

Victorian consumer survey of knowledge, attitudes and behaviours related to salt intake

Dr Carley Grimes and Professor Caryl Nowson

Acknowledgements

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Victorian consumer survey of knowledge, attitudes and behaviours related to salt intake

Report prepared by Dr Carley Grimes and Professor Caryl Nowson
Centre for Physical Activity and Nutrition Research (C-PAN), Deakin University



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AND NUTRITION RESEARCH



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Executive summary

The current intake of salt within the Victorian population is high. This is concerning as a high salt intake contributes to the development of high blood pressure, which increases the risk for stroke and heart disease. Recently the Victorian Health Promotion Foundation (VicHealth) launched its 'State of Salt' salt reduction initiative in Victoria, with the goal of reducing salt intake in children and adults by 1 gram per day by 2018. Part of VicHealth's intervention focus relates to raising consumer awareness of the harms of high salt intake. To assess the impact of VicHealth's salt reduction program, monitoring strategies are required. The aim of this project was therefore to determine knowledge, attitudes and behaviours (KAB) related to salt intake in a sample of Victorian adults, at the same time as the collection of spot urine samples to provide an estimate of daily dietary salt intake prior to implementation of a salt reduction intervention.

Valid information was collected via an online survey in a total of 2398 adults aged 18–65 years living in Victoria. Participants came from three different samples, recruited via i) a shopping centre intercept survey ($n=373$, 16%) conducted in Melbourne and Geelong, ii) Facebook ($n=404$, 17%) and iii) an online research panel ($n=1621$, 68%). Overall, the sampling strategy was designed to reach a broad demographic spread of Victorian adults. A subsample of participants ($n=245$) recruited via the shopping centres also provided a spot urine sample, from which an estimate of daily salt intake was calculated. Finally, participants who indicated that they cared for children aged under 18 years were invited to complete additional questions examining parents' KAB towards salt intake in children. Eight hundred and thirty-seven (35%) participants responded to the parent-specific questions.

The final sample included 56% women and the average age of both men and women was 43 years. The majority (80%) were born in Australia and 63% were the main household grocery shopper. Self-reported height and weight indicated that 57% were overweight or obese. A spread of socioeconomic (SES) backgrounds was captured, with 43%, 28% and 29% of participants from a high, mid and low SES background respectively, based on education level.

Most participants (84%) believed that Australians eat too much salt and over two-thirds (76%) could correctly identify salt from processed foods as being the main source of salt in the Australian diet. Paradoxically less than a third (28%) of participants believed their own individual salt intake exceeded dietary recommendations. The majority (90%) were aware of the health risks associated with a high salt intake and many knew of the relationship between a high salt intake and high blood pressure (83%), heart disease (77%) and stroke (65%). Fewer participants (28%) could correctly identify the maximum recommended daily intake for salt.

Just under half (47%) of participants were concerned about the amount of salt in food, and other nutrients such as sugar and saturated fat were of concern to a greater proportion of participants: 60% and 59% respectively. However, about two-thirds of participants believed that there should be laws which limit the amount of salt added to manufactured foods and 59% agreed that it was difficult to find lower salt options when eating out. The most frequently reported behaviours used to lower salt in the diet were using spices/herbs instead of salt when cooking (53% do this always or often), avoiding eating food from fast food restaurants (52% do this always or often), checking the sodium information on food products (30% do this always or often) or purchasing foods labelled 'salt reduced' (37% do this always or often).

About a third of participants (37%) reported adding salt during cooking either always or often whereas fewer (24%) reported adding salt at the table either always or often. About a third of participants reported using the health star rating information displayed on food labels to choose bread, cheese or breakfast cereal food products. In the subsample of 245 adults with a valid spot urine sample, the estimated average daily intake of salt was 9.6 g/d (grams per day) in men and 7.9 g/d in women.

Within the sample of parents, most (73%) believed Australian children eat far too much or too much salt and 70% felt that reducing the amount of salt in their child's diet was important. The majority (77%) believed that eating too much salt during childhood may have harmful effects on children's long-term health. Relatively few parents (11%) reported that their child adds salt to their food at the table either always or often. More parents

(22%) reported that they add salt to their child's meal during preparation either always or often. Finally, there was strong support for the need for more action to be taken to reduce the amount of salt in foods targeted at children.

The findings of this study serve as a baseline assessment of KAB related to salt intake in Victorian adults. These findings can be used to assess changes in reported salt related KAB in Victorian adults over time.

Background

The current intake of salt within the Victorian population is high. This is primarily because of the widespread addition of salt to many commonly consumed manufactured foods. The Victorian Health Promotion Foundation (VicHealth) launched its 'State of Salt' salt reduction initiative in Victoria with the goal of reducing salt intake in children and adults by 1 gram per day by 2018. Part of VicHealth's intervention focus relates to raising consumer awareness of the harms of high salt intake.

At present little is known regarding Victorian adults' knowledge, attitudes and behaviours (KAB) related to salt intake. Obtaining a quantitative baseline assessment of this information is necessary prior to the implementation of the proposed VicHealth-led salt reduction initiative. Furthermore these findings can be used to help tailor appropriate strategies and messages within a public health awareness campaign.

Project aim

The aim of this project was to determine knowledge, attitudes and behaviours (KAB) related to salt intake in a sample of Victorian adults, at the same time as the collection of spot urine samples to provide an estimate of daily dietary salt intake prior to implementation of a salt reduction intervention.

Methods

Participants completed an online survey assessing basic demographic characteristics and knowledge, attitudes and behaviours (KAB) related to dietary salt intake. Data was collected between September and November in 2015 and will serve as the baseline assessment prior to implementation of the VicHealth salt reduction initiative. A subsample of participants recruited from shopping centres completed a spot urine test to provide an estimate of daily salt intake.

Survey instrument

A questionnaire containing 29 questions was developed to assess demographic characteristics and KAB related to dietary salt intake. An additional eight questions were developed to assess parents' KAB related to salt intake in children. The questionnaire was developed by the authors in consultation with staff at VicHealth and members of the VicHealth Salt Reduction Taskforce. Questions were modelled on those used in previous surveys. The questionnaire was pilot tested in 20 adults of varying demographic backgrounds (age, gender, education background). Following this, minor revisions were made to improve the readability and reduce the time required to complete the survey to approximately 10 minutes. Self-reported height and weight were also collected on the survey instrument. This information was used to calculate body mass index (BMI) and categorise participants into weight categories (i.e. underweight [BMI <18.5 kg/m²], healthy weight [BMI 18.5 – 24.99 kg/m²], overweight [BMI 25.0 – 29.99 kg/m²] and obese [BMI ≥30.0 kg/m²])¹.

Participants

Participants were Victorian adults aged 18–65 years. Those aged greater than 65 years of age were excluded. This criteria was set in consultation with VicHealth, on the basis that future salt-related public awareness initiatives would primarily target those aged under 65 years of age.

Sampling strategy

Three strategies were used to recruit participants:

- 1) shopping centre intercept survey (target $n=400$)
- 2) online recruitment via Facebook (target $n=500$)
- 3) online recruitment via a commercial research panel (Lightspeed GMI) (target $n=1000$).

The overall target for participants was 1900, with a subsample of 400 participants providing a spot urine sample. To help try to capture a representative sample of Victorian adults, quotas were set for recruitment based on age group (18–24 y; 25–34 y; 35–44 y; 45–54 y; 55–65 y), gender and location (i.e. Greater Melbourne versus regional Victoria). This was done separately for each recruitment strategy. Experience in the field demonstrated that the recruitment of shoppers within shopping centres was challenging and therefore to maximise overall participant numbers, a convenience sample of adults was recruited. Similarly, due to the constraints of advertising on Facebook, a convenience sample was recruited. Prior to commencing the third recruitment strategy (online consumer research panel), the number of participants recruited via shopping centres and Facebook by gender and age group was considered in relation to the overall quotas set for the full study sample. Based on this assessment, it was apparent that women and older participants (age groups 45–54 years and 55–65 years) were over-represented. To compensate for this, the consumer research panel age and gender quota targets were adjusted to increase the number of targeted men and younger age groups (i.e. 25–34 years and 35–44 years).

Shopping centre intercept survey (KAB survey + spot urine sample)

To capture adults across Victoria participants were recruited from shopping centres located in Greater Melbourne (three sites) and Geelong (one site). A list of shopping centres was obtained using Google maps. Closed shopping malls and plazas were included and open shopping strips were excluded. A total of 57 shopping centres were located in the Greater Melbourne area and 8 in Geelong. The 2011 Socio-Economic Indexes for Areas (SEIFA) was used to match the postcode of each shopping centre with the corresponding SEIFA score based on the 'Index of Relative Socio-Economic Advantage and Disadvantage' at the state level for Victoria². Following this, shopping centres were grouped into tertiles based on their assigned SEIFA index, for each region (i.e. Greater Melbourne and Geelong). To enable a

spread of participants across different socioeconomic strata, one shopping centre site was recruited from the bottom and the top tertile in Greater Melbourne; and one site from the bottom tertile in Geelong. Of note, during the project a fourth site was added to increase participation rates. The site selected was in the top tertile in Greater Melbourne as experience had proved higher participant numbers in this demographic profile. To maximise participation, shopping centres with 70 or more stores were targeted for recruitment. The final selection of shopping centres within each SEIFA tertile was dependent on shopping centre management approval, stall costs and availability. Permission to recruit shoppers was obtained from the shopping centre management.

Research staff set up a small stall within each site and invited passing shoppers to participate in the study. Adults aged greater than 65 years were excluded from participation ($n=156$). Participants independently completed the online survey using tablets available on site. Data was collected during September–October 2015. For the most part, data was collected during the hours of 9:00 am to 5:00 pm Monday to Saturday. However, to capture a range of adults, recruitment also occurred on Sundays and during late-night shopping hours on Thursday evenings at selected sites.

Spot urine sample collection

On site at the shopping centre each participant was provided with the option of providing a sample of urine in addition to completion of the online survey. A \$10 Coles shopping voucher was provided as reimbursement for their time. Consenting participants were instructed to visit the bathrooms located within the shopping centre and provide a urine sample. Participants were asked to collect the total amount of urine voided. Research staff recorded the time of the void and the participant reported time of the previous void. Additional information on date of birth was collected. Urine samples were transported to a commercial pathology laboratory (Dorevitch Pathology) for analysis of sodium, potassium and creatinine. Total volume of the sample was also recorded. To estimate daily salt intake the INTERSALT equations³ were used. Because the INTERSALT equation uses BMI, participants who were missing information for either height or weight were

excluded from the urine analysis. In addition, participants who had a very low urine volume (≤ 15 mL) were excluded.

Facebook

A 'clicks to website' advert was run on Facebook for eight weeks from 13 September to 16 November 2015, inviting users to complete the online survey. Interested users clicked on the advert, which diverted them to the plain language statement and consent form. After providing consent the participant was directed to the online survey. Parameters were set for the advert to be displayed to users aged 18–64 years residing in Victoria. Note: due to pre-specified age brackets available within the advertising options of Facebook it was not possible to include those aged 65 years.

Consumer research panel

Participants were recruited through a commercial online research panel provider (Lightspeed GMI). The GMI research database is a database of individuals who have voluntarily registered themselves with GMI and are contacted periodically by GMI to take part in a variety of online surveys in return for reward points that they can redeem for monetary payments. After providing consent the participant was directed to the online survey. Data collection for this component of the project occurred from 5–20 November 2015.

Data management and analysis

The survey software instrument Qualtrics was used to deliver the surveys. All data were collated and analysed using the statistical program STATA/SE 14.0 (StataCorp LP). Descriptive statistics, mean and (standard deviation) or n and (proportion %) were used to describe participant characteristics and responses to each of the survey questions.

Results

Study participants

A total of 2559 participants agreed to complete the online survey. The number of survey responders by sample location is shown in Table 1. The response rate for the shopping centre intercept survey and online consumer research panel was 19.4% and 13.7%, respectively. It was not possible to determine the response rate for participants recruited via Facebook. Forty-six (1.8%) participants did not answer any of the survey questions and were defined as drop outs. One hundred and fifteen (4.5%) did not complete the survey to the end (i.e. Q1–29) and were excluded from the analysis.

The final number of participants included in this analysis is 2398. This comprises 373 (15.6%) participants recruited via shopping centres, 404 (16.8%) participants recruited via Facebook and 1621 (67.6%) recruited via the online consumer research panel.

In the subsample of participants who consented to participate in the shopping centre intercept survey, 276 (71.7%) agreed to provide a spot urine sample (Table 2). Of these, 12 (4.3%) dropped out and did not provide a urine sample. In total, 264 participants provided a urine sample, 9 were excluded as they were missing information on BMI and 10 were excluded due to a very low urine volume of ≤ 15 mL. This left a final analytical sample of 245.

Table 1. Participation rates for online survey by sample location

Sample location	Response	Drop out ¹	Excluded ²	Final analytical sample
Shopping Centre 1 – Melton West	82 (3.2%)	1	1	80 (3.3%)
Shopping Centre 2 – Glen Waverley	151 (5.9%)	7	1	143 (6.0%)
Shopping Centre 3 – Corio	88 (3.4%)	1	1	87 (3.6%)
Shopping Centre 4 – Forest Hill	64 (2.5%)	1	0	63 (2.6%)
<i>Totals for shopping centres</i>	<i>385 (15.0%)</i>	<i>10</i>	<i>3</i>	<i>373 (15.6%)</i>
Facebook	495 (19.3%)	27	64	404 (16.8%)
Online consumer research panel	1679 (65.6%)	9	49	1621 (67.6%)
Total	2559	46 (1.8%)	115 (4.5%)	2398

¹ Drop out is defined as a participant who consented to completing the survey but did not answer any of the survey questions.

² Exclusion is defined as a participant who commenced the survey but did not complete the survey to the end.

Table 2. Participation rates for urine collection in subsample of shopping centre participants

Sample location	Response	Consent to urine	Drop out ¹	Excluded ²	Final analytical sample
Shopping Centre 1 – Melton West	82	38 (46.3%)	0	6	32
Shopping Centre 2 – Glen Waverley	151	112 (74.2%)	9	6	97
Shopping Centre 3 – Corio	88	84 (95.5%)	2	6	76
Shopping Centre 4 – Forest Hill	64	42 (65.6%)	1	1	40
Total	385	276 (71.7%)	12 (4.3%)	19	245

¹ Drop out is defined as a participant who consented to completing the urine collection but did not return a urine sample

² Participants were excluded if data for body mass index was missing ($n=9$) or if the total volume of urine sample was ≤ 15 mL ($n=10$)

Demographic characteristics of study participants

Table 3 shows the demographic characteristics of the 2398 participants who completed the online survey. Just over half (56%) of the sample were female and the majority (80%) were born in Australia. The average age of both men and women was 43 years and there was a relatively even distribution of participants across the five age groups. Forty three per cent of participants were from a high socioeconomic background (based on education level) and 40% were in the healthy weight range category. Just under a third of the sample (29%) reported they had previously been diagnosed or suffered from a chronic condition, with the most common being high blood pressure (21%). Just over two-thirds (69%) of participants reported that they were the primary person responsible for household grocery shopping. In comparison to the Victorian population the sample is slightly over-representative of females, i.e. 56% of sample compared to 52% of population. The spread of participants across age groups is similar to that in the Victorian population, however the sample is over-representative of older participants aged 55–65 years and under-representative of younger participants aged 18–24 years (Table 3).

Table 3. Demographic characteristics of participants presented for all survey participants and subsample of participants with a valid urine sample

Characteristic	Survey sample (n=2398)		Urine subsample (n=245)		Census ¹
	n or mean	% or SD	n or mean	% or SD	%
Gender					
Male	1046	43.6	78	31.8	49.3
Female	1352	56.4	167	68.2	51.7
Age (years)	42.7	13.4	43.2	13.5	
Men	43.0	12.9	43.5	14.1	
Women	42.6	13.8	43.1	13.3	
18–24 y	251	10.5	28	11.4	15.0
25–34 y	512	21.3	46	18.8	22.1
35–44 y	527	22.0	55	22.4	22.5
45–54 y	514	21.4	45	18.4	21.1
55–65 y	594	24.8	71	29.0	19.3
Country of Birth					
Australia	1915	79.9	165	67.4	
United Kingdom	86	3.5	10	4.1	
New Zealand	29	1.2	4	1.6	
Italy	10	0.4	0	0	
Greece	11	0.5	1	0.4	
China	30	1.2	7	2.9	
Vietnam	14	0.6	1	0.4	
Lebanon	4	0.2	0	0	
Other	271	11.3	55	22.4	
Don't know	2	0.1	0	0	
Prefer not to answer	26	1.1	2	0.8	
Do you speak a language other than English at home?					
Yes	409	17.06	70	28.6	
No, English only	1969	82.11	174	71	
Prefer not to answer	19	0.79	1	0.4	
Don't know	1	0.04	0	0.0	
What is the highest level of education and training you have completed? ²					
Never attended school	0	0	3	0.1	
Some primary school	0	0	9	0.4	
Completed primary school	0	0	11	0.5	
Some high school (i.e. Year 7 to Year 11)	30	12.2	299	12.4	
Completed high school (i.e. Year 12)	34	13.9	360	15.0	
TAFE or Trade Certificate or Diploma but did not complete Year 12 at secondary school	27	11.0	311	13.0	
TAFE or Trade Certificate or Diploma and also completed Year 12 at secondary school	32	13.1	364	15.2	
University, or some other Tertiary Institute degree, including post-university	120	49.0	1020	42.5	
Don't know	0	0	3	0.1	

Prefer not to answer	2	0.8	18	0.8
<hr/>				
Socioeconomic status ³				
High SES	120	49.4	1020	42.9
Mid SES	59	24.3	675	28.4
Low SES	64	26.3	682	28.7
<hr/>				
Height (cm)	167.5	10.3	169.3	10.2
Weight (kg)	76.5	18.4	77.6	18.7
BMI (kg/m ²)	27.3	6.2	27	6.1
Weight category				
Underweight	8	3.3	68	3.2
Healthy weight	97	39.5	846	39.6
Overweight	72	29.4	690	32.3
Obese	68	27.8	532	24.9
<hr/>				
Diagnosed with a chronic condition				
Yes	71	29.0	705	29.4
No	170	69.4	1659	69.2
Don't know/can't recall	4	1.6	34	1.4
<hr/>				
Have you ever been diagnosed with or suffered from one or more of the following conditions? (Yes)				
Heart Disease	6	2.5	107	4.46
Stroke	2	0.8	70	2.92
Heart attack	1	0.4	58	2.42
Other (please specify)	36	14.7	195	8.13
Can't recall/don't know	4	1.6	36	1.5
High blood pressure	42	17.1	514	21.43
If yes, do you currently take medication for the control of your blood pressure?				
Yes	32	76.2	385	74.9
No	10	23.8	129	25.1
<hr/>				
Have you ever received any advice from your doctor or a health professional to reduce your intake of salt/sodium and/or salty foods?				
Yes	35	14.4	486	20.3
No	196	80.3	1789	74.6
Can't recall	13	5.3	122	5.1
<hr/>				
Are you the main person who does the grocery shopping in your household?				
Yes	155	63.3	1654	69.0
No	30	12.2	239	10.0
No, I share the responsibility	60	24.5	505	21.0

¹This data is taken from the 2011 Australian Census and reflects the proportion of adults aged 18–65 years residing in Victoria⁴.

²*n*=13 responded with option 'other, please specify'. These responses were recoded into the appropriate category.

³Socioeconomic status as defined by highest level of education. Note: *n*=2377 because participants who responded 'don't know' (*n*=3) or 'prefer not to answer' (*n*=18) were excluded.

Knowledge related to salt intake

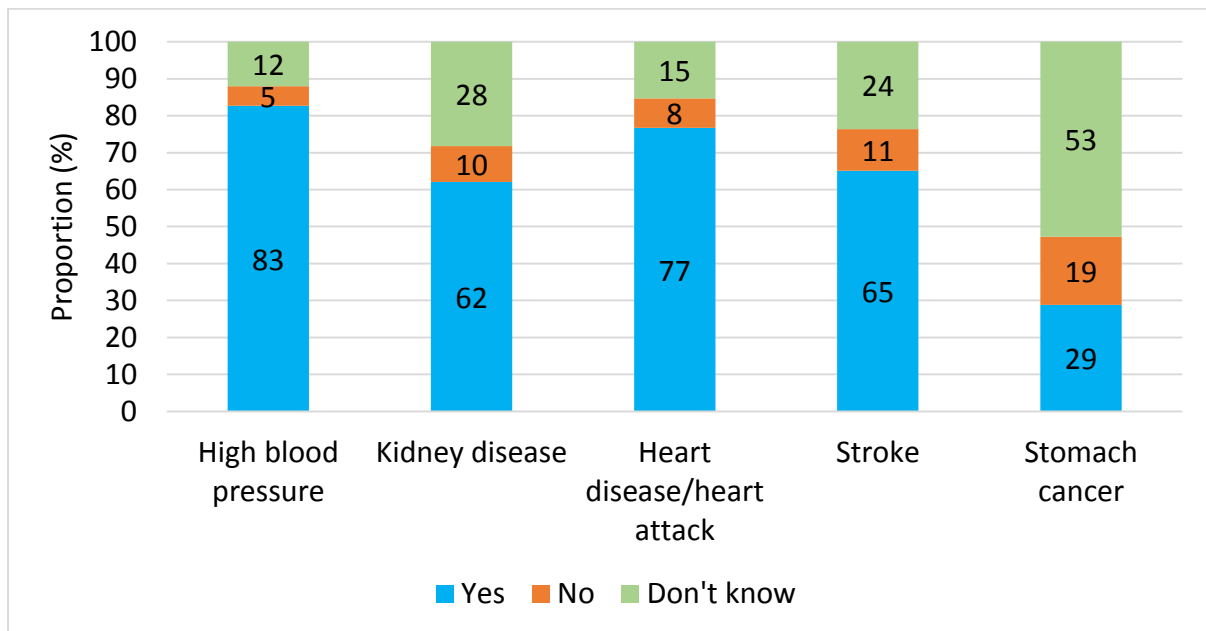
Six questions assessed participants' knowledge related to salt intake. The majority of participants (90%) knew that eating too much salt could damage their health (Table 4). Most were aware of the relationship between high salt intake and high blood pressure (83%) and heart disease/heart attack (77%). Approximately two-thirds knew of the relationship between salt intake and stroke and kidney disease, however far fewer were aware of links with stomach cancer (Figure 1). Only a third of participants could correctly identify the relationship between salt and sodium (33%), however the majority (76%) knew that most salt in the Australian diet comes from processed foods. Most participants (84%) believed Australians eat either far too much or too much salt but only 28% could correctly identify the recommended maximum amount of salt to eat per day (Table 4).

Table 4. Survey responses for questions assessing salt knowledge (n=2398)¹

Question	n	%
On Australian food products information about the amount of sodium within a food product is displayed on the food label. What is the relationship between salt and sodium?		
They are exactly the same	1116	46.5
<i>Salt contains sodium</i>	<i>783</i>	<i>32.7</i>
Sodium contains salt	78	3.3
Don't know	421	17.5
In general, how much salt do you think Australians eat?		
<i>Far too much</i>	<i>814</i>	<i>33.9</i>
<i>Too much</i>	<i>1197</i>	<i>49.9</i>
Just the right amount	177	7.4
Too little	34	1.4
Far too little	6	0.3
Don't know	170	7.1
Which of the following do you think is the main source of salt in the Australian diet?		
Salt added during cooking or at the table	396	16.5
<i>Salt from processed foods such as breads, sausages and cheese</i>	<i>1820</i>	<i>75.9</i>
Salt from natural food sources	57	2.4
Don't know	125	5.2
Health professionals recommend that we should eat no more than a certain amount of salt each day . How much salt do you think this is?		
3 grams (about 1/2 a teaspoon)	671	28.0
<i>5 grams (about 1 teaspoon)</i>	<i>660</i>	<i>27.5</i>
8 grams (about 1 and a 1/2 teaspoons)	114	4.8
10 grams (about 2 teaspoons)	239	10.0
15 grams (about 3 teaspoons)	31	1.3
Don't know	683	28.4
Do you think that eating too much salt could damage your health?		
<i>Yes</i>	<i>2164</i>	<i>90.2</i>
No	97	4.0
Don't know	137	5.7

¹ Correct answers are shown in ***bold italic green***

Figure 1. Which, if any, of the following conditions do you think is linked to eating too much salt? (n=2398)



Attitudes to salt intake

Despite most participants thinking that in general Australians eat too much salt, less than a third (28%) of participants believed their own individual intake of salt would exceed dietary recommendations (Table 5). Instead, about half (56%) believed that they eat less than or about the right amount of recommended salt.

Table 5. Attitude to individual salt intake ($n=2398$)¹

Question	<i>n</i>	%
How do you think your daily salt intake compares to the amount of salt recommended by health professionals?		
I eat less salt than recommended	446	18.6
I eat about the right amount of salt	887	37.0
I eat more salt than recommended	676	28.2
I don't know	389	16.2

The overall concern regarding food-related issues was relatively high, with 40–60% of participants reporting that they were either very concerned or extremely concerned with each of the listed food-related issues (Figure 2). Sugar (60% very or extremely concerned) and saturated fat (59% very or extremely concerned) were the nutrients of most concern, whereas just under half (47%) were very or extremely concerned about the amount of salt in food.

Figure 2. Please indicate on the scale below how concerned you are about each of the following food-related issues (*n*=2398)

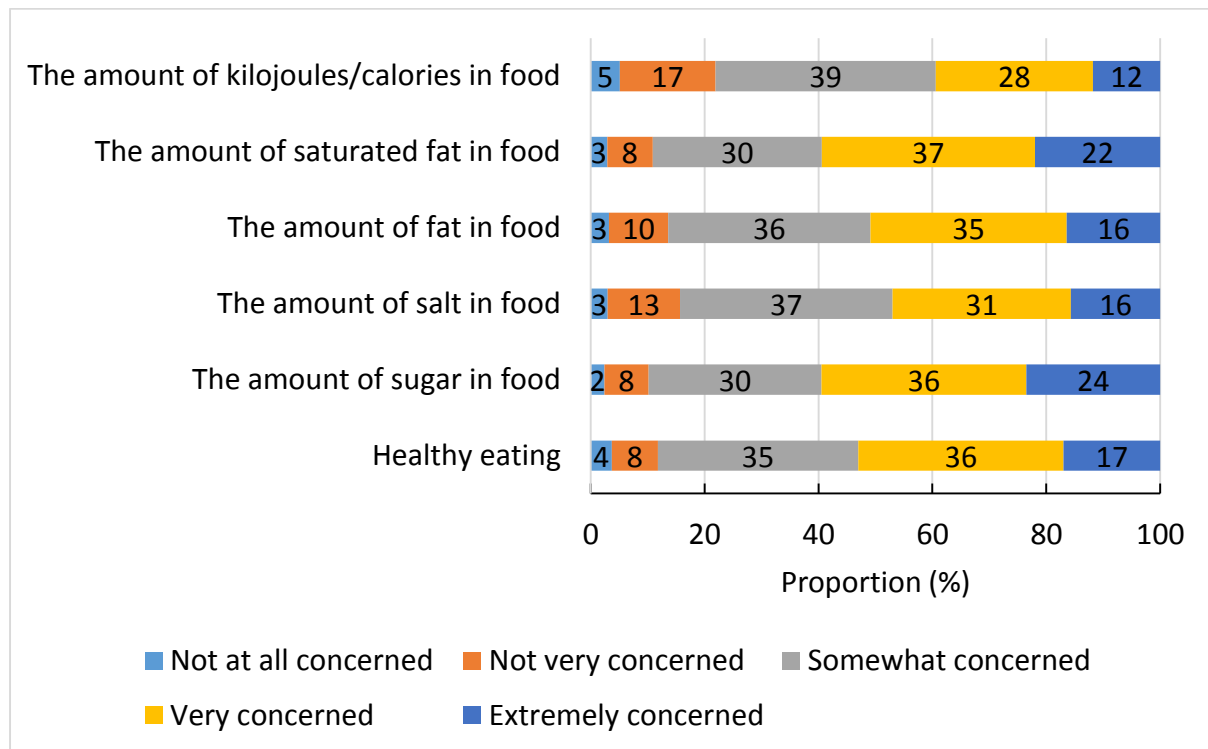


Figure 3 shows participants' level of agreement on a range of attitudes related to salt intake. Of the six attitude statements, the one which had the highest proportion of participants in agreement with it was the belief that there should be laws which limit the amount of salt added to manufactured foods, with approximately two-thirds (62%) of participants either agreeing or strongly agreeing with this statement. About half of the sample either agreed or strongly agreed that it was difficult to find low salt options when eating out (59%) and that it was difficult to understand sodium information displayed on food labels (47%). Forty per cent agreed or strongly agreed that salt should be added to food to make it tasty and 37% agreed or strongly agreed that speciality salts are healthier than regular table salt. Across all attitude statements about a third of the sample did not agree or disagree, indicating these issues were not high on the radar of these participants.

With respect to who is responsible for reducing salt in the diets of the Australian population (Figure 4), participants generally thought it was primarily the responsibility of the individual, followed by food manufacturers, fast food chains and chefs involved in food preparation.

Figure 3. Please indicate on the scale below how much you agree or disagree with the following statements (*n*=2398)

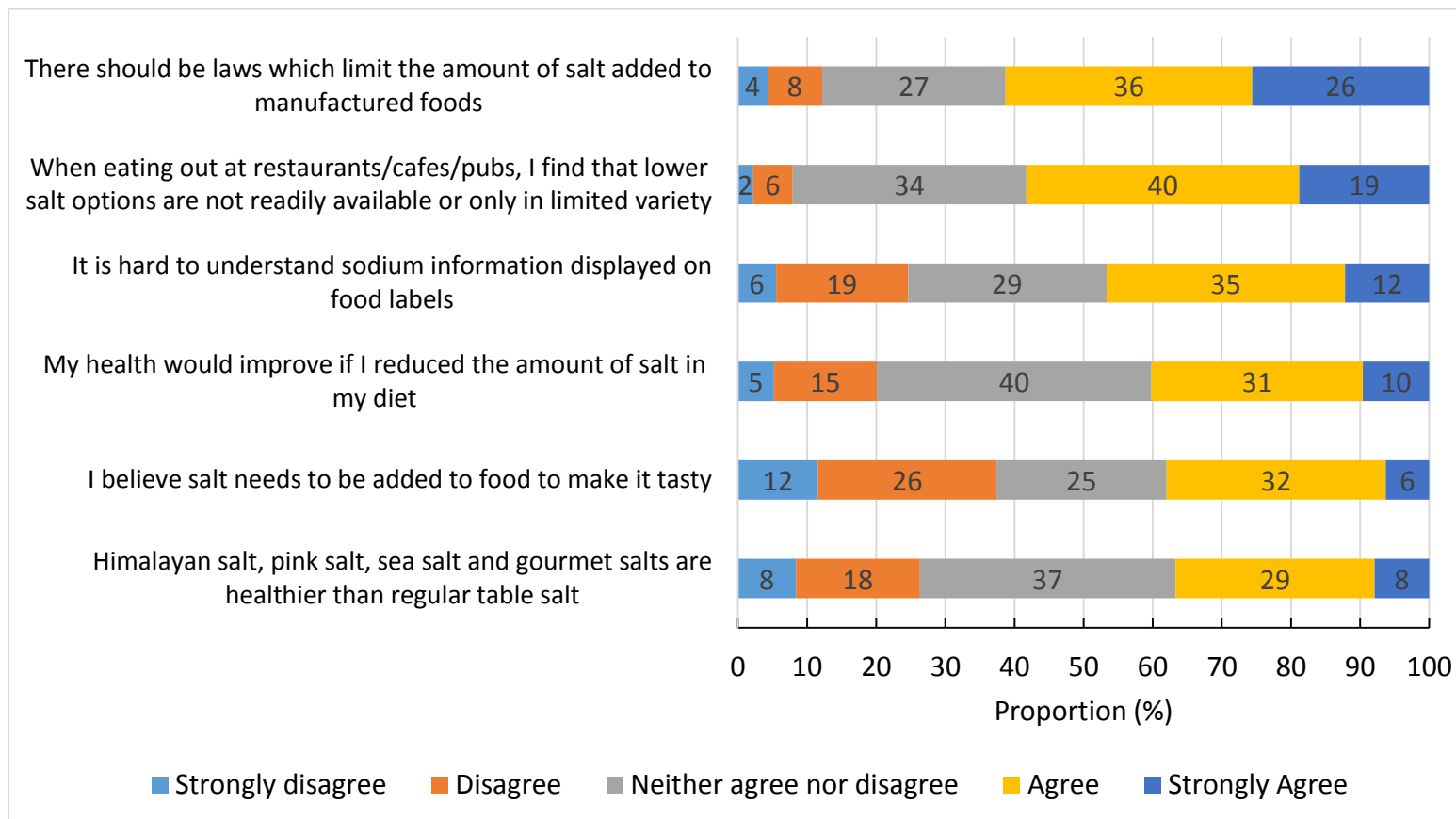
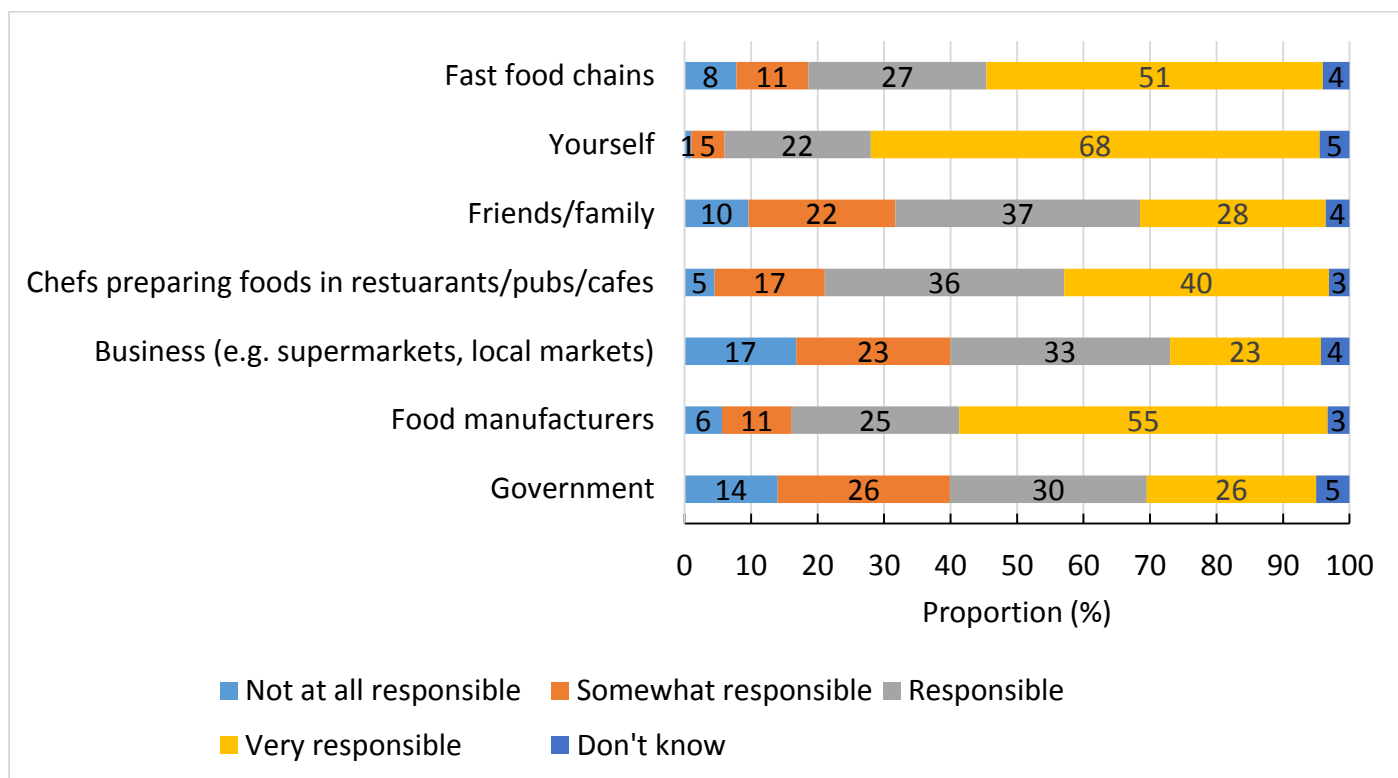


Figure 4. From the list below please rate how responsible you think each group is for reducing the amount of salt Australians eat (*n*=2398)



Behaviours related to salt intake

Figure 5 shows the proportion of participants who report using salt at the table and during cooking. The reported use of cooking salt was higher than table salt with about a third (37%) of participants reporting that they either always or often add salt during cooking, while only 24% reported that they either always or often add salt at the table. Twenty eight per cent of participants either always or often place a salt shaker on the table at meal times, whereas about a third (32%) reported that they never perform this behaviour.

Figure 5. Discretionary salt use behaviours (n=2398)

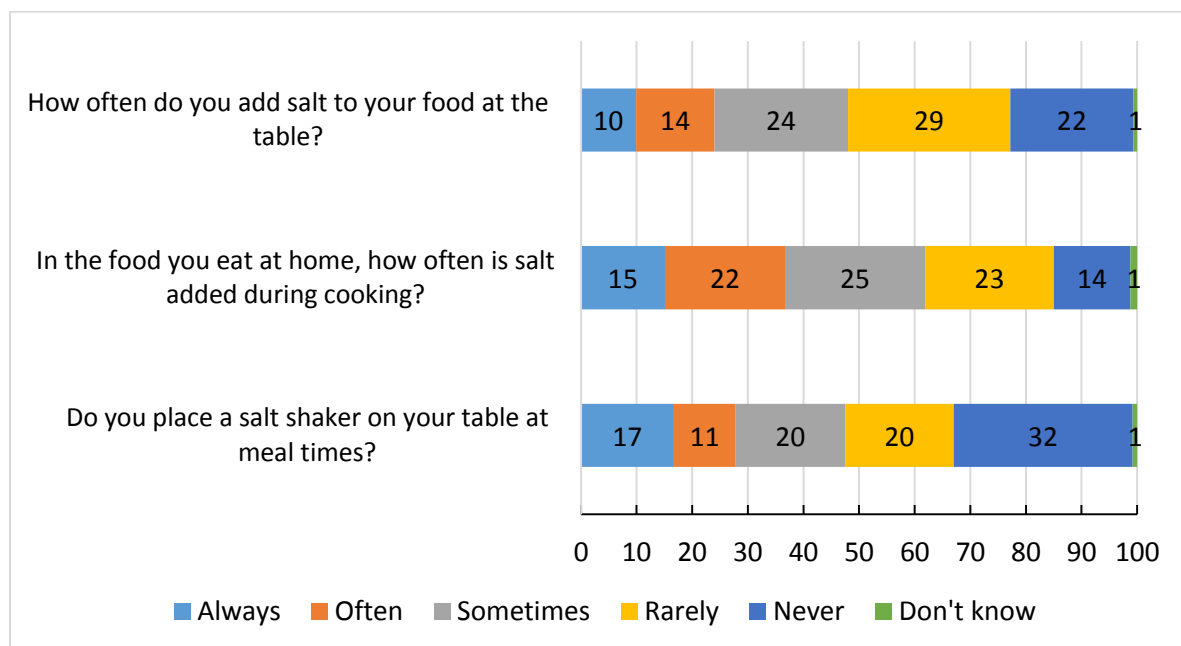


Figure 6 shows ways in which the participant may be trying to lower the amount of salt in their diet. Of the listed behaviours, those that were most commonly performed were: avoiding eating food from fast food restaurants, using spices and herbs instead of salt when cooking, and avoiding eating packaged foods, with about 50% of participants reporting that they either always or often did these behaviours. Fewer participants, about a third, reported that they purchased salt-reduced foods or used the sodium information on food labels. The majority (74%) would not ask to have their meal prepared without salt when eating out.

Figure 6. Below are some common ways to lower the amount of salt in your diet. In the past month, to what extent have you personally done any of the following? (n=2398)

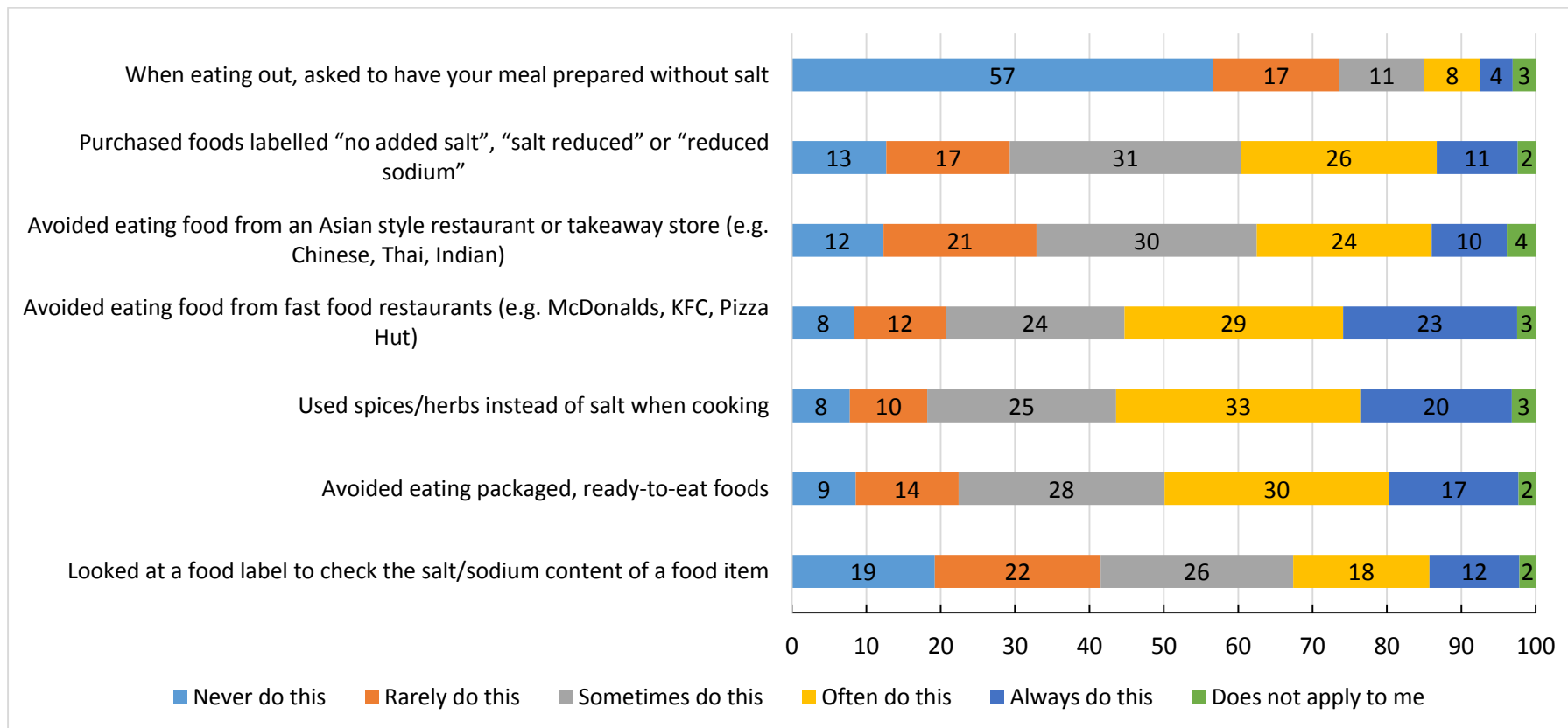
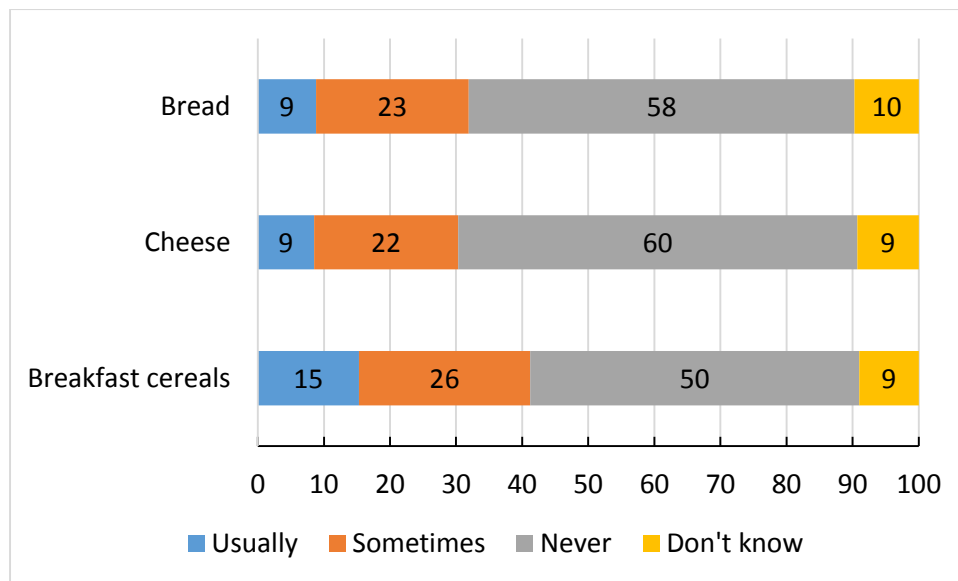


Figure 7 shows that participants reported using the new health star rating information that is included on certain food products. About a third of participants reported that they had used this information to choose either bread, cheese or breakfast cereals. Of the three food groups, this information was more commonly used for choosing breakfast cereals.

Figure 7. On some food products a health star rating is displayed on the food label.

Do you use the health star rating information to choose any of the following products?

(n=2398)



Finally participants were asked if they were aware of VicHealth’s initiative to reduce salt intake within the Victorian population. Most participants (77%) reported that they were not aware of the initiative. Seventeen per cent reported that they knew of the initiative and 6% were unsure.

Subsample of parents/caretakers

Of the 2398 participants in the main analysis, 840 (35%) responded that they were either a parent ($n=726$, 30.3%) or a caretaker ($n=114$, 4.8%) for a child or children under the age of 18 years. Three of these dropped out and did not complete the additional parent questions, leaving a final sample size of 837. Fifty-nine per cent of the parent subsample were female and the mean age of parents was 40.1 (10.0) years. The majority (82%) were born in Australia and just under half were of a high socioeconomic background (45%). Seventy-six per cent of parents reported that they were responsible for the household grocery shopping and 17% reported that they shared the grocery shopping responsibility. Parents were asked to indicate the age range of their child/children. One hundred and thirty-three parents had children aged 0–1 years, 251 parents had children aged 2–4 years, 438 parents had children aged 5–12 years and 303 parents had children aged 13–17 years.

Most parents (73%) believed Australian children eat far too much or too much salt (Table 6). Just over two-thirds of parents (70%) agreed or strongly agreed with the statement that limiting the amount of salt in their child's diet was important. Similarly, the majority (77%) believed that eating too much salt during childhood may have harmful effects on children's health. There was strong support among parents for the idea that more action needs to be taken to reduce the amount of salt in foods targeted at children, with 81% either agreeing or strongly agreeing to this attitude statement (Figure 8).

With regards to discretionary salt use behaviours, overall more parents (22% always and often) reported that they used salt when preparing their child's meals compared to only 11% reporting that their child adds salt to their food at the table (Figure 9). Conversely, about half of the parents reported that they never or rarely engage in either of these behaviours. Almost a third (27%) of parents reported that they placed a salt shaker on their table at meal times either always or often.

Table 6. In general how much salt do you think Australian children eat? (*n*=837)

Response	<i>n</i>	%
Far too much	201	24.0
Too much	409	48.9
Just the right amount	124	14.8
Too little	18	2.2
Far too little	3	0.4
Don't know	82	9.8

Figure 8. Please indicate on the scale below how much you agree or disagree with the following statements.

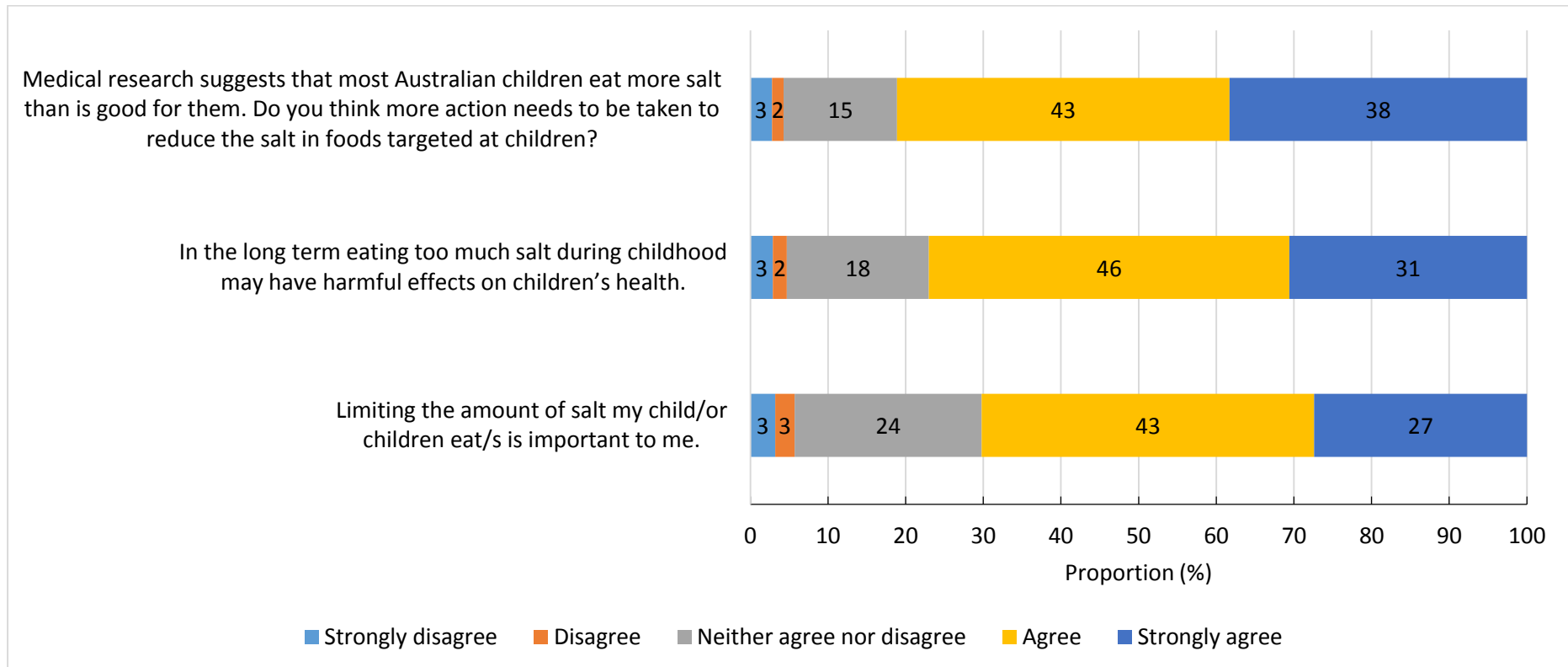
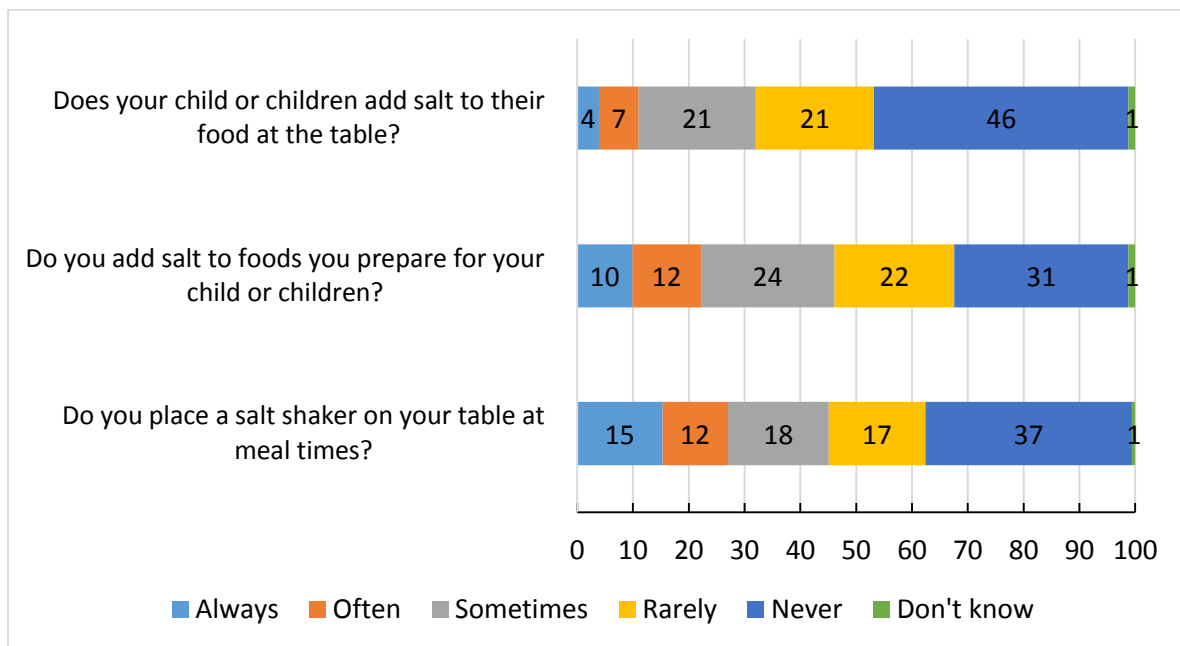


Figure 9. Discretionary salt use behaviours (n=837)



Estimated daily salt intake from spot urine sample*

In the subsample of 245 adults with a valid spot urine sample, the estimated average salt intake was 8.5 (SD 2.5) g/d. The estimated average salt intake of men (n=78) was 9.6 (2.6) g/day and that of women (n=167) was 7.9 (2.2) g/d.

*** Note: This is an estimate of daily salt intake derived from a casual spot urine sample and should be interpreted with caution.**

Conclusion

It is clear that Victorian adults believe that Australians eat too much salt and most are aware that processed foods contain high levels of salt. However, although over three-quarters of participants could correctly identify salt from processed foods as being the main source of salt in the Australian diet, less than a third believed their own individual salt intake would exceed dietary recommendations. Addressing this issue in educational campaigns would seem to be a useful strategy. As few consumers could correctly identify the maximum recommended daily intake for salt, this may also be a key issue to address in an education campaign. Most parents believed Australian children were consuming too much salt and were aware of the long-term health risks associated with high salt intakes during childhood. There was strong support for the need for more action to be taken to reduce the amount of salt in foods targeted at children. Parents and advocacy and/or legislative actions to target this issue would have a significant amount of consumer support which could lead to an environment and a food supply that could be effective in reducing the salt intake of children.

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Victorian Health Promotion Foundation
PO Box 154 Carlton South
Victoria 3053 Australia
T +61 3 9667 1333 F +61 3 9667 1375

vichealth@vichealth.vic.gov.au
vichealth.vic.gov.au
twitter.com/vichealth
facebook.com/vichealth

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