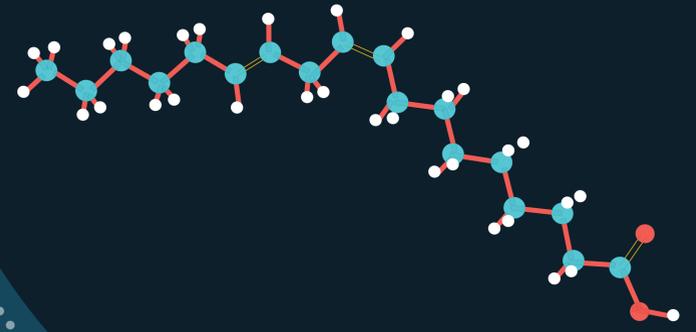


Usual intake of trans fatty acids by Australian adults in 2011–12

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Background

Trans fatty acids are unsaturated fatty acids with one or more double bonds in the trans configuration. The two main sources in the diet are derived from:

- Ruminants
- Industrial processing.⁽¹⁾

Foods which contributed >5% to trans fatty acid intakes in the 2011-12 Australian National Nutrition and Physical Activity Survey (NNPAS) included:

- Pastries
- Butter
- Beef, sheep and pork, unprocessed
- Sausages, frankfurts and saveloys
- Dairy milk and cheese.⁽²⁾

The Australian Bureau of Statistics has published the distribution for the usual intakes of trans fatty acids expressed as mg/day.⁽³⁾ However the published information for the percent of total energy (%E) from trans fatty acids is based on dietary intakes from a single day.⁽²⁾

The World Health Organization (WHO) recommends that population intake of trans fatty acids should be below 1% of total energy per day for the prevention of heart disease.⁽⁴⁾

When comparing dietary intakes to a health based guidance value related to a chronic disease it is important to use long term or usual intakes. This is because comparison to single day intakes could overestimate the proportion of the population with intakes above or below the guidance value⁽⁵⁾ (Figure 1).

Therefore the proportion of the population exceeding the WHO recommendation for trans fatty acid intake cannot be determined from the published data.

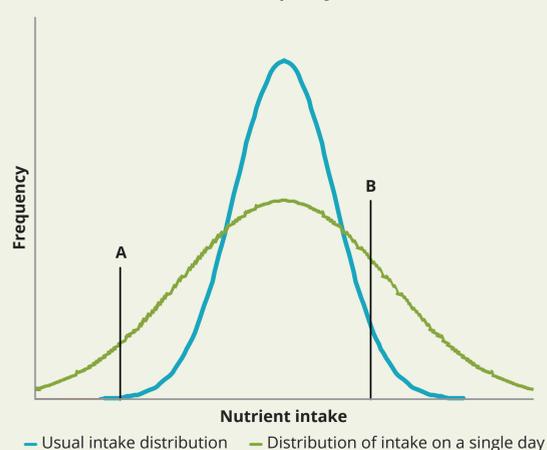
Objectives

Illustrate the impact of three different methods of estimating dietary intake to:

- Describe the distribution of trans fatty acid dietary intakes as a %E for Australian adults.
- Estimate the proportion of Australian adults whose trans fatty acid intake exceeded 1 %E.

Identify the method which gives the best estimation of the proportion of Australian adults who exceeded the WHO recommendation.

Figure 1. Illustration of difference between 1 day and usual intake assuming normal distribution. Points A and B represent NRVs food adequacy (A) and excess (B)⁽⁶⁾



Methods

We used the two days of trans fatty acid intake expressed as %E and the sampling weights for adults (19+ years) in the 2011–12 NNPAS. The intake distribution was assessed using three different methods:

- Day 1 only
- Average of both days (2-day average)
- Usual intake (NCI method)⁽⁷⁾

The proportion exceeding 1 %E was determined for each method.

The Day 1 only method used data from those who provided data on Day 1 of the 2011-12 NNPAS.

The 2-day average method used data from those who provided data for 2 days of the 2011-12 NNPAS.

The National Cancer Institute (NCI) method used two days of data from the 2011-12 NNPAS for those respondents who provided it to estimate within-person variation, and applied these adjustments to the Day 1 data for all respondents to estimate usual or longer term intakes.

Day 1 only and 2-day average assessments were performed by FSANZ using the software program 'Harvest'. NCI method assessments were performed by the Australian Bureau of Statistics.

Results

Estimated mean dietary intakes of trans fatty acid for Australian adults (0.6% of total energy) are similar for each method (Figure 2).

Figure 2 shows how the range of the distribution of intakes contracts as the method of correcting for within-person variation improves. The NCI method has the narrowest range, although using a 2-day average does give some improvement.

The estimated proportion of Australian men who exceeded 1 %E varied between 1.9% using the NCI method and 12.7% using the Day 1 only method. For Australian women the estimated proportion who exceeded 1 %E varied between 1.1% and 11.9%.

We consider that the NCI method gives the best estimate of the proportion exceeding the WHO recommendation: 1.9% of men and 1.1% of women.

Conclusions

Using the NCI method only a small percentage of Australian adults exceeded the WHO recommendation.

These results highlight the importance of matching the data and analysis method to the basis on which the health based guidance value was established to correctly evaluate risks associated with short or long term health effects as appropriate.

This is important for determining the health implications and risk management actions that may be required.

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Figure 2. Estimated distributions of trans fatty acid dietary intakes as a percentage of total energy, and percentage of the adult population exceeding the WHO recommendation using three different methods, 2011-12 NNPAS

