

# FNM News

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## An estimate of folate in the Australian food supply

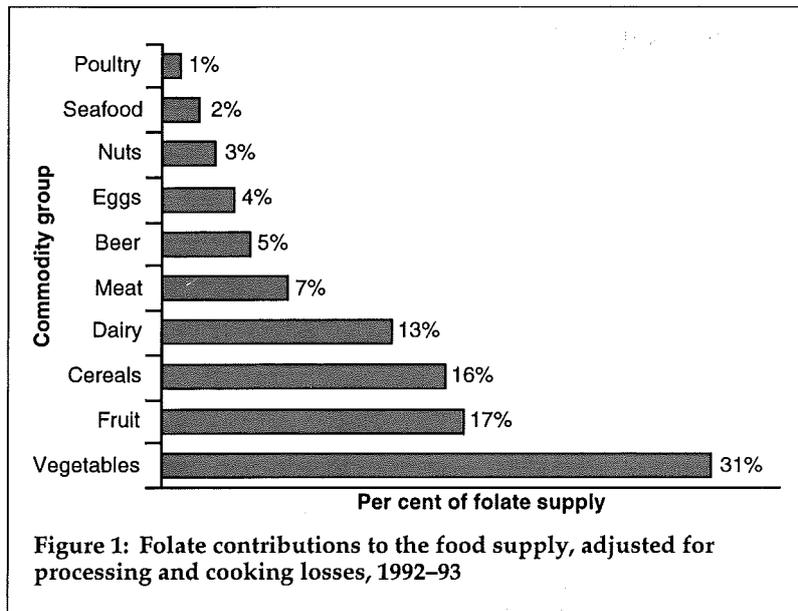
In its recent report (NHMRC 1995) the NHMRC Expert Panel on Folate Fortification recommended, inter alia, that monitoring activities for its proposed folate fortification program include estimates of folate available in the food supply. Folate data have not been reported in the Apparent Consumption series (*Apparent Consumption of Foodstuffs and Nutrients, Australia*, ABS Cat. No. 4306.0) because Australian data on the folate content of foods are not yet available. Because of the paucity of data on folate and pending the availability of Australian data, we provide here an estimate of folate in the Australian food supply based on the UK food composition data for folate and the existing Australian food database.

### Method of estimation

#### Nutrient calculations

Nutrient values for the Apparent Consumption database are calculated from the values available for food items in the Australian food database, published as *Composition of Foods Australia* (COFA, vols 1-7, 1989-1993). In total, 142 individual food items are used to calculate nutrient values for the foods for which the Australian Bureau of Statistics collect quantitative national data.

The ABS reports food data in kg of food 'as purchased', while nutrient data in the food composition database are given per 100g edible portion. For example, food data for bananas are for whole bananas in kg while the nutrient data relate to 100g of edible portion. The value for edible portion as a proportion of total weight given in COFA is used



to convert nutrient values to 'per kg as purchased' values as follows:

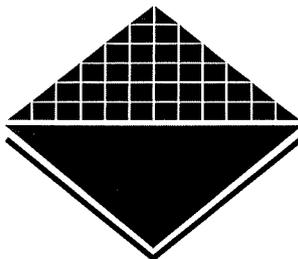
$$\text{value per kg as purchased weight} = 10 * (\text{edible portion as proportion of total weight}) * (\text{value per 100g edible portion})$$

A full description and explanation of the method used for making nutrient estimates of apparent consumption (including the adjustments made for losses in processing and cooking) can be

found in the AIHW publication *Apparent Consumption of Nutrients: sources and structure of the database* (Lester & Coles-Rutishauser 1996).

#### Derivation of folate values

The British food composition data (*McCance and Widdowson's Composition of Foods*, 5th ed and supplements 1-4, supplements 3-5 of Mc&W 4th ed, 1988-94) include values for total folate for many foods. Of the 142 food items in the Apparent Consumption database, a comparable food item with a measured value for folate is available for 98 items. Of the 98 items 15 did not contain any folate



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**Table 1: Estimated folate content of the Australian food supply, unadjusted and adjusted for cooking and processing losses, per capita per day, 1988–89 to 1992–93**

	1988–89	1989–90	1990–91	1991–92	1992–93
Total folate, unadjusted for processing and cooking losses (µg)	306	311	314	312	298
Total folate, adjusted for processing and cooking losses (µg)	194	197	207	206	189
Population weighted RDI (µg) (NHMRC 1991)	185	185	185	185	185
Folate supply as per cent of population weighted RDI (NHMRC 1991)	105%	106%	112%	111%	102%
Population weighted RDI (µg) based on recommendation by Expert Panel on Folate Fortification (NHMRC 1995)	220	221	221	222	222
Folate supply as per cent of population weighted RDI (NHMRC 1995)	88%	89%	94%	93%	85%

(primarily fats, sugars and alcoholic beverages other than beer). A folate value for a further 30 items was derived by using a value for a similar food (eg a similar species of fish, or the frozen equivalent for a fresh food). For meats, the folate value of lean meat from Mc&W was adjusted to the fat content of the equivalent COFA item.

*folate per kg as purchased = {10 \* (edible portion as proportion of total weight) \* (Mc&W folate per 100g) \* (100 - COFA fat%) / (100 - Mc&W fat%)}*.

For the remaining foods the folate values are less certain. None of these foods contributed a significant amount by weight to the total food supply, and the proportion of the total folate supply

derived in this way was less than 2%.

### Adjustment for food processing and cooking

Folate estimates for fruit and vegetables were adjusted for likely processing losses in the same way as currently used for vitamin C. The folate contribution of the fresh equivalent weight of processed product was subtracted from the total folate and replaced with the amount of folate available from the processed product.

No adjustment for cooking losses was made for processed fruit and vegetables, fresh fruit, lettuce, tomatoes, dairy products, beer and nuts. For all other foods the adjustment was based on the factors for loss on cooking given in Mc&W (5th ed, pp. 399–402) as shown in Table 2.

### Results

The estimates in Table 1 indicate that the total amount of folate in the Australian food supply is very close to the population-weighted Recommended Dietary Intake (RDI) based on the 1991 recommendations for folate (NHMRC 1991). It is, however, well below a population-weighted RDI calculated on the basis of the recommendation, made by the Expert Panel on Folate Fortification (NHMRC 1995). The Panel recommended a folate intake of 400µg per day by women of child-bearing age (15–44 years) to prevent

neural tube defects. Since the population-weighted RDI for a nutrient represents the amount of that nutrient required in the food supply to ensure that the nutrient needs of almost all healthy individuals are met (NHMRC 1991) folate appears to be the limiting nutrient in the Australian food supply.

Vegetables are the principal source of folate in the Australian food supply (Figure 1) and together with fruit and cereals contribute almost two thirds of the folate in the Australian food supply. To bring the total folate supply to a level consistent with the 1995 recommendation for folate intake requires a 30% across the board increase in the current supply of vegetables, fruits and cereals.

This amounts to an increase in the national food supply of around 120g of vegetables, 100g of fruit and 75g of cereals per person per day to a total of around 500g vegetables, 450g fruit and 325g cereals per head per day. It is clear that such a large increase in the food supply cannot be achieved in the short-term without the fortification of relevant food products or consumption of a folate supplement. The Expert Panel on Folate Fortification recommended the voluntary fortification of core cereal foods and fruit and vegetable juices to increase the supply of folate. The Panel also recommended that a system to monitor and assess the effects of

**Table 2: Adjustments for folate loss on cooking**

Commodity group	Adjustment
Meat products	30% loss
Poultry	30% loss
Seafood	30% loss
Dairy products	nil
Fruit	nil
Vegetables	50% loss
Grain products	50% loss
Eggs	30% loss
Nuts	nil
Beer	nil

fortification of foods with folate be established. The results reported here add further weight to the importance of implementing the Panel's recommendations for monitoring and surveillance.

For further information contact:  
Ingrid Coles-Rutishauser, on  
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# State and Territory monitoring and surveillance activities

## Food intake patterns in Darwin

In October 1994 a survey to investigate health behaviours and related risk factors was conducted in NT. In part the purpose of the survey was to gather baseline data on food intake patterns and to determine the level of compliance with national dietary recommendations. The survey was a supplement to the ABS Labour Force Survey. Questions on food consumption were selected from the questionnaires used in the 1994 Perth Dietary Survey and the 1993 Queensland Regional Health Surveys. Information was obtained from occupants of selected dwellings, aged 18 years and over, by trained interviewers. The data on food intake related only to food eaten on the previous day.

The survey provides estimates for the proportion of the population who had eaten fruit, vegetables and cereals, the number of serves eaten and the consumption of take-away foods by age, gender, marital status, country of birth and employment status for Darwin, the balance of Northern Territory and the Territory as a whole. The data given below are based only on the Darwin sample.

### Fruit

In Darwin 50% of adults reported eating the recommended amount of two or more pieces of fruit and 29%

did not eat any fruit. Since the survey was conducted during the mango season the results may not be typical of consumption at other times of the year.

*Editor's note:* A piece of fruit was described to respondents as the equivalent of an apple, a small bunch of grapes, a quarter of a rockmelon, half a cup of canned fruit or three dried apricots.

### Vegetables

The recommended amount of five or more serves of vegetables was reported by only 13% while 50% of adults ate two serves or less. The total number of serves of vegetables was calculated from the amounts of individual vegetables reported by respondents.

*Editor's note:* One medium potato, half a cup of cooked vegetables or half a cup of salad were each taken as equal to one serve.

### Bread and cereals

Just under two thirds of the population (62%) ate four or more serves but only 19% ate the recommended amount of seven serves. However, the proportion of males who ate seven serves or more was twice that of females. The total number of serves of bread and cereals was calculated from separate data for bread, cooked rice and pasta and breakfast cereal. The results of this survey suggest that less than 5% of the Darwin population aged 18 years and over

currently meet recommendations for fruit, vegetable and cereal intake on any given day.

*Editor's note:* One slice of bread or a small roll, half a bread muffin, large roll or pita bread, half a cup of cooked cereal, two weetbix, one cup of ready-to-eat breakfast cereal or one third of a cup of muesli were each taken as equal to one serve.

## NT Information systems project

The aim of the information systems project is to develop a food and nutrition monitoring plan and the infrastructure necessary for standardised data collection. Software and standard reporting mechanisms will be developed to allow more frequent data collection and feedback to communities and those responsible for resource allocation.

As part of the project a method to assess changes in the food supply and food availability in rural communities will be developed. The current 'Market Basket' used to survey the availability and price of core foods in urban and rural areas will also be updated in consultation with Aboriginal people to better reflect the current range of foods including take-away foods. Inclusion of cleaning and personal hygiene items (health hardware) and tobacco products in the

updated 'Market Basket' is being considered.

Community profiles of food service facilities will be developed for all areas. This will allow better co-ordination between nutritionists, health promotion officers, environmental health staff and other health professionals and help to ensure the best use of resources.

Information technology training of the nutrition workforce is essential to the success of this project and the aim is to have all relevant workers trained to intermediate level in wordprocessing and spreadsheet skills and in the use of the software tools developed for monitoring.

For further information contact: Sue Gough, Project Nutritionist, Territory Health Services on (089) 992 953.

### **Eat well Tasmania!**

A survey of the eating patterns of 805 Tasmanian adults, aged 20-64, was conducted by telephone in November 1995 by the Tasmanian Nutrition Promotion Taskforce. The purpose of the survey was to provide baseline data for evaluating the impact of *Eat Well Tasmania*, a state-wide broad-based nutrition campaign funded by the Tasmanian Health Promotion Council.

The survey asked respondents a series of questions about their food intake on the day before the interview.

#### **Core cereal, vegetable and fruit intake**

The major findings from the survey on core cereal, vegetable and fruit intake were as follows:

- 92% of respondents reported consuming bread on the day before the survey
- 52% ate breakfast cereal
- 28% ate rice, pasta or noodles
- 62% ate one or more cooked vegetables (other than potatoes)
- 56% ate potatoes (excluding hot chips and wedges)
- 56% reported having salad
- 38% ate two or more serves of fruit, and
- 30% of respondents ate no fruit.

Of the 249 respondents who reported wanting to increase their fruit and vegetable intake 22% cited availability and 14% cost as a barrier to change.

*Editor's note:* In this survey a serve of fruit was defined as one medium piece or a cup of diced pieces.

#### **Meals away from home**

In response to the question:

'Yesterday did you eat any main meals (breakfast, lunch, evening meal) prepared away from home?' 26% of the respondents reported eating at least one meal prepared away from home and overall 10% of all meals eaten (on the basis of three meals per person per day) were prepared away from home.

For further information contact: Judy Seal, State Nutrition Officer, Community and Health Services Tasmania, telephone 002 333 762 or fax 002 231 163.

*Editor's note:* The reported percentage of eating a meal away from home in the NT survey was 30% compared with 26% in Tasmania. It is quite possible that this difference is as much due to the use of a slightly different question in the NT survey (How many times did you eat out or have take-away yesterday?) as to a real difference in the prevalence of eating-out between the two areas.

#### **Some facts about weight in SA**

The Spring 1995 SA Omnibus Survey included questions about self-reported weight and height, self-perceived weight status and weight change during the past year. The questions were asked of a sample of 3016 persons aged 15 years and over who were representative of the SA population.

Some preliminary findings from the survey are as follows:

- overall 41.8% of the sample (men 41.7% and women 41.9%) were in the acceptable range for

Body Mass Index (BMI) (Target: 60% with a BMI between 20 and 25 by the year 2000)

- the 25-34 year age group had the highest proportion (46.4%) in the acceptable range for BMI
- in country areas only 36.1% had a BMI in the acceptable range as compared with 43.7% in metropolitan areas
- 71.6% correctly classified themselves as underweight, acceptable weight or overweight, and
- 51.9% reported no change in weight over the past year and 29.4% an increase.

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### **NSW Nutrition Monitoring Project**

Development of a State monitoring and surveillance strategy has been identified as a priority issue for the NSW Health Department Nutrition Strategy. Accordingly a project to develop an overall Food and Nutrition Monitoring Strategy for NSW and a system for monitoring food services in NSW schools has recently been funded by the NSW Health Department. Both systems will be designed to provide data that:

- are relevant to end-users
- complement national nutrition monitoring initiatives
- are relevant to the NSW Nutrition Strategy, and
- contribute to monitoring change among nutritionally vulnerable groups.

The project will involve extensive consultation with end-users to ensure the monitoring system is purpose built.

For further information contact: Edwina Macoun on (02) 391 9619.

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