

October 2014

Technical Evaluation for Labelling Review Recommendation 13: Mandatory declaration of trans fatty acids in the nutrition information panel

Executive summary

In 2009, the then Australian and New Zealand Ministerial Council for Food Regulation (now known as the Australian and New Zealand Ministerial Forum on Food Regulation (Forum)) agreed to a comprehensive independent review of food labelling law and policy. An expert panel, chaired by Dr Neal Blewett, AC, undertook the review and the panel's final report, *Labelling Logic: Review of Food Labelling Law and Policy (2011)* (Labelling Logic) was publicly released in January 2011.

Recommendation 13 in Labelling Logic states: *That mandatory declaration of all trans fatty acids above an agreed threshold be introduced in the nutrition information panel if manufactured trans fatty acids have not been phased out of the food supply by January 2013.*

A number of countries have implemented regulatory and/or non-regulatory approaches to reduce trans fatty acids (TFAs) in the food supply, such as mandatory labelling in the USA and Canada (when TFAs are above a certain level), mandatory limits on the trans fatty acid (TFA) content of foods in Denmark and industry guidance for meeting voluntary targets on the TFA content of foods in the UK. In 2003, the World Health Organisation (WHO) recommended that TFAs contribute less than 1% of dietary energy and in 2009 indicated that consideration should be given to the TFA intake of population subgroups that have higher intakes than the population mean.

In 2011, the Forum provided a response to the Labelling Logic report which considered Recommendation 13 in association with two other recommendations (Recommendations 12 and 14) also relating to nutrition information panel declarations along with ingredient listing. The Forum asked FSANZ to provide technical evaluation and advice on the three proposed changes to the nutrition information panel and ingredient list together. However, FSANZ has progressed its technical evaluation and advice on each of the three recommendations separately, because of the diverse nature of the issues involved in each recommendation.

In the government response to Recommendation 13, the Forum noted that industry had already achieved a significant reduction in TFAs and that the level of TFAs in the Australian diet was well below the at-risk level. The Forum questioned whether a deadline for a complete phase out of TFAs was actually required.

In response to the Forum's request for technical evaluation and advice, FSANZ has undertaken the following activities:

- an analytical survey, coordinated by the Implementation Subcommittee for Food Regulation, of the TFA content of New Zealand and Australian foods
- an industry survey on initiatives to reduce TFAs in foods
- two commissioned literature reviews on the health effects of TFAs: a systematic literature review on the relationship between intake of TFAs and blood cholesterol levels and a narrative review of the relationship between TFA intake and other possible adverse outcomes including cancer and type 2 diabetes
- a comparison of current provisions in the *Australia New Zealand Food Standards Code* (Code) for the declaration of TFA content on food labels with those in the USA, Canada and the EU
- consideration of technical issues related to the declaration of TFA content on food labels in Australia and New Zealand, including the threshold approach.

The key findings are as follows:

- While TFAs were detected in most product categories, the median concentrations of TFAs in 500 foods sampled in Australia and New Zealand in 2013 were generally low. Excluding foods likely to contain ruminant TFAs, approximately 86% of the foods had TFA concentrations below 2 g/100 g fat, the limit adopted for manufactured TFAs in Danish legislation in 2003.
- On the basis that the analytical results did not show an increase in TFA concentrations from previous surveys, dietary intake of TFAs is likely to remain low and below the WHO recommended level of 1% dietary energy in both Australia and New Zealand.
- Recently released data from the Australian 2011–12 National Nutrition and Physical Activity Survey, also suggest TFA intake remains low, with the mean intake of all Australians 2 years and above estimated to be 1.4 g/day or 0.6% of dietary energy. Dairy and meat food groups, together with butters and dairy blends, contributed more than half of this intake, showing ruminant TFAs continue to be the major source of TFAs in the Australian diet.
- Current estimates of the distribution of TFA intakes for age/gender groups across the Australian and New Zealand populations are not available. In 2009, FSANZ estimated the 95th percentile for total TFA intake to be 1.1% and 1.2 % of dietary energy for the Australian (17 years and above) and New Zealand (15 years and above) populations, respectively. Given the continued low level of TFAs in foods and the recent population mean estimate of TFA intake in Australia of 0.6% of dietary energy, it is unlikely there has been a large increase in TFA intakes among those with above average intakes.
- The 2013 FSANZ industry survey indicates that the survey respondents were generally actively maintaining a low TFA content of their foods. Some respondents were undertaking on-going work to make further reductions in TFAs. It is not possible to extrapolate the findings of the study to the food industry because of the small number of respondents and the convenience sampling approach.
- The findings from the systematic review, incorporating new evidence published between 2010 and 2014, are consistent with previous research demonstrating a causal relationship between intake of dietary TFAs and detrimental changes in blood cholesterol levels. The review also indicated that any further reduction in TFA intakes in Australia and New Zealand may produce only minor improvements in blood cholesterol levels.

- In 2009, FSANZ updated its 2007 review and concluded that several cohort studies showed a direct association with TFA intake and risk of cardiovascular disease. It was also found that other TFA and disease relationships were less well established and required further research before they could be accepted or refuted. The 2014 narrative review did not find any new evidence that would change this conclusion.

In conclusion:

- The low level of TFAs in the foods sampled in Australia and New Zealand, the small number of people with intakes above the WHO goal of less than 1% TFAs of dietary energy determined in 2009, and the recent estimate of mean dietary intake of total TFAs in Australia together with ruminant TFAs contributing more than half of the total TFA intake, suggest mandatory labelling is not warranted. The Code currently permits the voluntary declaration of TFA content on labels and requires TFA declaration when certain nutrition content and health claims are made.
- Should there be further consideration of mandating TFA declarations on food labels, the costs and benefits of a threshold labelling approach and other approaches would need to be evaluated, including any potential impacts on consumer purchase behaviour, blood cholesterol levels, product formulations and industry costs.

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Supporting Documents:

Supporting Document 1: 2013 survey of the trans fatty acid content of Australian and New Zealand foods

Supporting Document 2: Survey of selected quick service restaurants, edible oil suppliers, packaged food manufacturers and supermarkets on initiatives to reduce trans fatty acids in the Australian and New Zealand food supply

Supporting Document 3: Systematic Review of the evidence for a relationship between trans-fatty acids and blood cholesterol

Supporting Document 4: Narrative review: The relationship between dietary trans-fatty acids and adverse health outcomes

1 Introduction

1.1 Background to Recommendation 13 – Mandatory declaration of trans fatty acids

In 2009, the then Australian and New Zealand Ministerial Council for Food Regulation (Ministerial Council) (now known as the Australian and New Zealand Ministerial Forum on Food Regulation (Forum)) agreed to a comprehensive independent review of food labelling law and policy. An expert panel, chaired by Dr Neal Blewett, AC, undertook the review and the panel's final report, *Labelling Logic: Review of Food Labelling Law and Policy (2011)* (Labelling Logic) (Blewett et al. 2011), was publicly released on 28 January 2011.

Recommendation 13 from Labelling Logic states: *That mandatory declaration of all trans fatty acids above an agreed threshold be introduced in the nutrition information panel if manufactured trans fatty acids have not been phased out of the food supply by January 2013.*

1.2 Government response to recommendation 13

The government response to *Labelling Logic*¹ considered Recommendation 13 in association with two other recommendations (Recommendations 12² and 14³). For the three recommendations, the Forum noted that the proposed changes to labelling requirements are very technical in nature and, as such, require further work to fully investigate and characterise the issues involved.

FSANZ was asked by the Forum to undertake a technical evaluation and provide advice on the proposed changes to the ingredient listing and nutrition information panel (NIP) for the three recommendations. The Forum noted that this advice will assist them to fully consider the expected benefits and cumulative impacts of possible changes to labelling requirements before considering any amendments to the *Australia New Zealand Food Standards Code* (Code). However, FSANZ has progressed its technical evaluation and advice on each of the three recommendations separately, because of the diverse nature of the specific issues involved in each recommendation.

Specifically in relation to Recommendation 13, the Forum recognised that industry has already achieved a significant reduction in trans fatty acids (TFAs) and that the level of TFAs in the Australian diet is well below the at-risk level. On this basis, the Forum questioned whether a deadline for a complete phase out was actually required.

1.3 What are trans fatty acids?

Unsaturated fatty acids can occur in the common *cis* structure, or the rarer *trans* configuration. The different structures of *cis* and *trans* fatty acids lead to different chemical and physical properties and may also explain the differences in their biological activity. TFAs are unsaturated fatty acids which contain at least one double bond in the *trans* configuration.

Sources of dietary intake of TFAs include naturally occurring TFAs found in meat and milk from ruminant animals (referred to as *ruminant* TFAs in this report) and TFAs formed from

¹ Government response to Labelling Logic is at

<http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/home>

² Recommendation 12 – grouping added sugars, fats/oils in the ingredient list

³ Recommendation 14 – mandatory dietary fibre declarations

manufacturing processes such as hydrogenation (referred to as *manufactured* TFAs in this report). Manufactured TFAs (also known as artificial TFAs) are formed when liquid vegetable oils are partially hydrogenated or ‘hardened’ during processing to create spreads such as margarine, cooking fats for deep-frying and shortening for baking. Some TFAs are also formed during high temperature cooking. TFAs can also be formed in food through other manufacturing processes including deodorisation of oils to remove aromatic impurities and heating of oils at excessive temperatures.

Total TFAs refers to the sum of ruminant plus manufactured TFAs. The range of individual TFAs is the same in ruminant and manufactured trans fatty acid (TFA) sources, but the proportions of these individual acids differ. Unless the term manufactured or ruminant TFAs is specified, it should be assumed that the use of TFAs in the report refers to total TFAs.

The variation in the regulatory definition of TFAs around the world was discussed in the FSANZ 2007 review of TFAs (see section 1.5) (FSANZ 2007). As noted in the earlier report, many regulatory definitions, while not specifically excluding ruminant TFAs, exclude fatty acids with conjugated bonds from the definition of TFA, even though these acids have double bonds in the trans configuration. These definitions stem from the view that regulatory definitions adequately identify the fatty acids targeted by regulation. The Australian and New Zealand approach closely follows the chemical definition of trans configuration in fatty acids, and includes all types of TFAs, including ruminant TFAs.

1.4 World Health Organization goals for trans fatty acids

In 2003, the World Health Organization (WHO) set nutrient goals, including one specifically recommending that TFAs contribute less than 1% dietary energy intake (WHO, 2003). The Global Strategy on Diet, Physical Activity and Health, released in 2004, stated that recommendations for populations and individuals should *limit energy intake from total fats and shift fat consumption away from saturated fats to unsaturated fats and towards the elimination of trans-fatty acids* (WHO 2004). The strategy also indicated that specific recommendations to the food industry should refer to limiting the levels of TFAs in existing foods. In 2009, a WHO scientific update on TFAs was published following a meeting of experts in 2007 (Uauy et al. 2009). The key conclusions were as follows:

- *TFAs produced by partial hydrogenation of fats and oils should be considered industrial food additives having no demonstrable health benefits and clear risks to human health.*
- *Restaurants and food manufacturers should avoid using industrially derived TFA in food products and that governments should take steps to support alternative fats or oils for TFA replacement.*
- *There is a need to review the current recommendation that the mean population intake of TFA, that is, partially hydrogenated oils and fats, should be less than 1% of daily energy intake. There is sufficient epidemiological and experimental evidence to support revising this recommendation so that it encompasses the great majority of the population, and not just the population mean, to protect large subgroups from having high intakes.*

1.5 Previous FSANZ reviews of trans fatty acids

FSANZ has previously completed two reviews of TFAs in the New Zealand and Australian food supply and considered the risk posed by dietary intakes of TFAs.

The first review, in 2006, was undertaken in response to a request from the then Ministerial Council (FSANZ 2007). The TFA concentrations in Australia and New Zealand food sampled between 2001 and 2006 were used to determine the dietary intake of TFAs. At that time, the contribution of TFAs to total energy intake in Australia and New Zealand was found to average at 0.6% and 0.7%, respectively. These intakes were below the WHO goal of TFA contributing less than 1% to total energy intake and comparable to, or lower than those reported in other developed countries. Ruminant TFAs contributed approximately half of the TFA intake. While there was evidence that the adverse effects of TFAs on blood cholesterol were greater than those posed by saturated fatty acids (SFAs), the TFA intakes of Australians and New Zealanders were much lower than the intakes of SFAs. FSANZ recommended that a non-regulatory approach to reduce the level of TFAs in the food supply was the most appropriate action and that a review of the outcome of the non-regulatory measures should be undertaken in 2009.

Two voluntary initiatives were established in 2006/2007 to support the reduction of manufactured TFAs in the food supply: the Australia New Zealand Collaboration on Trans Fats and the Roundtable on Trans Fats in Quick Service Restaurants (QSRs).

The Collaboration included representatives from government, public health and industry bodies. It worked on reducing the amount of TFAs in the food supply, without increasing the amount of SFAs. The group also promoted industry and public health initiatives to reduce TFAs and worked on increasing consumer awareness and understanding about TFAs. The broad aim of the Roundtable was to minimise the use of TFAs in quick service meals.

In 2009 FSANZ reviewed the outcome of non-regulatory measures to reduce TFAs in the food supply, including the work of the Roundtable and the Collaboration (FSANZ 2009). The 2009 review included the analysis of 456 foods sampled in Australia and New Zealand during 2008/09. It was found that the intakes of TFAs from manufactured sources had decreased in Australia and New Zealand by around 25 to 45 per cent since 2007, reflecting changes in industry practice. This decline is equivalent to around 0.1% of dietary energy intake. The mean total TFA intake from both ruminant and manufactured sources was estimated to be 0.5% and 0.6% of dietary energy intake for Australians and New Zealanders, respectively. It was also found that ruminant TFAs contributed around 60 to 75% of total TFA intake.

As a result of these findings, in October 2009 ministers agreed that the non-regulatory approach should continue. Due to the success of voluntary industry initiatives to reduce TFAs in foods, the Collaboration and Roundtable are no longer active.

1.6 International regulatory and non-regulatory approaches for reducing trans fatty acids in the food supply

Over the last 10 years several countries have introduced a range of regulatory and/or non-regulatory approaches for reducing the TFA content of foods and TFA intake (L'Abbe et al. 2009, Ratnayake et al. 2009, Uauy et al. 2009, Downs et al. 2013). Details of approaches used in a selection of countries are given in Attachment 1 with a summary provided below.

In Canada, a combination of regulatory and non-regulatory approaches has been implemented. Mandatory labelling was introduced in 2005 (see section 3.4.3). In 2007 Health Canada adopted voluntary limits of 2% TFAs of total fat content for vegetable oils and spreadable margarines and 5% TFAs of total fat content for all other foods, excluding foods containing fat exclusively from ruminants. Results from several TFA monitoring surveys undertaken by Health Canada indicate that the TFA content of foods has decreased. In 2008 the mean dietary intake of TFAs was estimated to be 1.4% of dietary energy, a decline from

3.7% in the mid 1990's (Ratanyake et al. 2009).

The USA has also implemented a combination of approaches for reducing the TFA content of foods with mandatory labelling (above certain levels) enforced from 2006 and guidelines for consumers and industry being available from 2005. Some states and cities in the USA have also introduced laws or voluntary initiatives. For example, from 1 January 2011, all foods containing 0.5 g or more of manufactured TFAs per serving were banned in California, with the exception of food sold in an original sealed package. Estimates of dietary intake indicate that although population mean intakes have declined, individuals may still consume high levels of TFAs. Remig et al. (2010) noted that the threshold labelling approach used in the USA may lead consumers to believing they have consumed no TFAs because foods with less than 0.5 g TFA per serving may be labelled as having 0 g TFA or have no declaration (see section 3.4.3). The Food and Drug Administration (USFDA) is currently considering submissions in response to its preliminary determination that partially hydrogenated oils are no longer 'generally recognised as safe' (GRAS).⁴ In the USA, any substance intentionally added to food is subject to premarket approval by the USFDA, unless it is GRAS or is otherwise exempt.

In response to concern with subgroups of the Danish population having a TFA intake of over 5 g/day, in 2003 Danish legislation was enacted limiting all food products to less than 2% TFA of total fat (Danish Veterinary and Food Administration 2003). The requirements do not apply to ruminant TFAs. Studies evaluating the impact of legislating limits on the TFA content of food suggested that manufactured TFA intake was close to zero in 2006 (L'Abbe et al. 2009, Downs et al. 2013). In earlier FSANZ reviews of TFAs and in the current analytical survey, FSANZ has compared TFA concentrations in foods sampled in Australia and New Zealand with the Danish limit since the mean population intake of TFAs in Denmark in 2003 was around 1% dietary energy, which was closer to the estimated population intakes in Australia and New Zealand than those in other countries.

In the UK in the mid 1990's a voluntary approach was implemented to reduce the TFA content of foods. In 1994, the Committee on Medical Aspects of Food and Nutrition Policy (COMA) recommended average population TFA intakes should not exceed 2% of dietary energy (Department of Health 1994), which remains in place. More recently the UK Department of Health established the Public Health Responsibility Deal⁵ whereby businesses and organisations can sign up to one of two collective pledges about TFA reduction. A recent estimate of the mean TFA intake using 2010/2011 data is 0.6-0.7% of dietary energy for all age groups which reflects the decrease in TFA content of processed food over time (Bates et al. 2014, UK Department of Health 2013). As in other EU countries, there is no requirement for mandatory labelling of TFAs.

The European Commission is to complete a report on the presence of TFA in foods and in the overall diet of the EU population by 13 December 2014. The aim of the report is to *assess the impact of appropriate means that could enable consumers to make healthier food and overall dietary choices or that could promote the provision of healthier food options to consumers, including among others, the provision of information on trans fats to consumers or restrictions on their use.*⁶ A legislative proposal, which could include mandatory labelling or restrictions in the use of TFAs, may be included, if appropriate.

⁴ Further information is available at <https://www.federalregister.gov/articles/2013/11/08/2013-26854/tentative-determination-regarding-partially-hydrogenated-oils-request-for-comments-and-for-h-8>

⁵ Further information is available at <https://responsibilitydeal.dh.gov.uk/>

⁶ http://www.s-ge.com/6059BA05-8CAB-42A2-9427-2CE816B3CBD7/FinalDownload/DownloadId-D1408E7E5C70D1853E580572C0995300/6059BA05-8CAB-42A2-9427-2CE816B3CBD7/sites/default/files/guidance_on_food_labelling_0.pdf

1.7 Current labelling requirements in Australia and New Zealand

The Code permits voluntary declarations of TFA content in the NIP. Declaration of TFA content is mandatory in the NIP when specific nutrition content claims or health claims are made. Refer to section 3.4.3 and Attachment 2 for further details.

2 Project objectives and approach

The main objective of this project was to determine the current levels of TFAs in the Australian and New Zealand food supply, including whether there has been a change from the results of FSANZ 2009 review of TFAs.

In addressing this objective FSANZ has undertaken the following activities:

- an analytical survey, coordinated by the Implementation Subcommittee for Food Regulation (ISFR), of the TFA content of New Zealand and Australian foods
- an industry survey on initiatives to reduce TFAs in products
- two commissioned literature reviews on the health effects of TFAs: a systematic literature review on the relationship between intake of TFAs and blood cholesterol levels and a narrative review of the relationship between TFA intake and other possible adverse outcomes including cancer and type 2 diabetes
- a comparison of current provisions in the *Australia New Zealand Food Standards Code* (Code) for the declaration of TFA content on food labels with those in the USA, Canada and the EU
- consideration of technical issues related to the declaration of TFA content on food labels in Australia and New Zealand, including the threshold approach.

3 Analysis of issues

3.1 Trans fatty acids in the Australian and New Zealand food supply

3.1.1 ISFR coordinated analytical survey

The aim of the analytical survey was to establish the current levels of TFAs in a range of processed and takeaway foods available in Australia and New Zealand. Details of this survey are in Supporting Document 1, with a summary of key aspects of the methodology and the key findings provided below.

A total of 500 samples from 39 different product categories were collected from New South Wales, Western Australia, New Zealand, South Australia, Tasmania, Queensland and Victoria, over a two week period in October 2013. Samples were selected to include different quality products and different prices in each product category, from lower priced private label products to more expensive products. The range of product categories tested in the survey included takeaway foods, fats and oils, snack foods, meat products, and bakery products. Analytical measurements were conducted by three separate laboratories using validated methods for the measurement of TFAs in foods.

The sampling plan attempted to reflect food products and categories sampled in 2008/09 to facilitate a direct comparison of TFA levels where possible. However, some modifications to the 2008/09 sampling plan were made based on previous results to remove foods that contributed only a low amount of total fat to the diet, and to reduce unnecessary duplication of samples. Some foods were also added to the sampling plan where the 2013 FSANZ

industry survey or international studies identified that these foods were high in total fat and TFAs.

TFAs were detected in 36 of the 39 product categories analysed. The highest median concentrations of TFAs were found in edible oil spreads, vegetable oils, croissants, custard baked goods, and prepared pastry. TFAs were not detected in pikelets/pancakes, snack bars and toasted style muesli. While TFAs were detected in most product categories, the median concentrations of TFAs were generally low. Excluding foods likely to contain ruminant TFAs, approximately 86% of the foods had TFA concentrations below 2 g/100 g fat, the limit adopted for manufactured TFAs in Danish legislation in 2003.

There was no clear trend toward an increase or a decrease in median TFA concentrations in Australian or New Zealand foods compared with the 2007 and 2009 surveys. Statistically significant ($p < 0.01$) increases in TFA concentration were observed in only one product category - chicken nuggets/products (median concentrations of TFAs in chicken nuggets/products were 0.1 and 0.2 g / 100 g food in the 2009 and 2013 surveys, respectively). This product category was widened slightly to include other chicken products in the current survey, which may have contributed to this result. No significant changes in TFA concentrations were observed in other product categories.

On the basis that the analytical results did not show an increase in TFA concentrations - from previous surveys, dietary intake is likely to remain low and below the WHO recommended level of 1% dietary energy in both Australia and New Zealand. The summary results of the 2011–12 National Nutrition and Physical Activity Survey component of the Australian Health Survey have been recently released (refer to section 3.2.1). Updated consumption data for New Zealand are not yet available for dietary exposure modelling purposes.

3.1.2 2013 FSANZ industry survey

The purpose of the survey was to investigate past and current activities, and future plans of sectors of the food industry to reduce TFAs in the Australian and New Zealand food supply. Details of this survey are in Supporting Document 2, with a summary of the key findings provided below.

A convenience sample of a selection of Australian and New Zealand QSRs, edible oil and spread manufacturers/suppliers, packaged food manufacturers (frozen goods and snack products) and supermarket chains were surveyed. These groups of businesses were specifically targeted given existing knowledge about the key sources of manufactured TFAs in the Australian and New Zealand food supply.

The survey included questions on activities to reduce the TFA content of foods, whether TFA levels had been reduced as much as practicable and whether companies provide information to consumers or customers about the TFA content of products. The survey was conducted via email between July and September 2013.

Responses were received from 22 of the 52 companies selected to participate (five QSR, five edible oil manufacturers/suppliers, three frozen goods manufacturers, seven snack product manufacturers and two supermarket chains). Six of the respondents provided a combined response for both the Australia and New Zealand arms of the company.

Overall, the findings indicate that the majority of the surveyed companies are actively maintaining a low TFA content of their products and that in some cases, there is ongoing work to make further reductions in TFA levels. It was noted that companies producing fats and oils in Australia and New Zealand are competing with hydrogenated oils imported from

Asia and that many companies in Australia and New Zealand are sourcing oils and fats offshore. The TFA content of such imported products is unclear. Should a further study be undertaken in the future, this could be investigated. It is not possible to extrapolate the findings of the study to the food industry because of the small number of respondents and the convenience sampling approach.

3.2 Dietary intake of trans fatty acids

3.2.1 Australia

The 2011–12 National Nutrition and Physical Activity Survey (NNPAS) component of the Australian Health Survey (AHS) was released on 9 May 2014 and reported population estimates of food consumption and nutrient intake from over 12,000 Australians aged 2 years and above (Australian Bureau of Statistics 2014). At this time, only summary data are available from the NNPAS. The summary data include estimated mean intake of TFA by age group and sex, mean energy intake, and food groups that contribute to TFA intake. The Australian Bureau of Statistics prepared the intake data using a nutrient database prepared by FSANZ.

Results from the NNPAS showed that among all Australians 2 years and above, TFA intake averaged 1.4 g/day, ranging from 1.0 g (2-3 year olds) to 1.9 g/day in males aged 14-18 years. As a percentage of energy, intake averaged 0.6% across all age groups. In the FSANZ 2009 review, an estimate for the same population age group was not determined. In 2009, the mean TFA intake for children aged 2–16 years was estimated to be 0.6% of dietary energy and 0.5% dietary energy for persons aged 17 years and older. Population mean TFA intake estimates reflect both the levels of TFA in foods and the amounts and types of different foods people eat. The 2011–12 NNPAS estimates use a very similar set of data for TFA levels to that used by FSANZ in 2009 to estimate TFA intakes. Due to methodological differences between the type of dietary modelling used by FSANZ in 2009, and the procedures used in the 2011–12 NNPAS, the estimates of dietary intake from the FSANZ 2009 review and the 2011–12 NNPAS are not directly comparable. Nonetheless, the NNPAS results show that TFA intake remains low, and below the WHO recommendation of less than 1 % dietary energy.

In the 2011–12 NNPAS, the dairy and meat food groups, together with butters and dairy blends, contributed more than half the total TFA intake, showing that ruminant TFAs continue to be the major source of TFA in the Australian diet. This estimate is based on an analysis of food groups that differs from the analysis undertaken in the FSANZ 2009 review (60-75% of TFAs came from ruminant TFAs) and therefore the two estimates are not directly comparable.

Intakes of SFAs remain high in Australia. The 2011–12 NNPAS estimate of mean intake of SFAs and TFAs combined, as a percentage of dietary energy, is 12.4% of energy for all Australians aged 2 years and above, and 12.1% for those aged 19 years and above. This remains above the NHMRC recommendation of no more than 10% of energy (National Health & Medical Research Council and Ministry of Health 2006). Between 1995 and 2011–12, the contribution of SFAs to energy intake declined by around one percentage point.

3.2.2 New Zealand

The most recent national nutrition survey for New Zealand adults, the 2008/09 Adult Nutrition Survey, also found continuing high intakes of SFAs. The mean contribution of SFAs to daily energy intake was 13.1% for both males and females aged 15 years and above (University of Otago & Ministry of Health 2011). TFA intakes were not determined.

3.3 The effect of trans fatty acids on blood cholesterol and other adverse health outcomes

TFAs have been postulated to be linked to a range of adverse health effects in humans. In 2006 and in 2009, FSANZ reviewed the evidence in this area (FSANZ 2007, FSANZ 2009). In the 2009 review FSANZ concluded that the most consistent and robust evidence is for its adverse effect on blood lipids. TFA appear to raise LDL- and lower HDL-cholesterol concentrations; a change associated with an increased risk of cardiovascular disease. Several cohort studies showed a direct association with TFA intake and risk of cardiovascular disease. The review also concluded that other TFA and disease relationships are less well established and require further research before they can be accepted or refuted.

In order to update this work, in 2014 FSANZ commissioned two further reviews:⁷

- a systematic review of the relationship between intake of TFAs and blood cholesterol levels
- a narrative review of the relationship between TFA intake and other adverse health outcomes including cancer and type 2 diabetes.

The systematic review (Supporting Document 3) showed that new evidence published between 2010 and 2014 is consistent with previous research regarding the relationship between TFA intake and change in blood cholesterol levels. This evidence demonstrated a causal relationship between intake of dietary TFA and detrimental changes in LDL and HDL cholesterol values. However, the associated change in blood lipid values with a one per cent increase in TFA, as a percentage of energy intake, was small. In addition, studies included in this systematic review showed substantial variability in the reported blood lipid changes at TFA intakes at and below one per cent of energy intake.

The narrative review (Supporting Document 4) examined research published between 2009 and 2014 for health outcomes related to cardiovascular disease and coronary heart disease, and considered published research (with no date restrictions) for a range of other health outcomes, including mortality, macular degeneration, dementia, asthma, eczema, type 2 diabetes and breast, colorectal, pancreatic and prostate cancer. The narrative review did not find any evidence that changes the conclusions made in 2009, that is, that several cohort studies show a direct association with TFA intake and risk of cardiovascular disease and further research is required before any relationships between TFA intake and other diseases can be accepted or refuted.

While the new systematic review confirms previous conclusions that high intakes of TFA produce adverse effects on blood cholesterol levels, it also shows that any further reduction in TFA intakes in Australia and New Zealand may produce only minor improvements in blood cholesterol levels. These improvements are likely to be less than would be achieved through other dietary changes, such as reduced intake of SFAs.

⁷ Both reviews were conducted by researchers at Edith Cowan University and reviewed by FSANZ's Health Claims Scientific Advisory Group.

3.4 Mandating the declaration of trans fatty acids on food labels

3.4.1 Dietary guidelines in Australia and New Zealand

Guideline three of the 2013 Australian Dietary Guidelines (National Health and Medical Research Council 2013) relates to saturated fat as follows: *Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks.* It is noted in the discussion of Guideline 3 that *the intake of TFAs is low in Australia and consequently there is no specific recommendation to limit their intake compared to current intake. However, it is important to ensure that intake remains at its current low level.* Reference is made to the FSANZ 2009 review of TFAs. In addition, it is stated that the intake of total fat, in particular saturated fat, remains higher than recommended but that the mean total population TFA intake for Australia is estimated to be 0.5% of total dietary energy, which is below the WHO population goal of less than 1% of total dietary energy from TFAs.

In the New Zealand Dietary Guidelines (Ministry of Health 2003), guideline statement three refers to fat intake as follows: *Prepare foods or choose pre-prepared foods, drinks and snacks: with minimal added fat, especially saturated fat.....* At that time it was noted that most table spreads were low in TFAs. In 1991 the New Zealand Nutrition Taskforce recommended that the proportions of total energy supplied by SFAs and TFAs should be no more than 12%. As noted above, the current recommendation for both New Zealand and Australia is that the intake of SFAs and TFAs combined should be no more than 10% of energy (National Health & Medical Research Council and Ministry of Health 2006).

Saturated fat is a mandated nutrient in the NIP providing information to help consumers follow the dietary guidelines and make informed food choices.

3.4.2 Distribution of dietary intakes of trans fatty acids

The 2009 WHO scientific update on TFAs refers to the need to consider the TFA intakes of those subgroups of the population with higher intakes than the population mean (WHO 2009). The summary data from the Australian NNPAS showed that there were no important differences in mean TFA intake across age/gender groups and that the average TFA intake across all groups assessed was 0.6% of dietary energy, well below the 1% recommended by the WHO. At the current time, the FSANZ 2009 survey provides the most recent estimate of the distribution of TFA intakes for age/gender groups in Australia and New Zealand (FSANZ 2009). In 2009, using 1995 and 2007 Australian and 2002 New Zealand dietary intake data, the 95th percentile for total TFA intake was estimated to be 1.1% and 1.2 % of dietary energy for the Australian and New Zealand populations, respectively. Given the continued low level of TFAs in foods and the recent mean estimate of TFA intake in Australia, it is unlikely there has been a large increase in TFA intakes among those with above average intakes.

The foods found to contribute disproportionately to high total TFA intakes in Australia and New Zealand in 2009 included pastry products such as meat pies, beef sausages, processed luncheon meats and creamy style pasta dishes. The levels of TFAs in sausage rolls and meat pies determined in the 2013 survey were similar to the levels reported in the FSANZ 2009 survey indicating that the contribution of TFAs from these foods is not likely to have changed. It is also important to note that many of the foods identified as contributing disproportionately to high total TFA intake contain ruminant TFAs, therefore measures to reduce the level of manufactured TFAs would not have a major effect on the contribution of TFAs from these foods to total TFA intake.

3.4.3 International requirements for the declaration of trans fatty acids on food labels

A summary of requirements for the declaration of TFAs on food labels in Australia/New Zealand, Canada, the USA, the EU and from Codex Alimentarius is at Attachment 2.

TFA declarations in nutrition information panels are mandatory in Canada and the USA while being voluntary in Australia/New Zealand (see Table 1 at Attachment 2). Of interest is the use of a threshold approach in Canada and the USA whereby the TFA content does not need to be declared below a specified concentration per serving. The EU regulations, which will become mandatory from December 2016, do not permit voluntary TFA declarations. The Codex guideline states that TFA content must be declared if a nutrition or health claim is made about TFAs. This approach has been consistently implemented across Australia/New Zealand, Canada, USA and in the EU.

A limited number of nutrition content claims about TFAs are permitted in Australia/New Zealand, Canada and in the EU (see Table 2 at Attachment 2). *Low* TFA claims are not permitted in any of the countries reviewed due to the lack of a reference value to define such a claim. Nutrition content claims about TFAs are not permitted in the USA.

Ingredient labelling is another potential mechanism for providing information about TFA content of foods to consumers (see Table 3 at Attachment 2). Codex and all countries reviewed require fats/oils that have been hydrogenated to be declared as *hydrogenated* or in some cases *partially hydrogenated* (as appropriate) in the ingredient list. Ingredient lists are only useful to the consumer in identifying the presence of TFAs if *partially hydrogenated* is declared when partially hydrogenated fats/oils have been used. It appears that in the EU, this distinction is not required.

In summary, the Code currently permits the voluntary declaration of TFAs in the nutrition information panel and requires the declaration of TFA when certain nutrition content and health claims are made, which is consistent with the Codex guideline. In addition, there are conditions for nutrition content claims about TFAs and SFAs and TFAs combined, which give industry an opportunity to provide consumers with information about the TFA content of their products. While similar claims are permitted in Canada and the EU, such claims are not currently permitted in the USA. In the absence of a nutrition content claim, voluntary TFA declarations in the nutrition information panel are not permitted in the EU.

3.4.4 Threshold labelling approach

When mandatory TFA labelling was introduced in Canada and the USA in 2005 and 2006 respectively, the estimated TFA intakes were higher than the current estimates for Australia and New Zealand. In the USA, mean TFA intakes were 2.6% of dietary energy in 2002 while in Canada the mean TFA intake was 3.7% of dietary energy in the mid 1990's. In the USA and Canada, the declaration of 0 g of TFAs per serving is permitted on food labels below a specified threshold TFA concentration (0.5 g per serving in the USA).

Information on the serving size of foods sampled in the 2013 survey that were carrying nutrition information panels, is not available. It is therefore not possible to evaluate the effect of a possible threshold labelling approach, based on TFA concentration per serving size, on the extent to which foods would actually be required to carry TFA label declarations, from the current survey. Given the general low levels of TFAs in the foods sampled, it could however, be expected that many labelled foods would not have a figure for TFA content in the NIP under a threshold approach similar to that adopted in the USA or Canada. Note that serving sizes are included in legislation in both Canada and the USA, whereas in Australia and New Zealand, serving sizes are determined by the manufacturer.

Considerably more work would need to be undertaken to evaluate the effect of a threshold labelling approach on the extent to which products with manufactured TFA (as opposed to ruminant TFA) would carry TFA declarations. The high contribution of ruminant TFA to total TFA intakes in Australia/New Zealand is noteworthy. Should there be further consideration of mandating TFA declarations on food labels, the costs and benefits of a threshold labelling approach and other approaches would need to be evaluated including any impacts on consumer purchase behaviour, blood cholesterol levels, product formulations and industry costs.

3.5 Effectiveness of voluntary and regulatory approaches for reducing TFAs in foods

Downs et al. (2013) have published a systematic review of the effectiveness of policies designed to reduce the TFA content of food. They searched only the peer-reviewed literature and did not include government reports. Twenty-six studies were included in the review; five involved voluntary self-regulation, eight labelling alone; four labelling and voluntary limits, five mandatory limits and local bans, and four mandatory limits and national bans. The majority of studies evaluated policies in USA, Canada and Denmark. It is important to note that although reference is made to Denmark and parts of the USA 'banning' TFAs in foods, the regulations that were put in place permit a specified level of TFAs to be present in foods. The authors of the review concluded that reductions in the TFA content of foods have occurred, irrespective of the particular policy used. They considered that national and local bans, that is, mandatory limits on TFA content, were most effective. The authors also commented that monitoring TFA levels in the food supply is important to ensure that progress in reducing TFA levels continues.

4 Conclusions

The key findings from this technical evaluation of Recommendation 13 are as follows:

- While TFAs were detected in most product categories, the median concentrations of TFAs in 500 foods sampled in Australia and New Zealand in 2013 were generally low. Excluding foods likely to contain ruminant TFAs, approximately 86% of the foods had TFA concentrations below 2 g/100 g fat, the limit adopted for manufactured TFAs in Danish legislation in 2003.
- On the basis that the analytical results did not show an increase in TFA concentrations from previous surveys, dietary intake of TFAs is likely to remain low and below the WHO recommended level of 1% dietary energy in both Australia and New Zealand.
- Recently released data from the Australian 2011–12 National Nutrition and Physical Activity Survey, also suggest TFA intake remains low, with the mean intake of all Australians 2 years and above estimated to be 1.4 g/day or 0.6% of dietary energy. Dairy and meat food groups, together with butters and dairy blends, contributed more than half of this intake, showing ruminant TFAs continue to be the major source of TFAs in the Australian diet.
- Current estimates of the distribution of TFA intakes for age/gender groups across the Australian and New Zealand populations are not available. In 2009, FSANZ estimated the 95th percentile for total TFA intake to be 1.1% and 1.2 % of dietary energy for the Australian (17 years and above) and New Zealand (15 years and above) populations, respectively. Given the continued low level of TFAs in foods and the recent population mean estimate of TFA intake in Australia of 0.6% of dietary energy, it is unlikely there

has been a large increase in TFA intakes among those with above average intakes.

- The 2013 FSANZ industry survey indicates that the survey respondents were generally actively maintaining a low TFA content of their foods. Some respondents were undertaking on-going work to make further reductions in TFAs. It is not possible to extrapolate the findings of the study to the food industry because of the small number of respondents and the convenience sampling approach.
- The findings from the systematic review, incorporating new evidence published between 2010 and 2014, are consistent with previous research demonstrating a causal relationship between intake of dietary TFAs and detrimental changes in blood cholesterol levels. The review also indicated that any further reduction in TFA intakes in Australia and New Zealand may produce only minor improvements in blood cholesterol levels.
- In 2009, FSANZ updated its 2007 review and concluded that several cohort studies showed a direct association with TFA intake and risk of cardiovascular disease. It was also found that other TFA and disease relationships were less well established and required further research before they could be accepted or refuted. The 2014 narrative review did not find any new evidence that would change this conclusion

In conclusion:

- The low level of TFAs in the foods sampled in Australia and New Zealand, the small number of people with intakes above the WHO goal of less than 1% TFAs of dietary energy determined in 2009, and the recent estimate of mean dietary intake of total TFAs in Australia together with ruminant TFAs contributing more than half of the total TFA intake, suggest mandatory labelling is not warranted. The Code currently permits the voluntary declaration of TFA content on labels and requires TFA declaration when certain nutrition content and health claims are made.
- Should there be further consideration of mandating TFA declarations on food labels, the costs and benefits of a threshold labelling approach and other approaches would need to be evaluated, including any potential impacts on consumer purchase behaviour, blood cholesterol levels, product formulations and industry costs.

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Attachment 1: International regulatory and non-regulatory approaches used for reducing trans fatty acids in the food supply

Canada

Canada introduced mandatory labelling of TFAs in 2005, the first country to do so. The Trans Fat Task Force was established in 2005 to develop recommendations to reduce TFAs in the food supply. In 2007, Health Canada announced that it had adopted the recommendations of the Trans Fat Task Force with respect to the amount of TFAs in foods as a voluntary measure to support the reduction of TFA levels in foods¹. The recommendations were as follows:

- For all vegetable oils and soft, spreadable (tub-type) margarines sold to consumers or for use as an ingredient in the preparation of foods on site by retailers or foodservice establishments, the total TFA content was limited to 2% of total fat content.
- For all other foods purchased by a retail or foodservice establishment for sale to consumers or for use as an ingredient in the preparation of foods on site, the total TFA content was limited to 5% of total fat content. This limit did not apply to foods for which the fat originated exclusively from ruminant meat or dairy.

The Minister called on the food industry to achieve these limits within two years and stated that if significant progress had not been made after that time, regulations would be developed to ensure that the recommended levels are met.

Results from several TFA monitoring surveys have been published.² From 2005–2009, 1120 food samples were analysed of which 76% met the voluntary TFA limits (Ratanyake et al. 2009). The average TFA intake declined from 3.7% of dietary energy in the mid-1990's to 1.4% of dietary energy in 2008. Of interest is that there was no change in mean SFA intake by Canadians between 2004 and 2008 with the estimated 2008 intake of SFA being 10.4% of total energy (Ratanyake et al. 2009). A more recent estimate of TFA content of foods indicates that the proportion of foods meeting the TFA voluntary limits may have increased to around 96% in 2010–11, however the range of foods sampled in the various surveys differs (Arcandi et al. 2014). A number of food categories were noted to have a large proportion of foods exceeding the voluntary TFA limits including dairy-free cheeses, frosting, shortening, restaurant prepared biscuits and scones.

Other than mandatory labelling no other regulatory action to reduce the TFA content of foods has been taken in Canada to date.

United States of America (USA)

The USA introduced mandatory labelling of TFAs in 2006. There have been no other country-wide regulations implemented, however, the state of California and some cities across the USA have introduced laws or voluntary initiatives designed to reduce the consumption of TFAs. For example, restaurants in New York City were barred from using most frying and spreading fats containing manufactured TFAs above 0.5 g per serving from 1 July 1, 2007. From 1 January 2011, all foods containing 0.5 g or more of manufactured TFAs per serving were banned in California, with the exception of food sold in an original sealed package.

¹ Further information is available at <http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/index-eng.php>

² Further information is available at http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/tfa-age_tc-tm-eng.php

From 2005, the USA Department of Agriculture and the USA Department of Health and Human Services have issued guidelines recommending reducing TFA consumption and requesting industry to decrease the TFA content of foods.

In 2003, the mean adult (aged 20 years or more) intake of TFAs from foods containing manufactured TFAs was 4.6 g per day (2.0% of energy based on a 2,000 calorie diet). The total TFA intake from foods containing manufactured TFAs and ruminant TFAs was 5.8 g per day for adults (2.6% of total energy). According to 2010 estimates, intakes of manufactured TFAs have decreased since 2003. In 2010, the mean TFA intake for those aged 2 years or more who consumed one or more of processed foods identified as containing manufactured TFAs to be 1.3 g per day (0.6% of total energy). For high-level consumers (represented by the 90th percentile), the intake was estimated to be 2.6 g per day (1.2% of total energy). In 2012, a further estimate of mean TFA intake, for the USA population aged 2 years or more, was 1.0 g per day (0.5% of energy) with the 90th percentile at 2.0 g per day (1.0% of energy). An estimate for a high-intake scenario (by assuming that TFAs were present at the highest level observed for all foods within a particular food category based on a label survey) was also determined. For this scenario, the mean intake was 2.1 g per day (1% of energy) with the 90th percentile at 4.2 g per day (1.9% of energy).³

Although TFA intake was found to decrease overall since 2003 it is considered that individuals with certain dietary habits may still consume high levels of TFAs from certain brands or certain types of food products (e.g. refrigerated biscuits, ready-to-use frostings, certain brands of frozen pizzas, and certain brands of microwave popcorn). As noted above, those consumers who consistently choose these products could have a daily intake of added TFAs approximately twice as high as that for the consumer who does not choose only the foods containing the highest levels of TFAs within a particular category. Remig et al. (2010) commented that it could be possible for an individual to consume significant quantities of TFAs while believing they have consumed no TFAs because foods with less than 0.5 g TFA per serving may be labelled as 0 g TFA or have no declaration (refer to Attachment 2).

In November 2013 the US Food and Drug Administration (USFDA) announced it had made a preliminary determination that partially hydrogenated oils are no longer 'generally recognized as safe' (GRAS). The FDA has consulted on the preliminary decision and is currently considering submissions.³

3.4.3 European Union (EU)

The European Commission is to complete a report on the presence of TFA in foods and in the overall diet of the EU population by 13 December 2014. The aim of the report is to *assess the impact of appropriate means that could enable consumers to make healthier food and overall dietary choices or that could promote the provision of healthier food options to consumers, including among others, the provision of information on trans fats to consumers or restrictions on their use.*⁴ A legislative proposal, which could include mandatory labelling or restrictions in the use of TFAs, may be included, if appropriate.

Estimates of mean TFA intake in Denmark were around 1 g per day in 1996. The Danish Nutrition Council was concerned with subgroups of the population with a higher than average intake of over 5 g TFAs per day as intakes above this level were found to be

³ Further information is available at <https://www.federalregister.gov/articles/2013/11/08/2013-26854/tentative-determination-regarding-partially-hydrogenated-oils-request-for-comments-and-for-h-8>

⁴ http://www.s-ge.com/6059BA05-8CAB-42A2-9427-2CE816B3CBD7/FinalDownload/DownloadId-D1408E7E5C70D1853E580572C0995300/6059BA05-8CAB-42A2-9427-2CE816B3CBD7/sites/default/files/guidance_on_food_labelling_0.pdf

associated with an increased risk of coronary heart disease (Willett et al., 1993, L'Abbe et al. 2009). In 2003, the Danish Nutrition Council recommended restrictions on the use of manufactured TFAs in foods. Legislation was enacted limiting all food products to less than 2% TFA of total fat. Finished products with less than 1 g TFAs/100 g of fat are considered to be free of TFAs (Danish Veterinary and Food Administration 2003). The requirements do not apply to ruminant TFAs. There is no mandatory requirement for TFA declaration on food labels in Denmark. Studies evaluating the impact of legislating limits on the TFA content of food in Denmark suggested that manufactured TFA intake was close to zero in 2006 (L'Abbe et al. 2009, Downs et al. 2013).

A voluntary approach has been undertaken to reduce the TFA content in foods in the UK. In 1994, the Committee on Medical Aspects of Food and Nutrition Policy (COMA) recommended average population TFA intakes should not exceed 2% of food energy (Department of Health 1994). In a review of this recommendation in 2007, the Scientific Advisory Committee on Nutrition (SACN) endorsed the recommendation made in 1994 and agreed there was no firm scientific basis for revising the recommendation (Scientific Advisory Committee on Nutrition 2007).

The UK Department of Health has established the Public Health Responsibility Deal⁵ whereby businesses and organisations can commit to take action voluntarily to improve public health. In 2011, the Department of Health published pledges in a number of areas including TFA reduction. Businesses can sign up to one of two collective pledges about TFA as follows:

- *We do not use ingredients that contain artificial trans fats.*
- *We are working to remove artificial trans fats from our products within the next 12 months.*

As of May 2014, there were 91 signatories for the first pledge and 11 for the second pledge noted above.

Using consumption data from the 2000/01 National Diet and Nutrition Survey along with updated TFA concentration data, TFA intake in 2007 was estimated to be 1% of dietary energy for all adults aged 19-64 years. A recent estimate of the mean TFA intake using 2010/2011 data is 0.6-0.7% of food energy for all age groups which reflects the decrease in TFA content of processed food over time (Bates et al. 2014, UK Department of Health 2013). The UK Dietary Reference Value for TFA intake is no more than 2% of dietary energy. As in other EU countries, there is no requirement for mandatory labelling of TFAs.

⁵ Further information is available at <https://responsibilitydeal.dh.gov.uk/>

Attachment 2: Requirements for labelling of trans fatty acids in Australia/New Zealand, Canada, USA, EU, UK and from Codex Alimentarius

Table 1 Nutrition information panel or similar¹

Australia/New Zealand ²	Canada ³	USA ⁴	EU including the UK ^{5,6}	Codex Guidelines for Nutrition Labelling ⁷
<p>Voluntary declarations of TFA content permitted.</p> <p>Declaration mandatory in the nutrition information panel when nutrition content claims or health claims are made about cholesterol or saturated, trans, polyunsaturated, monounsaturated, omega-3, omega-6 or omega-9 fatty acids.</p>	<p>TFA content must be declared in the Nutrition Facts Table.</p> <p>Can be declared as zero if conditions for 'free TFA' claims are met (the amount is less than 0.2 g per serving and other compositional requirements).</p> <p>The sum of saturated fatty acids and TFAs, expressed as a percentage of the Daily Value, must also be declared in the Nutrition Facts Table.</p>	<p>TFA content must be listed in the Nutrition Facts panel. %DV is not required.</p> <p>If a serving contains less than 0.5 g, must be expressed as 0 g, or, if no claims are made about fat, fatty acid or cholesterol content, declaration of 0 g not required but instead, a footnote must be added stating that the food is 'not a significant source of trans fat'.</p>	<p>TFA content is not permitted to be declared on a label (unless a nutrition or health claim is made).</p>	<p>Must be declared if a nutrition claim or health claim is made about TFA.</p> <p>Where a claim is made regarding the amount and/or type of fatty acids or the amount of cholesterol, the amount of TFAs may be required according to national legislation.</p>

¹ Note that the definition of TFAs for labelling purposes varies around the world. Refer to Appendix 1 in the FSANZ 2007 review (FSANZ 2007).

² The *Australia New Zealand Food Standards Code* is at <http://www.foodstandards.gov.au/code/Pages/default.aspx>.

³ The Canadian *Food and Drug Regulations* are at http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.%2C_c._870/.

⁴ Title 21 – Food and Drugs from the USA Food and Drug Administration is available at http://www.ecfr.gov/cgi-bin/text-idx?SID=50c7e808f8d7d041fe07e13453d53306&c=ecfr&tpl=/ecfrbrowse/Title21/21cfrv2_02.tpl. A food labelling guide is available at <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm>.

⁵ In 2011 the EU released new regulations on the provision of food information to consumers (EU 1169/2011). These requirements become fully effective in December 2014 for foods with a nutrition information panel, and for all foods from December 2016. The nutrition information panel remains voluntary in the EU from December 2014 to December 2016. EU 1169/2011 is available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF>.

⁶ A draft guidance document on labelling requirements is available at <https://www.gov.uk/government/consultations/food-information-regulations-fir-2013>. The industry groups FoodDrinkEurope and EuroCommerce released a guidance document on EU 1169/2011 (Food Information for Consumers) in September 2013. This document is available at http://www.fooddrinkeurope.eu/uploads/press-releases_documents/FDE_Guidance_WEB1.pdf.

⁷ Codex guidelines are available at <http://www.codexalimentarius.org/standards/list-of-standards/>.

Table 2 Nutrition content claims¹

Australia/New Zealand	Canada	USA	EU including the UK	Codex Guidelines for use of nutrition and health claims
<p>Claims permitted: - 'free' (the food contains no detectable TFA and no more than 0.75g SFA per 100ml liquid food or 1.5 g SFA per 100 g solid food or no more than 28% SFA as proportion of total fatty acid content) - reduced/light/lite (the food contains at least 25% less TFA than in the same quantity of reference food and no more SFA).</p> <p>Other claims, e.g. 'low' not permitted.</p>	<p>Three claims permitted: - 'free' (less than 0.2g TFA and 0.5 g SFA per reference amount and serving of stated size or 100g if the food is a pre-packaged meal) - 'reduced in' TFA and 'lower in' TFA (both at least 25% less TFA than reference food).</p> <p>Wording for these claims is prescribed.</p>	<p>Nutrition content claims about TFAs are not permitted.</p>	<p>Claims permitted: - reduced/light/lite TFA (at least 30% reduction compared with similar product).</p>	<p>Claims are permitted, no conditions specified.</p>

¹ Refer to footnotes under Table 1 for links to regulations and guidance documents

Table 3 Ingredient labelling¹

Australia/New Zealand	Canada	USA	EU including the UK	Codex General Standard for the Labelling of Pre-packaged Foods
<p>Where a specific source name of an oil is used on the label of the food (e.g. soybean oil), the label of the food containing that oil must include a statement that describes the nature of any process that has been used to alter the fatty acid composition of the oil.</p>	<p>Oils and fats that have been hydrogenated or partially hydrogenated, including tallow, but not including lard, must include 'hydrogenated' in the name of the ingredient. Marine fats or oils and coconut oil, palm oil, palm kernel oil, peanut oil or cocoa butter that has been hydrogenated or partially hydrogenated must be named 'hydrogenated' plus the specific name of the oil or fat.</p>	<p>If the fat or oil is completely hydrogenated, the name shall include the term <i>hydrogenated</i>, or if partially hydrogenated, the name shall include the term <i>partially hydrogenated</i>. If each fat and/or oil in a blend or the blend is completely hydrogenated, or partially hydrogenated the term <i>hydrogenated</i> or <i>partially hydrogenated</i>, respectively, may precede the term(s) describing the blend, e.g., "hydrogenated vegetable oil (soybean, cottonseed, and palm oils)", rather than preceding the name of each individual fat and/or oil.</p>	<p>Food Labelling Regulations require hydrogenated fat to be identified as such in the ingredient list on the label when it has been used as an ingredient in food. However, if hydrogenated fat is part of a compound ingredient that makes up less than 25% of the finished product it is not required to be mentioned in the ingredient list.</p>	<p>Refined oils other than olive must be declared as 'oil' with either 'vegetable' or 'animal', qualified by the term 'hydrogenated' or 'partially hydrogenated' as appropriate.</p>

¹ Refer to footnotes under Table 1 for links to regulations and guidance documents