Cancer Council Australia

Cancer Council Australia is Australia’s peak national non-government cancer control organisation. Its members are the eight state and territory cancer organisations working together to undertake and fund cancer research, prevent and control cancer, and provide information and support for people affected by cancer.

Cancer Council’s goal is to lead the development and promotion of national cancer control policy in Australia, in order to prevent cancer and reduce the illness, disability and death caused by cancer.

Cancer Council welcomes the opportunity to make a submission to the National Health and Medical Research Council (NHMRC) about the draft Australian Dietary Guidelines and Australian Guide to Healthy Eating (AGHE).

Our organisation is interested in simple, consumer-friendly dietary messages to assist Australians to make healthier food choices. Cancer Council has a series of evidence-based recommendations aimed at preventing cancer at the population level, and these include maintaining a healthy weight, being physically active, enjoying a nutritious diet and limiting alcohol consumption. The high rates of obesity in Australia and the link between obesity and cancer make sound dietary advice and clear, easy to understand messages of extreme importance.

The importance of the Dietary Guidelines

The 2007-08 National Health Survey, which measured the height, weight, and hip and waist circumference of respondents aged 5 years or more, identified that 68% of adult men and 55% of adult women were overweight or obese.\(^1\) Importantly, the distribution of overweight and obesity is not shared equally amongst all population groups, with people in the most disadvantaged socioeconomic groups having higher levels of obesity than those in the most advantaged group.\(^2\) Poor nutritional status and related overweight and obesity are associated with significant health consequences including certain cancers and other chronic diseases. Further, overweight and obesity is associated with negative psychosocial consequences, such as low self-esteem and depression. In 2008, the total financial cost of obesity was estimated at $8.3 billion,\(^3\) which includes productivity losses, health system costs, carer costs, taxation revenue foregone, and other indirect costs. The cost of obesity increased to $58.2 billion when the cost of lost wellbeing was included.\(^3\)

Australians are bombarded with healthy eating information in the mass media and other sources that is often not evidence-based. Australians need credible, reliable and evidence-based nutrition information to assist them to make healthy food choices, and the Dietary Guidelines provides this. Cancer Council is pleased to see the Dietary Guidelines has a primary focus on food and not individual nutrients as advice needs to be based on practical messages about eating that are relevant to consumers’ everyday food choices.
The evidence regarding cancer prevention

Cancer Council supports the recommendations in the Dietary Guidelines. We also appreciate the considerable body of evidence that has been reviewed and included in the evidence statements. However there are some differences in the associations of some foods or food groups and specific cancer types between the Dietary Guideline evidence statements and the Cancer Council position statements and the World Cancer Research Fund report that we recommend are reviewed before finalising the document to ensure that important studies have not been overlooked.

See Appendix 1 for a comprehensive comparison of World Cancer Research Fund and NHMRC evidence statements.

Fruit and vegetables
Cancer Council is pleased that the Dietary Guidelines encourage people to eat more fruit and vegetables. However there are a few discrepancies between the Dietary Guideline evidence statements and the World Cancer Research Fund report.

The NHMRC found that the association between consumption of fruit and oral and nasopharyngeal cancers as suggestive. However, the World Cancer Research Fund found that there was probable evidence that fruit reduces the risk of cancers of the oesophagus, stomach and lung as well as mouth, pharynx and larynx. Additionally, foods containing dietary fibre, found in plant foods (particularly when in whole or relatively unprocessed forms) probably protect against colorectal cancer.\(^4\)

The NHMRC found suggestive evidence of an association between the consumption of vegetables and a reduced risk of nasopharyngeal cancer. However the World Cancer Research Fund states that there is probable evidence that non-starchy vegetables reduce the risk of cancer of the oesophagus and stomach as well as mouth, pharynx, larynx, and allium vegetables, and garlic specifically, probably protect against stomach cancer.\(^4\) In addition, foods containing dietary fibre, found in plant foods (particularly when in whole or relatively unprocessed forms) probably protect against colorectal cancer.\(^4\)

Processed meats
Cancer Council is concerned that processed meat has been overlooked in the evidence report, and that there are no explicit recommendations about processed meat consumption in the Dietary Guidelines. The World Cancer Research Fund reviewed 14 cohort studies and 44 case-control studies, and found that there is convincing evidence that processed meat is a cause of colorectal cancer.\(^4\) While Cancer Council supports the guideline that Australians should consume lean meats, we feel it should be noted in the evidence report and evidence statements that processed meat is a cause of colorectal cancer and therefore its inclusion in the diet should be limited. Further, processed meat should be clearly articulated as an ‘extra’ food in all education materials to ensure the public is aware that processed meats are very different to lean red meats and therefore should not be included regularly in the diet.

Alcohol
In accordance with our latest recommendations, Cancer Council supports the inclusion of the statement “If you choose to drink alcohol, limit intake” in Guideline 2. However the levels of evidence in the Dietary Guidelines in relation to alcohol consumption and cancer risk are inconsistent with the World Cancer Research Fund report. The World Cancer Research Fund report states that there is convincing evidence that alcohol use causes colorectal cancer (in men) and oral, pharyngeal and laryngeal cancers,\(^4\) while the Dietary Guidelines evidence statement found a probable link.
Social determinants of food choices and health

It is unlikely that improvements in the health of all Australians will be made if nutrition recommendations are only considered in isolation. The broader social determinants of food choices and health need to be taken into consideration. It is pleasing to see that the guidelines address some of the issues faced by Aboriginal and Torres Strait Islander peoples, culturally and linguistically diverse groups and those in lower socio-economic groups who bear a disproportionate burden of diet related chronic disease in Australia.

For the guidelines to effectively reach these groups, it is important that education materials be readily accessible and comprehensible to all.

In particular, food examples need to be culturally inclusive and relevant to Australians from a range of backgrounds. Care needs to be taken to include budget conscious alternatives and choices that are available in rural and remote locations. In particular, canned and frozen fruit and vegetables should be included as alternatives if access and cost of fresh produce is a barrier to consumption.

Recommendations:
- Include references and examples of foods available, accessible and appropriate to people from a range of backgrounds, cultures, locations and socioeconomic status, including budget-conscious options.
- Any education materials developed must be thoroughly consumer-tested for ease of use and comprehension.
- Education materials should be developed to cater for low-literacy, culturally diverse and indigenous population groups.

Consumer needs

Consumer communication materials should provide clear, simple and easy to interpret information that can be understood across demographic groups, particularly lower socio-economic groups. The consumer materials that accompany the Dietary Guidelines and the AGHE are vital as they translate the evidence into practical and achievable advice that the public can adopt. It is vital that the Dietary Guidelines are accompanied by a comprehensive consumer education strategy.

As the levels of overweight and obesity in Australia are still at concerningly high levels even though the AGHE has been available as a consumer resource since 1998, it is imperative that the release of the updated Dietary Guidelines are accompanied with a comprehensive social marketing campaign, and well considered key messages for key target audiences. It is important that government dietary advice take into consideration the health literacy of consumers and in particular those with low education levels or from non-English speaking backgrounds.

Recent research by Cancer Council NSW and the Physical Activity, Nutrition and Obesity Research Group at Sydney University has shown that consumers find it difficult to interpret
some of the terms commonly used to communicate dietary advice such as eat often, eat occasionally and eat moderately. The research included a survey of 405 shoppers which explored how frequently consumers thought foods labelled with the terms ‘eat often’, ‘eat moderately’, ‘eat occasionally’, ‘a sometimes food’ and ‘an extra food’ should be eaten. In a separate phase, 30 grocery buyers responded to open-ended questions about their interpretation of these terms. The results showed significant differences in the relative frequency of consumption implied by each term. However, the interpretation of each term varied considerably across the sample. The qualitative research found the terms to be highly subjective, and there was a high degree of uncertainty about the meaning of the term ‘an extra food’ in particular. The research concluded that these ‘frequency of consumption’ terms do not communicate precisely or specifically about how often food and beverages are recommended to be consumed.

Another part of the research explored consumers’ understanding of the terms energy, calories and kilojoules. This research found that despite the requirement to use kilojoules on nutrition information panels and menu labelling there is a lack of understanding of kilojoules and specific links to weight gain. High energy products were often seen as healthy and even necessary for sustained energy. High energy products were also associated with increasing productivity, providing a boost and necessary for those doing physical activity such as going for a bushwalk. There was a difference in people’s interpretation of energy according to their socio-economic status, with people with lower education or incomes more likely to associate higher energy with healthiness. The findings showed a poor understanding of the terms ‘kilojoules’ and ‘calories’ amongst Australian shoppers, with many reporting that they are unsure of the definitions. Only 40% knew that kilojoules and calories were measures of the same thing, with respondents in the interviews associating calories negatively with weight gain, sugar or fat, while kilojoules were more often referred to in terms of contributing to energy needs.

Education and communication materials must be developed with consideration of the functional literacy levels in the community. Cancer Council recommends comprehensive consumer testing of any resources developed and practical, pictorial examples showing portion sizes, a range of foods that appeal to various cultures, and examples of whole meals and snacks in ‘as eaten’ form.

**Recommendations:**
- Any education materials developed must be thoroughly consumer-tested for ease of use and comprehension.
- The launch of the Dietary Guidelines must be accompanied by a social marketing campaign that has been thoroughly consumer-tested with a range of sub-groups, including low-literacy, culturally and linguistically diverse and indigenous groups.
- Low-literacy, culturally diverse and indigenous materials should be included in the education resources.
- Include references and examples of foods available, accessible and appropriate to people of a range of backgrounds, cultures, locations and socioeconomic status, including budget-conscious options.

**Guideline 1 – Eat a wide variety of nutritious foods…And drink water**

Using the word ‘eat’ in relation to the food groups may confuse consumers as milk and alternatives are often served as a beverage. Cancer Council recommends that the word ‘eat’ be replaced with ‘enjoy’ in both Guideline 1 and the AGHE. This also promotes an appreciation and enjoyment of healthy foods from the five food groups, and reflects the social nature of food and eating in Australia.
In relation to drinking water, the guideline does not recommend how much should be drunk or that water should be chosen as a drink in preference to sugar-sweetened beverages. Therefore Cancer Council recommends that the guideline be reworded to ‘drink plenty of water’ or ‘choose water as a drink’.

**Recommendation:**
- Reword Guideline 1 to “Enjoy a wide variety of nutritious foods… And drink plenty of water” or “Enjoy a wide variety of nutritious foods… And choose water as a drink”

**The Australian Guide to Healthy Eating**

Cancer Council uses the Dietary Guidelines and the AGHE as a basis of its consumer education materials and education programs.

The basic principles of eating a wide variety of nutritious foods from all five food groups and drinking water are clearer than the previous depiction of the AGHE. Cancer Council supports the continued use of the ‘plate’ model as it is a good visual depiction of a healthy diet.

**Depiction of foods on the ‘Plate’ model**

Cancer Council is concerned that the depiction of individual foods on the model is not to scale and hence may be confusing to consumers. Further, it is not clear what some of the images are. The plate model is regularly used as an education tool, therefore clear, easy to identify images are essential. We recommend that the images included on the plate be of actual serve sizes for each food – e.g. a glass of milk, ½ cup rice etc. This would reduce confusion and improve nutrition literacy, should people not read the additional information in the Daily Diets and Serve Size Equivalents pages that follow. Alternatively, development of an accompanying consumer resource that demonstrates serving sizes for each food group would be useful.

Cancer Council is also concerned that the foods included on the plate are very anglo-centric, and do not include many commonly eaten ethnic foods, for example flat breads, Lebanese breads and wraps or a variety of Asian vegetables. Inclusion of more ethnic foods would make the AGHE more culturally diverse.

Additionally, the foods included on the plate do not reflect a wide variety of commonly eaten foods in the way that they are eaten. For example, including foods such as minced meat, fish fillets, flavoured yoghurts, salads, cooked vegetables and chopped fruit would provide visual representations of the ‘eat plenty’ foods in the context of more common food choices.

Cancer Council notes that the plate has been rotated so that fruit and vegetables are now on the bottom of the depiction rather than the top. As Australians do not consume enough fruit and vegetables, it is recommended that the plate be rotated so that the fruit and vegetable sections are at the top, as this may prompt people to eat more fruit and vegetables.

**Unsaturated fats**

The addition of unsaturated fats in the model is positive; however their current placement outside the plate could imply that they have similar nutritional value to the ‘extra’ foods. Placing them at the bottom next to the ‘extra’ foods gives the impression that the unsaturated fats are not an essential part of the diet, especially if people don’t read the additional information in the Daily Diets and Serve Size Equivalents pages that follow. On the other hand, Cancer Council understands that an adequate intake of unsaturated fats can be obtained from foods already depicted on the plate, such as fish, nuts, seeds and avocados.
Cancer Council recommends that the placement and depiction of the unsaturated fats be thoroughly consumer-tested to ensure the public is not confused by the placement of these foods outside the plate and on an equal footing to the ‘extra’ foods. Further, as these have not been included on the plate model, there is no information about the serve sizes for this group. In order to ensure people are not confused, serve sizes should be included in the Serve Size Equivalent table.

**Breads and cereals**
The recommendation for breads and cereals is to include mostly wholegrain breads and cereals in the diet, yet there are many refined, white breads and cereals depicted. There are also many different types of rolls and bread, but not other bread products such as wraps or Lebanese bread, and muesli and oats but not flaked breakfast cereals.

Cancer Council recommends the inclusion of more images of wholegrain cereals on the plate. Foods should be presented in their prepared form (e.g. a bowl of breakfast flakes). Images of a variety of cereal products, including wholemeal/grain bread and pasta, wraps, flatbreads and crispbreads, should also be included on the plate. Grouping wholegrain cereal products and the refined cereal products separately could visually depict the need for wholegrain cereals in the diet.

**Commonly available, affordable foods**
The limited depiction of dried, frozen and canned fruits and vegetables are at odds with the need for food examples to be commonly available, affordable choices. Frozen and canned options may be the only options available for lower socio-economic or remote populations, therefore should feature in the appropriate segment.

‘Extra’ foods or ‘discretionary choices’
The ‘extra’ foods have been included off to the side of the plate (only sometimes and in small amounts), however there is no written information on how many serving sizes. The 1998 release of the AGHE highlighted how small a serve size for extra foods is, and this was a valuable education tool. The decision not to quantify how many extra foods were allowed each day is understood, however if they are included on the plate resource, there should be some mention of them in the Serve Size Equivalents section so that people know what is a small amount.

To address overweight and obesity, consumers need advice on energy recommendations. The AGHE must enable the population not only to assess the number of serves from food groups but also to relate this to their own energy needs. The importance of this is highlighted by our research previously referred to on pages 3 and 4 of this submission showing consumers lack understanding of the energy and kilojoules terms.\(^6\)

Cancer Council recommends that average energy needs at different life stages and practical examples of energy content of “extra foods” be included in the AGHE.

**Daily Diets table (Table 1)**
It is not clear what ‘Additional serves from the five food groups or discretionary choices’ means. There is no definition for ‘discretionary choices’, and it is unclear whether the extra serves should be across the food groups or from each food group. Further, stating that the discretionary choices are only for taller or more active people is likely to be dismissed by the public, as it is effectively telling people they cannot have a small amount of ‘extra’ foods if they are short/not active. There is also no guidance on how many serves of extra foods specifically are appropriate.

There is the potential for this statement to confuse the public and may lead to an unnecessary increase in energy intake in taller or active individuals. Cancer Council
recommends that the wording of this be clarified and thoroughly focus tested with the public to test consumer comprehension, efficacy and applicability. Extensive public education will also be required to ensure that the Daily Diets can be correctly applied by the public.

The * on unsaturated fats in the footer of Tables 1 and 2 is not user-friendly, and does not reflect how much pregnant and lactating women require. As these are an essential part of the diet, an allowance for these in terms of serve sizes should be included in the table for all population groups.

Serve Size Equivalents (2nd Table 1 – note: numbering of tables incorrect)
Some of the descriptors in the Serve Size Equivalents, e.g. 'Brassica or cruciferous vegetables' would not be easily understood by the average consumer. It is recommended that common examples (e.g. cauliflower, broccoli, cabbage) are used. Further, practical descriptions of serve sizes (e.g. cup sizes or relatable sizes such as 'palm-sized serve of meat') are recommended over weights (30g nuts) or measurements (4x3x2cm piece of cheese), as people are unlikely to measure their serves in this way.

Overall, the AGHE is used in a variety of settings, therefore ensuring it is thoroughly tested in a diverse population sample is crucial to ensuring it is user-friendly and understandable.

Supporting materials
It is assumed that additional supporting materials will be released with the AGHE, such as the Consumer Booklet and Background Information for Nutrition Educators that accompanied the 1998 AGHE. If this is the case, it is disappointing that these have not been released for consultation as this would have generated useful insight from the general public and health professionals who use the materials in the community to promote healthy eating. To ensure these are consumer-friendly and easily comprehended by the public, all developed materials should be thoroughly focus-tested and subjected to public consultation prior to publication.

Recommendations:
- Images used on the AGHE should be of good quality and to-scale.
- Images used on the AGHE should be of actual serve sizes of the foods to avoid consumer confusion. Alternatively, a consumer resource on serving sizes should be developed.
- Include more images of culturally-appropriate foods.
- Include images of food items in the state in which they are eaten.
- The plate depiction should be rotated so that the fruit and vegetable sections are at the top.
- The placement and depiction of the unsaturated fats group must be thoroughly consumer-tested to ensure the public is not confused by the placement of these outside the plate and on an equal footing to the ‘extra’ foods.
- Include a better balance of wholegrain and refined breads and cereals and group these together on the plate.
- Ensure affordable, available and accessible options are depicted on the AGHE, including more frozen, canned and dried foods.
- Include serving sizes for ‘extra’ foods in the Serve Size Equivalents section so that people know what a small amount of these foods are.
- The average energy needs at different life stages and practical examples of energy content of “extra foods” should be included in the AGHE.
- The wording of the ‘discretionary choices’ section must be clarified and thoroughly consumer-tested to ensure it is understood by the general public.
- Recommended serves of unsaturated fats and serve sizes for all food groups must be included in the table for all population groups (including pregnant/lactating women).
Testi
g, dissemination and evaluation

Cancer Council strongly recommends that a comprehensive communication plan accompany this document to ensure it meets the needs of Australians and the aims of the NHMRC in putting it together. Communication materials need to be in different formats to meet the needs of different audiences.

The Joint Food and Agricultural Organisation/World Health Organisation (FAO/WHO) consultation report provides guidelines which are useful to consider:
- The guidelines should be practical for the general public to implement taking into account foods that are affordable, widely available, accessible to most people taking into account geographical variation and suitable for people of different ages and energy requirements.
- The messages should be conveyed in an appropriate and appealing form.
- The guidelines must be at a suitable reading level and represent both everyday usage and scientific meaning.
- The guidelines must be culturally appropriate by considering current food habits. The choice of who conveys the message and how they deliver the message should also be considered in a cultural context.
- Workshops and seminars should be used to train key persons about the broad concepts and specific messages presented by the guidelines.
- Testing should firstly be carried out with nutritionists as well as representative users, then with members of the general public, using focus groups to determine the appropriateness and cultural acceptability of the content and the visual presentation. Then it is recommended a more in-depth evaluation is carried out to ascertain how individuals interpret the words and advice given in the guidelines.
- Communication materials and messages should be promoted in a variety of settings including the educational system, private organisations, health care systems, etc.
- Educational materials can be developed to support the guidelines with instructional materials addressing issues such as serving size and traditional foods.

It is also important to evaluate the dissemination process to monitor the effectiveness of the communication plan.

Recommendations:
- A comprehensive communication plan should accompany the guidelines
- Communication materials and messages should be promoted in a variety of settings
- Educational materials must support the guidelines with instructional materials addressing issues such as serving size and traditional foods
- The education and communication materials should be tested on consumers prior to finalising
- The communication process should be evaluated.
**National Food and Nutrition Policy**

Although environmental sustainability has been considered and the general principles of the Dietary Guidelines are compatible with reducing environmental impacts as well as promoting good health, it is disappointing that the evidence chapter on the environment has been removed. Cancer Council recommends a chapter on environmental sustainability be included, and environmental considerations be included in the practical considerations in relevant sections, such as meat and ‘extra’ foods.

As it has been identified that the inter-relationship between diet and the environment is a cross-sectoral matter, it is important that the Dietary Guidelines are part of a food policy framework which includes environmental sustainability. Cancer Council believes that a comprehensive government approach is important to ensure that these Guidelines have maximum impact. It is vital the Australian Government develops a food policy framework that looks at the food system from the perspective of public health.

**Recommendation:**
- Include a chapter on the evidence on environmental sustainability and incorporate environmental sustainability into practical considerations sections.
- The Dietary Guidelines form part of the National Food and Nutrition Policy

**Conclusion**

The Dietary Guidelines are an important independent tool to guide Australians in making healthier food choices, reducing their risk of developing chronic diseases and maintaining a healthy weight. The government-endorsed guidelines also provide evidence-based information to counteract the mixed messages that consumers receive from a range of sources. The importance of thorough consumer-testing and a public education campaign should not be overlooked.

Cancer Council is pleased to be able to contribute to the consultation process for the Dietary Guidelines and the AGHE. Should you require clarification of any of the above recommendations, please contact:

Kathy Chapman  
Chair, Nutrition and Physical Activity Committee  
Cancer Council Australia  
Ph: 02 9334 1720  
E: kathyc@nswcc.org.au
## Appendix 1
Comparison between Cancer Council positions (and WCRF Report) and Dietary Guidelines

<table>
<thead>
<tr>
<th>Food group</th>
<th>Cancer Council position</th>
<th>WCRF finding</th>
<th>NHMRC Dietary Guidelines</th>
<th>Comment (consistent inconsistent or not addressed)</th>
</tr>
</thead>
</table>
| Alcohol    | There is *convincing* evidence that any level of alcohol use increases the risk of cancers of the:  
- mouth, pharynx and larynx  
- oesophagus  
- colorectum (men)  
- breast (women)  

There is *probable* evidence that it increases the risk of cancers of the:  
- Colorectum (women)  
- Liver  

There is *probable* evidence that alcoholic drinks increase the risk of cancer of the:  
- Liver  
- Colorectum (women)  

There is *probable* evidence that alcoholic drinks can increase the risk of cancer of the:  
- Mouth, pharynx and larynx  
- Oesophagus  
- Colorectum (men)  
- Breast (pre- and post-menopause) | Consumption of alcohol even at low levels (10-15g/day), is associated with increased risk of breast cancer – *B - probable*  
Consumption of alcohol is associated with increased risk of colorectal (men) and mouth, pharynx and larynx  
Consumption of alcohol is associated with increased risk of cancer of the oesophagus – *B – probable*  
Consumption of alcohol even at low levels (10g/day), is associated with increased risk of colon cancer and rectal cancer – *C – suggestive association*  
Consumption of alcohol, even at low levels (10g/day) is associated with increased risk of liver cancer in some populations – *C – suggestive association*  
Consumption of alcohol is associated with an increased risk of cancer of the oral cavity, pharynx and larynx – *C – suggestive association* | *Inconsistent*  
NHMRC reports weaker level of evidence  
Evidence stated but weaker for colorectal (men) and mouth, pharynx and larynx |
<table>
<thead>
<tr>
<th>Food group</th>
<th>Cancer Council position</th>
<th>WCRF finding</th>
<th>NHMRC Dietary Guidelines</th>
<th>Comment (consistent inconsistent or not addressed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td><strong>Dietary fibre probably decreases the risk of colorectal cancer</strong>&lt;br&gt;There is <em>limited suggestive</em> evidence that dietary fibre may be associated with a lower risk of oesophageal cancer</td>
<td><strong>There is convincing evidence that foods containing dietary fibre reduce the risk of colorectal cancer</strong>&lt;br&gt;<strong>There is <em>limited</em> evidence that foods containing dietary fibre reduce the risk of cancer of the oesophagus</strong></td>
<td>Consumption of 1-3 serves per day of cereals high in fibre is associated with reduced risk of colorectal cancer in adults – <em>C – suggestive association</em></td>
<td><strong>Inconsistent</strong>&lt;br&gt;NHMRC reports weaker level of evidence</td>
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<td>Coffee</td>
<td><strong>It is unlikely that coffee has any substantial effect on the risk of cancer of the:</strong>&lt;br&gt;● Pancreas&lt;br&gt;● Kidney</td>
<td><strong>Consumption of coffee is associated with increased risk of cancers of the:</strong>&lt;br&gt;● Lung&lt;br&gt;● Endometrial&lt;br&gt;● Hepatocellular&lt;br&gt;● <em>C – suggestive association</em></td>
<td></td>
<td><strong>Inconsistent</strong>&lt;br&gt;NHMRC reports stronger evidence level than WCRF&lt;br&gt;NHRMC also makes a connection between coffee and different cancers to WCRF</td>
</tr>
<tr>
<td>Fats and oils</td>
<td><strong>There is <em>limited suggestive</em> evidence that total fat increases the risk of cancer of the:</strong>&lt;br&gt;● Lung&lt;br&gt;● Breast (post menopause)**&lt;br&gt;<strong>There is <em>limited suggestive</em> evidence that foods containing animal fats can increase the risk of cancer of the colorectum</strong>&lt;br&gt;<strong>There is <em>limited suggestive</em> evidence that butter can increase the risk of cancer of the lung</strong></td>
<td></td>
<td></td>
<td><strong>Not addressed</strong>&lt;br&gt;No NHMRC evidence statement regarding association between fats and oils and cancer</td>
</tr>
<tr>
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| Fish              | There is *limited suggestive evidence* for an association between increased fish consumption and a reduced risk of cancer of the:  
\- Breast  
\- Colorectal  
\- Prostate | There is *limited suggestive evidence* that fish is associated with a reduced risk of cancer of the colorectum |                                                                                      | *Not addressed*                                                                                 |
|                   |                                                                                       |                                                                                      |                                                                                      | No NHMRC evidence statement regarding association between consumption of fish and cancer |
| Fruit             | Fruit and vegetables *appear to protect* against cancers of the digestive tract, such as cancer of the mouth, pharynx, larynx, oesophagus, stomach and colorectum  
Fruit *may also protect* against lung cancer | There is *probable evidence* that fruit reduces the risk of cancer of the:  
\- Mouth  
\- Pharynx  
\- Larynx  
\- Oesophagus  
\- Stomach  
\- Lung  
There is *limited evidence* that fruit reduces the risk of cancer of the:  
\- Nasopharynx  
\- Colon & rectum  
\- Pancreas  
\- Liver | Consumption of fruit is associated with a reduced risk of oral and nasopharyngeal cancer – *C – suggestive association* | *Inconsistent*                                                                               |
|                   |                                                                                       |                                                                                      |                                                                                      | NHMRC reports weaker level of evidence            |
|                   |                                                                                       |                                                                                      |                                                                                      | NHMRC only acknowledges association with oral and nasopharyngeal cancer |
| Legumes (pulses) and beans | There is *limited suggestive evidence* that pulses (legumes) reduce the risk of cancer of the:  
\- Stomach  
\- Prostate | Consumption of legume foods is associated with reduced risk of colorectal cancer. – *C – suggestive association* |                                                                                      | *Consistent*                                     |
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</thead>
<tbody>
<tr>
<td>Meat</td>
<td>The consumption of red meat appears to be <em>convincingly</em> associated with a modest increased risk of colorectal cancer</td>
<td>There is <em>convincing evidence</em> that red meat increases the risk of colorectal cancer</td>
<td>Consumption of greater than 100-120g/day red meat is associated with an increased risk of colorectal cancer – <em>B – probable association</em></td>
<td>Inconsistent NHMRC reports a weaker evidence base than WCRF for colorectal cancer</td>
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<td></td>
<td>There is <em>limited suggestive evidence</em> that red meat may be associated with an increased risk of cancer of the:</td>
<td>There is <em>limited evidence</em> that red meat increases the risk of cancer of the:</td>
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<td>- Oesophagus</td>
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<td>- Endometrium</td>
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<tr>
<td>Meat (Processed)</td>
<td>The consumption of processed meat appears to be <em>convincingly</em> associated with a modest increased risk of colorectal cancer</td>
<td>There is <em>convincing evidence</em> that processed meat increases the risk of colorectal cancer</td>
<td>Consumption of red meat is associated with an increased risk of renal cancer – <em>C – suggestive association</em></td>
<td>Not addressed</td>
</tr>
<tr>
<td></td>
<td>There is <em>limited suggestive evidence</em> that processed meat with an increased risk of oesophageal, lung, stomach and prostate cancer</td>
<td>There is <em>limited evidence</em> that processed meat increases the risk of cancer of the:</td>
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<td></td>
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<td>- Oesophageal</td>
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<td>- Lung</td>
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<td>- Stomach</td>
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<td>- Prostate</td>
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<tr>
<td>Food group</td>
<td>Cancer Council position</td>
<td>WCRF finding</td>
<td>NHMRC Dietary Guidelines</td>
<td>Comment (consistent inconsistent or not addressed)</td>
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<tr>
<td>Milk and dairy</td>
<td>Evidence suggests that milk probably protects against colorectal cancer</td>
<td>There is probable evidence that milk can reduce the risk of cancer of the colorectum</td>
<td>Consumption of more than 1 serving of dairy per day, especially milk, is associated with a reduced risk of colorectal cancer – B – probable</td>
<td>Inconsistent (except for association between milk and colorectal cancer)</td>
</tr>
<tr>
<td>products</td>
<td></td>
<td>There is limited suggestive evidence that milk reduces the risk of bladder cancer</td>
<td>Consumption of 3 or more servings of milk per day is not associated with risk of renal cell cancer – B – probable</td>
<td>NHMRC does not address association between milk and dairy foods with increased risk of cancer of the prostate</td>
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<td>There is limited suggestive evidence that milk and dairy foods increase the risk of prostate cancer, and that cheese increases the risk of colorectal cancer</td>
<td>Consumption of more than 1 serving of milk per day is associated with reduced risk of rectal cancer – C – suggestive association</td>
<td>NHMRC does not address association between cheese and cancer of the colorectum</td>
</tr>
<tr>
<td>Salt and salt</td>
<td>Both salt and salt preserved foods are probably associated with an increased risk of stomach cancer</td>
<td>There is probable evidence that salt and salt preserved foods increase the risk of cancer of the stomach</td>
<td>Not addressed</td>
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<tr>
<td>preserved foods</td>
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<td>No NHMRC evidence statement regarding the association between salt and salt preserved foods and cancer</td>
</tr>
<tr>
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<td>WCRF finding</td>
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</tbody>
</table>
| Soy and phyto-oestrogens | There is *limited suggestive* evidence that soy foods may lower the risk of cancer of the:  
• Prostate  
• Stomach  
The evidence for soy foods and cancer of the pharynx, oesophagus, pancreas, breast and endometrium is *limited* with *no conclusion* possible.  
There is *no* association between soy foods and the risk of other cancers, including bowel cancer | There is *limited suggestive* evidence that foods containing sugars increase the risk of cancer of the colorectum |                                                                                         | Not addressed  
NHMRC does not address this category                                                                 |}

| Sugars                                           |                                                                                                                                                                                                                 |                                |                                                                                                                                                                                                 | Not addressed  
No NHMRC evidence statement regarding association between sugars and cancer  
NHMRC states that Consumption of sugar-sweetened beverages is associated with increased risk of weight gain – *B – probable*                                                                 |
<table>
<thead>
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<th>WCRF finding</th>
<th>NHMRC Dietary Guidelines</th>
<th>Comment (consistent inconsistent or not addressed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>Fruit and vegetables appear to protect against cancers of the digestive tract, such as cancer of the mouth, pharynx, larynx, oesophagus, stomach and colorectum. Foods containing lycopene such as tomato may reduce the risk of prostate cancer.</td>
<td>There is probable evidence that vegetables reduce the risk of cancer of the: - Mouth - Pharynx - Larynx - Oesophagus - Stomach There is limited evidence that vegetables reduce the risk of cancer of the: - Nasopharynx - Colon &amp; rectum - Lung - Ovary - Endometrium</td>
<td>Consumption of vegetables is associated with a reduced risk of oral and nasopharyngeal cancers – C – suggestive association Consumption of preserved vegetables is associated with a increased risk of oral and nasopharyngeal cancers – C – suggestive association Consumption of 1-2 serves per day of tomato is associated with a reduced risk of prostate cancer – C – suggestive association Consumption of more than 1 serving of spinach is associated with a reduced risk of colorectal cancer – C – suggestive association Consumption of cruciferous vegetables is associated with a reduced risk of lung cancer – C – suggestive association</td>
<td>Inconsistent NHMRC reports weaker level of evidence</td>
</tr>
</tbody>
</table>

**NHRMC mention of processed meat**

NHRMC notes in the section “setting the scene” that “processed and cured meats can be high in added salt and saturated fat and are not recommended as substitutes for unprocessed meat.” (pg. 51)

**External evidence considered by NHRMC regarding the relationship between processed meat and cancer**

“A large cohort trial that found modest increases in total mortality, cardiovascular mortality and cancer mortality with red and processed meat intakes [Sinha 2009] was not included due to lack of clarity over the inclusion of processed meats, liver and sausages with unprocessed red meat.
“The WCRF reported a convincing relationship between red and processed meat and increased risk of colorectal cancer” (pg. 53)  
“The WCRF also reported convincing evidence of an association between processed meats (meat preserved by smoking, curing, salting or addition of chemical preservatives such as nitrites) and increased risk of colorectal cancer but it is unclear whether the responsible factor in the food is the salt, other components such as nitrites, or a combination of these factors.” (pg. 84)
References


