans fats, salt and added sugar and rich in unsaturated fats (MUFA, omega-3 PUFA, and omega-6 PUFA), along with wholegrains, fibre, and antioxidants. Eating this way can help improve the heart health of all Australians by reducing CVD risk factors such as high blood pressure and blood lipids and decreasing the risk of CVD events and mortality.

Summary

The combined evidence suggests that improving the entire eating pattern, not simply altering one nutrient or food, is required to promote cardiovascular health.

There are a variety of eating patterns which promote cardiovascular health and reduce cardiovascular risk factors. Irrespective of the differences between these eating patterns (often referred to as 'diets'), the similarities between them suggest that it is the quality of the foods regularly included in the diet, as well as their combination and quantity, that is associated with greater health benefits, rather than the consumption of individual nutrients, or specific foods in isolation.

Identifying the common features in heart healthy eating patterns, including the Mediterranean and DASH diets, enabled the development of the Heart Foundation Healthy Eating Principles.

There are several key policy actions which can be taken to improve current eating patterns in Australia.

Background

Current eating patterns (or poor diets*) in Australia are a leading risk factor for heart disease, and other chronic diseases including type 2 diabetes and some cancers.⁷ Poor diet also directly contributes to overweight and obesity, which is a significant risk factor for disease burden in Australia.^{8,9}

Current eating patterns in Australia are characterised by an excessive intake of discretionary foods that are high in kilojoules, saturated fat, added sugars and salt, and an inadequate intake of healthy foods associated with a decreased risk of disease, such as vegetables, legumes, fruit, wholegrain cereals and nuts.^{9,10} Discretionary foods are estimated to account for 35% of the average Australian adult's daily energy intake.¹⁰ In 2010, Australian households spent, on average, considerably less each week on vegetables (\$13.70) than on discretionary foods, such as take away (\$30.50) and confectionery (\$11.77).¹¹ Trends indicate that the proportion of Australian adults not meeting the recommended intake for vegetables has increased over the past two decades to 92 per cent.⁹ Improving vegetable intake to meet the recommended 5 serves per day is estimated to reduce the risk of cardiovascular disease (CVD) by 16%, and could avoid \$1.4 billion of health expenditure based on estimates in 2015-2016.¹² In addition to the type or quality of foods consumed, their quantity is also an important determinant of a heart healthy eating pattern, as it can lead to weight gain and in turn, heart disease. Internationally and in Australia, research demonstrates a trend for increasing portion sizes over the past few decades.^{13,14} In Australia, portion size differs depending on the age and gender of the individual, the type of food and the way in which it is eaten.^{14,15} In the most recent national nutrition survey, dairy, fruit and vegetables were consumed in consistently smaller than recommended amounts, while portions of some (but not all) discretionary foods were consistently larger.¹⁵

Currently, diet quality is unequally distributed in Australia. Aboriginal and Torres Strait Islander Peoples, vulnerable cultural groups and those living in remote communities or of relative disadvantage are less likely than other Australians to buy healthy food and consume a healthy diet.¹⁶⁻¹⁹ Cardiovascular disease also disproportionately affects these population groups with Aboriginal and Torres Strait Islander Peoples living in rural and remote areas and those with lower socioeconomic status having increased hospitalisation rates for CVD.^{20,21}

Eating patterns for Aboriginal and Torres Strait Islander Peoples are characterised by higher intakes of discretionary foods and lower intakes of vegetables.^{22,23} People living in rural and remote Australia have overall poorer health outcomes and lower incomes than those living in major cities, yet pay a higher price for foods, with a healthy food basket costing 20-43% more than in metropolitan areas.²⁴⁻²⁸ Due to the interplay of issues surrounding the low availability and accessibility of fresh foods along with higher food prices and greater levels of disadvantage, food insecurity can be a significant problem in both Aboriginal and Torres Strait Islander Peoples and rural and regional communities.

Measures of socio-economic position are also associated with poorer diet quality in Australian adults.²⁹ Living in lower income households is associated with lower total energy intake and higher trans fat and carbohydrate intake compared to people from higher income households.²⁹ Similarly, lower education level (incomplete high school or less) is associated with a higher intake of trans fat, carbohydrates, and total sugars, lower poly-unsaturated fat and fibre intake and fewer servings of vegetables compared to Australians with a higher education level.²⁹ These relationships between healthy eating patterns and socio-economic position highlight the importance of social determinants in the nutrition status and health of all Australians. Structural interventions are required to support healthy dietary behaviours across all socio-economic groups.³⁰ Importantly, these must work across sectors and address the underlying physical, economic, social and commercial determinants of health.³⁰

* Poor diet is defined as the combination of dietary risks which include low vegetables, nuts and seed, fruits, wholegrains, fibre, omega 3 and PUFA sources; high sodium, processed and red meats, trans fat and sweetened beverages; and low milk and suboptimal calcium.³

Background

Historically, nutrition science has focused on the isolation of individual nutrients in foods and the study of their effects on the risk and/or incidence of diseases. This approach provided the opportunity to make important advances in our knowledge of food and nutrition particularly in the areas of nutrient deficiency, however it is at odds with the way individuals and populations eat and is limited in its ability to explore relationships with chronic diseases.³¹⁻³³

When communicating healthy eating messages, a nutrient approach does not adequately represent the relationship between foods, eating patterns and health. Globally, there is a shift in research and guidelines to recognise that foods and dietary patterns, rather than individual nutrients, can better support both individual diet counseling and population dietary recommendations, as well as food policy, to improve the overall eating pattern.³⁴

In recognition of this, the Heart Foundation has adopted a food-based and dietary patterns approach to healthy eating recommendations. The Heart Foundation commissioned the *Evidence Review: Dietary Patterns and Cardiovascular Disease Outcomes* which reviewed the variety of dietary patterns associated with better cardiovascular health outcomes.¹ This evidence along with recent Heart Foundation Evidence Reviews,^{2,6} and consideration of the cultural experiences, food supply and policy context of Australia form the basis of this position statement.



The Heart Foundation's Heart Healthy Eating Principles

Based on the evidence for dietary patterns,¹ key foods²⁻⁴ and nutrients,^{5,6,35-37} the Heart Foundation summarises healthy eating recommendations into five Heart Healthy Eating Principles described here:

Plenty of fruit, vegetables and wholegrain cereals

Fruits, vegetables and wholegrain cereals were key features of all the dietary patterns associated with better cardiovascular health outcomes.¹ Increased vegetable and fruit consumption is associated with reduced coronary heart disease and stroke risk.^{40,41} The fibre, potassium and other micro-nutrients contained in fruits and vegetables have shown to reduce the risk of high blood pressure and cholesterol, and these mechanisms likely contribute to this protective effect towards CVD.^{40,42} There is also evidence of a significant association between wholegrain consumption and reduced risk of cardiovascular disease.⁴³⁻⁴⁵ Eating patterns high in fibre from wholegrains have been linked to reduced LDL-cholesterol levels, and reduced CVD risk.⁴² Foods high in soluble fibre such as oats, barley and legumes are particularly beneficial to lower total cholesterol levels.⁴² In addition, most fruits, vegetables and wholegrains have a low glycaemic load, which assists in lowering serum triglyceride levels and consequently reducing the risk of CVD.⁴²

A variety of healthy protein sources especially fish and seafood, legumes (such as beans and lentils), nuts and seeds. Smaller amounts of eggs and lean poultry can also be included in a heart healthy diet. If choosing red meat, make sure the meat is lean and limit to 1-3 times a week

A diverse array of foods can contribute protein to a healthy eating pattern. The Evidence Review found most dietary patterns emphasised beans, legumes and nuts, some dietary patterns emphasised fish, some poultry, and a number emphasised limiting meat products.¹

Unprocessed meat provides a source of protein, iron, zinc and B12.⁴⁶ The evidence suggests a moderately adverse relationship between unprocessed red meat consumption and cardiovascular disease, up to 350g (cooked weight) of unprocessed red meat can be included in a heart healthy eating pattern.²

Eggs and poultry can be included in a heart healthy eating pattern. The evidence suggests a neutral relationship between these foods and cardiovascular disease.^{2,4} This suggests no strong evidence for a maximum limit but should not be interpreted that these foods are uniquely beneficial to cardiovascular health.⁴⁶ There is evidence that increasing egg intake in people with type 2 Diabetes increases risk of cardiovascular disease, and a maximum limit of <7 eggs per week is recommended in this population.⁴⁷

Fish and legumes are the preferred protein sources due to their consistent beneficial relationship with heart health.⁴⁸ Fish and seafood are good sources of omega 3 fatty acids, and their regular consumption is associated with a reduced risk of CHD incidence and mortality.⁶ Legumes, nuts and seeds are good sources of plant proteins, fibre, healthy fats and micro-nutrients, and are inversely associated with risk of heart disease.⁴⁹⁻⁵¹

The evidence continues to support recommendations to avoid processed meat consumption for cardiovascular health.^{2,46} Processed meat includes meat products preserved by smoking and curing (i.e. salting or with the addition of chemical preservatives), and includes ham, bacon, chorizo, prosciutto, pancetta, pastrami, meat spreads, salami, sausages, hot dogs, devon and other luncheon and deli meats.

Unflavoured milk, yoghurt and cheese. Those with high blood cholesterol should choose reduced fat varieties

Milk, yoghurt and cheese are good sources of protein and calcium and unsweetened milk and yoghurt, and cheese can feature in a healthy eating pattern; as long as foods such as fish, olives, seeds, nuts and oils made from them are the primary sources of fat.^{3,52} Milk, yoghurt and cheese were included in some but not all dietary patterns linked to better cardiovascular health outcomes.¹

There is mixed evidence, but on balance it appears milk, yoghurt and cheese have a neutral relationship with cardiovascular health, therefore less processed products (i.e. no added sugar, limited sodium) can be included in a healthy eating pattern.³ Replacing saturated fat from dairy with unsaturated fat (PUFA and MUFA) from foods such as olives, nuts and seeds is likely to be associated with a reduced risk of heart disease, however given the inconsistencies in the evidence for fat modified dairy products, there is not enough evidence to recommend fat modification (i.e. full fat over reduced fat products, or reduced fat over full fat products) for the general population.^{3,52}

There is evidence dairy fat from cheese and yoghurt does not raise LDL-C in the same way that dairy fat from butter does; and evidence that LDL-C response to dairy fat is higher for those with elevated LDL-C.^{3,52} This suggests caution for inclusion of butter, and higher fat dairy products, for people who would benefit from LDL-C lowering dietary interventions.⁵²

It is noted that unflavoured reduced fat milks, cheese and yoghurts are lower in kilojoules.

Healthy fat choices with nuts, seeds, avocados, olives and their oils for cooking

Healthier fats include foods and oils rich in mono-unsaturated and polyunsaturated (omega-3 and omega-6) fat.³⁵ These types of fats have been associated with reductions in LDL cholesterol and increases in HDL cholesterol, reducing the risk of heart disease.⁵ In contrast, fats and oils which have considerable amounts of saturated or trans fatty acids compared to unsaturated fatty acids have not demonstrated these same health benefits and include butter, lard, copha, dripping, palm oil, coconut oil.⁵³⁻⁵⁵

Sources of these fats include unsalted nuts, seeds such as linseed, chia or tahini, avocados, and cooking oils made from plants or seeds including olive, avocado, canola, peanut, sunflower, soybean, sesame and safflower.

Herbs and spices to flavour foods, instead of adding salt

Many eating patterns use herbs and spices to flavour foods. A healthy eating pattern, based on the previous 4 principles, will be naturally lower in sodium, and will help to lower population salt intakes. Australians should aim to reduce their salt intake to less than 5 grams per day by following the above healthy eating principles and not adding salt to food or during cooking.³⁶

The Heart Foundation's Heart Healthy Eating Principles do not include discretionary food and drinks. Discretionary food and drinks are estimated to account for 35% of the average Australian adult daily energy intake.⁴ These foods, as a whole group, are the leading contributors to intakes of saturated fat and trans fat, free sugar, sodium and alcohol intake;^{56,57} they dominate current eating patterns and occupy space where the health-promoting foods outlined in the Heart Foundation's Healthy Eating Principles should be prominent. This dietary imbalance means current Australian eating patterns are a leading risk factor for death and disability in Australia.⁷

Translating evidence into practice

Nutrients within a healthy pattern

Healthy eating patterns do not rely on one type of nutrient to promote health. An eating pattern based on the Heart Healthy Eating Principles will be naturally low in saturated and trans fats, salt and added sugar and rich in wholegrains, fibre, antioxidants and unsaturated fats (omega-3 and omega-6) and are likely to meet existing nutrient targets.^{6,35-37} This is achieved through the emphasis of the Healthy Eating Principles, along with a shift away from discretionary food and drinks.

High sodium intake has an established causal link to hypertension and is associated with an increased risk of vascular diseases.³⁶ Most Australian studies suggest people are consuming around 3,600mg of sodium per day (nine grams of salt),^{58,59} which is almost double the World Health Organisation and Australian recommendations of less than 2,000mg of sodium per day (five grams of salt).^{60,61}

Saturated and trans fat intakes are also associated with increased risk of CVD, reducing these types of fats and replacing them with unsaturated fats and wholegrains can decrease the risk of coronary events.⁵

Poor quality carbohydrates may confer a similar amount of cardiovascular risk as saturated fats, while wholegrain carbohydrates are associated with a reduced cardiovascular risk.⁵ Free sugars (those not including fruit and dairy) are associated with an increased risk of weight gain, and in turn, heart disease.^{37,62}

There is no evidence to suggest changes are required to existing nutrient targets, however the promotion of dietary patterns and food-based messages is required to shift current eating patterns in a manner which is more beneficial for cardiovascular health. The Heart Foundation supports the following nutrient targets which can be achieved through adopting the Heart Foundation's Heart Healthy Eating Principles:

Nutrient	Target	Source
Saturated fat	<10% of total energy, on average	NHMRC, ⁶¹ WHO ^{63,64}
Omega-3 polyunsaturated fat		NHMRC, ⁶¹ Heart Foundation ^{5,6,65}
Combined EPA/DHA	250-500mg per day	
ALA	1 gram per day	
Omega-6 polyunsaturated fat	4-10% of total energy, on average	NHMRC, ⁶¹ American Heart Association, ^{66,67} WHO ⁶³
Total trans fat	<1% of total energy, on average	WHO ^{63,68}
Free sugars	<10% of total energy on average	WHO ³⁷
Sodium	<2,000mg sodium (<5 grams salt) per day	NHMRC, ⁶¹ WHO ⁶⁰

Policy changes to support healthy eating patterns

As current eating patterns have become a leading risk factor for ill health in Australia,⁷ the food environment has remarkably changed over the few past decades. There has been an increase in the availability and consumption of discretionary foods and drinks, a rise in the availability of highly processed foods[†] replacing healthy[‡] foods, and an increase in the promotion of “healthier” versions of highly processed or discretionary foods by focusing on single nutrients such as ‘low-fat’ or ‘low-sugar’. Australians are eating more of their meals outside of the home than ever before. Spending on fast foods and eating increased by 50% between 2003-04 to 2009-10.⁶⁹ It is estimated that over \$15 billion, or a third of an average Australian’s food budget, is spent annually on foods eaten outside of the home.⁷⁰

Australian governments’ have implemented many programs and initiatives towards improving Australians’ dietary habits and the food environment. For instance, at the Commonwealth level, the Healthy Food Partnership, and the voluntary front of pack labeling scheme, the Health Star Rating system, aim to make the food supply healthier and raise awareness of better food choices.⁷¹ Other best practice policies include the GST exemption on basic foods, regulation of health claims and regular monitoring of the population’s body weight through the National Health Survey.⁷¹

Despite these initiatives, Australia is behind other developed nations in their efforts to address the population’s unhealthy eating patterns.⁷¹ A lack of investment in coordination and evaluation results in many initiatives being implemented in isolation or without adequate, long-term support. There is no comprehensive action towards addressing current eating patterns, and a nationally coordinated nutrition strategy and implementation plan is urgently required.

The Heart Foundation recommends the development and implementation of a government-led National Nutrition Strategy or equivalent to improve current eating patterns in Australia to reduce the burden of non-communicable diseases including heart disease. Key features of a funded national strategy should:

- Be grounded in a strong evidence base with regular updates to the Australian Dietary Guidelines
- Enable transparent labeling on processed food products and in the retail sector, including mandatory labeling of kilojoules for foods purchased outside the home, and mandatory labeling of added sugars, and fat profiles (including saturated, mono-saturated polyunsaturated and trans-fat) on packaged food products.
- Establish food standards that place a strong emphasis on healthy food and drink environments outside the home, with robust targets for salt reformulation, portion size and a recommended mix of healthy vs unhealthy foods.
- Include measures to improve access to healthier food options particularly for regional and remote communities
- Ensure transparent governance, monitoring, reporting and surveillance including regular National Nutrition surveys as part of the Australian Health Survey

[†] In this document, the term ‘processed’ refers to highly processed and/or discretionary foods such as chips, biscuits, pastries, take-away style foods, confectionery, and sugary drinks. Please see the FAQs for more information.

[‡] In this document, the term ‘healthy food’ refers to foods promoted in the Heart Foundation’s Heart Healthy Eating Principles.

Conclusions

Healthy eating is more than changing one type of nutrient or food. Based on the available evidence for dietary patterns, foods and nutrients, the Heart Foundation summarises healthy eating recommendations into five Heart Healthy Eating Principles.

These principles reflect the current evidence on the variety of dietary patterns (including the Mediterranean and DASH diets) which promote heart health. While seemingly basic, these principles will help to build a sustainable eating pattern to promote heart health.

This style of eating is naturally low in saturated and trans fats, salt and added sugar and rich in wholegrains, fibre, antioxidants and unsaturated fats (omega-3 and omega-6). Eating this way can help improve the heart health of all Australians by reducing CVD risk factors such as high blood pressure and raised blood lipids and decreasing the risk of developing and dying from heart disease.

The food environment has changed remarkably over the past few decades, and current eating patterns are now a leading risk factor for cardiovascular disease and other chronic diseases. A national nutrition strategy or an equivalent, that is cognisant of policy measures that address the food environment; the food system; and individual behaviours, underpinned by a strong governance and accountability framework is now critical if we are to improve current eating patterns and reduce the burden of non-communicable diseases including heart disease in the Australian community.



Recommendations

Based on the evidence for dietary patterns, foods, nutrients and cardiovascular health outcomes, the Heart Foundation recommends:

1. Rather than focusing on individual nutrients, we encourage Australians to follow the Heart Foundation's Heart Healthy Eating Principles which includes people eating:

1. Plenty of vegetables, fruits and wholegrains
2. A variety of healthy protein sources especially fish and seafood, legumes (such as beans and lentils), nuts and seeds. Smaller amounts of eggs and lean poultry can also be included in a heart healthy diet. If choosing red meat, make sure the meat is lean and limit to 1-3 times a week.
3. Unflavoured milk, yoghurt and cheese. Those with high blood cholesterol should choose reduced fat varieties
4. Healthy fat choices with nuts, seeds, avocados, olives and their oils for cooking
5. Herbs and spices to flavour foods, instead of adding salt

Water as the drink of choice

2. For people who would benefit from LDL-C lowering dietary intervention, choosing reduced fat and unflavoured milk, yoghurt and cheese and less than 7 eggs per week is recommended; for people with type 2 Diabetes a maximum of 7 eggs per week is also recommended. Unflavoured reduced fat milks, cheese and yoghurts are also lower in kilojoules.

3. A government-led National Nutrition Strategy or equivalent is required to improve current eating patterns in Australia to reduce the burden of non-communicable diseases including heart disease.

4. An adequately skilled nutrition and health workforce, such as Dietitians, General Practitioners, nurses and cardiac rehabilitation workers, who can identify and support people at high risk or with existing heart disease to make healthy eating changes.



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