

Supporting Document 1: Fluoride intake estimates

Estimates of fluoride intake are available for the Australian and New Zealand populations and include fluoride from both water and food sources. The fluoride content of foods is combined with food consumption records for individuals as recorded in national nutrition surveys in each country to estimate fluoride intakes for different age/gender groups. In some cases model diets need to be developed where food consumption records were not available (children under 2 years of age in Australia, children under 5 years of age in New Zealand). In all cases a ‘mapping’ process was undertaken to give the best estimate of fluoride intakes, whereby the known fluoride content of individual foods was matched to a wider food group of a similar nature. For example, the analysed value for fluoride in apples may be assigned to all pome fruits in the mapping process and multiplied by the total consumption amount for pome fruits from the national nutrition survey for individual children in the nominated age group to derive individual fluoride intakes from all pome fruits. Fluoride intakes from individual foods are then summed for each respondent in the survey and population statistics derived.

Fluoride content –water

The 23rd Australian Total Diet Study (ATDS) reported analysed values for the fluoride content of tap water of 0.8 mg/L, which was used to estimate fluoride intakes in that report (FSANZ 2011a). Other estimates assumed either a non-fluoridated water value (0.1 mg fluoride /L) or fluoridated water value (0.6 and/or 1.0 mg fluoride/L). Table 1 summarises available data on the fluoride content of tap water and drinking water guideline levels, giving values for Europe and the US for comparison.

Table 1 Fluoride content of drinking water/guideline levels

Country	Fluoride content tap water mg/L	Guideline levels mg/L	Comment
Australia	0.8 23 rd ATDS 0.8025 NUTTAB10 (FSANZ 2011a,b analysed values)	1.5 Maximum (Drinking Water Guidelines NHMRC 2011)	NHMRC quote range for unfluoridated water 0.1-1.5; target for fluoridation 0.7-1.0 with lower level applying where climate is hot
NZ	0.1 1990/91 NZTDS (analysed) (assumed to be 1.0 mg/L in fluoridated areas) (Cressey et al 2010)	1.5 Maximum Accepted Value (NZ Drinking Water Standards MOH 2005)	0.7-1.0 recommended
US	0.7-1.0 (EPA 2010)	0.7 maximum proposed in 2010 (EPA 2010)	Current range 0.7-1.2 mg/L
EU	0.1-6.0 across various countries (EFSA 2013)	1.5 maximum (EFSA 2013)	Council Directive 98/83/EC

Fluoride content – foods

The most up to date reference database for fluoride content of foods and beverages in Australia (NUTTAB10) is held by FSANZ and is available as an online reference nutrient database on the FSANZ website (FSANZ 2011b) Some of the fluoride content values in NUTTAB10 were based on those reported in the 23rd Australian Total Diet study results (FSANZ 2011a). The New Zealand Food Composition tables do not report fluoride content. However, fluoride was analysed in foods and reported in the 1987-88 and 1990-91 New Zealand Total Diet Surveys (NZTDS) (IESR & MOH 1994, Hannah et al 1995).

Water and fluid consumption

For the purposes of this NRV review FSANZ derived total water consumption from all sources for young children in Australian aged 2-10 years from the 2007 Australian National Children's Nutrition and Physical Activity Survey (ANCNPAS) and for children aged 5-10 years from the 2002 New Zealand children's NNS, as given in tables 2a and 2b. Figures 1 and 2 give mean total water consumption by body weight for these two surveys. Tap water consumption was also derived for Australian children (Table 3). The total fluid and tap water values were used in the review for comparison with water consumption figures reported by Dean in his 21 city study in the US in 1942 and more recent US figures reported in the EPA 2010 reports (Dean 1942, EPA 2010a,b), see Sections 5 and 6.

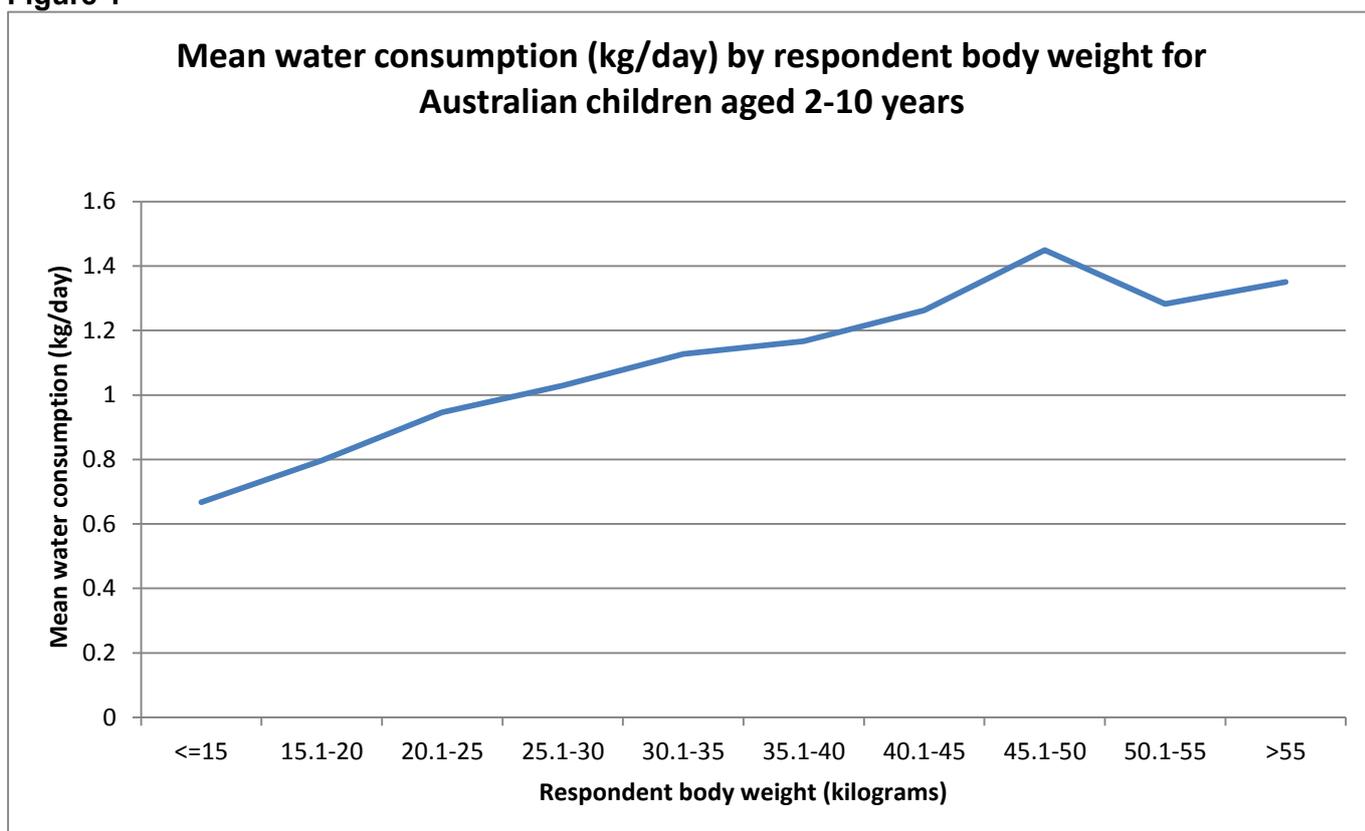
Table 2a: Total water consumption for Australian children aged 2-10 years*

Age yrs	Number of respondents	Mean body weight kg	Water consumption [^] (g/day)			Water consumption [^] (g/kg BW/day)		
			Mean	90th Percentile	95th Percentile	Mean	90th Percentile	95th Percentile
2	258	14	685	1141	1261	48	77	87
3	295	16	751	1207	1412	46	74	83
4	359	19	875	1339	1501	47	72	79
5	267	21	912	1388	1645	43	68	76
6	285	23	961	1379	1664	42	62	78
7	278	27	1029	1626	1862	39	60	69
8	331	31	1070	1624	1825	36	57	63
9	275	34	1138	1726	1858	34	54	61
10	302	40	1243	1913	2082	32	51	56

* Data derived from the 2007 ANCNPAS using weighted Day 1 and Day 2 average consumption.

[^] Water consumption includes water consumed as water, bottled water, mineral water etc, and water consumed in mixed foods, for example water in tea/coffee, soft drinks, soups, casseroles etc)

Figure 1



Derived from the 2007 ANCNPAS using unweighted Day 1 and Day 2 average data.

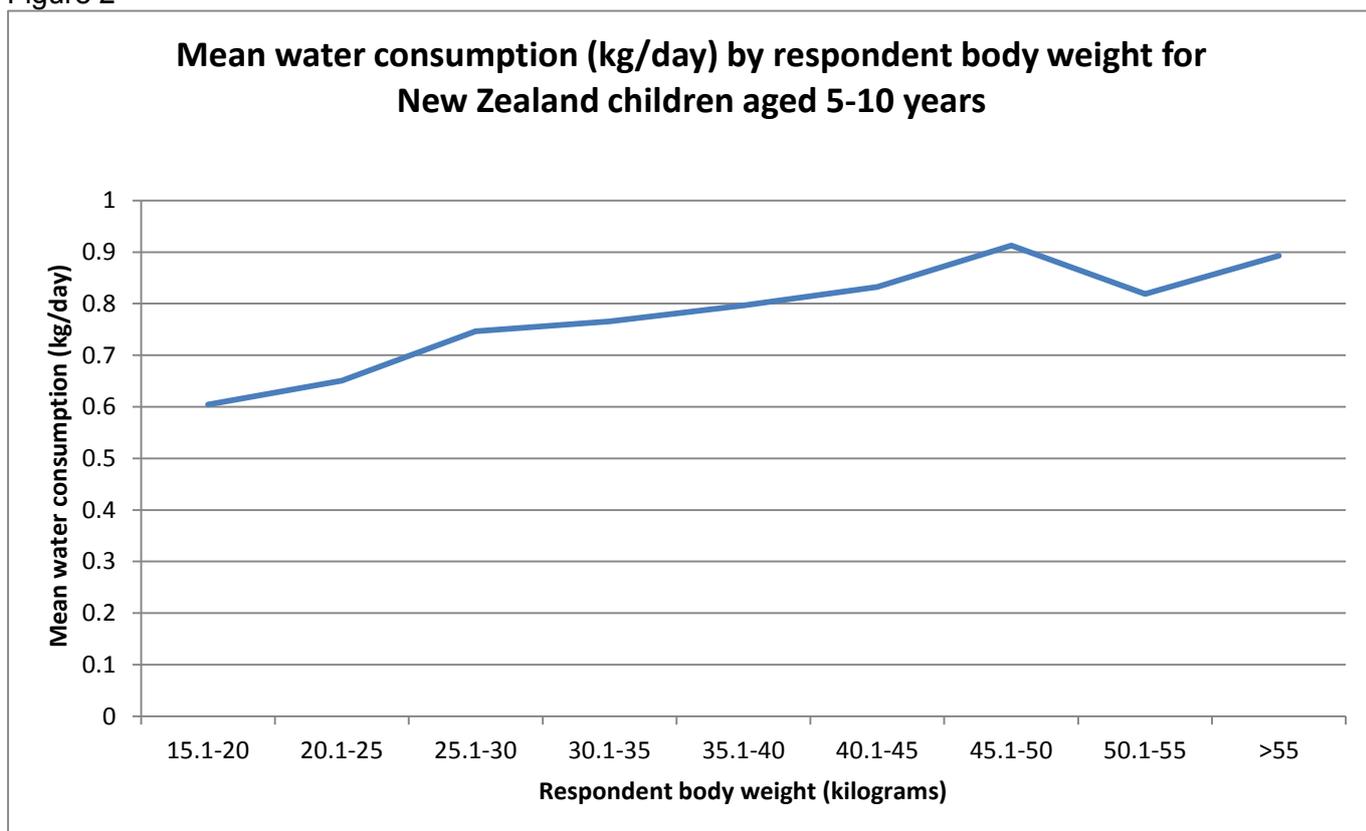
Table 2b: Total water consumption for New Zealand children aged 5-10 years*

Age yrs	Number of respondents	Mean body weight (kg)	Water consumption^ (g/day)			Water consumption^ (g/kg BW/day)		
			Mean	90th Percentile	95th Percentile	Mean	90th Percentile	95th Percentile
5	314	22	618	1055	1346	28	51	61
6	321	24	652	1129	1329	27	50	55
7	320	28	737	1321	1596	27	47	57
8	330	32	746	1272	1421	25	42	47
9	337	36	766	1218	1519	23	37	44
10	346	40	842	1462	1702	22	39	48

* Data derived from the 2002 New Zealand Children's NNS using weighted Day 1 consumption.

^ Water consumption includes water consumed as water, bottled water, mineral water etc, and water consumed in mixed foods, for example water in tea/coffee, soft drinks, soups, casseroles etc)

Figure 2



Derived from the 2002 New Zealand Children's NNS using unweighted data.

Table 2c: Summary of total water consumption for Australian children aged 2-3 years and 4-8 years (derived from the 1995 NNS and the 2007 ANCPAS)

Nutrition Survey	Age group	No. of Respondents	mean body weight (kg)	Water consumption~			
				Mean		95 th Percentile	
				g/day	g/kg BW/day	g/day	g/kg BW/day
2007 ANCPAS*	2-3 years	552	15	720	47	1330	86
	4-8 years	1520	24	968	42	1714	74
1995 NNS^	2-3 years	383	16	686	45	1510	96
	4-8 years	977	24	883	38	1832	81

* Data derived from the 2007 ANCPAS using weighted Day 1 and Day 2 average consumption.

^ Data derived from the 1995 NNS using unweighted Day 1 consumption.

~ Water consumption includes water consumed as water, bottled water, mineral water etc, and water consumed in mixed foods, for example water in tea/coffee, soft drinks, soups, casseroles etc)

Table 3 Water consumption as ‘tap water’ for Australian children aged 2-3 years and 4-8 years (derived from the 1995 NNS and the 2007 ANCNPAS)

Nutrition Survey	Age group	No. of Respondents	% consumers to respondents	mean body weight (kg)	Water consumption~ (consumers only)			
					Mean		95 th Percentile	
					g/day	g/kg BW/day	g/day	g/kg BW/day
2007 ANCNPAS*	2-3 years	552	98	15	540	35	1138	71
	4-8 years	1520	98	24	698	30	1405	62
1995 NNS^	2-3 years	383	81	16	559	37	1250	87
	4-8 years	977	85	24	642	28	1520	72

* Weighted Day 1 and Day 2 average consumption.

^ Unweighted Day 1 consumption.

~ Water consumption includes water consumed as domestic tap water (including bore or rain water). However, due to the way food consumption data were collected in the NNSs this consumption may also include some food items where water was consumed in a mixed foods and the mixed food was dis-aggregated for coding purposes (for example, cordial may have been identified and coded as 50 ml cordial concentrate + 200 ml tap water).

Estimated fluoride intakes from food and water sources

A588 Voluntary addition of fluoride to bottled water (FSANZ 2009)

Two fluoride databases were constructed to estimate fluoride intakes for the Australian and New Zealand populations presented in the final assessment report for an application to FSANZ, Application A588 *Voluntary addition of fluoride to bottled water*. Model diets for 3 month and 9 month old Australian infants were developed, and a 6-12 month old diet for New Zealand infants (FSANZ 2009). Food consumption data were derived from the 1995 NNS data and 1997 New Zealand adults NNS, using a mapping process to assign fluoride content to foods with no analytical data. At the time of completion of this application, data from the 2002 New Zealand children’s NNS and the 2007 Australian National children Nutrition and Physical Activity Survey were not available for use in FSANZ’s computer modelling program. Time and resources restrictions on the pilot NRV review did not allow for the development of fluoride content databases for these surveys to enable FSANZ to use these newer surveys to estimating fluoride intakes for this report.

Where there were no Australian fluoride concentration data for specific foods, it was assumed that New Zealand data were representative of these food groups, and vice versa for New Zealand. In addition, a minority of values were imputed from German and US data (Souci *et al.*, 1994; USDA, 2005). Fluoride values for multi-ingredient foods without analysed fluoride values were calculated using commonly used recipes. It was assumed that fluoride

from water was not taken up by vegetables when boiled. Information provided by beverage manufacturers indicated that local water supplies (whether fluoridated or non-fluoridated) are used when making products in their processing plants. Therefore, beverages such as soft drinks and fruit juices were assigned the current mean fluoride content from analytical data for those types of beverages on the market. These values remained the same for all scenarios.

There is considerable uncertainty with the non-water fluoride values of foods for a number of reasons including: limited analysed data for some food groups; considerable uncertainty in fluoride levels in some foods; poor sensitivity of the analysed methods used; and the high proportion of 'non-detected' results, for which assumptions on fluoride levels had to be made.

Where water is used for the preparation or cooking of certain foods in the home, the fluoride concentration in the water for the specific scenario was taken into account when determining the recalculated final fluoride content for these foods (fluoride content of 0.1 mg/L, 0.6 mg/L and 1.0 mg/L reported in A588). These foods included tea, coffee, diluted cordial, juices made from concentrate, pasta, rice, noodles, cornmeal, couscous, oats, soup, stock, gravy and in other recipes where water was used, such as jelly.

A separate estimate was given for potential fluoride intakes from toothpaste, but not from the use of supplements containing fluoride or from non-dietary sources (e.g. mouthwashes, dental treatment etc).

The results are summarised in Table 4 below for Australian children up to 8 years of age for mean and high consumer estimates and for NZ infants aged 6-12 months (90th or 95th percentile of fluoride intake used to represent a high consumer of fluoride in different studies).

New Zealand fluoride intake estimates (Cressey et al 2010)

The NZTDS analytical values were used in the estimated fluoride intakes for children in New Zealand population reported by Cressey in 2010 using a mapping process, model diets from the New Zealand Total Diet Study for children <5 years of age and the 2002 NNS food consumption data for children aged 5-16 years (Cressey et al 2010, Hannah et al 2005). Cressey et al also reported fluoride intakes for older children using the NZTDS model diets, but these were not used in this report as the results based on the 2002 children's NNS were considered to be more accurate. The results are summarised in Table 4 below for children up to 10 years of age for mean and high consumer estimates (95th percentile).

Table 4 Estimated fluoride intakes for Australia and New Zealand infants and young children (non-fluoridated and fluoridated water scenarios)

Data source	Mean intake mg/day	High consumer intake mg/day	Comments
Australia (FSANZ 2011)		<i>95th percentile intakes</i>	
23rd ATDS	0.68 9 mths infant	1.37 9 mths infant	Analysed fluoride data, food mapping process used, range depends on value assigned to non-detect results.
1995 NNS, 2007 ANCNPAS, 24 hr recall data	1.46-1.56 2-3 yrs child 1.66-1.84 4-8 yrs child	1.99-2.14 2-3 yrs child 2.25-2.58 4-8 yrs child	No estimate intake from toothpaste.
		1.99-5.18 across age groups 2 yrs +	
Australia (FSANZ 2009)		<i>90th percentile intakes</i>	
A588 Voluntary addition of fluoride to bottled water	0.002, 0.008 3 mths breast fed	0.005-0.0016	Fluoride content from NUTTAB database, food mapping process used. Two scenarios for fluoride in tap water (0.1, 1.0 mg/L).
Model diet for infants, 1995 NNS, 24 hr recall data	0.2, 1.0 3 mths formula fed 0.4, 1.3 9 mths infant	3 mths breast fed infant 0.5-1.9	
	0.5, 1.0 2-3 yrs child 0.6, 1.2 4-8 yrs child	3 mths formula fed 0.7-2.7 9mths infant	Additional fluoride from toothpaste 0.1-0.3 mg/day for <6 yrs, assuming half or all of it is swallowed; 0.1 mg/day for children aged ≥6, assuming 10% swallowed.
New Zealand (Cressey et al 2010)		<i>95th percentile intakes</i>	
2002 NZ Children's NNS (5-15 years), 24 hr recall data	0.18, 0.71 6-12 mths infant		Fluoride content from 1987-88 and 1990-91 NZ Total Diet Studies, food mapping process used. Two scenarios for fluoride in tap water (0.1, 1.0 mg/L).
Model diets for infants an young children from 2003/04 NZTDS	0.25, 0.57 1-3 yrs child 0.38, 0.84 5-6 yrs child 0.45, 0.99 7-10 yrs child	0.73, 1.74 5-6 yrs child 0.82, 1.80 7-10 yrs child	Additional fluoride from toothpaste estimated to be 0.12 mg/day (400 mg/kg content) to 0.3 mg/day (1000 mg/kg content) for infants and children < 6 years and 0.3 mg/day for older children.
New Zealand (FSANZ 2009)		<i>90th percentile intakes</i>	
A588 Voluntary addition of fluoride to bottled water	0.4, 0.9 6-12 mths infant	0.7-1.7 6-12 mths infant	Fluoride content from NZTDS and NUTTAB database. Two scenarios for fluoride in tap water (0.1, 1.0 mg/L).
Model diet for infants			Additional fluoride from toothpaste 0.1-0.3 mg/day for <6 yrs, assuming half or all of it is swallowed; 0.1 mg/day for children aged ≥6, assuming 10% swallowed.

Where non-fluoridated (0.1 mg fluoride/L tap water and fluoridated (1.0 mg/L tap water) scenarios were used, total fluoride intakes were greater using fluoridated water, as expected.

Estimates for the New Zealand population were in the same range of magnitude as those for similar Australian age groups, though direct comparisons are not possible as the age ranges reported were not the same (FSANZ 2011, FSANZ 2009, Cressey et al 2010). In general the estimated fluoride intakes for the New Zealand population appear to be lower than those reported for the Australian population of a similar age. This may be due to a more restricted fluoride content database available in New Zealand and/or a lower amount of food in the model diet and hence a more restricted range of foods that could be mapped and assigned a fluoride content value for use in the intake estimates.

Updated FSANZ fluoride estimates, including at high concentrations of fluoride in water (FSANZ 2014, derived for this report)

For the purpose of deriving NRVs for fluoride in the pilot NRV Review, FSANZ reran the A588 calculations for the Australian population based on model diets for infants and the 1995 NNS population (2-8 years).

The following changes were made for the infant diets:

- A new value for fluoride content of infant formula was used in the models to reflect the lower fluoride content of infant formula products available in the food supply in 2014. Clifford et al in 2009 reported analysis results of 0.07 mg F/kg for infant formula, a paper that was not available at the time FSANZ prepared the A588 Report in 2008. It replaces the value of 0.24 mg F/kg used for infant formula made up with distilled water used in models in the FSANZ A588 report, as reported by Silva et al (Silva et al 1996, Clifford et al 2009, FSANZ 2009). A new approach to deriving high percentile fluoride intakes for infants was taken, using the 95th median body weight for boys at 3 months and 9 months of age from the 2007 WHO Growth charts as the starting point for the model diets for high consumers, as the model is based on energy requirements for infants of a certain bodyweight. Previous estimates by FSANZ presented in A588 used a simple multiplication factor of 2 to derive a 90th percentile intake, which has generally applied to the intake estimates for the whole population not infants per se (FSANZ 2009). This adjustment was also applied to the 6-12 month old infant diet for New Zealand populations.

- Additional estimates for tap water fluoridated at 1.9 mg F/L and 2.1 mg F/L were made to allow for comparison with the earlier US studies on which the IOM based the current NRVs for fluoride for children (IOM 1997, Dean 1942).

In all other respects, the same assumptions were made as for the original A588 models described above in terms of allowing for tap water use in a number of foods (tea, coffee, diluted cordial, juices made from concentrate, pasta, rice, noodles, cornmeal, couscous, oats, soup, stock, gravy and in other recipes where water was used, such as jelly), with the same limitations to the modelling process applying.

Updated fluoride intake estimates are presented in Tables 5 and 6a,b below, noting these updated estimates for 0.1 mg F/L and 1.0 mg F/L differ from those published by FSANZ in 2009 due to the lower fluoride content of infant formula used and a change in method for determining high percentile intakes for infants.

Resources were not available during the pilot NRV Review to construct a new fluoride database to apply to the foods reported as consumed in the 2007 Australian National Children's Nutrition and Physical Activity Survey, though this would have been desirable for children aged 2-8 years.

Application A588 did not report fluoride intakes for New Zealand children aged 2-15 years as food consumption data were not available to FSANZ at the time. Resources were not available during the NRV pilot review to construct a new fluoride database to apply to the foods reported as consumed in the 2002 New Zealand Children's NNS, so revised figures using 1.9 mg/L and 2.1 mg/L are not available for New Zealand children aged 5-8 years.

Table 5: Estimated fluoride intake for infants from model diets (FSANZ 2014)

Age group	Fluoride 0.1 mg/L water		Fluoride 1.0 mg/L water		Fluoride 1.9 mg/L water		Fluoride 2.1 mg/L water		Ave body weight (kg)	
	Mean intake mg/day	95 th centile intake mg/d**	Mean intake mg/day	95 th centile intake mg/d**	Mean intake mg/day	95 th centile intake mg/d**	Mean intake mg/day	95 th centile intake mg/d**		
Australia										
3mth infant*	0.16	0.19	0.80	0.96	1.44	1.73	1.66	1.92	6.4 med 7.7 95th	
9 mth infant [^]	0.31	0.36	1.23	1.47	2.16	2.57	2.37	2.83	8.9 med 10.6 95th	
NZ										
3mth infant*	0.16	0.19	0.80	0.96	1.44	1.73	1.66	1.92	6.4 med 7.7 95th	
6-12 mth infant ^{\$}	0.33	0.39	0.79	0.93	1.27	1.49	1.38	1.63	9.0 mean 10.6 95th	

*Mean intake calculation assumes 800 g or 784 mL infant formula/day required to meet energy requirements for a boy of median body weight of 6.4 kg (WHO growth curves, WHO 2007) and energy requirement of 343 kJ/kg bw /day (FAO 2004); from manufacturer's instructions approx. 130g infant formula powder used with 900 mL water to make up 1 Litre infant formula with baseline level of average fluoride content of 0.07 mg/kg infant formula made up with distilled water (as reported by Clifford et al 2009)

[^]For 9 mth old infants mean intake calculation assumes infant boy of median body weight (WHO growth curves, WHO 2007), with a diet where 544 g infant formula per day (533 ml/day) provides half the energy needs and solid food the other half, based on an energy requirement of 343 kJ/kg bw /day (FAO 2004).

**For 3 mth old infants the high percentile intake is based on an infant boy of 95th percentile body weight (WHO growth curves, WHO 2007), 800 g formula per day (784 ml/day); for 9 mth infants the high percentile intake is based on an infant boy of 95th percentile body weight (WHO growth curves, WHO 2007) with a diet where 648 g infant formula per day (635 ml/day) provides half the energy needs and solid food the other half, based on an energy requirement of 343 kJ/kg bw /day (FAO 2004).

^{\$} For 6-12 mth old infants assumed 9 kg body weight as reported in 2003/04 NZ Total Diet study (Vanoort et al 2005) and the infant diet used in that report with 700 g infant formula per day (686 ml); for a 95th percentile intake this has been adjusted to account for a 95th percentile body weight of 10.6 kg, with 824 g infant formula per day (808ml).

The lower estimated fluoride intakes for 6-12 month old NZ infants compared to Australian 9 month old infants of a similar average body weight is likely to largely be due to the lower amount of infant formula included in the Australian model diet (350 ml/day for NZ infants aged 6-12 months, 533 ml/day for Australian infants aged 9 months). Infant formula is a major contributor to fluoride intakes, particularly at higher levels of fluoridated tap water.

Table 6a: Estimated fluoride intakes (mg/day) from all foods for Australian children aged 2-3 years for four water scenarios, 1995 NNS

	Fluoride concentration for tap water			
	0.1 mg/L (baseline)	1.0 mg/L	1.9 mg/L	2.1 mg/L
Mean	0.5	1.0	1.6	1.7
Median	0.5	1.0	1.5	1.6
90th Percentile	0.7	1.6	2.6	2.8
95th Percentile	0.7	1.8	3.0	3.3

Intakes derived from the 1995 National Nutrition Survey, using a second day adjusted nutrient intake methodology

Mean body weight for Australian children aged 2-3 years = 15.5 kg, n = 383

Fluoride concentration used in tap water and where tap water is used in recipes (eg tea, coffee, cordials, cooked rice/pasta, soups etc)

Table 6b: Estimated fluoride intakes (mg/day) from all foods for Australian children aged 4-8 years for four water scenarios, 1995 NNS

	Fluoride concentration for tap water			
	0.1 mg/L (baseline)	1.0 mg/L	1.9 mg/L	2.1 mg/L
Mean	0.6	1.2	1.9	2.0
Median	0.6	1.1	1.7	1.9
90th Percentile	0.8	1.9	3.0	3.2
95th Percentile	0.8	2.1	3.5	3.7

Intakes derived from the 1995 National Nutrition Survey, using a second day adjusted nutrient intake methodology

Mean body weight for Australian children aged 4-8 years = 24 kg, n = 977

Fluoride concentration used in tap water and where tap water is used in recipes (eg tea, coffee, cordials, cooked rice/pasta, soups etc)

Major contributors to total fluoride intakes

Major food and water contributors to total fluoride intake for different age/gender population groups were also reported for the studies presented in Tables 7a, b, for both unfluoridated and fluoridated water scenarios, assuming tap water was used to make up infant formula and in recipes for beverages. The percent contributed by different food groups to total fluoride intakes also varies with the level of fluoridation assumed, depending on the food consumption patterns at different ages and contribution of water to the total fluoride intake

(percent contribution from water higher in fluoridated water scenarios, with a subsequent decrease in relative contributions from other food groups).

Table 7a Major contributors (>5%) to total fluoride intake for infants and young children (Australia)

Data source	Major contributors Non-fluoridated water (0.1 mg F/L)	Major contributors Fluoridated water (1.0 mg F/L)
<p>23rd ATDS Using 2007 ANCNPAS, 24 hr recall data</p> <p>Model diet for 9 mth old infant</p> <p>Fluoride content analysed, food mapping process used</p>	<p>na</p>	<p>Fluoride content of water as analysed (0.8 mg/L)</p> <p>For 9 mth infants major contributors were: water (37%) infant formula (20%)</p> <p>For children 2-8 years main contributors were: water (33-34%), pome fruits (6%), non-alcoholic beverages (5% excl waters and milk)</p>
<p>A588 Voluntary addition of fluoride to bottled water 2007 ANCNPAS, 24 hr recall data</p> <p>Fluoride content from NUTTAB database (included results from 23rd ATDS), food mapping process used</p> <p>Model diets for 3 mth, 9mth old infants</p>	<p>For 3 mth infants either breast milk or formula only</p> <p>For 9 mth infants major contributors based on non-fluoridated water were: infant formula & follow on (45%), non-alcoholic beverages (30%), water (15%), cereal & cereal products (7%), dairy products (6%)</p> <p>For 2-3 yr child, major contributors based on non-fluoridated water were: non-alcoholic beverages (27%), dairy products (22%), cereal & cereal products (12%), water (10%), meat & meat dishes (7%), veg & veg dishes (7%)</p> <p>For 4-8 yr child, major contributors based on non-fluoridated water were: non-alcoholic beverages (28%), dairy products (20%), cereal & cereal products (11%), water (10%), meat & meat dishes (8%), veg & veg dishes (7%)</p>	<p>For 3 mth infants either breast milk or formula only</p> <p>For 9 mth infants major contributors based on fluoridated water were: infant formula & follow on (49%), water (39%), non-alcoholic beverages (4%)</p> <p>For 2-3 yr child, major contributors based on fluoridated water were: water (46%) non-alcoholic beverages (20%), dairy products (10%), cereal & cereal products (8%)</p> <p>For 4-8 yr child, major contributors based on fluoridated water were: water (45%) non-alcoholic beverages (22%), dairy products (9%), cereal & cereal products (8%)</p>
<p>Updated infant diets FSANZ 2014 (using lower fluoride content for infant formula)</p>	<p>For 9 mth infants major contributors based on non-fluoridated water were: infant formula & follow on formula (36%), non-alcoholic beverages (18%), water (17%), dairy products (5%)</p>	<p>For 9 mth infants major contributors based on fluoridated water were: infant formula & follow on formula (44%), water (43%), non-alcoholic beverages (5%)</p>

Table 7b Major contributors (>5%) to total fluoride intake for infants and young children (New Zealand)

Data source	Major contributors Non-fluoridated water (0.1 mg F/L)	Major contributors Fluoridated water (1.0 mg F/L)
<p>A588 Voluntary addition of fluoride to bottled water Model diet used for 6-12 mth old infant</p> <p>Fluoride content from NUTTAB database (included results from 23rd ATDS), food mapping process used</p>	<p>For 6-12 mths infants major contributors based on non-fluoridated water were: water (0%) infant formula & follow on (29%), cereal & cereal products (17%), dairy products (16%), infant foods (9%), non-alcoholic beverages (9%).</p>	<p>For 6-12 mths infants major contributors based on fluoridated water were: infant formula & follow on (49%), non-alcoholic beverages (22%), water (17%), cereal & cereal products (8%), dairy products (7%), infant foods (6%).</p>
<p>Cressey et al 2010 2002 Children's NNS</p> <p>Fluoride content as analysed from 1987-88 and 1990-91 NZ Total Diet Studies, food mapping process used</p> <p>Model diets for children <5 yrs from NZ Total Diet Study</p>	<p>For 6-12 mth infants major contributors based on non-fluoridated water were: infant formula & follow on formula (25%), infant foods (11%), yoghurt (8%), bread (7%), water (7%)</p> <p>For 1-3 yr child major contributors based on non-fluoridated water were: water (10%), bread (10%), yoghurt (7%), biscuits (6%), fruit drink (5%)</p> <p>For 5-6 yr child major contributors based on non-fluoridated water were: bread (20%), water (10%), potatoes (5%), fruit drink (5%)</p> <p>For 7-10 yr child major contributors based on non-fluoridated water were: bread (15%), water (9%), carbonated beverages (9%), tea (6%)</p>	<p>For 6-12 mth infants major contributors based on fluoridated water were: infant formula & follow on formula (50%), water (22%), infant foods (5%)</p> <p>For 1-3 yr child major contributors based on fluoridated water were: water (44%), fruit drink (11%), bread (5%)</p> <p>For 5-6 yr child major contributors based on fluoridated water were: water (43%), fruit drink (10%), bread (8%), chocolate bev (7%)</p> <p>For 7-10 yr child major contributors based on fluoridated water were: water (41%), carbonated beverages & fruit drink (8%), bread (7%),</p>
<p>Updated infant diets FSANZ 2014 (using lower fluoride content for infant formula)</p>	<p>For 6-12 mth infants major contributors based on non-fluoridated water were: infant formula & follow on formula (21%), infant foods (7%), yoghurt (15%), bread (5%), water (5%), fish and products (5%)</p>	<p>For 6-12 mth infants major contributors based on fluoridated water were: infant formula & follow on formula (44%), water (19%), infant foods (6%), yoghurt (6%)</p>

References

Refer to Section 8 References in main report.