NUTRITION POLICY IN AUSTRALIA: ADOPTING A HARM MINIMISATION APPROACH

Policy evidence brief

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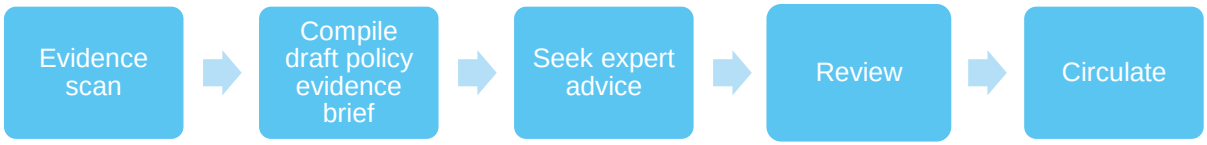
About us

The Mitchell Institute for Education and Health Policy at Victoria University is one of the country's leading education and health policy think tanks and trusted thought leaders. Our focus is on improving our education and health systems so more Australians can engage with and benefit from these services, supporting a healthier, fairer and more productive society.

The Australian Health Policy Collaboration is led by the Mitchell Institute at Victoria University and brings together leading health organisations and chronic disease experts to translate rigorous research into good policy. The national collaboration has developed health targets and indicators for preventable chronic diseases designed to contribute to reducing the health impacts of chronic conditions on the Australian population.

Process

The Mitchell Institute's policy evidence briefs are short monographs highlighting the key evidence for emerging policy issues. We work with our partners in the Australian Health Policy Collaboration to seek expert advice on topics, content and context.



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Scope and purpose

This policy evidence brief aims to explore the significant harms and extensive burden of disease associated with unhealthy diets, focussing on the specific food components and dietary risk factors which are responsible for the greatest amount of harm in the Australian context. 'Unhealthy diet' is a broad term used characterise eating patterns which encompass various individual dietary intake risk factors. These include but are not limited to:

- high intake of salt (sodium)[†];
- high intake of free (added) sugars;
- high intake of saturated fats; and
- inadequate intake of fruits, vegetables and wholegrains.

The authors acknowledge the robust global evidence illustrating a wide range of other dietary risk factors which significantly contribute to global disease burden and the subsequent need to take a whole-of-diet approach to developing nutrition policy and improving unhealthy diets at a population and individual level. Major dietary risk factors include diets high in sodium, high in free sugars, high in saturated fat, and high in processed meats and low in whole grains, low in fruit, low in nuts and seeds, low in vegetables, and low in omega-3 fatty acids. This policy evidence brief has a strong focus on the overconsumption of salt, sugar and saturated fat, however many of the other aforementioned dietary risk factors feature throughout the paper. Analysing all 15 Global Burden of Disease Study dietary risk factors was considered out of scope for this policy evidence brief.

Trans fats were not considered in scope despite their clear association with diet related harm, as Australian average intakes of trans fats are below the recommended upper limit set by the World Health Organisation. Given that most Australians are below the recommended intake level, the volume of harm associated with trans fats in the Australian context is relatively small compared to other dietary risk factors. However, it is acknowledged that trans fat consumption exceeds recommended intake levels in certain age demographics (e.g. young adults) and cultural groups (e.g. some indigenous populations), which can be harmful for these specific groups but does not significantly contribute to diet-related harm at a population level. Similarly, micronutrient deficiencies were also considered out of scope due to their relatively small contribution to Australia's overall burden of disease compared with the overconsumption of salt, free sugars and saturated fat.

Finally, it is acknowledged that malnutrition – a condition commonly defined in Australia as the insufficient nutritional intake to meet an individual's nutritional needs – is one of the largest contributors to diet-related harm and overall burden of disease globally. It is also a significant issue for certain population groups in Australia (e.g. those living in residential aged care facilities or people experiencing extended inpatient hospital stays). However, it was considered out of scope for this evidence brief due to its relatively low prevalence rate at a population level and lack of similar risk factors to other diet-related diseases.

After illustrating the magnitude of diet-related harm, this policy evidence brief presents the case for adopting a formal harm minimisation approach regarding nutrition policy in Australia.

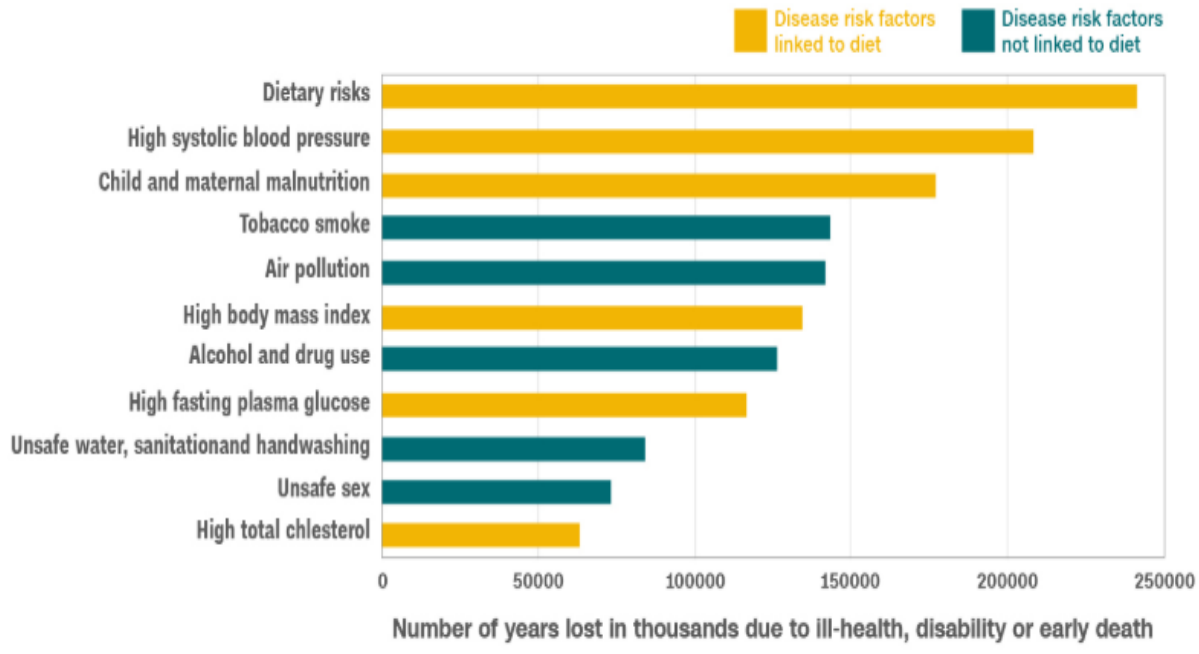
[†] While recognizing that sodium is the component of salt that contributes to diet-related harm, this evidence brief primarily refers to salt as a proxy for sodium.

What is the problem?

Globally, unhealthy diets are responsible for more preventable deaths than any other disease risk factor, with one in five deaths attributable to poor diet [1]. The 2015 Australian Burden of Disease Study found that unhealthy diets accounted for 19,876 preventable deaths nationwide – 12.6% of total deaths in that year. This was greater than the proportion of preventable deaths attributable to physical inactivity (4.5%), alcohol use (4.0%), illicit drug use (1.6%) or high body mass† (9.0%), and second only to tobacco use (13.3%). Dietary risk factors and high body mass combined are the largest contributor to Australia's overall fatal and non-fatal burden of disease [1, 2]. Furthermore, a 2019 systematic review which analysed data from multiple burden of disease studies, including the 2016 Global Burden of Disease Study (GBDS), found that unhealthy diets were responsible for more preventable deaths in Australia than any other disease risk factor, including tobacco use [3].

A 2016 study which analysed individual disease risk factor data from the 2013 Global Burden on Disease Study, found that six of the top 11 risk factors driving the global burden of disease are related to diet (see *Figure 1*) [4]. 'Dietary risks', which refers to a collation of individual intake recommendations for different nutrients or food groups (e.g. diets high in sodium or diets low in wholegrains), was identified as the top contributor. The other diet-related risk factors driving global disease burden were mostly outcomes of unhealthy diets (e.g. high blood pressure, high total cholesterol, high body mass index) and therefore their individual impacts on disease burden could be reduced simultaneously by improving population nutrition [1, 4].

Figure 1: Contributions of disease risk factors to global burden of disease (GBDS 2013)



Source: Glopan
Note: The graph shows global disability-adjusted life years attributed to level 2 risk factors in 2013 for both sexes combined.

† High body mass has been used a proxy term for overweight and obesity throughout this paper.

The average Australian diet exceeds the recommended intake for salt, free sugars and saturated fat and does not meet the recommendations for daily consumption of fruits and vegetables and fibre [5, 6]. Diets that are high in salt, free sugars and saturated fat are associated with a variety of harms [7, 8], and in the quantities that they are currently consumed by many Australians, they could be considered inherently harmful to people's health. Although these nutrients are all important in small quantities to ensure a balanced diet, they are major contributors to diet-related harm when consumed above recommended levels.

The economic burden of unhealthy diets

In addition to the significant health impacts, there is evidence illustrating the substantial economic costs attributable to unhealthy diets in Australia [6]. Economic modelling and data examining the costs attributable to specific dietary risk factors and overall diet quality are scarce [9]. However, a 2016 Deloitte Access Economics report calculated that $1.4 billion in health expenditure is attributable to low vegetable consumption [10]. Earlier Australian research found that even small improvements in average Body Mass Index (BMI) and fruit and vegetable intake at the population level would lead to potential health sector and productivity cost savings of over $1.8 billion per year [11].

Data illustrating the economic burden of overweight and obesity, which is associated with unhealthy diets, is more readily available. Modelling performed in 2008 suggested that the total cost of overweight and obesity to the Australian community in that year was $58.2 billion, including direct costs to the health system and other indirect costs such as lost productivity, reduced wellbeing and carer costs [12]. These figures do not include the true costs related to unhealthy diets, as high body mass is just one harmful outcome attributable to diet.

Diet-related harm and the Australian Dietary Guidelines

Many Australians across all age groups, including children, consume diets which are nutritionally inadequate, with the vast majority of the population not meeting the Australian Dietary Guidelines [5-8]. The Australian Dietary Guidelines are set of high-level, evidence-based recommendations regarding the composition of a healthy diet that aim to inform Australians' dietary patterns and promote health and wellbeing [7]. They provide general information and advice about the types and amounts of foods and food groups that should be consumed to reduce the risk of various diet-related conditions and chronic diseases [7]. The five core food groups identified in the Australian Dietary Guidelines are vegetables, fruit, grains, lean meats/ meat alternatives and dairy products/ dairy alternatives [7]..

The food environment and dietary patterns in Australia have changed considerably over the past 40 years, with an increase in availability of convenient and inexpensive processed foods [13]. Most of these foods are described as 'discretionary foods' in the Australian Dietary Guidelines [7]. Discretionary foods are foods that are not needed to meet nutrient requirements and generally tend to be high in kilojoules, saturated fat, free sugars and added salt [7]. Common examples include cakes, confectionary, processed meats, commercially fried foods, potato chips and sugar-sweetened drinks [7].

The high amounts of sugar, salt and saturated fat often found in processed, discretionary foods makes them highly palatable and habit-forming [14]. The Australian Dietary Guidelines recommend that discretionary foods should be consumed occasionally and in small amounts [7]. Despite this recommendation, Australians consume an average of 35% of their energy

from discretionary foods [8]. Australian adolescents fare particularly poorly, with 14-18 year olds consuming an average of 41% of their energy from discretionary foods [15]. The overconsumption of nutrient-poor discretionary foods often precludes the adequate intake of foods from the five core food groups outlined in the Australian Dietary Guidelines and is a major contributor to unhealthy diets in Australia [8].

Unhealthy diets are closely associated with the development of various chronic diseases, which are the leading cause of death and disability in Australia [16]. Evidence demonstrates a direct relationship between unhealthy diets and increased risk of diabetes, cardiovascular and cerebrovascular diseases, obesity, mental health conditions and poor oral health [17]. Unhealthy diets continue to be a key driver of overweight and obesity, with two thirds (67.0%) of Australian adults classified as overweight or obese in the 2017-18 National Health Survey, an increase from 63.4% in 2014-15 [18]. Almost one quarter (24.9%) of children aged 5-17 years were also classified as overweight or obese in 2017-18 [18].

Over one in two Australians have a chronic disease and over one third of the chronic disease burden could be prevented by reducing and removing exposure to risk factors [2]. The major modifiable risk factors commonly associated with chronic disease include unhealthy diets and high energy intake, physical inactivity, tobacco and alcohol use. Most Australians exhibit at least one risk factor, (e.g. 90% of Australians fail to consume the recommended amounts of vegetables) [19].

A good diet can be protective against the risk of chronic disease. It has been estimated that if Australians' eating patterns aligned with the Australian Dietary Guidelines, the total burden of disease would reduce dramatically [7]. For example, the burden from heart disease would reduce by 52%, type 2 diabetes by 34% and diet-related cancers by up to 37% [20].

Beyond the direct chronic disease related harms attributable to unhealthy diets, there is significant harm related to stigma and discrimination experienced by people who are overweight or obese [21-23]. Obesity stigma is pervasive and often contributes to additional harm and poorer mental and physical health outcomes for people trying to manage the burden of multiple chronic diseases [23]. Despite robust evidence documenting the negative impacts of weight-related stigma and discrimination, their public health implications have largely been ignored [21]. Several studies have refuted claims that weight-related stigmatisation motivates individuals to improve their diet or lose excess weight [23, 24]. Conversely, evidence shows that the stigmatisation of obese individuals generates health disparities, leads to poorer health outcomes and can reduce the effectiveness of lifestyle-based weight management interventions [23, 24].

There are also strong links between food systems that promote unhealthy diets and environmental harms, including climate change. Global food production is the single largest driver of environmental degradation and climate instability, illustrating that harms associated with unhealthy food products extend beyond their direct effects on human health [25].

Key drivers of diet-related harm

Salt/ Sodium

Australians are consuming too much salt, with average dietary intakes well above recommended levels. The National Health and Medical Research Council (NHMRC) advises that 1.5 to 2.3 grams of salt per day is adequate for most people, with a suggested dietary target of 5 grams of salt per day for a healthy diet [26]. National data show that Australians

are eating more salt than ever, with adults consuming an average of 9 grams daily [27, 28]. It is estimated that 75–80% of salt is consumed via 'hidden salt' in processed foods, making the consumption of processed food a key driver of excessive salt intake [29].

Although small amounts of sodium (the major component of table salt) are essential for some physiological processes in the human body, high sodium intake is strongly associated with hypertension (high blood pressure), cardiovascular disease (CVD), stomach cancer, osteoporosis, oedema and stroke [29]. Vascular dementia and kidney disease have also been linked with high blood pressure [30, 31].

High blood pressure is the most important modifiable risk factor for cardiovascular and cerebrovascular disease [32]. CVD is the leading cause of death and the second-largest contributor to Australia's disease burden [33]. There is also evidence that a high sodium intake is associated with an increased risk of stroke independent of vascular risk factors [34].

Almost one quarter of Australian adults (23.1%) have high blood pressure [18]. This equates to more than 4 million Australians and the number is increasing. Research suggests that if all Australians reduced their daily salt intake by 3 grams, it would prevent an estimated 6,000 deaths a year from heart disease and stroke [35]. Even modest reductions in the salt content of processed food reduce the prevalence of hypertension, stroke and cardiovascular events at a population level [36].

A 2019 systematic analysis of dietary risk factors across 195 countries concluded high sodium intake was the leading dietary risk factor for deaths and disease burden globally and in many countries [1].

Free sugars

Most Australians are eating too much sugar, with almost 50% of adults and over 70% of children consuming more than the World Health Organization (WHO) recommended intake for free sugars [37]. Sugar is found naturally in many foods, including fruits and dairy foods. However, most sugars consumed in Australian diets are 'free sugars', a term used interchangeably with 'added sugars' to describe any sugar that is not naturally occurring in the food product. The WHO recommends that free sugars contribute no more than 10% of overall energy intake but less than half of Australians (aged 2 years and over) meet this recommendation [37].

Energy dense, nutrient-poor discretionary foods and beverages are the major contributors to consumption of free sugars in the diet. Common high sugar products include soft drinks, energy drinks, fruit juices, confectionary and cakes [15].

Consuming a diet high in free sugars increases the likelihood of becoming overweight or obese, and by extension is associated with the development of chronic diseases such as heart disease, type 2 diabetes, and some cancers [38, 39]. High sugar diets also contribute to poor oral health, with consumption of free sugars the major dietary risk factor for dental caries in children, young people and adults. Over 90% of Australian adults have experienced tooth decay in their permanent teeth and 20% of children (aged 6-14 years) have experienced decay in their primary teeth [40].

Saturated fat

The proportion of energy that comes from overall fat in an average Australian diet is 31%, with saturated fat contributing 11-13% of that intake [41]. This is higher than the recommended maximum of 10% of energy intake from saturated fats for all age groups 14

years and over [42]. Overconsumption of saturated fat is associated with unhealthy diets and is a major contributor to increased cardiovascular disease risk across the population [43].

For cardiovascular health, substantial evidence indicates that the type of fat is of greater importance than the quantity consumed [43]. Intake of unsaturated fats are preferred to saturated fats as saturated fats increase the level of low-density lipoprotein (LDL) cholesterol in the bloodstream, which is a major risk factor for cardiovascular disease [43]. There is strong evidence that reducing saturated fat in the diet leads to lower serum LDL cholesterol levels and subsequent improvements in cardiovascular disease risk [43].

Ultra-processed foods

There is robust evidence illustrating the significant and graded association between dietary intake of ultra-processed foods and the occurrence or incidence of several chronic diseases, including obesity, cardiovascular and metabolic diseases, various cancers, depression and gastrointestinal disorders, and also premature mortality [44, 45]. Diets high in ultra-processed foods are strongly linked with exceeding recommended intakes for salt, free sugars and saturated fat [44, 45].

Ultra-processed foods are one of four classifications included in the NOVA Food Classification System, which describes the nature, extent and purpose of industrial food processing across all food items, ranging from ‘unprocessed’ to ‘ultra-processed’ [46]. While the harms attributable to individual nutrients are clear, there is a growing body of evidence that the level of consumption of ultra-processed foods, which are often high in salt, free sugars and saturated fats, is an even stronger indicator of diet quality than individual nutrient intakes [14, 47, 48].

The proportion of energy intake from ultra-processed foods in the average Australian diet is 42% [45]. Decreasing dietary intakes of ultra-processed foods would substantially improve diet quality across the population and assist Australians in reducing their consumption of salt, free sugars and saturated fats to better align with recommended intake levels [45].

Inadequate intake of fruit, vegetables and wholegrains

The consumption of fruits, vegetables and wholegrains play an important role in improving diet quality and preventing disease, making them essential considerations in reducing diet-related harm [48]. Meeting the recommended daily intakes of fruit, vegetables and wholegrains is strongly associated with the prevention of several chronic diseases [48]. Diets high in fruits, vegetables and wholegrains can protect against certain cancers, heart disease and type 2 diabetes, while greater intake of these foods is associated with a reduction in the risk of some eye diseases, such as cataracts and macular degeneration [48]. Eating the recommended amount of fruits and vegetables is also associated with improved mental health and psychological wellbeing [49, 50].

However, just over half of Australian adults meet the recommended daily fruit intake, less than one in ten meet the recommended daily vegetable intake and less than 20% meet the recommended daily fibre intake [6, 51]. Australian figures show that inadequate consumption of fruits, vegetables and wholegrains are responsible for 4.1% of total disease burden [2].

A 2019 systematic analysis of dietary risk factors across 195 countries concluded that low intake of whole grains and low intake of fruits were ranked second and third respectively as the leading dietary risk factors for disease burden globally and in many countries [1].

Diet-related harm in at-risk groups

The economic, social, cultural and geographical factors that influence health inequities also influence the ability of an individual to access and choose nutritious foods. Dietary risk factors such as the overconsumption of salt, free sugars and saturated fat, and inadequate intake of fruits and vegetables are influenced by socioeconomic status and the distance you live from a major city [7]. On average, Australians who live in more affluent areas or in major cities tend to consume healthier diets and experience lower rates of most diet-related chronic disease [7]. Conversely, Australians living in areas of greater disadvantage or in remote or rural locations tend to have poorer diet quality and increased costs and access barriers to healthy foods [7]. Socioeconomic factors have a large impact on food and nutrient intakes and food purchasing decisions and patterns, and there is clear evidence of a social gradient in the distribution of diet-related chronic disease [7].

Aboriginal and Torres Strait Islander populations also experience disproportionate rates of almost all diet-related chronic diseases, which are major contributors to the significant gap in life expectancy compared with non-indigenous Australians [6, 52]. It has been estimated that 19% of the total disease burden experienced by Aboriginal and Torres Strat Islanders is attributable to poor diet [52].

Any approach aimed at improving population nutrition needs to consider these inequities and endeavour to address them through focusing efforts on groups who experience disadvantage.

Perceptions of diet-related harm

The words ‘harm’ or ‘harmful’ do not feature in the 1992 Australian Food and Nutrition Policy [53] or the more recent Australian Institute of Health and Welfare reports *Nutrition across the life stages* and *A picture of overweight and obesity in Australia,* published in 2018 and 2017 respectively. While ‘harm’ does appear 12 times in the 210 page background evidence paper for the 2013 Australian Dietary Guidelines, ten of these references relate to alcohol-related harm and the remaining two refer to food safety [7]. Although this policy evidence brief is not a systematic, in-depth analysis of how diet-related harm is framed across all government resources and policies, it does indicate a clear lack of explicit references to the ‘harms’ associated with unhealthy diets.

The potential reluctance to directly link unhealthy diets with the magnitude of the harms they are associated with and a lack of public knowledge and awareness of specific diet-related harms are barriers to progressing the concept of harm minimisation in nutrition policy. Public, political and scientific discourse related to tobacco, illicit drugs and gambling appears more focussed on the associated harms of these products or behaviours than harm related to diet [54, 55]. This is despite the contribution of dietary risk factors to Australia’s overall burden of disease being similar to tobacco and significantly greater than illicit drugs and gambling [2].

There is robust Australian evidence demonstrating a lack of consumer knowledge and awareness around specific diet-related harms [56-58]. Although consumers can usually identify certain products high in salt and sugar and the basic harms associated with overconsumption of these nutrients (e.g. high blood pressure and weight gain), their knowledge of appropriate dietary intakes and more specific diet-related harms are often lacking [56-58]. A large Victorian study examining consumer knowledge, attitudes and behaviours related to dietary salt found that less than a third of participants believed their own individual salt intake exceeded recommendations and only 28% could correctly identify

the maximum recommended daily intake for salt, despite 83% believing that Australian's eat too much salt [58]. Part of the problem is the perception that the harms associated with poor diets and the manufacturers of unhealthy food products should not considered on par with the harms attributable to other industries and products [59], despite the overall contribution to Australia's burden of disease.

A study examining the perceptions of children and their parents regarding healthy eating and obesity prevention found that the children could accurately identify unhealthy foods but that they did not fully understand the harms associated with consuming them [60]. Parents believed that children had not internalised messages about eating unhealthy foods in the same way they had embraced messages about the negative health effects of smoking [60]. Parents attributed this to inconsistent or confusing messaging around nutrition and attractive advertising strategies used to market unhealthy foods [60].

The nutrition policy landscape

Australian policy context

The development, revision and implementation of evidence-based national nutrition strategies deliver significant and measurable benefits to individual and community health and are more cost-effective for governments than taking no action [61]. Despite this, and the ever-increasing evidence of diet-related harm, the Australian Government does not have an up to date National Nutrition Strategy. The most recent iteration of a national strategy was the Australian Food and Nutrition Policy, published in 1992 [61]. That Policy's aims were:

- to improve the knowledge and skills necessary for Australians to choose a healthy diet;
- to support community-based initiatives towards improving the diet of people with special needs;
- to incorporate food and nutrition objectives into a broad range of policy areas and sectors; and
- to regularly monitor the food and nutrition system.

The 1992 policy recommended a review be undertaken after three years; however this did not eventuate.

A recent review examining progress on key food and nutrition policy domains at the national level found that the absence of a contemporary national strategy has contributed to significant policy gaps, patchy implementation and the largely ad hoc approach of successive Australian governments to improving diet quality [62]. Furthermore, the *2017 Food Policy Index Scorecard and Priority Recommendations for Australian Governments* listed the development of a national nutrition policy as a top priority at the federal level [63].

Although Australia does not have a current and comprehensive national nutrition strategy, the Australian government has introduced several policies, programs and initiatives over the past two decades to improve population nutrition. These include the:

- implementation of the Eat Well Australia action plan 2000-2010;
- development of the Australian Dietary Guidelines (most recently updated in 2013 [7]) and a range of accompanying consumer resources and educational toolkit;
- development of Nutrient Reference Values (e.g. recommended daily intakes, upper intake limits);
- introduction of food labelling initiatives (including the voluntary Health Star Rating system) and legislation;
- establishment of National Government-lead public-private partnerships such as the Food and Health Dialogue (FHD) and Healthy Food Partnership (HFP); and
- development of a National Obesity Strategy and National Preventive Health Strategy, both due to be completed in 2020-21.

A contemporary national nutrition strategy would integrate these existing initiatives and other policy tools in a coordinated approach to improving diet quality and reducing diet-related harm. Although there will be some overlap between the National Obesity Strategy and a new national nutrition strategy, obesity is only one component of the overall harm attributable to unhealthy diets. Therefore, an obesity strategy alone will not be enough to reduce other aspects of diet-related harm, which contribute significantly to Australia’s overall burden of

disease. A National Obesity Strategy and national nutrition strategy, sitting under the broad umbrella of an overarching National Preventive Health Strategy, would likely achieve the largest possible reduction in diet-related harm.

A national nutrition strategy would also result in better coordination of policies across jurisdictions and guide nutrition policies at the state, territory and local government level. Many state and territory governments have implemented their own nutrition policies or developed guidelines and resources to address the significant harms associated with unhealthy diets. A national nutrition strategy should therefore provide both a framework for federal policy activities and information to support existing state-based and local initiatives.

The World Health Organization

The World Health Organization (WHO) has been at the forefront of working to improve global nutrition standards and prevent diet-related harm since its inception in 1948. In terms of policy development, the WHO has provided resources, guidelines and implementation assistance to support over 150 countries develop national nutrition policies and improve the diets of their citizens [42, 64].

The WHO also plays a major role in the monitoring and evaluation of nutrition policies, programs and data across the globe. The Global Database on National Nutrition Policies and Programmes was established in 1995 initially to monitor and evaluate the progress in implementing the World Declaration and Plan of Action for Nutrition. However, it has been further developed to monitor country progress in developing, strengthening and implementing national nutrition plans, policies and programmes, including multi-sectoral actions, development of dietary guidelines, undertaking of nutrition surveys and the collection of demographic and epidemiological data [65].

A harm minimisation approach

Defining harm minimisation

There is no consensus on a definition of a harm minimisation approach, and it has been defined in several different ways. The definition used in this brief, adapted from *Harm-Minimisation: Principles & Policy Frameworks* is [66]:

….. a policy or practice or strategy is harm minimising if it is fully reasonable to expect that it will reduce existing or future harm to the greatest degree allowed by the resources and conditions that prevail in the particular context of its application, without necessarily requiring the reduction or elimination of use.(p.10)

Harm minimisation has been used as a key policy approach of both Australian federal and state governments to address alcohol and other drugs, underpinned by the National Drug Strategy [67]. The 1985 iteration of the National Drug Strategy was the first national strategy in Australia to formally adopt a harm minimisation approach [68].

A harm minimisation approach does not blame individuals for choosing health behaviours which result in harm but rather looks at the various contributing factors which culminate in harm and aims to address them systematically [55]. Such approaches have also been associated with reducing stigma in other areas, which is of relevance to nutrition given the stigma associated with being overweight or obese [23, 69].

The three pillars of harm minimisation

Formal harm minimisation approaches, including Australia's National Drug Strategy, are underpinned by three key principles: harm reduction, demand reduction and supply reduction. These key principles, often referred to as the three pillars of harm minimisation, offer a multifaceted approach to minimise the harms associated with harmful substances or behaviours [70]. A description of the three pillars within the context of minimising alcohol and other drug-related harm is provided below:

- **Harm reduction** - helping to reduce harm arising from drug use for those who continue to use;
- **Demand reduction** - encouraging people not to use, to delay use, or to use less of a drug; and
- **Supply reduction** - reducing and controlling the amount of drug available.

These three pillars continue to provide the foundation for multifaceted harm minimisation approaches across various areas of public health[68]. Harm minimisation principles are being used across many different issues, including road safety, problem gambling and sexual health. Box 1, below, demonstrates the application of harm minimisation in the context of drug and tobacco-related policy in Australia.

Box 1: Case Study on harm minimisation in Australian drug and tobacco policy

In Australia, harm minimisation is the current strategy underpinning drug-related laws and responses. It was first introduced in 1985 and has remained as the key drug and other substances policy of Australian governments. Drug use is a complex issue and harm minimisation has allowed for people who use drugs to be supported to progressively reduce harms [67]. The National Drug Strategy 2017-2026 emphasises a harm minimisation approach, underpinned by demand reduction, supply reduction and harm reduction [67].

Demand reduction of illicit drugs is predominantly achieved through education and public community awareness campaigns on the risks of consumption [55]. These strategies aim to prevent initial uptake and reduce continual use [67]. Supply reduction aims to reduce the availability of drugs through legal sanctions against the sale and distribution of drugs. Seizures and supplier arrests through large-scale supply control operations sometimes reduce the availability of illicit drugs [71].

Harm reduction interventions aim to minimise the harmful impacts of the risky behaviour. Regarding illicit drugs, these include needle exchange programs, medically supervised injecting centres and methadone programs [55]. Needle-exchange programs have reduced the spread of HIV and hepatitis C infection significantly, and health professionals continue to use this as best practise [72]. Methadone treatment programs reduce harm as methadone is associated with much lower mortality rates than heroin [73].

Australia's success in using harm minimisation principles with tobacco is shown in the long term decline in the prevalence of tobacco use in Australia. Since 2001, the proportion of adults who are daily smokers decreased from 22.3% to 13.8% in 2017-18 [74]. This substantial decline in smoking prevalence is attributable to a range of initiatives.

Tax and price policies are widely recognised as one of the most effective means of influencing the demand for, and thus the consumption of, tobacco products [75]. To date, successive Australian Governments have influenced the price of tobacco products through a series of increases in tobacco excise and excise-equivalent customs duty. Smoke free laws and policies have also played an important role in reducing tobacco use. Smoke-free policies are designed to reduce exposure to second hand smoke, provide incentives for smokers to quit and de-normalise smoking as adolescents are particularly vulnerable to visual cues and social norms [76].

Advertising and promotional activities by tobacco companies have been shown to influence the onset and continuation of smoking, particularly among adolescents and young adults [77]. Comprehensive controls to prohibit and restrict tobacco advertising, promotion and sponsorship have played a key role in reducing the demand for tobacco products in Australia. The introduction of plain packaging of tobacco products, along with larger graphic images on tobacco packaging, has improved the effectiveness of health warnings, reduced misconceptions about relative harms and decreased the overall appeal of smoking [78]. Other key measures have included mass media and other public education campaigns. These campaigns continue to be important in influencing knowledge and attitudes around tobacco-related harms [79].

Certain supply side measures have also been introduced including measures to restrict the legal purchasing age for cigarettes to 18 years Australia wide and measures to address the illicit tobacco trade.

Applying the three pillars of harm minimisation to nutrition policy

As harm minimisation focuses on the overall harm attributable to a specific substance, product, behaviour or activity, it provides a framework in which a range of strategies can be used concurrently to achieve an overarching goal [70]. The individual strategies within the overarching approach can be broadly grouped into one of the three pillars which underpin harm minimisation.

A description of these pillars, their application to nutrition policy and examples of government-led actions in relation to reducing diet-related harms are detailed below.

(1) Harm reduction

Harm reduction focuses on identifying and targeting specific risks that arise on a population or individual level. Harm reduction interventions are aimed at reducing negative effects of behaviours without necessarily eliminating the problematic behaviours entirely. Food reformulation is an example of a harm reduction strategy. Reformulation involves reducing the level of potentially harmful components of a product (e.g. sugar or salt) and replacing them with healthier alternatives, without compromising the sensory properties of the product [80]. Reformulation is effective at reducing the intake of unhealthy food components [80], likely because replacing already established products with reformulated 'healthier' alternatives does not rely on consumers changing their dietary behaviours to reduce their intake of salt, sugar and/or saturated fat. Setting incremental targets is a key to success as gradual reduction enables the population to adjust their taste preferences to lower salt, lower sugar and/or lower saturated fat alternatives [80]**.**

In Australia, a National Government-led public-private partnership known as the 'The Healthy Food Partnership' was established in 2015 with reformulation identified as a key focus area. The Healthy Food Partnership provides a mechanism for government, the public health sector and the food industry to work cooperatively to promote healthy eating and encourage food manufacturers to make positive changes to their products. A working group focussed on reformulation has been given the remit to *'work with industry and key stakeholders to make targeted manufactured foods healthier by building on existing strategies such as the Health Star Rating system and optimising the appropriate balance of nutrients and ingredients in food' [81]*.

(2) Demand reduction

Demand reduction prevents the uptake, delays the use and reduces the misuse or overconsumption of harmful products or behaviours. Examples of demand reduction strategies include:

Health advisory labels: Research shows that health advisory labels can reduce dietary intakes of selected nutrients and influence industry practices regarding nutrient composition [82]. In line with such evidence, Australia and New Zealand (like more than 30 other countries worldwide) introduced a voluntary front-of-pack labelling system called the Health Star Rating (HSR) system in 2014 to help consumers compare similar products and subsequently make healthier choices [83]. The five-year evaluation of the HSR system found that around one quarter of surveyed consumers indicated they had made healthier product choices as a result of the HSR system [83]. However, there is mixed evidence about the effectiveness of the HSR system, with some research indicating that it contributes to inconsistent messaging around discretionary foods and may actually undermine the Australian Dietary Guidelines [84].

Other examples of advisory labels that are easy to understand, such as traffic-light labels, have been associated with decreased sales of sugar-sweetened beverages [85]. The Australia and New Zealand Ministerial Forum on Food Regulation agreed that a pictorial approach applied to sugar-sweetened beverages warrants further consideration [86]. In Chile, front-of-pack warning labels identify the level of individual nutrients that are associated with harm (i.e. sugar, salt and saturated fat) and display “Ministry of Health” below each warning graphic [87].

Health levies: Governments can use economic levers to reduce the sales of foods with high levels of unhealthy components, such as high sugar content. Price increases on sugar-sweetened beverages is associated with decreased sugar-sweetened beverage sales [88]. Almost 30 countries around the world have already introduced a sugar tax. Australian modelling shows that a 20% flat-rate tax on sugar-sweetened beverages would reduce consumption by 12.6% and lead to health improvements [85]. The rationale behind tax increases or other pricing regulations on risky products to reduce consumption and related harm is that increasing the economic costs of a product relative to other products will reduce the demand [89].

Restrictions on marketing of unhealthy foods and drinks to children: Evidence consistently shows that children are particularly amenable to marketing and the greater the exposure to advertising, the greater the consumption of the advertised product. Australian children and young people are highly exposed to unhealthy products. TV advertising is the dominant form of food marketing to children, and an estimated 63% of the products promoted during children’s popular viewing times are unhealthy products [90]. Internationally, protecting children from unhealthy product advertising is gaining momentum. Ireland, Norway, the United Kingdom, Canada, France and the United States have employed policies to tackle ‘junk food’ advertising aimed at children. This has been widely endorsed by Australia’s leading medical and health organisations. However, in Australia a mix of statutory regulations and co-regulatory and self-regulatory codes has created a complex system which does not comprehensively protect children and adolescents from the marketing of unhealthy products

(3) Supply reduction

Supply reduction is not only centred on stopping the production of harmful products, it also includes controlling, managing and regulating the availability. In relation to improving diet quality, supply reduction needs to focus on improving access and availability of healthy food options and limiting access to discretionary foods in certain contexts. This could include reducing discretionary foods and encouraging healthy food options through food service policies implemented in government-funded settings (e.g. government departments and agencies, publicly funded schools, early childhood services, hospitals and prisons) to ensure that the food supply encourages taking up of options aligned with dietary guidelines, and that government actively encourages and supports private companies to implement similar policies [91]. For example, a recent review of the effect of interventions limiting the availability of sugar sweetened beverages in schools tentatively concluded that such interventions might be successful in lowering consumptions of such beverages. However, the review also noted that (1) given the uncertainty of the evidence, it is important that the existing evidence base is strengthened and (2) a large number and variety of factors are associated with, and may potentially influence, sugar sweetened beverage consumption and that these beverages are consumed on a variety of occasions and in many locations. This

suggests that no single intervention is sufficiently effective to lower population-level sugar sweetened beverage consumption [88]. This observation is likely to also apply to strategies addressing the consumption of other harmful food components.

Example of an adapted harm minimisation framework

The following 'core elements of a harm-minimisation framework' have been adapted from a Victorian Parliamentary Drugs and Crime Prevention Committee report titled *Harm-Minimisation: Principles & Policy Frameworks, Occasional paper No. 1* [66]. The report examined harm minimisation related to substance abuse but many of the core elements can be directly adapted to nutrition policy, as illustrated below.

1. **Being evidence-based is pivotal:** Decisions regarding strategies to reduce demand, supply and harm reduction for foods with a high propensity to contribute to diet-related harm should be based on best available evidence from Australia and internationally. This includes evidence of successful interventions but also includes the regular collection of robust data to fully understand consumption patterns and to assist in the targeting of interventions.
2. **Sensitivity to context is important:** There are social, cultural, environmental, geographical and economic factors which influence dietary behaviours and diet quality, all of which need to be considered when developing or delivering interventions aimed at improving nutrition [92]. The disproportionate levels of diet-related harm experienced by some population groups, including people who experience socio-economic disadvantage, Aboriginal and Torres Strait Islanders and people living in remote or rural areas should also be a focus of interventions or strategies aimed at improving nutrition in high-risk populations [6, 52].
3. **A harm-minimisation strategy ideally needs to be comprehensive in scope:** Making dietary improvements is challenging for most people, and the factors that influence on dietary choices are inter-related and complex. These include individual, societal, economic and environmental factors [93]. Effectively minimising the harms associated with unhealthy diets requires a multifaceted, integrated approach that addresses demand, supply and harm reduction.
4. **Diversity, flexibility and innovation are important:** The nature of diet-related harms are varied, and the circumstances which drive them can also change depending on context. Adopting an overarching harm minimisation approach will therefore have little prospect of minimising harm if it does not include a diverse range of interventions which are delivered in a way that is sufficiently flexible to respond to the wide variety of factors that contribute to diet-related harm. A coordinated approach, led by the Australian Government with enhanced flexibility at the local or regional level would encourage innovation.
5. **Coordinated policy and targeted program activity is central to harm minimisation:** By definition, a harm-minimising strategy needs to direct its efforts and resources in the most efficient and effective way it can to reduce harms. Such efficiency will not be possible without the appropriate targeting and systematic coordination of decision-making and program operation. The need for coordination and balanced sharing of decision-making between the local and centralised levels of government presents an opportunity for the Australian Government to take leadership in adopting a broad harm minimisation approach and developing a new national nutrition strategy.

6. **An ideal harm-minimisation strategy will be integrated and cohesive:** A collective effort is needed to improve diet quality. Strategies aimed at reducing supply, demand and harm need to be consistent across settings and jurisdictions. For example, strategies that focus on healthy options in schools will be most effective in reducing diet-related if they are accompanied by initiatives which educate families and communities about the harmful effects of unhealthy diets.
7. **Harm minimisation strategies must be inclusive and aim to reduce stigma and discrimination**: Beyond the direct chronic disease related harms attributable to unhealthy diets, there is also significant harm related to stigma and discrimination experienced by people who are overweight or obese. Diet quality has become synonymous with weight and the 'obesity epidemic'. People who are obese are often socially marginalised and portrayed as lacking in will power [21-23]. To reduce this stigmatisation, it is important that firstly, diet quality and weight be disentangled and secondly that vulnerable people and communities are involved in decision-making regarding healthy food options and how to reduce the harm from food.
8. **Ongoing dialogue and communication between key stakeholders is essential**: Individuals, governments, food manufacturers and other industry stakeholders all contribute to dietary patterns and options, and they can all play an active role in improving diet quality and nutrition status. Ensuring open dialogue and communication facilitates collaboration and promotes accountability.
9. **Harm minimisation strategies to improve diet quality should consider unintended consequences:** For example, strategies to reduce supply of unhealthy foods at schools could increase consumption of unhealthy foods at home [88].
10. **Reducing health inequities is a key tenet of harm minimisation**: The minimisation of harm should ideally be achieved in a way that is equitable. This means targeting resources and efforts to groups who are most vulnerable to diet-related harms, including people experiencing the highest levels of disadvantage or people from marginalised groups.
11. **Evaluation is paramount:** Strategies to improve diet quality should be monitored to assess their effectiveness in improving diet quality and reducing diet-related harm. This requires investment in research and regular collection of health information on population health status, risk and behaviours [94]. This includes data on the diet quality and eating patterns of Australians.
12. **Emphasise the significant harms caused by unhealthy diets and specific dietary risk factors in any public messaging** to ensure that Australians understand the rationale behind adopting such an approach.

Policy considerations and recommendations

The Australian Government has introduced a range of initiatives and funded programs and research aimed at improving Australian diets. *The 2017 Food Policy Index Scorecard and Priority Recommendations for Australian Governments* [63] found that at the national level, Australia is meeting best practice in the implementation of some policies, including:

- aspects of food labelling (such as the development of the Health Star Rating scheme, and regulations on health claims);
- food prices (no GST on basic foods); and
- regular monitoring of population body weight.

These successes and the ongoing development of a National Obesity Strategy and National Preventive Health Strategy are positive examples of policy progress. However, there are several areas where Australian policy is lagging other countries in addressing unhealthy diets and diet-related harm.

There is robust evidence that unhealthy diets are responsible for more harm than any other chronic disease risk factor globally [1], and that a harm minimisation approach could be applicable to nutrition policy. It is recommended that the Australian Government develop and oversee a comprehensive policy approach to improve diet quality and reduce the significant harms, preventable deaths and substantial costs associated with diet-related chronic disease burden. This could be achieved via the development of an up to date national nutrition strategy to act as an overarching framework for the implementation of a multifaceted harm minimisation approach, which has been used successfully in other areas of public health, such as illicit drugs and road safety [95, 96].

Potential benefits of adopting a formal harm minimisation approach to nutrition policy include:

- a system wide examination of policy levers related to of supply, demand and harm reduction;
- improved coordination as the whole system has the singular and simplified focus of minimising harm;
- nutrition policy outcomes that align with an overarching framework while still encouraging agile initiatives and local responsiveness;
- a potential shift in the narrative around government intervention and regulation from ‘Nanny Statism’ to harm minimisation; and
- opportunities to engage with food industries that manufacture potentially harmful products.

Policy options:

1. Acknowledge the significant harms attributable to overconsumption of salt, free sugars and saturated fat and the inadequate intake of fruits, vegetables and wholegrains in nutrition policies and Government resources.
2. Develop of a new National Nutrition Strategy to provide an overarching framework for the implementation of a multifaceted long term harm minimisation approach aimed at improving the diet quality and nutrition status of all Australians. This national long term strategy should include a suite of policies and programs aligned with the three pillars of harm minimisation; harm reduction, demand reduction and supply reduction.

3. Include adequate monitoring and evaluation of the suite of policies and strategies that sit within the broad harm minimisation approach and consider national nutrition targets to encourage long-term accountability.
4. Acknowledge that while obesity and increased chronic disease risk are the predominant harms associated with unhealthy diets, diet-related harms can also include weight-related stigmatisation and mental health and wellbeing issues.
5. Develop targeted strategies within an overarching harm minimisation approach should be adopted to reduce health inequities arising from disproportionate levels of diet-related harm across at-risk population groups, including people who experience socio-economic disadvantage, Aboriginal and Torres Strait Islanders and people living in remote or rural locations.

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