

Folate and Spina Bifida

SEPTEMBER 2001

*Prepared for
Health Promotion SA
Department of Human Services*

**Eleonora Dal Grande
Tiffany Gill
Anne Taylor**

SERCIS ~ Centre for Population Studies in Epidemiology
Research and Evaluation Branch
SA Department of Human Services

This work is copyright. It may be reproduced and the Centre for Population Studies in Epidemiology (CPSE) welcomes requests for permission to reproduce in the whole or in part for work, study or training purposes subject to the inclusion of an acknowledgment of the source and not commercial use or sale. CPSE will only accept responsibility for data analysis conducted by CPSE staff or under CPSE supervision.

Published April 2002 by the South Australian
Department of Human Services
Centre for Population Studies in
Epidemiology, Research and Evaluation
Branch
PO Box 287 Rundle Mall 5000
South Australia, Australia

National Library of Australia Cataloguing-in-Publication

Dal Grande, E.
Folate and spina bifida, September 2001 : prepared for
Health Promotion SA, South Australian Department of Human
Services.

Bibliography.
ISBN 0 7308 9172 0.

1. Folic acid. 2. Folic acid deficiency. 3. Spina bifida.
I. Gill, Tiffany. II. Taylor, Anne. III. Social
Environmental Risk Context Information System (S. Aust.).
IV. South Australia. Dept. of Human Services. V. Centre
for Population Studies in Epidemiology (S. Aust.). VI.
Title.

616.83

In accordance with the Copyright Act 1968 a copy of each book published must be lodged with the National Library and respective deposit libraries in each state.

Printed : 23/04/2002

TABLE OF CONTENTS

CHAPTER 1: BACKGROUND AND METHODOLOGY	5
1.1 Introduction	6
1.2 Survey objectives	7
1.3 Survey design	7
1.3.1 Sample selection	7
1.3.2 Introductory letter	7
1.3.3 Questions	7
1.3.4 Pilot testing	8
1.4 Data Collection	8
1.4.1 CATI	8
1.4.2 Call backs	8
1.4.3 Validation	9
1.4.4 Response rate	9
1.5 Data processing	10
1.5.1 Analysis	10
1.5.2 Weighting	10
1.5.3 Data interpretation	10
CHAPTER 2: DEMOGRAPHIC PROFILE OF RESPONDENTS	11
2.1 Introduction	12
2.2 Demographic characteristics of all respondents	12
2.3 Demographic characteristics of respondents who were never married	16
CHAPTER 3: RESULTS	17
3.1 Knowledge of relation between folate and spina bifida	18
3.2 Alcohol consumption during pregnancy	29
3.3 Intake of folate before and during pregnancy	34
3.3.1 Women who had given birth or who were currently pregnant	34
3.3.2 Consumption folate in the month before pregnancy	34
3.3.3 Consumption of folate in the first three months of pregnancy	37
3.3.4 Type of folate enriched cereal consumed	40
3.4 Comparison with 1998 survey	41
REFERENCES	45
APPENDIX 1: SERCIS ADVISORY COMMITTEE	47
APPENDIX 2: APPROACH LETTER	49
APPENDIX 3: FOLATE QUESTIONS	51

CHAPTER 1: BACKGROUND AND METHODOLOGY

1.1 Introduction

SERCIS (Social, Environmental and Risk Context Information System) is a telephone monitoring system designed to provide high quality health data on large samples of the South Australian population. It is particularly applicable for surveys where planning information is required about health problems, use of health services, consumer perspective or health outcomes. SERCIS is a flexible system and can be used not only in direct self-report surveys, but also in recruiting for postal or other surveys requiring more detailed or complex information than can be obtained in telephone surveys (such as clinical information).

The advantage of obtaining large samples lies in the opportunity to describe health problems and compare the health status and activities of different population or regional groups, either cross-sectionally or over time. Large samples are important for the planning and development of health services on specific issues and SERCIS provides the opportunity to obtain population data regarding these issues.

SERCIS is managed within the Centre for Population Studies in Epidemiology, in the South Australian Department of Human Services and overseen by an Advisory Committee (Appendix 1).

This folate survey was conducted on behalf of Health Promotion SA. Questions from previous SERCIS surveys were used as a basis for this survey and further clarified by Health Promotion SA and Pregnancy Outcome Unit staff working in the area, and SERCIS staff.

1.2 Survey objectives

The objectives of this survey were to:

- Obtain data in 2001 for the questions repeated from the 1994, 1996 and 1998 surveys;
- Determine the awareness of women of child bearing age with regard to the use of folate and;
- Obtain information relating to alcohol use and pregnancy.

1.3 Survey design

1.3.1 Sample selection

All households in South Australia with a telephone connected and the telephone number listed in the Electronic White Pages (EWP) were eligible for selection in the sample. Telephone numbers were randomly selected from the Adelaide and country regions EWP telephone listings¹.

Within each household, the person who had their birthday last, and was 18 years or older, was selected for interview. There was no replacement for non-contactable persons.

1.3.2 Introductory letter

A letter introducing the survey (Appendix 2) was sent to the household of each selected telephone number. This informed people of the purpose of the survey and indicated that they could expect to be contacted by telephone within the time frame of the survey. Overall, 75.6% of the respondents reported receiving the letter.

1.3.3 Questions

The questionnaire design was based on those questions used previously in a CATI survey conducted in 1994² and questions from previous SERCIS surveys conducted in 1996 and 1998^{2,3}.

The full list of questions asked in this survey is contained in Appendix 3.

1.3.4 Pilot testing

Before the conduct of the main survey, the questionnaire was pilot tested (n=50). Some telephone numbers of persons recently pregnant were obtained in order to ensure that respondents in this group would be asked the relevant questions. The original questionnaire was amended slightly on the basis of the information obtained.

1.4 Data Collection

Data collection was undertaken by the contracted agency, Harrison Health Research. Pilot testing took place in August 2001. The survey commenced on 14th of September 2001 and concluded on 9th October 2001. Telephone calls were made between 9:30 am and 9.00 pm, seven days a week. Professional interviewers conducted the interviews and were supervised by Harrison Health Research and SERCIS personnel. Disposition codes were supplied to SERCIS staff daily, or as required, to ensure careful monitoring of survey activities.

On contacting the household, the interviewer initially identified themselves and the purpose of the survey.

1.4.1 CATI

The CATI III (Computer Assisted Telephone Interview) system was used to conduct the interviews. This system allows immediate entry of data from the interviewer's questionnaire screen to the computer database. The main advantages of this system are the precise ordering and timing of call backs and correct sequencing of questions as specific answers are given. The CATI system enforces a range of checks on each response with most questions having a set of pre-determined response categories. In addition, CATI automatically rotates response categories, when required, to minimise bias. When open-ended responses were required, these were transcribed exactly by the interviewer.

1.4.2 Call backs

At least six call-backs were made to the telephone number selected to interview household members. Different times of the day or evening were scheduled for each call-back. If a person could not be interviewed immediately they were re-scheduled for interview at a time suitable to them. Where a refusal was encountered, another

interviewer generally (at the discretion of the supervisor) called later, in an endeavour to obtain the interview(s). Replacement interviews for persons who could not be contacted or interviewed were not permitted.

1.4.3 Validation

Of each interviewer's work, 10% was selected at random for validation by the supervisor. In addition, Harrison Health Research is a member of Interviewer Quality Control Australia (IQCA), a national quality control assurance initiative of the Market Research Society of Australia. Accredited organisations must strictly adhere to rigorous quality assurance requirements and are subject to regular audits by IQCA auditors.

1.4.4 Response rate

The overall response rate was 75.2%. Initially a sample of 4800 was drawn. Sample loss occurred due to fax / modem connections (60), non-connected numbers (603), no contact due to no answer / always busy / answering machine (198), and non-residential numbers (142). From the eligible sample of 3995, the response rate was calculated as shown in Table 1.1.

Table 1.1: Summary of response rate

Response rate	n	%
Eligible Sample	3995	100.0
Refusals	497	12.4
Non-Contact 6 attempts	198	5.0
Foreign language	74	1.9
Incapacitated	105	2.6
Terminated	10	0.3
Respondent unavailable	105	2.6
Completed interviews	3006	75.2

Response rate = completed interviews / initial eligible sample

Participation rate = completed interviews / (initial eligible sample - non-contact after six attempts)

Of the completed interviews, 6 people were omitted from the analysis because they did not specify their age. The participation rate, which is the percentage of completed interviews following a successful contact being made with the household, was 79.2%.

1.5 Data processing

1.5.1 Analysis

Raw data from the CATI system were analysed using SPSS Version 10.0. The conventional five per cent level of statistical significance was used to determine statistically significant differences.

1.5.2 Weighting

Weighting was used to correct for disproportionality of the sample with respect to the population of interest⁴. The data were weighted by age and sex to reflect the structure of the population in South Australia over the age of 18 years and probability of selection in the household. Probability of selection in the household was calculated on the number of adults in the household and the number of listings in the White Pages that reach the household.

1.5.3 Data interpretation

The weighting of the data results in rounding effects for the numbers. In all instances the percentages should be the point of reference rather than the actual numbers of respondents. For example cell sizes presented as 1, 2 and 4 could in fact be 1.3, 2.4 and 4.4, which results in a slight variation from the totals presented (7 vs 8). The percentages presented in this report have been processed on the figures pre-rounding.

Differences reported with \wedge \vee mean that the overall figure is statistically significantly different from the sample proportion.

CHAPTER 2: DEMOGRAPHIC PROFILE OF RESPONDENTS

2.1 Introduction

This section presents all of the relevant demographic characteristics of the survey respondents.

2.2 Demographic characteristics of all respondents

Table 2.1 shows the profile of respondents by gender, age group, household size and area of residence

Table 2.1: Demographic characteristics-gender, age group, household size and area of residence

Variable	Response categories	n	%
Gender	Male	1466	48.9
	Female	1534	51.1
Age group	18 to 24 years	368	12.3
	25 to 34 years	563	18.8
	35 to 44 years	601	20.0
	45 to 54 years	538	17.9
	55 to 64 years	364	12.1
	65 to 74 years	307	10.2
	75 years and over	258	8.6
Household size (adults)	1	446	14.9
	2	1826	60.9
	3	728	24.3
Number of children in household (under 18 years)	None	1935	64.5
	1	417	13.9
	2	414	13.8
	3 or more	228	7.6
	Not stated	5	0.2
Metropolitan or country	Metropolitan Adelaide	2225	74.2
	Country	775	25.8
Area of residence	Northern Adelaide	577	19.2
	Western Adelaide	388	12.9
	Southern Adelaide	678	22.6
	Eastern Adelaide	582	19.4
	SA Country	775	25.8
Total		3000	100.0

Table 2.2 describes the ethnic composition of the respondents. The majority of respondents were born in Australia, with the next most common country of birth being the United Kingdom & Ireland, although a wide range of respondents from other countries were also interviewed. Those from a non-English speaking background accounted for 10.3% of the sample population. Of the 76.2% who reported that they were born in Australia, 1.3% were of Aboriginal or Torres Strait Islander descent.

Table 2.2: Demographic characteristics – Country of Birth and Aboriginality

Variable	Response categories	n	%
Country of birth	Australia	2286	76.2
	English speaking countries	405	13.5
	Non – English speaking countries	309	10.3
	Australia	2286	76.2
	UK & Ireland	370	12.3
	Italy	63	2.1
	Northern, Western, Southern Europe	43	1.4
	South East Asia	40	1.3
	Eastern Europe, Russia & the Baltic States	34	1.1
	Germany	28	0.9
	New Zealand	26	0.9
	Greece	23	0.8
	Asia	22	0.7
	Netherlands	20	0.7
	Africa including South Africa	14	0.5
	South & Central America	10	0.3
	Middle East & North Africa	9	0.3
	North America	8	0.3
	Melanesia & Polynesia	2	0.1
	Refused	1	0.0
Total		3000	100.0
Aboriginal or Torres Strait Islander	Yes	30	1.3
	No	2256	98.7
Total		2286	100.0

Table 2.3 shows the main language spoken at home, marital status, the highest education level attained and gross household annual income of the respondents. In addition, respondents were asked whether their dwelling was rented or owned.

Table 2.3: Demographic characteristics - main language spoken at home, marital status, highest educational qualification obtained and gross household annual income

Variable	Response categories	n	%
Main language spoken at home	English	2860	95.3
	Greek	22	0.7
	Italian	41	1.4
	South East Asian and Indian languages	28	0.9
	Other European language	36	1.2
	Other	13	0.4
Marital status	Married/defacto	1977	65.9
	Separated/divorced	228	7.6
	Widowed	188	6.3
	Never married (single)	607	20.2
Highest educational qualification obtained	Still at school	31	1.0
	Left school at 15 years or less	526	17.5
	Left school after age 15	921	30.7
	Left school after age 15 but still studying	158	5.3
	Trade / apprenticeship	393	13.1
	Certificate / diploma	509	17.0
	Bachelor degree or higher	462	15.4
Gross household annual income	Up to \$20,000	659	22.0
	\$20,001 to \$40,000	531	17.7
	\$40,001 to \$60,000	342	11.4
	Over \$60,000	1079	36.0
	Not stated / don't know	389	13.0
Ownership of dwelling	Owned or being purchased by the occupants	2507	83.6
	Rented from Housing Trust	138	4.6
	Rented privately	333	11.1
	Rent free / supplied with job	5	0.2
	Other	8	0.3
	Refused	10	0.3
Total		3000	100.0

Table 2.4 shows the current work status of the respondent. The ‘other’ category of work status generally relates to people on disability pensions, WorkCover or sickness benefits. For analysis purposes, respondents who reported home duties, retired, student or ‘other’ were classified as economically inactive. The respondents whose work status was home duties, retired, student or ‘other’ (n=1192) were asked if they received any form of pension or benefit.

Table 2.4: Demographic characteristics - work status, receiving pension or benefit and summary of the type of pension

Variable	Response categories	n	%
Work status	Full time employed	1280	42.7
	Part time / casual employment	554	18.5
	Unemployed	99	3.3
	Home duties	292	9.7
	Retired	583	19.4
	Student	136	4.5
	Other	55	1.8
Total		3000	100.0
Receive pension or benefit	Yes	836	70.1
	No	356	29.9
Total		1192	100.0
Pension type *	Aged pension	435	14.5
	Invalid, disability pension	114	3.8
	Service or defense, war widow's, Veteran's Affairs pension	102	3.4
	Austudy, Youth allowance	61	2.0
	Unemployment	58	1.9
	Supporting parents	29	1.0
	Carer's, partner allowance	27	0.9
	Self-funded, superannuation	17	0.6
	United Kingdom, overseas pension	9	0.3
	Sickness allowance	5	0.2
	Other	14	0.5

* Multiple responses possible

2.3 Demographic characteristics of respondents who were never married

Respondents who were never married were examined in more detail with regard to age, gender and income level (n=607). The responses are summarised in Table 2.5.

Table 2.5: Demographic characteristics of those who were not married

Variable	Response categories	n	%
Gender	Male	345	56.9
	Female	262	43.1
Age group	18 to 24 years	320	52.7
	25 to 34 years	171	28.2
	35 to 44 years	67	11.1
	45 to 54 years	27	4.5
	55 to 64 years	6	1.0
	65 to 74 years	10	1.7
	75 years and over	5	0.8
Gross household annual income	Up to \$20,000	88	14.5
	\$20,001 to \$40,000	107	17.6
	\$40,001 to \$60,000	64	10.5
	Over \$60,000	213	35.1
	Not stated / don't know	136	22.4
Total		607	100.0

CHAPTER 3: RESULTS

3.1 Knowledge of relation between folate and spina bifida

Respondents were asked two questions to determine their knowledge of which vitamins may prevent spina bifida in babies, and at what times before and/or during pregnancy the vitamin needs to be taken to help prevent spina bifida. These questions were asked of all respondents.

Respondents were firstly asked which vitamin prevents spina bifida if enough is taken by the mother. These responses are presented in Table 3.1.

Overall, 39.9% (n=1197) of the respondents correctly identified folate as the vitamin that may prevent spina bifida.

Table 3.1: Vitamins nominated by respondents as preventing spina bifida if enough is taken by the mother

Response category	Males		Females		Persons	
	n	%	n	%	n	%
Vitamin A	30	2.1	28	1.8	59	2.0
Folate (folic acid, a B group vitamin)	395	26.9	802	52.3	1197	39.9
Other B group vitamins (B1, B2, B5, B6)	32	2.2	19	1.2	51	1.7
Vitamin C (ascorbic acid)	41	2.8	28	1.8	69	2.3
Vitamin D	21	1.4	13	0.9	34	1.1
Other	5	0.4	7	0.5	12	0.4
No	94	6.4	62	4.1	156	5.2
Not sure / Don't know	848	57.8	574	37.4	1422	47.4
Total	1466	100.0	1534	100.0	3000	100.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Table 3.2 shows the demographic characteristics of the respondents who correctly identified folate as the vitamin that may prevent spina bifida. Respondents who identified folate were significantly more likely to be female, aged between 25 and 44 years, live in Southern or Eastern Adelaide, live in household of two people, have children, be married or in a de facto relationship, work part time, have a degree or higher qualifications, earn over \$40,000 and not receive a pension.

Table 3.2: Proportion of respondents who correctly identified folate as the vitamin that may prevent spina bifida by demographic characteristics

Response category	n	%
Gender		
Male	395	26.9 ∨
Female	802	52.3 ^
State region		
Metropolitan area	918	41.3
Rural	261	36.0
Remote	16	34.3
Area of residence		
Northern Adelaide	221	38.3
Western Adelaide	139	35.9
Southern Adelaide	299	44.2 ^
Eastern Adelaide	259	44.4 ^
SA Country	278	35.9 ∨
Age groups		
18 to 24 years	115	31.2 ∨
25 to 34 years	324	57.6 ^
35 to 44 years	308	51.2 ^
45 to 54 years	221	41.0
55 to 64 years	129	35.6
65 to 74 years	72	23.6 ∨
75 years and over	27	10.6 ∨
Household size (18 years and over)		
One person	142	31.8
Two people	821	45.0 ^
Three or more people	233	32.0
Children living in the household (less than 18 years)		
None	642	33.2
Yes	552	52.1 ^
Not stated	2	37.7 #
Overall	1197	39.9

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

^ ∨ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.2: Proportion of respondents who correctly identified folate as the vitamin that may prevent spina bifida by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	948	41.5
Other English speaking country	182	44.8
Non English speaking country	67	21.8 √
Aboriginal or Torres Strait Islander		
Yes	7	24.3
No	1189	40.0
Main language spoken at home		
English	1175	41.1
Other	22	15.5 √
Marital status		
Married / de facto	866	43.8 ^
Separated / divorced	89	39.1
Widowed	37	19.9 √
Never married	204	33.7 √
Work status		
Currently working full time	526	41.1
Currently working part time	284	51.2 ^
Unemployed	32	31.8
Economically inactive	355	33.3 √
Highest educational attainment		
Secondary	572	35.0
Trade/Apprenticeship/Certificate/Diploma	350	38.8
Degree or higher	275	59.4 ^
Gross annual household income		
Up to \$20,000	174	26.5 √
\$20,001 to \$40,000	226	42.5
\$40,001 to \$60,000	165	48.4 ^
Over \$60,000	513	47.6 ^
Not stated/don't know	118	30.3 √
Overall	1197	39.9
Receive pension or benefit*		
No	177	49.8 ^
Yes	222	26.6 √
Overall	399	33.5

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

*Only asked of those who did not work full time or part time

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Respondents who identified folate and had never been married (n=204) were further examined in terms of age, gender and income. The responses are summarised in Table 3.3. These respondents were significantly more likely to be female.

Table 3.3: Selected demographic characteristics of those who are unmarried and identified folate

Response category	n	%
Gender		
Male	74	21.5 √
Female	130	49.7 ^
Age group		
18 to 24 years	89	27.8
25 to 34 years	71	41.5
35 to 44 years	29	43.2
45 to 54 years	9	33.5
55 to 64 years	3	42.6 #
65 to 74 years	3	31.5 #
75 years and over	1	9.1 #
Gross annual income		
Up to \$20,000	32	36.7
\$20,001 to \$40,000	37	34.2
\$40,001 to \$60,000	25	39.4
Over \$60,000	77	36.4
Not stated/don't know	33	24.2 √
Overall	204	33.7

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.4 shows the demographic characteristics of women in the reproductive age (18 to 44 years) who correctly identified folate as the vitamin that may prevent spina bifida (63.1%, n=479). These respondents were significantly more likely to be aged 25 to 34 years, live in a household of two people and have a degree or higher.

Table 3.4: Proportion of females, 18 to 44 years, who correctly identified folate as the vitamin that may prevent spina bifida by demographic characteristics

Response category	n	%
State region		
Metropolitan area	366	63.8
Rural	104	61.2
Remote	9	59.0
Area of residence		
Northern Adelaide	100	61.9
Western Adelaide	43	57.6
Southern Adelaide	121	67.6
Eastern Adelaide	102	64.3
SA Country	113	61.1
Age groups		
18 to 24 years	84	47.1 √
25 to 34 years	203	72.9 ^
35 to 44 years	192	63.7
Household size (18 years and over)		
One person	54	67.4
Two people	344	71.8 ^
Three or more people	82	40.7 √
Children living in the household (less than 18 years)		
None	171	57.8
Yes	309	66.6
Not stated	-	-
Overall	479	63.1

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.4: Proportion of females, 18 to 44 years, who correctly identified folate as the vitamin that may prevent spina bifida by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	400	64.7
Other English speaking country	58	72.0
Non English speaking country	22	35.5 √
Aboriginal or Torres Strait Islander		
Yes	4	30.4 #
No	476	63.6
Main language spoken at home		
English	473	64.8
Other	7	22.0 √
Marital status		
Married / de facto	331	69.7
Separated / divorced	27	62.8
Widowed	1	74.1 #
Never married	120	50.2 √
Work status		
Currently working full time	176	63.3
Currently working part time	176	65.0
Unemployed	8	46.4
Economically inactive	120	61.7
Highest educational attainment		
Secondary	233	56.0 √
Trade/Apprenticeship/Certificate/Diploma	124	66.7
Degree or higher	122	77.7 ^
Gross annual household income		
Up to \$20,000	45	54.4
\$20,001 to \$40,000	81	62.4
\$40,001 to \$60,000	81	67.5
Over \$60,000	222	72.1
Not stated/don't know	50	42.3
Overall	479	63.1
Receive pension or benefit*		
No	98	67.8
Yes	39	49.5 √
Overall	137	61.3

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

*Only asked of those who did not work full time or part time

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Those respondents who correctly identified folate as the vitamin responsible for preventing spina bifida (n=1197) were further asked at what time before or during pregnancy they thought folate needed to be taken to prevent spina bifida. The results are presented in Table 3.5.

Of the respondents who correctly identified folate as the vitamin responsible for preventing spina bifida, 47.2% (n=563) correctly stated that folate should be taken before pregnancy and in the first three months of pregnancy.

Table 3.5: Period of time nominated by respondent for when folate should be taken to prevent spina bifida

Response category	Males		Females		Persons	
	n	%	n	%	n	%
During the menstrual period	-	-	2	0.2	2	0.1
Before pregnancy	51	13.1	135	16.8	186	15.6
Before pregnancy and in the first three months of pregnancy	145	36.8	418	52.1	563	47.1
In the first three months of pregnancy only	49	12.5	55	6.8	104	8.7
In the first six months of pregnancy	9	2.3	13	1.6	22	1.8
Throughout pregnancy	64	16.3	83	10.4	147	12.3
Before and during pregnancy	4	1.0	14	1.7	18	1.5
Other	1	0.2	2	0.3	3	0.2
Not sure / Don't know	70	17.8	80	10.0	150	12.6
Total	393	100.0	802	100.0	1197	100.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Table 3.6 shows the demographic characteristics of the respondents who correctly identified that folate should be taken before and during the first three months of pregnancy. These respondents were significantly more likely to be female, aged between 25 and 34 years, have children living in the household, be of Aboriginal or Torres Strait Islander descent, have a degree or higher and earn between \$40,000 and \$60,000.

Table 3.6: Proportion of respondents who correctly identified that folate should be taken before and during the first three months of pregnancy by demographic characteristics

Response category	n	%
Gender		
Male	145	36.9 ∨
Female	418	52.3 ^
Area of SA		
Metropolitan area	425	46.5
Rural	127	48.7
Remote	10	60.4
Area of residence		
Northern Adelaide	106	48.5
Western Adelaide	58	41.4
Southern Adelaide	131	43.7
Eastern Adelaide	131	50.5
SA Country	137	49.3
Age groups		
18 to 24 years	52	46.0
25 to 34 years	212	65.8 ^
35 to 44 years	139	45.4
45 to 54 years	94	42.6
55 to 64 years	45	34.9 ∨
65 to 74 years	13	17.6 ∨
75 years and over	8	27.5 ∨
Household size (18 years and over)		
One person	63	44.2
Two people	399	48.9
Three or more people	101	43.2
Children living in the household (less than 18 years)		
None	255	39.8 ∨
Yes	308	56.0 ^
Not stated	-	-
Overall	563	47.2

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ ∨ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.6: Proportion of respondents who correctly identified that folate should be taken before and during the first three months of pregnancy by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	455	48.2
Other English speaking country	75	41.4
Non English speaking country	33	48.7
Aboriginal or Torres Strait Islander		
Yes	7	93.0 [^]
No	556	46.9
Main language spoken at home		
English	553	47.2
Other	10	45.4
Marital status		
Married / de facto	427	49.5
Separated / divorced	43	48.1
Widowed	8	21.1 ^v
Never married	85	41.8
Work status		
Currently working full time	255	48.7
Currently working part time	152	53.7
Unemployed	11	35.8
Economically inactive	145	40.8 ^v
Highest educational attainment		
Secondary	253	44.2
Trade/Apprenticeship/Certificate/Diploma	153	44.0
Degree or higher	157	57.4 [^]
Gross annual household income		
Up to \$20,000	66	38.0 ^v
\$20,001 to \$40,000	88	39.0 ^v
\$40,001 to \$60,000	96	57.8 [^]
Over \$60,000	260	50.9
Not stated/don't know	53	45.6
Overall	563	47.2
Receive pension or benefit*		
No	84	47.4
Yes	82	37.2 ^v
Overall	166	41.7

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

*Only asked of those who did not work full time or part time

[^] ^v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.7 shows the demographic characteristics of women in the reproductive age (18 to 44 years) who correctly identified that folate should be taken before and during the first three months of pregnancy (61.4%, n=293). These respondents were significantly more likely to be aged 25 to 34 years.

Table 3.7: Proportion of females, 18 to 44 years, who correctly identified that folate should be taken before and during the first three months of pregnancy by demographic characteristics

Response category	n	%
Area of SA		
Metropolitan area	222	60.8
Rural	64	62.2
Remote	7	80.6
Area of SA		
Northern Adelaide	64	63.6
Western Adelaide	24	55.7
Southern Adelaide	71	58.4
Eastern Adelaide	64	62.4
SA Country	71	63.1
Age groups		
18 to 24 years	40	48.0 √
25 to 34 years	153	75.6 ^
35 to 44 years	100	52.3 √
Household size (18 years and over)		
One person	34	62.5
Two people	221	64.8
Three or more people	38	46.7 √
Children living in the household (less than 18 years)		
None	103	60.6
Yes	190	61.9
Not stated	-	-
Overall	293	61.4

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.7: Proportion of females, 18 to 44 years, who correctly identified that folate should be taken before and during the first three months of pregnancy by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	247	62.1
Other English speaking country	34	58.9
Non English speaking country	12	55.5
Aboriginal or Torres Strait Islander		
Yes	4	100.0 #
No	290	61.2
Main language spoken at home		
English	288	61.1
Other	6	83.5
Marital status		
Married / de facto	212	64.3
Separated / divorced	21	76.9
Widowed	1	100.0
Never married	59	49.7 √
Work status		
Currently working full time	113	63.9
Currently working part time	104	59.5
Unemployed	3	47.3 #
Economically inactive	74	61.4
Highest educational attainment		
Secondary	136	58.8
Trade/Apprenticeship/Certificate/Diploma	74	59.7
Degree or higher	83	68.3
Gross annual household income		
Up to \$20,000	24	53.8
\$20,001 to \$40,000	49	60.8
\$40,001 to \$60,000	52	64.0
Over \$60,000	136	61.6
Not stated/don't know	32	64.9
Overall	293	61.4
Receive pension or benefit*		
No	64	65.7
Yes	21	55.2
Overall	85	62.7

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

*Only asked of those who did not work full time or part time

Insufficient numbers for statistical tests

∧ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

3.2 Alcohol consumption during pregnancy

Respondents (n=3000) were asked the amount of alcohol they think is safe for pregnant women to drink. Overall, 56.2% (n=1687) of the respondents indicated that women should abstain from alcohol entirely during pregnancy (Table 3.8).

Table 3.8: Amount of alcohol the respondents considered is safe for pregnant women to drink

Response category	Males		Females		Persons	
	n	%	n	%	n	%
Pregnant women shouldn't drink any alcohol	695	47.4	992	64.7	1687	56.2
Pregnant women should not drink more than one standard drink in any one day	599	40.8	438	28.6	1037	34.6
Pregnant women should not drink more than 2 standard drinks per day on 5 days of the week	97	6.6	52	3.4	149	5.0
Pregnant women can drink more than 2 standard drinks per day on 5 or more days per week	9	0.6	2	0.1	10	0.3
Occasional drink	4	0.3	6	0.4	10	0.3
One drink a week	-	-	7	0.5	7	0.2
Up to them to decide	5	0.4	-	-	5	0.2
Other	10	0.7	4	0.2	14	0.5
Not sure / Don't know	47	3.2	33	2.1	79	2.6
Total	1466	100.0	1534	100.0	3000	100.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Table 3.9 shows the demographic characteristics of the respondents who correctly identified that pregnant women should abstain from drinking alcohol (n=1687). These respondents were significantly more likely to be female, of Aboriginal or Torres Strait Islander descent, speak a language other than English at home, and not state their gross annual income.

Table 3.9: Proportion of respondents who correctly identified that that pregnant women should abstain from drinking alcohol by demographic characteristics

Response category	n	%
Gender		
Male	695	47.4 \vee
Female	992	64.7 \wedge
Area of SA		
Metropolitan area	1248	56.1
Rural	412	56.7
Remote	27	55.7
Area of residence		
Northern Adelaide	341	59.1
Western Adelaide	206	53.2
Southern Adelaide	375	55.4
Eastern Adelaide	325	55.8
SA Country	439	56.7
Age groups		
18 to 24 years	206	56.1
25 to 34 years	315	55.9
35 to 44 years	330	54.9
45 to 54 years	312	57.9
55 to 64 years	212	58.3
65 to 74 years	173	56.2
75 years and over	140	54.1
Household size (18 years and over)		
One person	246	55.1
Two people	1043	57.1
Three or more people	398	54.7
Children living in the household (less than 18 years)		
None	1108	57.3
Yes	575	54.2
Not stated	5	90.5 #
Overall	1687	56.2

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

\wedge \vee Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.9: Proportion of respondents who correctly identified that that pregnant women should abstain from drinking alcohol by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	1278	55.9
Other English speaking country	219	54.2
Non English speaking country	190	61.6
Aboriginal or Torres Strait Islander		
Yes	24	79.6 [^]
No	1664	56.0
Main language spoken at home		
English	1590	55.6
Other	97	69.5 [^]
Marital status		
Married / de facto	1115	56.4
Separated / divorced	126	55.4
Widowed	103	54.9
Never married	343	56.5
Work status		
Currently working full time	669	52.3
Currently working part time	332	59.9
Unemployed	53	53.4
Economically inactive	633	59.4
Highest educational attainment		
Secondary	930	56.9
Trade/Apprenticeship/Certificate/Diploma	515	57.0
Degree or higher	243	52.5
Gross annual household income		
Up to \$20,000	380	57.7
\$20,001 to \$40,000	293	55.1
\$40,001 to \$60,000	196	57.5
Over \$60,000	572	53.0
Not stated/don't know	245	63.1 [^]
Overall	1687	56.2
Receive pension or benefit*		
No	211	59.2
Yes	487	58.3
Overall	698	58.6

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

*Only asked of those who did not work full time or part time

[^] ^v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.10 shows the demographic characteristics of women in the reproductive age (18 to 44 years) who correctly identified that pregnant women should abstain from drinking alcohol (63.6%, n=483). These respondents were significantly more likely to live in a household of three or more people, live in Eastern Adelaide, be from a non-English speaking country and never have been married.

Table 3.10: Proportion of females, 18 to 44 years, who correctly identified that that pregnant women should abstain from drinking alcohol by demographic characteristics

Response category	n	%
Area of SA		
Metropolitan area	368	64.2
Rural	106	61.9
Remote	9	59.0
Area of residence		
Northern Adelaide	103	63.2
Western Adelaide	44	58.6
Southern Adelaide	107	59.6
Eastern Adelaide	115	72.9 [^]
SA Country	114	61.7
Age groups		
18 to 24 years	127	71.1
25 to 34 years	172	61.7
35 to 44 years	184	60.8
Household size (18 years and over)		
One person	44	55.0
Two people	292	61.0
Three or more people	147	73.1 [^]
Children living in the household (less than 18 years)		
None	199	67.5
Yes	282	61.0
Not stated	1	100.0 #
Overall	483	63.6

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

[^] ^v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.10: Proportion of females, 18 to 44 years, who correctly identified that that pregnant women should abstain from drinking alcohol by demographic characteristics (cont)

Response category	n	%
Country of birth		
Australia	387	62.7
Other English speaking country	46	56.9
Non English speaking country	50	80.4 [^]
Aboriginal or Torres Strait Islander		
Yes	8	70.7
No	474	63.4
Main language spoken at home		
English	458	62.8
Other	25	80.8
Marital status		
Married / de facto	288	60.6
Separated / divorced	22	50.1
Widowed	-	-
Never married	173	72.0 [^]
Work status		
Currently working full time	173	62.1
Currently working part time	171	63.3
Unemployed	10	63.4
Economically inactive	128	66.0
Highest educational attainment		
Secondary	258	62.0
Trade/Apprenticeship/Certificate/Diploma	124	66.4
Degree or higher	101	64.4
Gross annual household income		
Up to \$20,000	57	68.6
\$20,001 to \$40,000	78	60.4
\$40,001 to \$60,000	78	64.7
Over \$60,000	188	61.1
Not stated/don't know	82	68.8
Overall	483	63.6
Receive pension or benefit		
No	89	62.1
Yes	55	70.0
Overall	145	64.9

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

*Only asked of those who did not work full time or part time

Insufficient numbers for statistical tests

[^] χ^2 Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

3.3 Intake of folate before and during pregnancy

3.3.1 Women who had given birth or who were currently pregnant

Female respondents, aged 50 years or less (n=923) were asked if they had given birth in the last three years or if they were currently pregnant. Overall, 13.8% (n=127) of women, 50 years or less, had given birth in the last three years. In addition, 5.5% (n=51) of women aged 50 years or less, were currently pregnant (Table 3.11).

Table 3.11: Women who had given birth in the last three years and women who were currently pregnant

Response category	n	%
Women who had given birth in the last three years		
Yes in 1998	33	3.5
Yes in 1999	36	3.9
Yes in 2000	34	3.7
Yes in 2001	25	2.7
No	796	86.2
Women who were currently pregnant		
Yes	51	5.5
No	873	94.5
Total	923	100.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

3.3.2 Consumption folate in the month before pregnancy

Women who had given birth in the last three years or who were currently pregnant (n=159) were asked if they consumed folate before and in the first three months of their pregnancy (Table 3.12).

Table 3.12: Consumed folate in the month before becoming pregnant*

Response category	n	%
Took folic acid tablets every day	87	54.8
Ate cereals specially enriched with folic acid every day	41	25.9
Increased intake of foods rich in folate or folic acid such as green leafy vegetables, cereals and fruits	66	41.5
None	47	29.4
Not sure / Don't know	4	2.4

* Multiple response possible

Table 3.13 shows the demographic characteristics of women who had given birth in the last three years or who were currently pregnant, aged between 18 and 50 years, who have consumed folate, in some form, in the month before they became pregnant.

Table 3.13: Proportion of females, 18 to 50 years, who consumed folate in the month before becoming pregnant by demographic characteristics

Response category	Took folic acid tables		Ate folic acid enriched cereals		Increased intake of folic acid enriched foods	
	n	%	n	%	n	%
Area of residence						
Metropolitan area	63	55.0	32	28.3	50	43.9
Rural and remote areas	24	54.1	9	19.7	16	35.4
Age groups						
18 to 24 years	1	9.5 #	-	-	1	9.5 #
25 to 34 years	64	62.3	29	28.3	48	47.5
35 to 50 years	22	50.1	12	27.6	16	36.9
Household size (18 years and over)						
One person	3	27.9 #	2	17.2 #	5	42.1 #
Two or more people	83	56.9	39	26.6	61	41.5
Children living in the household (less than 18 years)						
None	9	50.6	3	14.7 #	8	43.6
Yes	78	55.3	38	27.3	58	41.3
Country of birth						
Australia	72	56.9	34	26.6	52	40.5
Other English speaking country	9	41.9	7	33.4	8	37.8
Non English speaking country	5	55.7 #	-	-	6	62.9
Marital status						
Married/defacto	73	56.9	40	27.3	63	43.1
Separated/divorced/never married	4	30.5 #	1	10.3 #	3	24.2 #
Work status						
Full time	31	70.5	12	28.6	16	37.0
Part time	27	50.8	9	17.5	19	36.3
Unemployed, economically inactive	29	47.0	19	31.2	30	49.2
Highest educational attainment						
Secondary	43	53.9	20	25.2	32	40.5
Trade/Apprenticeship/Certificate/Diploma	29	61.8	11	23.6	19	40.2
Degree or higher	15	46.8	10	30.7	15	46.0
Gross annual household income						
Up to \$20,000	5	31.5 #	5	27.8 #	7	38.3
\$20,001 to \$40,000	12	41.3	5	16.3 #	13	42.9
\$40,001 to \$60,000	16	54.4	11	37.0	13	42.7
Over \$60,000	41	62.8	15	22.6	25	39.1
Not stated/don't know	12	71.7	6	33.9	8	49.8
Overall	87	54.8	41	25.9	66	41.5

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

Table 3.14 shows the demographic characteristics of women who had given birth in the last three years or who were currently pregnant, aged between 18 and 50 years, who did not consume folate in the month before they became pregnant. These respondents were significantly more likely to be aged 18 to 24 years and be separated, divorced or never married.

Table 3.14: Proportion of females, 18 to 50 years, who did not consume folate in the month before becoming pregnant by demographic characteristics

Response category	n	%
Area of residence		
Metropolitan area	30	26.3
Rural and remote areas	17	37.3
Age groups		
18 to 24 years	10	80.9 [^]
25 to 34 years	22	21.9
35 to 50 years	14	32.1
Household size (18 years and over)		
One person	6	50.5
Two or more people	41	27.7
Children living in the household (less than 18 years)		
None	6	36.0
Yes	40	28.6
Country of birth		
Australia	38	29.9
Other English speaking country	6	28.8
Non English speaking country	2	24.7 #
Marital status		
Married/defacto	39	26.7
Separated/divorced/never married	8	59.8 [^]
Work status		
Full time	9	19.6
Part time	18	33.2
Unemployed, economically inactive	20	33.1
Highest educational attainment		
Secondary	27	33.1
Trade/Apprenticeship/Certificate/Diploma	13	27.5
Degree or higher	7	23.0
Gross annual household income		
Up to \$20,000	8	46.7
\$20,001 to \$40,000	12	41.3
\$40,001 to \$60,000	10	32.2
Over \$60,000	14	22.0
Not stated/don't know	2	14.7 #
Overall	47	29.4

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

[^] ^v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

3.3.3 Consumption of folate in the first three months of pregnancy

Women who had given birth in the last three years or who were currently pregnant (n=159) were asked if they consumed folate in the first three months of their pregnancy (Table 3.15).

Table 3.15: Consumed folate in the first three months of current or most recent pregnancy*

Response category	n	%
Took folic acid tablets every day	105	66.3
Ate cereals specially enriched with folic acid every day	42	26.3
Increased intake of foods rich in folate or folic acid such as green leafy vegetables, cereals and fruits	79	50.1
None	24	15.0
Not sure / Don't know	5	3.0

*Multiple response possible

Table 3.16 shows the demographic characteristics of women who had given birth in the last three years or who were currently pregnant, aged between 18 and 50 years, who had consumed folate in the first three months of the current or most recent pregnancy.

Table 3.16: Proportion of females, 18 to 50 years, who consumed folate in the first three months of current or most recent pregnancy by demographic characteristics

Response category	Took folic acid tables		Ate folic acid enriched cereals		Increased intake of folic acid enriched foods	
	n	%	n	%	n	%
Area of residence						
Metropolitan area	78	68.5	30	26.8	57	50.1
Rural and remote areas	27	60.7	11	25.0	22	50.1
Age groups						
18 to 24 years	8	61.0	-	-	3	25.7 #
25 to 34 years	72	70.4	29	28.9	54	53.2
35 to 50 years	26	58.5	12	27.7	22	49.7
Household size (18 years and over)						
One person	7	61.6	2	18.9 #	7	60.1
Two or more people	98	66.7	39	26.9	72	49.3
Children living in the household (less than 18 years)						
None	11	59.8	3	14.7 #	10	54.7
Yes	94	67.2	39	27.8	70	49.5
Country of birth						
Australia	85	66.7	34	26.8	62	48.7
Other English speaking country	12	56.9	7	34.6	12	54.0
Non English speaking country	8	83.1	-	-	6	60.2
Marital status						
Married/defacto	99	68.1	40	27.5	74	50.9
Separated/divorced/never married	6	46.9	2	11.9 #	5	40.9 #
Work status						
Full time	30	67.8	10	23.5	24	55.3
Part time	31	59.2	13	23.6	27	50.1
Unemployed, economically inactive	44	71.4	19	30.5	29	46.5
Highest educational attainment						
Secondary	54	68.0	23	28.4	41	50.9
Trade/Apprenticeship/Certificate/Diploma	30	66.0	10	22.0	22	48.5
Degree or higher	20	62.8	9	27.0	16	50.5
Gross annual household income						
Up to \$20,000	14	79.2	3	17.2 #	7	40.2
\$20,001 to \$40,000	18	59.7	9	30.7	16	54.5
\$40,001 to \$60,000	17	58.1	9	29.6	11	37.8
Over \$60,000	44	68.4	15	23.1	35	54.0
Not stated/don't know	12	71.7	6	33.9	10	59.0
Overall	105	66.3	42	26.3	79	50.1

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

^ v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

Table 3.17 shows the demographic characteristics of women who had given birth in the last three years or who were currently pregnant, aged between 18 and 50 years, who did not consume folate in the first three months of the current or most recent pregnancy.

Table 3.17: Proportion of females, 18 to 50 years, who did not consume folate in the first three months of current or most recent pregnancy by demographic characteristics

Response category	n	%
Area of residence		
Metropolitan area	16	14.4
Rural and remote areas	7	16.4
Age groups		
18 to 24 years	4	32.4 #
25 to 34 years	14	13.6
35 to 50 years	6	13.2
Household size (18 years and over)		
One person	2	13.2 #
Two or more people	22	15.1
Children living in the household (less than 18 years)		
None	3	17.1 #
Yes	21	14.7
Country of birth		
Australia	20	16.1
Other English speaking country	3	15.3 #
Non English speaking country		
Marital status		
Married/defacto	19	13.3
Separated/divorced/never married	4	34.4 #
Work status		
Full time	7	15.7
Part time	9	16.3
Unemployed, economically inactive	8	13.4
Highest educational attainment		
Secondary	12	14.7
Trade/Apprenticeship/Certificate/Diploma	8	16.7
Degree or higher	4	13.4 #
Gross annual household income		
Up to \$20,000	2	9.3 #
\$20,001 to \$40,000	5	15.4 #
\$40,001 to \$60,000	6	21.2
Over \$60,000	10	14.8
Not stated/don't know	2	9.8 #
Overall	24	15.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

Insufficient numbers for statistical tests

^ v Statistically significant higher or lower (χ^2 test, $p < 0.05$) than overall figure

3.3.4 Type of folate enriched cereal consumed

Women who indicated that they ate cereals specially enriched with folic acid were asked the brand of the cereal that they had eaten. These responses are shown in Table 3.18.

Table 3.18: Brands of folate enriched cereal taken by women in the month and during the first three months of their pregnancy*

Response category	n	%
Weetbix	15	30.4
Sultana bran	14	28.9
Cornflakes	7	15.0
Special K	6	12.4
Nutrigrain	5	10.7
Allbran	4	8.4
Other	11	21.6
Don't know	6	11.7
Total	49	100.0

* Multiple responses possible

3.4 Comparison with 1998 survey

In 1998, similar questions were asked in another SERCIS survey² regarding knowledge of the association between folate and spina bifida, and intake of folate before and during pregnancy.

There were no statistically significant differences in the proportion of respondents who correctly identified folate as the vitamin that may prevent spina bifida between the 1998 and 2001 survey (Table 3.19).

Table 3.19: Proportion who correctly identified folate as the vitamin that may prevent spina bifida by year of survey and by various age and gender categories

Folate is the vitamin that may prevent spina bifida	1998 Survey		2001 Survey	
	n	%	n	%
Males, 65 years or less	611	28.9	372	30.1
Females, 50 years or less	1258	60.5	567	61.4
Females, 44 years or less	1053	61.9	479	63.1
Overall	1870	44.6	939	43.4

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ v Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

There were no statistically significant differences in the proportion of respondents who correctly identified that folate should be taken before and during the first three months of pregnancy between the 1998 and 2001 survey (Table 3.20).

Table 3.20: Proportion who correctly identified that folate should be taken before and during the first three months of pregnancy by year of survey and by various age and gender categories

Folate should be taken before and during the first three months of pregnancy	1998 Survey		2001 Survey	
	n	%	n	%
Males, 65 years or less	238	38.9	141	38.0
Females, 50 years or less	705	56.0	337	59.7
Females, 44 years or less	622	60.7	293	61.4
Overall	943	50.4	478	51.1

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ v Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

Questions were asked of women who had given birth in the last three years or who were currently pregnant, aged between 18 and 50 years, when the surveys were conducted (1998, n=292; 2001, n=159) on the consumption of folate in the month before becoming pregnant and in the first three months of current or most recent pregnancy.

There has been an increase since 1998 in the proportion of women taking folic acid tablets every day in the month before becoming pregnant and in the first three months of the current or most recent pregnancy. In addition, there has been an increase since 1998 in the proportion of women eating folic acid enriched cereals in the month before becoming pregnant (Table 3.21).

Table 3.21: Consumed folate before and in the first three months of their pregnancy*

Response category	1998 Survey		2001 Survey	
	n	%	n	%
Consumed folate in the month before becoming pregnant				
Took folic acid tablets every day	117	40.3 ∨	87	54.8 ^
Ate cereals specially enriched with folic acid every day	48	16.5 ∨	41	25.9 ^
Increased intake of foods rich in folate or folic acid such as green leafy vegetables, cereals and fruits	125	42.8	66	41.5
None	92	32.5	47	29.4
Consumed folate in the first three months of current or most recent pregnancy				
Took folic acid tablets every day	154	52.7 ∨	105	66.3 ^
Ate cereals specially enriched with folic acid every day	61	21.1	42	26.3
Increased intake of foods rich in folate or folic acid such as green leafy vegetables, cereals and fruits	156	53.5	79	50.1
None	55	19.5	24	15.0

^ ∨ Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

* Multiple response possible

The results were then examined together to determine those who took folate both before pregnancy and within the first three months in 1998 (n=292) and in 2001 (n=159). The results for taking tablets, eating cereal and eating folate enriched food are shown in Table 3.22 to Table 3.24 and indicate that the number of respondents who took folate tablets before, and during the first three months of pregnancy was significantly higher in 2001 compared to 1998.

Table 3.22: The prevalence of taking folate tablets before and/or in the first three months of pregnancy

Tablets	1998 Survey		2001 Survey	
	n	%	n	%
Took folic acid tablets before and in the first three months	109	37.2 √	82	51.4 ^
Took tablets before but not in the first three months	7	2.3	3	2.2
Took tablets in the first three months of pregnancy but not before	45	15.5	22	13.7
None / Not sure	131	45.0 ^	52	32.7 √

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

Table 3.23: The prevalence of eating folate enriched cereal before and/or in the first three months of pregnancy

Cereal	1998 Survey		2001 Survey	
	n	%	n	%
Ate cereal enriched with folic acid before and in the first three months	42	14.5	34	21.4
Ate cereal enriched with folic acid before but not in the first three months	6	2.0	7	4.4
Ate cereal enriched with folic acid in the first three months of pregnancy but not before	19	6.6	8	4.8
None / Not sure	225	77.0	110	69.4

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

Table 3.24: The prevalence of eating food rich in folate before and/or in the first three months of pregnancy

Folate enriched food	1998 Survey		2001 Survey	
	n	%	n	%
Eating folate enriched food before and in the first three months	119	40.7	57	35.9
Eating folate enriched food before but not in the first three months	6	2.1	8	4.8
Eating folate enriched food in the first three months of pregnancy but not before	37	12.8	20	12.8
None / Not sure	130	44.4	74	46.6

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ √ Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

Overall, 60.6% of women who had given birth in the last three years consumed some form of folate before pregnancy and in the first three months of pregnancy in 1998 and while not statistically significant this percentage had risen to 66.7% in 2001. The proportion of respondents who had not consumed any form of folate had fallen over the same period of time from 21.1% in 1998 to 17.2% in 2001. The results are summarised in Table 3.25.

Table 3.25: Proportion of respondents who had consumed some form of folate before and/or in the first three months of pregnancy

Some form of folate	1998 Survey		2001 Survey	
	n	%	n	%
Taken some form of folate before pregnancy and in the first three months	177	60.6	106	66.7
Taken some form of folate before but not in the first three months	7	2.3	2	1.5
Taken some form of folate in the first three months but not before	47	16.1	23	14.6
Not taken folate before or in the first three months of pregnancy / Not sure	61	21.1	27	17.2
Total	292	100.0	159	100.0

Note: The weighting of the data can result in rounding discrepancies or totals not adding (see Section 1.4.2)

^ v Statistically significant higher or lower (χ^2 test, $p < 0.05$) between the surveys

REFERENCES

1. Wilson D, Starr G, Taylor A and Dal Grande E. Random digit dialling and Electronic White Pages samples compared: demographic profiles and health estimates. *Australian and New Zealand Journal of Public Health*. 1999; 23: 627-633.
2. Taylor A, Dal Grande E, Starr G, Woollacott T. *South Australian Health Goals and Targets Health priority Areas Survey 2. Folate / Spina Bifida. September 1998*. SERCIS, Centre for Population Studies in Epidemiology, Department of Human Services. Unpublished.
3. Chan A, Pickering J, Haan E, Netting M, Burford A, Johnson A, Keane R. Folate before pregnancy: the impact on women and health professionals of a population-based health promotion campaign in South Australia. *Medical Journal of Australia* 2001, 174(12):
4. Australian Bureau of Statistics. *Estimated Residential Population by Age and Sex, Catalogue 3235.1 – 3235.8, 1999*.

APPENDIX 1: SERCIS ADVISORY COMMITTEE

Strategic Planning and Policy Division

Andrew Stanley (Chair)
Director, Research & Evaluation Branch

Anne Taylor
A/Head, Centre for Population Studies in
Epidemiology

Eleonora Dal Grande
Epidemiologist, Centre for Population Studies
in Epidemiology

Statewide Division

Kae Martin
Director, Strategy & Operation Services

Dr Frida Cheok
Head, Health Outcomes Unit

Information Management Services

Paul Basso
Manager, Data Analysis & Consulting Unit

Angela Littleford
A/Manager, Health Promotion SA

Country & Disability Services Division

Suzanne Heath
Manager, Planning & Evaluation

Metropolitan Division

Nancy Rogers
Manager, Research, Analysis & Information

Hospital Based Clinical Epidemiologists (*rotating*)

Dr David Ben-Tovim
Director, Clinical Epidemiology & Health
Outcomes Unit
FMC

Dr Peter Baghurst
Public Health Research Unit
W&CH

Dr Brian Smith
Senior Consultant in Clinical Epidemiology,
Clinical Epidemiology & Health Outcomes
Unit, TQEH

APPENDIX 2: APPROACH LETTER

March 2001

Dear Householder,

I am writing to seek your assistance in an important health survey being conducted on behalf of a range of organisations which are involved in the delivery of health services to South Australians.

One of our interviewers will be contacting your household in the next few weeks to speak to the adult in the household who had the last birthday. The interview will be conducted over the telephone and will take around 15 minutes. Your phone number has been selected randomly from all telephone listings in the state and over 3000 people will be interviewed. **All information collected will be confidential.**

Your participation in the survey is very important. The results of the survey will help authorities in planning and developing health services that meet the needs and concerns of your community.

If you have any queries about the survey please contact Anne Taylor, Programme Co-ordinator on **1800 635 352**.

Yours sincerely,

Jim Davidson
Executive Director
Strategic Planning & Policy Division

APPENDIX 3: FOLATE QUESTIONS

SERCIS

 DEPARTMENT OF HUMAN SERVICES
 HEALTH PROMOTION SA /
 COMMUNICABLE DISEASE CONTROL
 BRANCH SURVEY

August - 2001

Introduction

Good My name is I'm calling on behalf of the South Australian Department of Human Services. We are conducting a survey on aspects to do with health.

You would have received a letter recently about the survey on behalf of the Department.

Did you receive the letter?

(Single Response)

1. Yes []
 2. No []
 3. Don't know []

Could I please speak with the person in the household, aged 18 and over, who was the last to have a birthday. (If

required person is not available, ask for a suitable time to call back, record first name details for call back. If the respondent changes repeat the first paragraph of the introduction)

I can assure you that all information given will remain confidential. The answers from all people interviewed will be gathered together and presented in a report. No individual answers will be passed on.

Interviewer select the appropriate type:

1. Respondent []
 2. Foreign language interviewer required Enter language []
 3. Refusal Enter reasons []

A. DEMOGRAPHICS

As some of the next questions relate to certain groups of people only, could you please tell me...

A.1 How old you are?

(Single Response)

1. Enter age ___

A.2 Voice (ask if unsure)

1. Male []
 2. Female []

A.3 Including yourself how many people aged 18 and over live in this household?

(Single Response. Enter number of people 18 years and over)

1. Enter number ___
 2. Not stated [999]

A.4 How many children under 18 years live in your household?

(Single Response. Enter number of people under 18 years. Enter 0 if none)

1. Enter number ___
 2. Not stated [999]

A.5 What is the Postcode of the house?

(Single Response. If postcode is not known enter 5999)

1. Enter number ___
 2. Not stated [5999]

Sequence Guide: If A.5 < 5999 Go to next section

A.6 What town or suburb do you live in?

(Single Response. Enter town/suburb)

1. Enter town/suburb _____

F. PREGNANCY AND FOLATE

Now changing the subject...

F.1 Spina bifida is a spinal defect present at birth. Can you tell me which ONE of the following may prevent spina bifida if enough is taken by the mother?

(Read options. Single response)

1. Vitamin A []
2. Folate (folic acid, a B group vitamin) []
3. Other B group vitamins (B1, B2, B5, B6) []
4. Vitamin C (ascorbic acid) []
5. Vitamin D []
6. Other (specify) []
7. No []
8. Not sure / Don't know []

Sequence guide: If F.1 ≠ 2, Go to F.3

F.2 Do you know when folic acid needs to be taken by a woman to reduce her chance of having a baby with spina bifida?

(Read options. Single response)

1. During the menstrual period []
2. Before pregnancy []
3. Before pregnancy and in first three months of pregnancy []
4. In first three months of pregnancy only []
5. In the first six months of pregnancy []
6. Throughout pregnancy []
7. Other (specify) []
8. Not sure Don't know []

The following question asks about alcohol drinking by pregnant women. The question is about pregnant women in general, and not specifically you or your family.

F.3 Which of the following statements best describes the amount of alcohol that you consider is safe for pregnant women to drink.

(Read options, single response)

1. Pregnant women shouldn't drink any alcohol []
2. Pregnant women should not drink more than one standard drink on any one day []
3. Pregnant women should not drink more than 2 standard drinks per day on 5 days of the week []
4. Pregnant women can drink more than 2 standard drinks per day on 5 or more days per week []
5. Other (specify) []
6. Don't know []

Sequence guide: If A.1 > 50 or A.2 = 1 go to next section

F.4 Can you please tell me if you have given birth in last three years?

(Single response. Interviewer note: if more than one birth, most recent only)

1. Yes in 1998 []
2. Yes in 1999 []
3. Yes in 2000 []
4. Yes in 2001 []
5. No []

F.5 Can you tell me if you are currently pregnant?

(Single Response. Enter number of months or weeks)

1. Yes (months) ___
2. Yes (weeks) ___
3. No []

Sequence guide: If F.4 = 5 and F.5 = 3 Go to.

F.6 In the month before you became pregnant the last time, did you do any of the following

(Read options. Multiple response)

1. Took folic acid tablets every day []
2. Ate cereals specially enriched with folic acid every day []
3. Increased your intake of foods rich in folate or folic acid, such as green leafy vegetables, cereals and fruits []
4. None []
5. Not sure []

F.7 In the first three months of your current or most recent pregnancy, did you do any of the following

(Read options. Multiple response)

1. Took folic acid tablets every day []
2. Ate cereals specially enriched with folic acid every day []
3. Increased your intake of foods rich in folate or folic acid, such as green leafy vegetables, cereals and fruits []
4. None of these []
5. Not sure []

Sequence guide: If F.6 ≠ 2 or F.7 ≠ 2. Go to.

F.8 If you ate cereals specially enriched with folic acid, what was the brand name(s)?

(Read options. Multiple responses)

1. Weetbix []
2. Sultana Bran []
3. Allbran []
4. Nutrigrain []
5. Cornflakes []
6. Special K []
7. Other (specify) []
8. Don't know [99]

K. DEMOGRAPHICS

Now to finish with some general questions.

K.1 What is your marital status?

(Read Options. Single Response)

1. Married []
2. Living with a partner []
3. Separated []
4. Divorced []
5. Widowed []
6. Never Married []

K.2 What is your work status?

(Read Options If Necessary. Single Response)

1. Full time employed [] Go to K.4
2. Part time/casual employment [] Go to K.4
3. Unemployed []
4. Home duties []
5. Retired []
6. Student []
7. Other (Specify) []

K.3 Do you receive any of the following pension benefits?

(Read Options. Multiple Response)

1. Aged /widow's pension []
2. Service or defence/ War widow's/ Repatriation Pension []
3. Invalid/Disability Pension []
4. Unemployment Benefits []
5. Sickness Benefits []
6. Supporting parents benefit []
7. AUSTUDY/student allowance []
8. Other (specify) []
9. None []

K.4 I would now like to ask you about your main job, that is, the one in which you usually work the most hours. What kind of work do you do?

(Single Response)

1. Specify work _____

K.5 The next question is about housing. Is this dwelling

(Read Options. Single Response)

1. **Owned or being purchased by the occupants** []
2. **Rented from the Housing Trust** []
3. **Rented privately** []
4. **Other (specify)** []

K.6 What is your country of birth?

(Single Response)

1. Australia [] Go to K.8
2. Austria []
3. Bosnia-Herzegovina []
4. Canada []
5. China []
6. Croatia []
7. France []
8. Germany []
9. Greece []
10. Holland / Netherlands []
11. Hong Kong []
12. Iran []
13. Italy []
14. Japan []
15. Malaysia []
16. New Zealand []
17. Philippines []
18. Poland []
19. Slovenia []
20. Spain []
21. U.K. and Ireland []
22. USA []
23. Vietnam []
24. Former Yugoslav Republic of Macedonia []
25. Former Yugoslav Republics of Serbia & Montenegro []
26. Other country (specify) []

K.7 What year did you arrive in Australia?

(Single Response)

1. *Enter year* 19 __ _
2. Don't know [99]

K.8 Do you consider yourself an Aboriginal / Torres Strait Islander?

(Single Response)

1. Yes []
2. No []

K.9 What is the main language you speak at home?

(Single Response)

1. English []
2. Cambodian []
3. Cantonese []
4. Chinese []
5. Croatian []
6. Dutch []
7. Filipino []
8. German []
9. Greek []
10. Italian []
11. Polish []
12. Serbian []
13. Spanish []
14. Vietnamese []
15. Other (specify) []

K.10 Which best describes the highest educational qualification you have obtained?

(Read Options. Single Response)

1. **Still at school** []
2. **Left school at 15 years or less** []
3. **Left school after age 15** []
4. **Left school after age 15 but still studying** []
5. **Trade/Apprenticeship** []
6. **Certificate/Diploma** []
7. **Bachelor degree or higher** []

Sequence Guide: Go to K.9

K.11 Can you tell me the approximate annual gross income of your household? That is, for all people in the household before tax is taken out. I'll read out some categories and could you please tell me into which one your household's income falls?

(Read Options. Single Response)

- 1. **Up to \$12,000** []
- 2. **\$12,001 - \$20,000** []
- 3. **\$20,001 - \$30,000** []
- 4. **\$30,001 - \$40,000** []
- 5. **\$40,001 - \$50,000** []
- 6. **\$50,001 - \$60,000** []
- 7. **\$60,001 - \$80,000** []
- 8. **More than \$80,000** []
- 9. Not stated/refused []
- 10. Don't know []

K.12 How many residential telephone numbers, including mobile phones, can be used to speak to someone in this household?

(Single Response. *Interviewer note: do not include Internet or fax numbers*)

- 1. Enter number --
- 2. Don't know [99]

K.13 How many times do these numbers appear in the White Pages?

(Single Response. *Interviewer note: do not include Internet or fax numbers. Total number of entries includes numbers that are listed more than once.*)

- 1. Enter number --
- 2. Don't know [99]

K.14 Date of interview

K.15 Day of week interview undertaken

K.16 Time of day interview undertaken

K.17 All responses in this survey are strictly confidential. Sometimes we need to gather extra information about you [or about the children in your household] when there is an emergency public health problem. If we require further information from you regarding health issues, could we phone you at a later date for help?

(Single Response)

- 1. Yes (specify - record first name only) _____
- 2. No []

That concludes the survey. On behalf of the Department of Human Services, thank you very much for taking part in this survey.