Scientific Interpretive Summary

Consumer Awareness of Salt

Sodium reduction has been identified as one of the most significant strategies that could be taken to reduce the burden of food related disease in New Zealand.

NZFSA’s Science Group commissioned Phoenix Research (the ‘authors’) to undertake a survey of New Zealand adults to establish current understandings and attitudes to salt/sodium. The findings from this consumer survey are primarily for use by NZFSA, but are also intended to be useful to the food industry, and others involved in food safety communications to the general public.

The overall objectives of this survey were: to establish baseline quantitative data on consumers’ awareness, understanding and attitude to salt in food and its relationship to health; and to determine consumers’ current understanding of the role of salt in the diet.

To meet these objectives a telephone administered survey was undertaken by the authors. A random sample of 1,000 New Zealand adults (+/- 3.1% margin of error) aged 18 years and over were interviewed using a pre-tested, piloted questionnaire. The overall weighted response rate was 45%.

The survey found that most people knew that the main source of salt in the diet was from processed foods. A quarter knew the recommended maximum daily salt intake was 6 grams however almost half felt they were consuming less than this, with a further 31% reporting they consumed approximately the maximum daily salt intake. Fifteen percent felt they consumed more than the recommended maximum daily salt intake.

Related to this, consumers were less concerned about salt in the diet than saturated fat, sugar, artificial colours or artificial flavours. Half the respondents agreed they were cutting down on the amount of salt they eat with the most common reason given for doing so being “because it is bad for you” followed by “general health reasons with no specific health issue being mentioned”. The main reason given for not cutting down on salt was a belief that they did not consume too much salt.

A variety of strategies were used by most of those who stated they were cutting down on salt. Fourteen percent said they “always” look at the packaging on the food they buy to find out about the salt content while another 35% say they do “sometimes”. The main source of this information was the sodium value in the nutrition information panel, followed by the ingredients list. Only a small percentage mentioned claims of low or reduced salt on the pack. Just over a quarter were “quite” or “very” interested in doing more than they currently do to reduce the amount of salt they or their household eats.

Most respondents were aware that heart attacks, blood pressure and stroke were made worse by salt. However, there was a low awareness that diseases such as osteoporosis and stomach cancer were also made worse by a higher salt intake.

Updated 14 March 2011
SALT CONSUMER SURVEY

RESEARCH REPORT FOR
NEW ZEALAND FOOD SAFETY AUTHORITY

January 2011

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EXECUTIVE SUMMARY

Internationally a number of regulatory bodies are addressing sodium reduction as a key strategy for reducing the burden of nutrition-related diseases, including Health Canada and the European Community. Recently, NZFSA agreed to begin a new work programme in this area. This consumer survey has been commissioned to provide NZFSA with essential baseline information on the New Zealand consumers' understanding of the role of salt in their diet and to inform ongoing communications strategies.

The objectives of this research were:

- To establish baseline quantitative data on consumers' awareness, understanding and attitude to salt in food and its relationship to health; and
- To determine consumers' current understanding of the role of salt in the diet.

One thousand people aged 18+ years were interviewed by telephone between 31 August and 25 September, 2010. Booster samples were used to obtain the correct proportion of Māori, Pacific and Asian peoples. The overall weighted response rate was 45%. The data has been weighted by age within gender within ethnicity, to reflect the correct proportions in the population. A questionnaire was designed and pre-tested by Phoenix Research based on the key information that NZFSA wanted to obtain. Questions were made as similar as possible to those used in overseas studies, to allow for comparisons.

There was a lack of clear understanding of the relationship between sodium and salt. Thirty-six percent selected the correct answer, that salt contains sodium. Almost as many (32%) thought they are exactly the same, while a quarter did not know and 6% thought sodium contained salt.

Most (77%) knew that "salt in processed foods such as breads, breakfast cereals, tinned foods and takeaways" was the main source of salt in the diet of New Zealanders.

A quarter knew that the recommended maximum daily salt intake was 6 grams or one teaspoonful (no answer options were provided). Twenty-one percent thought it was less and 18% more, while just over a third did not know.

Almost half (46%) thought they were consuming less than the recommended maximum. Just under a third (31%) thought they were at about the maximum and 15% thought they were consuming more.

Half the respondents agreed they were cutting down on the amount of salt they eat.

The most common unprompted reason for reducing was because it is bad for you (34%), followed by general health reasons with no specific health issue being mentioned (29%), reducing the risk of heart attack/ stroke (20%) and to lower blood pressure (17%). Responses that indicated the impact of interventions included 7% who said they were told by a doctor or other health professional, 6% who said it was a result of an article or advertisement they had seen, and 5% where a family member had been told to reduce their salt intake.

The main reason given for not cutting down was because they believed they did not have too much salt in their diet (42%).

Most people who were cutting down were using a range of strategies, with over two thirds using six of the seven strategies asked about. The exception was choosing foods lower in salt when eating out (used by 45%).
People were less concerned with salt (37% "quite" or "very" concerned) than they were with saturated fat (66%), sugar (51%), artificial colours (47%) or artificial flavours (46%).

Twenty-seven percent were "quite" or "very" interested in doing more than they currently do to reduce the amount of salt they or their household eats.

Fourteen percent said they "always" look at the packaging on the food they buy to find out about the salt content, while another 35% said they do so "sometimes".

Their main sources of information were the sodium level on the nutrition information panel (58%) and the ingredients list (28%), while 8% mentioned claims of low or reduced salt on the pack.

Most were aware that heart attacks (86%), high blood pressure (83%) and stroke (72%) were made worse by salt.

There was low awareness of two of the most correct options: osteoporosis (18%) and stomach cancer (26%).

There were two of the less correct responses that had relatively high mention: fluid retention (65%) and headaches (42%).

The questions on whether people are currently cutting down and whether they are interested in doing more to reduce the amount of salt they or their household eat were combined to identify four market segments:

- Segment 1: Reducing and interest in doing more (20% of respondents)
- Segment 2: Reducing and little/no interest in doing more (30%)
- Segment 3: Not reducing but interest in doing more (7%)
- Segment 4: Not reducing and little/no interest in doing more (42%).
INTRODUCTION

Sodium is an essential nutrient for human health. It regulates water balance, maintains blood volume, controls muscles and nerve function and helps to maintain our body temperature.

Sodium is found in most foods as sodium chloride, commonly known as salt. Salt may account for up to 90% of sodium intake in New Zealand but it is also present in foods as sodium bicarbonate, monosodium glutamate, sodium phosphate, sodium carbonate, and sodium benzoate. Salt is added to foods for a variety of reasons including preservation, flavouring, microbial safety and other technological purposes (Australian Department of Health and Ageing, 2006).

Despite the essential role of sodium in human health and in food processing there is convincing evidence that the general population would benefit from consuming less sodium. Higher sodium intakes can adversely affect blood pressure which is a risk factor for cardiovascular disease. It is also associated with increased risk of stomach cancer, osteoporosis and several other health conditions (McLean, Mann and Hoek, 2010).

The Ministry of Health and the Australia Department of Health and Ageing have endorsed an upper level of intake for sodium of approximately 2,300 milligrams (equivalent to 6 grams of salt) per day, based on the adverse effect of sodium intake on blood pressure levels (Australian Department of Health and Ageing, 2006). The New Zealand Total Diet Survey 2003/04 has reported that mean daily sodium intakes could exceed this upper level of intake for most age-sex groups by up to 25-57%. For a high consumer, sodium intake may exceed the upper level of intake by a factor of three. These estimates do not account for discretionary salt use by the consumer and thus likely underestimate total dietary sodium intake (New Zealand Food Safety Authority, 2005).

Internationally a number of regulatory bodies are addressing sodium reduction as a key strategy for reducing the burden of nutrition-related diseases, including Health Canada and the European Community. Recently, the New Zealand Food Safety Authority (NZFSA) agreed to begin a new work programme in this area. In 2010, a report commissioned by NZFSA identified increasing consumers’ knowledge of the risks of high dietary sodium, and increasing their use of food labels as risk management options to reduce both the supply of and demand for dietary sodium (McLean, Mann and Hoek, 2010).

This consumer survey will aim to provide NZFSA with essential baseline information on the New Zealand consumers understanding of the role of salt in their diet. The specific objectives of this survey are:

- To establish baseline quantitative data on consumers’ awareness, understanding and attitude to salt in food and its relationship to health; and
- To determine consumers’ current understanding of the role of salt in health.

It is anticipated similar surveys will be repeated at regular time intervals throughout the life of the work programme to assess progress against risk management options being implemented by NZFSA and other stakeholders.
METHODOLOGY

The survey was undertaken using a Computer Assisted Telephone Interviewing (CATI) system by trained Phoenix Research interviewers. Within each household one person aged 18+ years was randomly selected, by asking for the person with the most recent birthday.

The interviews had an average duration of 10 minutes and took place between 31 August and 25 September, 2010.

SAMPLE SIZE AND SELECTION

The survey had a combined total sample size of 1,000 respondents. The margin of error for a sample of 1,000 respondents is plus or minus 3.1% for a figure of 50%, at the 95% confidence level.

All respondents were aged 18+ years, and quotas ensured that 48% of the sample was male. Because ethnic groups tend to be under-represented in surveys, Māori, Pacific and Asian booster samples were undertaken to provide the correct proportion of each group as is present in the New Zealand population, as at the 2006 Census (Statistics New Zealand, 2006).1

The general population sample was generated using randomly selected telephone numbers, stratified into six regions, as listed in Table 1. To obtain 48% males in each region, some interviews contacted specifically for males. This general population sample consisted of 846 people, of whom 69 were Māori, 14 were Pacific peoples, and 50 were Asian peoples. Persons who identified as belonging to more than one ethnic group have been included in each ethnic group to which they belong.

Table 1: Regional Stratification for General Population Sample

<table>
<thead>
<tr>
<th>REGION FOR GENERAL SAMPLE</th>
<th>Number of completed interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland (North Shore, Waitakere, Auckland, Manukau and Papakura TLA_s)</td>
<td>249</td>
</tr>
<tr>
<td>Wellington (Upper Hutt, Lower Hutt, Porirua and Wellington TLA_s)</td>
<td>91</td>
</tr>
<tr>
<td>Christchurch (Christchurch TLA)</td>
<td>19</td>
</tr>
<tr>
<td>Other Upper North Island (all TLA_s down to and including Waitomo, Taupo, Opotiki)</td>
<td>192</td>
</tr>
<tr>
<td>Other Lower North Island (all other North Island TLA_s, including Gisborne and New Plymouth)</td>
<td>128</td>
</tr>
<tr>
<td>Other South Island</td>
<td>167</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>846</strong></td>
</tr>
</tbody>
</table>

Footnote: TLA = Territorial Local Authority.

The separate Māori booster sample was generated using phone numbers matched to Māori names randomly selected from the Māori and General electoral rolls. It was also stratified by region: Auckland (the same TLA_s as for the general sample), Rest of New Zealand. This generated 52 interviews with Māori, of which 13 were from the Auckland region. A further one was generated when contacting for the separate Pacific booster sample. All of this, combined with Māori in the general population sample (69), gave a final Māori sample of 122.

1 NZFSA made a decision not to oversample any of the ethnic groups.
The separate Pacific booster sample was based on randomly selected Pacific people's names from phone directories in Auckland and Wellington (these two regions account for 81% of the Pacific peoples population in New Zealand). A total of 43 Pacific peoples interviews were undertaken using this method, of which eight came from the Wellington region. When combined with the 14 from the general population sample, and one from the Māori sample, this gave a final Pacific sample of 58.

The same method as above was used to obtain numbers for the separate Asian booster sample; randomly selected Asian people's names from phone directories in Auckland and Wellington (these two regions account for 76% of the Asian population in New Zealand). A total of 58 Asian peoples' interviews were undertaken using this method, with nine of these from the Wellington region. When combined with the 50 from the general population sample, and one from the Pacific sample this gave a final Asian sample of 109.

The total sample of 1,000 respondents is less than the arithmetic sum of the numbers in each ethnic group because some individuals were included in more than one ethnic group as a result of using total response ethnicity.

**DATA COLLECTION**

Most interviewing took place between 5pm and 9pm on weeknights and between 10am and 5.30pm on weekends. There was usually one interviewer working during working hours on weekdays and a few interviewers would also begin evening shifts from 4pm. There was a minimum 90 minute gap between calls and after six calls this was extended to one day. This ensured that numbers were called at a range of different days and times of the day.

Persons were told that if they were Māori, Pacific or a Chinese person and they would prefer, Phoenix Research could arrange for them to be interviewed by a Māori, Pacific or Chinese interviewer. If an interviewer was from one of these ethnic groups and they knew they were speaking with someone from their own ethnic group, it was unnecessary for them to make this offer.

**QUALITY CONTROL**

All interviewers were personally briefed prior to the data collection process beginning. Most attended the briefing undertaken by the researcher responsible for this project. Interviewers also undertook practice interviews, until they felt sufficiently confident with the questionnaire, before beginning live interviews.

The CATI system enabled shift supervisors to monitor interviewers' calls, as the shift supervisor could bring up any interview on their screen and also listen into the interview at the same time. In addition, all calls were recorded on call catchers, which allowed for listening back and checking any of the interviews. Ten percent of all calls were audited.

**RESPONSE RATE**

Four different forms of response rate are provided:

1. The **response rate** is defined as: the number of completed interviews/number of eligible cases

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2 The response, contact and co-operation rates are as recommended by Beerten, R., Lynn, P., Laiho, J. and Martin, J. Response rates as a measure of survey quality.
The number of eligible cases was calculated as: Completed interviews + refusals + all other persons for whom contacts were attempted and were not identified as ineligible.

Using the letters in Table 2, this equates with: \( \frac{A}{(A+B+C+D+E+F+G+H)} \). It should be noted that those classified as fax machines were where a fax was reached on five consecutive occasions and it was therefore deemed to be a dedicated fax line and was not included in the qualifying phone numbers.

2. The **contact rate** is defined as the number of contacted households/number of eligible households = \( \frac{A+B+C+H}{A+B+C+H+D+E+F+G} \).

3. The **co-operation rate** is defined as the number of successful interviews/number of contacted households = \( \frac{A}{A+B+C+H} \).

4. The **weighted response rate** is defined in accord with Ministry of Health policy. This takes into account the fact that only some of those who refused (where it was not possible to establish if there were qualifiers in the household) or had other outcomes such as language problems, would have qualified for the interview.

This weighted response rate was calculated as the number of completed interviews/(number of completed interviews + number of eligible who did not complete interviews + estimated eligibles from the unknowns)

The 'estimated eligibles from the unknowns' was calculated as the number of unknowns * (number of completed interviews + number of eligible who did not complete interviews) / (number of completed interviews + number of eligible who did not complete interviews + number of ineligibles).

Unknowns were those categories labelled C to H in Table 2.

Although this weighted response rate is the method recommended by the Ministry of Health, it does provide inflated rates when not all households qualify. For example, when contacting for the ethnic booster samples such as Pacific peoples, persons can say that there is no Pacific person in the household when there actually is, as a method to refuse the interview. The interviewer cannot tell if that is the case. The most accurate response rate is therefore somewhere between the standard and weighted response rates.

The final status of the calls and the response rates are as listed in Table 2. The response rates achieved in this survey were lower than Phoenix Research usually achieve in surveys such as this for the Ministry of Health. The refusal rate was higher, and the only explanation that Phoenix Research can find to explain this is that people may not be familiar with the "New Zealand Food Safety Authority" and might have thought the survey was not going to be sufficiently interesting. They were also told in the introduction that the survey was about food. The Ministry of Health Surveys are introduced as being about a health topic.

The other factor contributing to the lower response rates is that Phoenix Research undertook 10 calls to each household, whereas 15 calls are usually made. Phoenix Research specified 10 in their proposal to NZFSA to be more cost competitive and being aware that 10 is more than most and probably all research companies undertake. Phoenix Research had not expected this change from 10 to 15 to result in so many households where the interviewers were unable to make contact, either with the selected household or person.

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3 Please note that this is a different form of weighted response rate to that recommended by Beerten et al., who use a weighted response rate to adjust for over-sampling in regions where it is more difficult to obtain sample.
Table 2: Final Status of Call

<table>
<thead>
<tr>
<th>FINAL STATUS OF CALL</th>
<th>General Sample</th>
<th>Māori booster sample</th>
<th>Pacific booster sample</th>
<th>Asian booster sample</th>
<th>Combined total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Completed full phone interview</td>
<td>846</td>
<td>53</td>
<td>43</td>
<td>58</td>
<td>1,000</td>
</tr>
<tr>
<td>B: Refusal (able to establish were qualifiers in household (includes partial interviews)</td>
<td>533</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>533</td>
</tr>
<tr>
<td>C: Refusal (not able to establish were qualifiers)</td>
<td>0</td>
<td>12</td>
<td>12</td>
<td>25</td>
<td>49</td>
</tr>
<tr>
<td>D: No answer</td>
<td>174</td>
<td>2</td>
<td>13</td>
<td>13</td>
<td>202</td>
</tr>
<tr>
<td>E: Answering machine on last call</td>
<td>158</td>
<td>1</td>
<td>12</td>
<td>11</td>
<td>182</td>
</tr>
<tr>
<td>F: Engaged on last call</td>
<td>24</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>G: Unable to contact</td>
<td>210</td>
<td>15</td>
<td>19</td>
<td>26</td>
<td>270</td>
</tr>
<tr>
<td>H: Language barrier</td>
<td>74</td>
<td>0</td>
<td>12</td>
<td>48</td>
<td>134</td>
</tr>
<tr>
<td>I: Disconnected number/Invalid number – business or other non-residential,</td>
<td>480</td>
<td>32</td>
<td>70</td>
<td>49</td>
<td>631</td>
</tr>
<tr>
<td>J: Fax machine (for 5 consecutive calls)</td>
<td>33</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>K: Ineligible – no Māori/Pacific/Asian in household or no males when looking to fill male quota</td>
<td>218</td>
<td>72</td>
<td>113</td>
<td>78</td>
<td>481</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,750</td>
<td>187</td>
<td>296</td>
<td>312</td>
<td>3,545</td>
</tr>
<tr>
<td>Response rate</td>
<td>42%</td>
<td>64%</td>
<td>39%</td>
<td>32%</td>
<td>42%</td>
</tr>
<tr>
<td>Contact rate</td>
<td>72%</td>
<td>78%</td>
<td>60%</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>Co-operation rate</td>
<td>58%</td>
<td>82%</td>
<td>64%</td>
<td>44%</td>
<td>58%</td>
</tr>
<tr>
<td>Weighted response rate</td>
<td>44%</td>
<td>81%</td>
<td>69%</td>
<td>52%</td>
<td>45%</td>
</tr>
</tbody>
</table>

QUESTIONNAIRE DEVELOPMENT

The questionnaire design was based on the key information that NZFSA wanted to obtain. Questions were made as similar as possible to those used in overseas studies, to allow for comparisons (The Secretariat of the Australian Division of World Action on Salt and Health, 2007; correspondence with Victoria Targett, Salt Reduction Strategy Team, Nutrition Division, Food Standards Agency, UK).

The questions were pre-tested to ensure they were working as intended. This included pre-testing with persons for whom English was not their first language.
WEIGHTING

For analyses, the sample sizes were weighted (post stratification) to reflect the proportions in the total population by age (18-29, 30-39, 40-54, and 55+ years) within gender within ethnicity (Māori, Pacific, Asian, Other), as identified in the 2006 Census. This split created 32 cells, with each cell being weighted to the correct proportion in the population aged 18+ years.

The weights were calculated using the formula below.

The weight assigned to the $i^{th}$ respondent in the $h^{th}$ stratum (or weighting cells) was equal to:

$$w_{hi} = \frac{1}{\sum_{\text{respondent } h, \text{ stratum}} \frac{1}{\pi_{hi}} W_h}$$

where $\pi_{hi}$ denoted the selection probability of that respondent and $W_h$ denoted the proportion of respondents in the $h^{th}$ stratum from the Statistics New Zealand 2006 Census data.

No adjustment was made for the probability of selection. This process is undertaken to adjust for people in larger households having less chance of selection. This would mean that a person in a four person household would be given four times the weighting of a person in a one person household. Phoenix Research has not included this adjustment believing there are good arguments against it. The person who is randomly selected in the household cannot be assumed to be representative of other persons in the household. They may well differ on key variables such as gender and age. Phoenix Research believe that these adjustments are likely to have an undue emphasis on the results and therefore do not usually undertake this adjustment unless clients specifically request it.

DATA ANALYSIS

The data was analysed using Toolbox software supplied by InfoTools (www.infotools.co.nz), which is widely used by market research companies internationally.

In InfoTools software the statistical tests are done on the weighted figures and the unweighted data provides the input on degrees of freedom and sample size.

Chi-squared tests are used for comparisons of counts, and t-tests are used for comparisons of continuous variables (averages or values such as volume data for market share). All tests are two tailed. For testing differences in proportions, the test is equivalent to a Z test on proportions. The Chi-squared tests are all corrected for continuity using Cochran’s formula. The developer of the InfoTools software noted that they have based their analysis methods on those detailed in Zar (1984).

ETHICAL ISSUES

NZFSA did not require this research to go through any formal ethics approval process.

SAMPLE COMPOSITION

While all the percentages shown in the tables in the report are based on weighted data, the numbers of people interviewed (often shown in brackets in table and figure titles) are unweighted, to show the number who were actually interviewed.
The ethnic composition of the total sample is shown in Table 3.

Table 3: Comparison of raw and weighted sample sizes by ethnicity

<table>
<thead>
<tr>
<th>ETHNICITY</th>
<th>Raw (unweighted)</th>
<th>%</th>
<th>Weighted sample size</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Māori</td>
<td>122</td>
<td>12</td>
<td>110</td>
<td>11</td>
</tr>
<tr>
<td>Pacific peoples</td>
<td>58</td>
<td>6</td>
<td>49</td>
<td>5</td>
</tr>
<tr>
<td>Asian peoples</td>
<td>109</td>
<td>11</td>
<td>85</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>768</td>
<td>77</td>
<td>810</td>
<td>81</td>
</tr>
<tr>
<td>Total</td>
<td>1,000</td>
<td>100</td>
<td>1,000</td>
<td>100</td>
</tr>
</tbody>
</table>

Footnote: Columns sum to more than the total because with Total Response ethnicity, one person may be counted as belonging to more than one ethnic group.

Table 4 presents the gender and age composition of the total sample, Māori, Pacific and Asian samples (all persons in these ethnic groups, not just those from the booster samples).

Table 4: Comparison of raw and weighted demographic characteristics

<table>
<thead>
<tr>
<th>SAMPLE DEMOGRAPHIC CHARACTERISTICS</th>
<th>TOTAL SAMPLE Raw</th>
<th>Weighted</th>
<th>MĀORI SAMPLE Raw</th>
<th>Weighted</th>
<th>PACIFIC SAMPLE Raw</th>
<th>Weighted</th>
<th>ASIAN SAMPLE Raw</th>
<th>Weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48</td>
<td>48</td>
<td>43</td>
<td>47</td>
<td>50</td>
<td>45</td>
<td>53</td>
<td>45</td>
</tr>
<tr>
<td>Female</td>
<td>52</td>
<td>52</td>
<td>57</td>
<td>53</td>
<td>50</td>
<td>55</td>
<td>47</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>AGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29 years</td>
<td>10</td>
<td>21</td>
<td>15</td>
<td>32</td>
<td>33</td>
<td>35</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>30-39 years</td>
<td>17</td>
<td>19</td>
<td>30</td>
<td>24</td>
<td>31</td>
<td>24</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>40-54 years</td>
<td>30</td>
<td>29</td>
<td>30</td>
<td>28</td>
<td>22</td>
<td>25</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>55+ years</td>
<td>42</td>
<td>30</td>
<td>25</td>
<td>17</td>
<td>14</td>
<td>16</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**REPORTING**

For each question, the total sample data is presented first, usually with a graph or table included. This is then followed by the demographic analyses, reporting groups that differed significantly from the total sample (at the 95% confidence level). Where there were only two categories (i.e. male/female and Māori/non-Māori) the comparisons were made between the two groups rather than with the total sample.

The demographic groupings used in the analyses were:

- Gender: male or female
- Age: 18-29, 30-39, 40-54, and 55+ years
- Ethnicity: Māori or non-Māori
- Education: No tertiary, Technical/trade qualification or University degree
- Level of deprivation (NZDep06): Low (1-3), Medium (4-7), or High (8-10) (Note that this information was not available for the Pacific booster sample, so they were excluded from these analyses)

- Meal preparer/grocery shopper: with children under 16 years, or without children under 16 years (As most people who were meal preparers were also grocery shoppers and vice versa, they were combined for analysis purposes).

As agreed with the client, this report does not seek to draw conclusions from the data. NZFSA intend to undertake this process and also to examine how these findings compare with other similar overseas studies. It will be important to bear in mind the possible impact of methodological differences in the data collection when making these comparisons.
4 RESULTS

4.1 KNOWLEDGE

RELATIONSHIP BETWEEN SODIUM AND SALT

Respondents were asked, "Which of the following statements best describe the relationship between salt and sodium?" The three answer options, which were read out, are shown in Figure 1. Thirty-six percent gave the correct answer, that salt contains sodium. Almost as many (32%) thought they are exactly the same, while a quarter did not know. Six percent thought sodium contained salt.

Figure 1: Relationship between salt and sodium (n=1,000)

- Correct mention that salt contains sodium increased with the level of education, from 26% among those with no tertiary education up to 54% among those with university degrees.
- Those aged 55+ years had lower mention of the correct answer than the total sample (29% vs. 36%) and were more likely to not know (33% vs. 25%).
- Those who identified as Māori were more likely to not know than non-Māori (34% vs. 25%).
- Those who were not a food preparer nor a shopper were less likely to say that salt and sodium are exactly the same (18% vs. 32%).
- Those living in Auckland were more likely than the total sample to give the correct response that salt contains sodium (43% vs. 36%), while those living in the Lower North Island (excluding Wellington) were less likely to do so (27% vs. 36%).
MAIN SOURCE OF SALT IN DIET

Respondents were asked, "Which one of the following do you think is the main source of salt in the diet of New Zealanders?" and they were read the three options shown in Figure 2. Just over three quarters knew that it was "salt in processed foods such as breads, breakfast cereals, tinned foods and takeaways".

Figure 2: Main source of salt in diet (n=1,000)

- Correct awareness was higher among those aged 18-29 years (82% vs. 77%).
- Māori were more likely to say that it was salt added during cooking or at the table than were non-Māori (34% vs. 17%) and were more likely not to know the main source (6% vs. 2%).
- Correct awareness increased with level of education; from 68% among those with no tertiary education to 88% for those with university degrees.
4.2 AWARENESS

RECOMMENDED MAXIMUM AMOUNT

Figure 3 illustrates that a quarter knew that the recommended maximum daily salt intake was 6 grams or one teaspoonful (no answer options were provided). Twenty-one percent thought it was less and 18% more, while just over a third did not know. This 35% who did not know included 3% who gave some other response that was not grams or teaspoonfuls, so has been treated as part of the ‘don't know’ response. The full range of responses is shown in Table 5.

Figure 3: Knowledge of recommended amount of salt (n=1,000)
Table 5: Recommended daily intake of salt as reported by respondents (n=1,000)

<table>
<thead>
<tr>
<th>RECOMMENDED DAILY INTAKE OF SALT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 gram</td>
<td>1</td>
</tr>
<tr>
<td>1 gram</td>
<td>4</td>
</tr>
<tr>
<td>2 grams</td>
<td>1</td>
</tr>
<tr>
<td>3 grams (1/2 teaspoonful)</td>
<td>11</td>
</tr>
<tr>
<td>4 grams</td>
<td>1</td>
</tr>
<tr>
<td>5 grams</td>
<td>4</td>
</tr>
<tr>
<td>6 grams (1 teaspoonful)</td>
<td>25</td>
</tr>
<tr>
<td>7-9 grams</td>
<td>1</td>
</tr>
<tr>
<td>10-15 grams (2 teaspoons)</td>
<td>11</td>
</tr>
<tr>
<td>16-20 grams (3 teaspoons)</td>
<td>2</td>
</tr>
<tr>
<td>More than 20 grams (4+ teaspoons)</td>
<td>3</td>
</tr>
<tr>
<td>Something else</td>
<td>3</td>
</tr>
<tr>
<td>Don't know</td>
<td>33</td>
</tr>
</tbody>
</table>

- Those who thought it was a lower amount increased with age; from 10% for 18-29 years to 28% for 55+ years.
- The same trend was evident for those who did not know; from 26% for the youngest up to 43% for the oldest.
- The opposite trend was evident for those who thought it was a higher amount than half a teaspoonful; from 37% for the youngest down to 7% for the oldest.
- Those who were not meal preparers or shoppers were more likely to specify levels above that recommended (28% vs. 18% total sample).

DAILY INTAKE COMPARED WITH RECOMMENDED MAXIMUM

Respondents were asked, "How do you think your daily intake of salt is likely to compare with the maximum daily amount?" and were read the options shown in Table 6. Almost half (46%) thought they were consuming less than the maximum. Just under a third (31%) thought they were about the maximum and 15% thought they were consuming more than the maximum.

Table 6 shows how these figures differed depending on the respondents' awareness of the maximum daily intake. Those who thought the maximum was higher than it is, were more likely to think they were consuming above the maximum (21% vs. 15% for the total sample), or at about the maximum (42% vs. 31%). The other group to show significant differences were those who did not know the recommended maximum. As might be expected, they were also more likely than the total sample to not know how their current intake compared with the maximum (14% vs. 8%). They were correspondingly less likely to say it was more than the maximum (10% vs. 15%) or about the maximum (25% vs. 31%). Over half (51%) of this group thought they were consuming less than the maximum.
Table 6: Individuals perception of daily intake of salt compared with awareness of the recommended maximum

<table>
<thead>
<tr>
<th>DAILY INTAKE</th>
<th>AWARENESS OF RECOMMENDED MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (n=1,000)</td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>More than maximum recommended</td>
<td>15%</td>
</tr>
<tr>
<td>About maximum recommended</td>
<td>31%</td>
</tr>
<tr>
<td>Less than maximum recommended</td>
<td>46%</td>
</tr>
<tr>
<td>Don't know</td>
<td>8%</td>
</tr>
<tr>
<td>Refused</td>
<td>0%</td>
</tr>
</tbody>
</table>

* Indicates significant differences from Total Sample at 95% level
** Indicates significant differences from Total Sample at 99% level

- The proportion who thought they were consuming at about the maximum decreased with age; from 43% among 18-29 years down to 24% among 55+ years.
- A similar trend was apparent for those who thought they were consuming more than the maximum; down from 20% among 18-29 years to 10% among 55+ years.
- The opposite trend was apparent for those who thought they were consuming less than the recommended amount; from 34% among the youngest age group up to 52% among the oldest. Those who did not know also increased with age; from 4% up to 13%.
- Māori were more likely to say they were consuming less salt than the maximum recommended (56% vs. 45% for non-Māori) and more likely to not know (12% vs. 7%).
- Those people with a university degree were less likely to say they were consuming less than the maximum (40% vs. 46%).
4.3 BEHAVIOUR CHANGE

REDUCING SALT

Exactly half the respondents agreed they were cutting down on the amount of salt they eat.

The following groups were more likely to be cutting down:

- Males (53% vs. 47% for females)
- 40-54 years (57% vs. 50%).

The following groups were more likely NOT to be cutting down:

- 18-29 years (63% vs. 50%).

REASONS FOR REDUCING

Those who said they were cutting down gave the reasons shown in Table 7. These were unprompted responses (i.e. not read out to respondents) and all responses with at least 2% mentions are included. The most common reason was because it is bad for you (34%). General health reasons, with no specific health issue being mentioned, was the next most frequent response (29%). The next two highest mentions did relate to specific health issues, with 20% mentioning reducing the risk of heart attack/stroke and 17% to lower blood pressure. Responses that indicated the impact of interventions included 7% who said they were told by a doctor or other health professional, 6% who said it was a result of an article or advertisement they had seen, and 5% where a family member had been told to reduce their salt intake.
Table 7: Reasons respondents gave for cutting down on salt (n=534)

<table>
<thead>
<tr>
<th>REASONS FOR CUTTING DOWN ON SALT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because it’s bad for you/ body</td>
<td>34</td>
</tr>
<tr>
<td>For general health reasons</td>
<td>29</td>
</tr>
<tr>
<td>Reduce risk of heart attack/ stroke</td>
<td>20</td>
</tr>
<tr>
<td>To help lower my blood pressure</td>
<td>17</td>
</tr>
<tr>
<td>Trying to eat more healthily</td>
<td>12</td>
</tr>
<tr>
<td>Have health problems/ diabetic</td>
<td>11</td>
</tr>
<tr>
<td>Don’t need a lot but need a little</td>
<td>10</td>
</tr>
<tr>
<td>Told by doctor/ health professional</td>
<td>7</td>
</tr>
<tr>
<td>Manufactured food has a lot of salt/ more salt</td>
<td>6</td>
</tr>
<tr>
<td>Saw an advertisement/article on TV</td>
<td>6</td>
</tr>
<tr>
<td>Don’t like the taste/ changed with age</td>
<td>5</td>
</tr>
<tr>
<td>We have too much salt</td>
<td>5</td>
</tr>
<tr>
<td>Family member has been told to cut down</td>
<td>5</td>
</tr>
<tr>
<td>Because of age/ elderly</td>
<td>5</td>
</tr>
<tr>
<td>To lower cholesterol</td>
<td>4</td>
</tr>
<tr>
<td>Because I am on a diet/ lose weight</td>
<td>4</td>
</tr>
<tr>
<td>To keep the family healthy</td>
<td>3</td>
</tr>
<tr>
<td>Don’t need any salt in your food</td>
<td>3</td>
</tr>
<tr>
<td>Family history of health problems</td>
<td>3</td>
</tr>
<tr>
<td>Encourage kids re healthy eating</td>
<td>2</td>
</tr>
</tbody>
</table>

- Females were more likely than males to say they were reducing their salt intake for general health reasons (34% vs. 23%) and not liking the taste or their tastes have changed with age (7% vs. 2%).
- Males were more likely to say they were reducing their salt intake to try to eat more healthily (17% vs. 8% females), and because they were having health problems or were diabetic (14% vs. 8%).
- People 55+ years were more likely to reduce their salt intake to help lower their blood pressure (28% vs. 17%) and because they have health problems or diabetes (21% vs. 11%). They were less likely to reduce to try to eat more healthily (6% vs. 12%).
- People 30-39 years were more likely to reduce their salt intake to try to eat more healthily (21% vs. 12%) and to keep the family healthy (12% vs. 3%), but were less likely to reduce due to health problems or diabetes (3% vs. 11%).
- Those 18-29 years were more likely to reduce their salt intake because a family member has been told to (14% vs. 5%) or because they have too much salt (17% vs. 5%). They were less likely to do so to help lower their blood pressure (4% vs. 17%).
- Māori were more likely to say they are trying to eat more healthily (33% vs. 9% non-Māori), and that we have too much salt (15% vs. 3% non-Māori).
- People with a university degree were more likely to cut down on salt for general health reasons (39% vs. 29%).
- Those living in the Lower North Island (excluding Wellington) were more likely to say they had been told by a doctor or a health professional to reduce their salt intake (15% vs. 7%).
• Those living in Wellington were more likely to say they were doing so to keep the family healthy (11% vs. 3%).

**REASONS FOR NOT REDUCING**

The main reason given for not cutting down on salt intake was because respondents believed they did not have too much salt in their diet (42%). The next highest response was that there was no particular reason/they had never thought about it (16%). Twelve percent mentioned liking the taste/flavour while 9% mentioned liking salt in their food and this was in part because it gives it flavour. There were 12% who said they were not concerned about it. Nine percent said they did not have health issues or that they were healthy enough and 5% said they eat a healthy diet already.

There were 7% who said they were not cutting back because they had already done so recently. Eight percent said they did not add salt to their food and 4% said they did not eat food high in salt. Two percent said they did not know they should cut down.

**Table 8: Reasons respondents gave for not cutting down on salt (n=466)**

<table>
<thead>
<tr>
<th>REASONS FOR NOT CUTTING DOWN ON SALT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't have too much salt in diet</td>
<td>42</td>
</tr>
<tr>
<td>No particular reason/not thought about it</td>
<td>16</td>
</tr>
<tr>
<td>Like the taste/flavour of salt</td>
<td>12</td>
</tr>
<tr>
<td>I'm not concerned by it</td>
<td>12</td>
</tr>
<tr>
<td>Like salt in my food/flavour</td>
<td>9</td>
</tr>
<tr>
<td>Don't have health issues/healthy</td>
<td>9</td>
</tr>
<tr>
<td>I don't add salt to my food</td>
<td>8</td>
</tr>
<tr>
<td>Already recently cut back</td>
<td>7</td>
</tr>
<tr>
<td>Need to eat salt to stay healthy</td>
<td>7</td>
</tr>
<tr>
<td>Eat a healthy diet already</td>
<td>5</td>
</tr>
<tr>
<td>I don't eat food high in salt</td>
<td>4</td>
</tr>
<tr>
<td>Need salt for iodine/thyroid</td>
<td>3</td>
</tr>
<tr>
<td>I didn't know I should</td>
<td>2</td>
</tr>
<tr>
<td>Don't know</td>
<td>1</td>
</tr>
</tbody>
</table>

• Females were more likely than males to say that they were not reducing their salt intake because they do not have any health issues (12% vs. 6%).

• Those 55+ years were more likely to say that they had recently cut back (12% vs. 7%).

• Māori were more likely to say they had not reduced their salt intake because they like the taste or flavour of salt (24% vs. 11% non-Māori).

• People in high deprivation areas were more likely to say they are not reducing their salt intake because they like the taste or flavour of salt (22% vs. 12%).

Note that the percentages in different categories cannot be summed, as the same people might be in more than one of the categories.
• Those in low deprivation areas were more likely to say they do not have any health issues (15% vs. 10%).
• Those living in the Upper North Island (excluding Auckland) were more likely to say that there was no particular reason that they were not reducing their salt intake (27% vs. 16%).
• Those living in the Lower North Island (excluding Wellington) were more likely to say they had not been told to reduce their salt intake (6% vs. 1%), or that they were not concerned about food that already has salt in it (8% vs. 1%) and less likely to say there was no reason (2% vs. 16%).

**METHODS OF REDUCING**

Respondents who were cutting down on salt were asked, "You say that you are trying to cut down on salt. How are you doing this?" They were read out the list shown in Figure 4, that is in standard type. The parts in italics have been added, based on other answers respondents made. It can be seen that most people were using a range of strategies, with six of the seven items being mentioned by at least two thirds of those who were cutting down. The exception was choosing foods lower in salt when eating out (45%).

Although respondents could give other reasons as well, none reached 2%, once those responses shown in italics in the graph had been added into the categories that were read out.

**Figure 4: How respondents reported cutting down on salt intake (n=534)**

- Eating less processed food (such as ready meals, tinned foods, etc) / don't buy processed foods: 82%
- Choosing foods lower in salt when eating at home: 80%
- Not adding salt to food at the table/ when eating / adding less salt at table/ when eating: 76%
- Choosing lower salt foods/ don't eat foods high in salt/ stopped buying food with high sodium content: 76%
- Checking the labelling on foods/ look for the Heart Foundation tick: 67%
- Not adding salt to food when cooking/ adding less salt when cooking: 66%
- Choosing foods lower in salt when eating out: 45%

• Females were more likely than males to say they are reducing their salt intake by eating or buying less processed foods (87% vs. 76%), choosing foods lower in salt at home (84% vs. 74%), or adding no or less salt when cooking (69% vs. 61%).
• People 55+ years were less likely to say they are cutting back on salt by adding no or less salt when cooking (55% vs. 66%).

• Māori were less likely than non-Māori to say they are reducing their salt intake by checking labelling on food (51% vs. 69%).

• People with a university degree were more likely to say they are cutting back on salt by choosing, eating, or buying lower salt foods (86% vs. 76%).

• Those who had a technical or trade qualification were less likely to say they are choosing, eating or buying lower salt foods than the total sample (68% vs. 76%).

• Those in high deprivation areas were more likely to say they are eating less processed foods (91% vs. 82%).

• People who prepare food or shop and have children under 16 years were more likely to say they are choosing foods lower in salt at home (86% vs. 80%) or adding no or less salt when cooking (74% vs. 66%).

• Those who prepare or shop but with no children under 16 years at home were less likely to say they are adding no or less salt when cooking (60% vs. 66%).

• People who do not prepare food or shop were less likely to say they are checking labels on foods (44% vs. 67%).

• Those living in Auckland were more likely to say that they are choosing foods that are lower in salt when eating out (54% vs. 45%).
4.4 MOTIVATION TO CHANGE

CONCERN WITH SALT

Respondents were asked, "How concerned are you about the following aspects of the food you eat? For each I would like you to tell me whether you are: Not concerned, a little concerned, quite concerned or very concerned." They were then asked about each of the five items listed in Figure 5, which shows the proportions who were quite or very concerned. Compared with these other things, people were least concerned about salt.

Figure 5: Concern with salt intake compared with other less healthy food intake (n=1,000)

The level of concern with salt was consistent across the demographics. When considering the proportion who were "very" or "quite" concerned about salt, the only demographic group that differed significantly from the total sample were 18-29 years (25% vs. 37%).
INTEREST IN REDUCING

Twenty-seven percent were "quite" or "very" interested in doing more than they currently do to reduce the amount of salt they or their household eats. (They were read the list of options shown in Figure 6).

Figure 6: Respondents' interest in doing more to reduce their salt intake (n=1,000)

Those who were "very" or "quite" interested in doing more to reduce their salt intake were:
- Those who have a university degree (34% vs. 27%)
- Those living in Auckland (34% vs. 27%).
4.5 USE OF FOOD LABELLING

EVER LOOK AT PACKAGING

Respondents were asked, "Do you ever look at the packaging on the food you buy to find out about the salt content?" If they said "Yes", the interviewer probed to identify whether it was "always" or "sometimes".

Half said they did look at the packaging, which included 14% who said they always did.

Figure 7: Whether respondents looked at the salt content on packaging (n=1,000)

- Females were more likely than males to say they "sometimes" looked at the salt content on packaging (39% vs. 30%) while males were more likely to say they do not look (55% vs. 46%).
- People 30-39 years were less likely to say they "always" look at the packaging (9% vs. 14% total sample).
- "Always" and "sometimes" viewing the packaging increased with education level. "Always" increased from 12% to 19% and "sometimes" from 29% to 40%.
INFORMATION USED ON PACKAGING

Those who did look at the packaging were asked, "What information on the food package do you use to determine how much salt is in the product?"

As shown in the Table 9, the most frequent mentions related to sodium rather than salt. While these responses were unprompted, some pre-coded options were provided for interviewers to code and any other responses were specified by the interviewers. The only pre-coded option relating to sodium was "sodium level on nutrition information panel". It is likely that this response would have been coded for some mentions of "sodium" that did not specifically mention the nutrition information panel. This category was the dominant response, being mentioned by 58% of those who said they looked at least sometimes at the food labelling.

There were no significant differences in responses between those who said they "always" looked at the packaging information and those who said they "sometimes" did.

Table 9: Packaging information used to determine salt content (n=492)

<table>
<thead>
<tr>
<th>PACKAGING INFORMATION USED TO DETERMINE SALT CONTENT</th>
<th>Sample using food labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total sodium mentions</strong></td>
<td>59</td>
</tr>
<tr>
<td>Sodium level on nutrition information panel</td>
<td>58</td>
</tr>
<tr>
<td>The ingredients list</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total salt mentions</strong></td>
<td>9</td>
</tr>
<tr>
<td>Claims for low/reduced salt on pack</td>
<td>8</td>
</tr>
<tr>
<td>Other mentions of salt</td>
<td>6</td>
</tr>
<tr>
<td>Information on pack (unspecified/unclear)</td>
<td>11</td>
</tr>
<tr>
<td>Don't know</td>
<td>5</td>
</tr>
</tbody>
</table>

- Those 55+ years were less likely to say that the ingredients list is how they determine how much salt is in a product (19% vs. 26%).
- Māori were less likely to use the sodium on the nutrition information panel (42% vs. 60% non-Māori).
- People with no tertiary education were more likely to say that they did not know what information they used (10% vs. 5%).
- People who were not food preparers or shoppers were less likely to say to they use the sodium level on the nutrition information panel (40% vs. 58%).
- Those living in the Lower North Island (excluding Wellington) were more likely to say that they look for claims for low/reduced salt on the pack (16% vs. 8%).
HEALTH PROBLEMS MADE WORSE BY SALT

Respondents were asked, "Which, if any, of the following health problems can be made worse by eating too much salt?" The list shown in the graph was read out. It can be seen that there was high awareness of heart attack, high blood pressure and stroke. The most correct responses are indicated by an asterix (*) in the graph. There was low awareness of two of the most correct options: osteoporosis (18%) and stomach cancer (26%). There were two of the less correct responses that had relatively high mention: fluid retention (65%) and headaches (42%).

Figure 8: Knowledge of which health conditions are aggravated by eating too much salt (n=1,000)

- Females were more likely than males to name the following health problems made worse by salt: fluid retention (76% vs. 55%), kidney disease (64% vs. 51%), stomach cancer (28% vs. 23%), memory/concentration problems (28% vs. 22%), and asthma (14% vs. 10%).
- People 18-29 years were more likely to name headaches (54% vs. 41%), stomach cancer (39% vs. 26%) and less likely to name fluid retention (53% vs. 66%).
- Those with no tertiary education were less likely to name the following health problems made worse by salt consumption: fluid retention (59% vs. 66%), kidney disease (51% vs. 58%), and headaches (33% vs. 41%).
- People with a university degree were more likely to name high blood pressure (92% vs. 83%), heart attack (91% vs. 86%), fluid retention (80% vs. 66%), stroke (79% vs. 72%), kidney disease (70% vs. 58%), and headaches (53% vs. 41%).
• People in high deprivation areas were more likely to name osteoporosis (22% vs. 17%). Those in low deprivation levels were less likely to name osteoporosis (12% vs. 17%).

• People who did not shop or prepare meals were less likely to name stroke (62% vs. 72%), fluid retention (46% vs. 66%) and headaches (31% vs. 41%).

• Those living in Auckland were more likely to name high blood pressure (90% vs. 83%), stroke (80% vs. 72%), kidney disease (67% vs. 58%), Meniere’s disease (16% vs. 10%) and asthma (16% vs. 12%). Those living in the Upper North Island (excluding Auckland) were less likely to name high blood pressure (75% vs. 83%), stroke (65% vs. 72%), fluid retention (58% vs. 66%), kidney disease (48% vs. 58%) and Meniere’s disease (6% vs. 10%). Those living in the South Island were less likely to name asthma (7% vs. 12%).
4.7 MARKET SEGMENTS

The questions on whether people are currently cutting down and whether they are interested in doing more to reduce the amount of salt they or their household eat were combined to identify four market segments. Any future communications or educational efforts are best put into Segments 1 and 3, who are most interested in changing their sodium intake. Those who are already displaying change (Segment 1) are the most likely to respond, but those who are not currently reducing but are interested in doing so (Segment 3) should also be a priority.

The following outlines how each segment differs from the total sample. While Segment 1 has a lot of defining characteristics, unfortunately Segment 3 has little to distinguish it from the total sample.

Segment 1: Reducing and interest in doing more (20%)

- Less likely to be 18-29 years (14% vs. 21%)
- More likely to have university degree (38% vs. 30%) and less likely to have no tertiary qualifications (33% vs. 43%)
- More likely to live in Auckland (42% vs. 33%), and less likely to live in the South Island (13% vs. 20%).
- Less likely to live in a low deprivation area (28% vs. 37%)
- More likely to be quite/very concerned about salt (66% vs. 37%)
- More likely to be cutting down on salt to help lower blood pressure (25% vs. 17%)
- Less likely to be cutting down on salt because they do not like the taste (1% vs. 5%)
- More likely to be cutting down on salt by choosing foods lower in salt at home (87% vs. 80%), checking food labels (75% vs. 67%), or choosing foods with lower salt content (54% vs. 45%)
- Less likely to say they do not know the relationship between salt and sodium (19% vs. 26%)
- More likely to say their salt intake is less than the maximum recommended (54% vs. 46%)
- More likely to correctly say salt in processed food is the main source of salt in the diet of New Zealanders (86% vs. 77%) and less likely to say that it is salt added during cooking or at the table (9% vs. 18%)
- More likely to say that salt makes health conditions worse, specifically:
  - High blood pressure (91% vs. 83%)
  - Stroke (86% vs. 72%)
  - Osteoporosis (23% vs. 18%)
  - Fluid retention (77% vs. 66%)
  - Heart attack (95% vs. 86%)
  - Stomach cancer (34% vs. 25%)
  - Kidney disease (73% vs. 58%)
  - Memory/concentration problems (34% vs. 25%)
  - Asthma (22% vs. 12%)
  - Headaches (53% vs. 41%)
- More likely to say they "always" look at the salt content on packaging (24% vs. 14%) or "sometimes" look (52% vs. 35%).
Segment 2: Reducing and little/no interest in doing more (30%)
- More likely to say their salt intake is less than the maximum recommended (54% vs. 46%)
- Less likely to be cutting down on salt to help lower blood pressure (12% vs. 17%)
- More likely to say that salt makes high blood pressure worse (91% vs. 83%)
- More likely to “sometimes” look at the salt content on packaging (41% vs. 35%).

Segment 3: Not reducing but interest in doing more (7%)
- More likely to be quite/very concerned about salt (53% vs. 37%)
- More likely to give as a reason for not cutting down on salt that they need salt for iodine – for thyroid (10% vs. 3%), and it is due to habit/ always had salt in diet (9% vs. 2%).

Segment 4: Not reducing and little/no interest in doing more (42%)
- More likely to be a little/not concerned about salt (82% vs. 63%)
- Less likely to say that salt and sodium are exactly the same (26% vs. 32%)
- Less likely to say that salt makes the following health conditions worse:
  - High blood pressure (75% vs. 83%)
  - Stroke (64% vs. 72%)
  - Fluid retention (59% vs. 66%)
  - Heart attack (79% vs. 86%)
  - Kidney disease (51% vs. 58%)
  - Memory/concentration problems (20% vs. 25%)
  - Asthma (8% vs. 12%)
- More likely to say they do not look at the salt content on packaging (69% vs. 50%).
BIBLIOGRAPHY


Correspondence with Victoria Targett, Salt Reduction Strategy Team, Nutrition Division, Food Standards Agency, UK


APPENDIX: QUESTIONNAIRE

Q99LOC
1. Auckland
2. Wellington
3. Christchurch
4. Other Upper North Island
5. Other Lower North Island
6. Other South Island

USE Q0LOC
AUTO

Q99SEL SELECTION TYPE
"Q99SEL. _Interviewer note: You must code below whether you_ _are going to be asking for any adult 18+ or males only._

       _Note: This is only to allow shopper etc questions to_ _come up, it will not alter wording in intro screen_.
"
WIDTH=1
1. General adult selection
2. Male only selection

Q99NUM NUMBER OF PEOPLE AGED 15 TO 44

"CONSUMER SALT SURVEY - SEPTEMBER 2010"
"PHONE: [Q0PH] ID/PROJECT NO: 4761
[Q0DAT] [Q0TIM] [Q0HIS]
CALL NUMBER: [Q0CAL]
[Q0COM]"

Good morning/afternoon/evening. I'm [Q0IV] calling on behalf of the New Zealand Food Safety Authority from Phoenix Research.

We are doing a short study to do with food.

We need the help of people aged 18 years and over.

(Have you got a minute now so I can see if there is anyone in your household who may be able to help us? The interview will only take about 10 minutes.)

Could you please tell me how many people aged 18 years and over normally live in this household?"
NUM 0-25
WIDTH=2

Q99DUM
=0

IF 0 IN Q99NUM GO Q99ABRT

Q99DUM2
=0

START
Q99DUM3
=0

IF 1 IN Q99NUM GO Q99ONE
IF >1 IN Q99NUM GO Q99CH
GO Q99CH

Q99ABRT
"Unfortunately we need to speak to people aged 18 years and over, but thank you very much for your time"
BLANK
IF "D" OR "R" IN Q99NUM ABORT "Abort: Don't know/Refused 18+
IF 0 IN Q99NUM ABORT "Abort: No-one aged 18+

Q99ONE
"Is that person you?
  _If same person, code 1_
  _If different person, ask to speak to them and then code 2_
  _Make appointment if necessary_
"
WIDTH=1
1. Person who answered phone
2. Someone other than person who answered the phone

IF 1 IN Q99ONE GO Q99INV
GO Q99INTRO

Q99CH CHOOSE PERSON TO INTERVIEW
"Q99CH. So that we can randomly select one of these people, would I be able to speak to the person who had their birthday last?
  _If same person, code 1_
  _If different person, ask to speak to them and then code 2_
  _Make appointment if necessary_
"
WIDTH=1
1. Person who answered phone
2. Someone other than person who answered the phone

IF 1 IN Q99CH GO Q99INV

Q99INTRO RE-INTRODUCE SURVEY
"Q99INTRO. Good morning/afternoon/evening. I'm [Q0IV] calling on behalf of the New Zealand Food Safety Authority from Phoenix Research.

  We are doing a short study to do with food.
  _Hit enter to continue to invitation to participate screen_
"
PAUSE
=0

Q99INV INVITATION TO PARTICIPATE
"Q99INV. The questions I'd like to ask you about usually take about 10 minutes. Is now a good time to speak with you?
PAUSE
=0

Q99A  GENDER
"Q99A. Code gender_
"
WIDTH=1
1. Male
2. Female

Q99KWO QUOTA GROUP
1. Auckland - Male
2. Auckland - Female
4. Wellington - Male
5. Wellington - Female
7. Christchurch - Male
8. Christchurch - Female
10. Other Upper North Island - Male
11. Other Upper North Island - Female
13. Other Lower North Island - Male
14. Other Lower North Island - Female
16. Other South Island - Male
17. Other South Island - Female

USE Q99A+0 IF 1 IN Q99LOC
USE Q99A+3 IF 2 IN Q99LOC
USE Q99A+6 IF 3 IN Q99LOC
USE Q99A+9 IF 4 IN Q99LOC
USE Q99A+12 IF 5 IN Q99LOC
USE Q99A+15 IF 6 IN Q99LOC
AUTO

CHECK

GO Q99QF
GO Q99M

Q99QF
"Unfortunately this quota is full and we don't need to interview you after all. Thank you very much for your time"
ABORT "Abort: Quota full"

Q99M OFFER OF MĀORI INTERVIEWER
"Q99M. If you are Māori, Pacific or a Chinese person and you would prefer, we can arrange for you to be interviewed by a Māori, Pacific or Chinese interviewer.

   _If R prefers Māori interviewer, code 2_
   _If R prefers Pacific interviewer, code 3_
   _If R prefers Chinese interviewer, code 4_
   _Otherwise code 1 to continue_
"
WIDTH=1
1. Continue interview
2. Would prefer Māori interviewer
3. Would prefer Pacific interviewer
4. Would prefer Chinese interviewer
IF 1 IN Q99M GO Q99CONF
IF 2 IN Q99M GO Q99MAPP
IF 3 IN Q99M GO Q99PAC
IF 4 IN Q99M GO Q99CHI

Q99MAPP ARRANGE FOR MĀORI INTERVIEWER
"Q99MAPP. _Read statement below and arrange callback_

I will need to arrange to have a Māori interviewer call you back when they are available. This is likely to be today/another day (AS APPROPRIATE).

_Hit enter, then make appointment_
"

PAUSE
=0

GO Q99CONF

Q99PAC ARRANGE FOR PACIFIC INTERVIEWER
"Q99PAC. _Read statement below and arrange callback_

I will need to arrange to have a Pacific interviewer call you back when they are available. This is likely to be today/another day (AS APPROPRIATE).

_Hit enter, then make appointment_
"

PAUSE
=0

GO Q99CONF

Q99CHI ARRANGE FOR CHINESE INTERVIEWER
"Q99CHI. _Read statement below and arrange callback_

I will need to arrange to have a Chinese interviewer call you back when they are available. This is likely to be today/another day (AS APPROPRIATE).

_Hit enter, then make appointment_
"

PAUSE
=0

Q99CONF CONFIDENTIALITY
"Q99CONF. Thank you for agreeing to participate.

We can assure you that all your answers will be treated as confidential information. They will be combined with everyone else's for analysis.

For quality control purposes some of my calls will be monitored by my supervisor.
"

PAUSE
=0

Q1 GROCERY SHOPPER
"Q1. Firstly can you please tell me whether you are one of the
people who does the grocery shopping in your household?

WIDTH=1
1. Yes
2. No
3. **Don't know**
4. **Refused**

IF 1 IN Q9NUM AND 1 IN Q9SEL
LOAD "1" NEXT

Q2 ONE OF MAIN MEAL PREPARERS
"Q2. And are you one of the main meal preparers?

WIDTH=1
1. Yes
2. No
3. **Don't know**
4. **Refused**

IF 1 IN Q9NUM AND 1 IN Q9SEL
LOAD "1" NEXT

Q3G GRID GOR Q3
"Q3G. How concerned are you about the following aspects of the food you eat? For each I would like you to tell me whether you are: not concerned, a little concerned, quite concerned or very concerned.

1. Artificial flavours
2. Artificial colours
3. Salt
4. Sugar
5. Saturated fat

FOR Q3

Q3CNT=
GRID

Q3 CONCERN ABOUT ASPECTS OF FOOD
IF 1 IN Q3CNT
"Q3. How concerned are you about _[Q3G]_?

IF >1 IN Q3CNT
"Q3. _[Q3G]_?

(How concerned are you about ...?)

WIDTH=1
1. Not concerned
2. A little concerned
3. Quite concerned
4. Very concerned
5. **Don't know**

Q4 CUTTING DOWN ON SALT
"Q4. This survey is to find out what people know and think about the salt in the food they eat.
Are you cutting down on the amount of salt you eat?

1. Yes
2. No
3. **Don't know**
4. **Refused**

IF 1 IN Q4 GO Q5A
IF 2 IN Q4 GO Q5B
GO Q6

Q5A REASONS CUTTING DOWN ON SALT
"Q5A. You say you are cutting down on salt, why are you doing this?

_Do not read_ _Probe fully_ _Code all that apply_

_Interviewer: code carefully to the pre-coded list_

MR
WIDTH=11
1. I have been told to by a doctor/other health professional
2. Another family member has been told to
3. Because it's bad for you
4. Because I am on a diet
5. To help lower my blood pressure
6. Because I have health problems
7. To reduce my risk of a heart attack or stroke
8. I don't like the taste of it
9. Saw an advert/article about it/something on TV
10. Trying to eat more healthily
11. Other (specify)
12. **Don't know**
13. **Refused**

GO Q5C

Q5B WHY NOT CUTTING DOWN ON SALT
"Q5B. Is there a particular reason why you are not cutting down?

_Do not read_ _Probe fully_ _Code all that apply_

_Interviewer: code carefully to the pre-coded list_

MR
WIDTH=11
1. I recently cut back and don't need to cut back any further
2. I didn't know I should
3. I eat a healthy diet and know I'm not eating too much salt
4. I'm not concerned by it
5. I haven't been told to cut salt from my diet
6. No particular reason, hadn't really thought about it
7. You need to eat salt to stay healthy
8. I don't have too much salt in my diet
9. I don't add salt to my food (anymore)
10. I don't eat food high in salt
11. Other (specify)
----------
Q6 HOW CUTTING DOWN ON SALT
"Q5C. You say that you are trying to cut down on salt. How are you doing this? Is it by ...?

_Read out_  _Code all that apply_

MR
WIDTH=8
RND 7
1. Not adding salt to food when cooking
2. Not adding salt to food at the table/when eating
3. Eating less processed food (such as ready meals, tinned foods etc)
4. Choosing lower salt foods
5. Choosing foods lower in salt when eating at home
6. Choosing foods lower in salt when eating out
7. Checking the labelling on foods
8. Any other ways? (specify)

____________________
9. **None of these**
10. **Don't know**
11. **Refused**

Q6 RELATIONSHIP BETWEEN SALT AND SODIUM
"Q6. Which of the following statements best describes the relationship between salt and sodium?

_Read all and code one only_

WIDTH=1
1. They are exactly the same
2. Salt contains sodium
3. Sodium contains salt
4. **Don't know**

Q7A RECOMMENDED DAILY INTAKE OF SALT
"Q7A. It is recommended that we should eat no more than a certain amount of salt each day. How much salt do you think this is?

_Please answer in either grams or teaspoonfuls._

_Do not read_"
16. Something else
17. **Don't know**

Q7B HOW INTAKE COMPARES WITH MAXIMUM DAILY AMOUNT
"Q7B. How do you think your daily intake of salt is likely to compare with the maximum daily amount?
Is it likely to be ..."

_Read_

"WIDTH=1
1. More than the maximum recommended
2. About the maximum recommended
3. Less than the maximum recommended
4. **Don't know**
5. **Refused**

Q8 MAIN SOURCE OF SALT IN DIET
"Q8. Which one of the following do you think is the main source of salt in the diet of New Zealanders?"

_Read all options and code only one_

"WIDTH=1
1. Salt added during cooking or at the table
2. Salt in processed foods such as breads, breakfast cereals, tinned foods and takeaways
3. Salt from natural sources such as vegetables and fruits
4. **Don't know**

Q9 INTEREST IN DOING MORE TO REDUCE HOUSEHOLD SALT INTAKE
"Q9. How interested are you in doing more than you currently do to reduce the amount of salt you or your household eats?"

_Read_

"1. Not interested in doing any more
2. A little interested
3. Quite interested
4. Very interested
5. **Don't know**
6. **Refused**

Q10G GRID FOR Q10
"Q10G. Which, if any, of the following health problems can be made worse by eating too much salt?"

"1. High Blood Pressure
2. Stroke
3. Osteoporosis
4. Fluid Retention
5. Heart attacks
6. Stomach Cancer
7. Kidney Disease
8. Meniere's Disease
9. Memory/concentration problems
10. Asthma
11. Headaches

FOR Q10
Q10CNT = GRID

Q10 HEALTH PROBLEM MADE WORSE BY TOO MUCH SALT
IF 1 IN Q10CNT
"Q10. Can _[Q10G]_ be made worse by eating too much salt?
"
IF >1 IN Q10CNT
"Q10. And _[Q10G]_?
(Can _[Q10G]_ be made worse by eating too much salt?)
"
WIDTH=1
1. Yes
2. No
3. **Don't know**

Q11A LOOK AT SALT CONTENT ON PACKAGING
"Q11A. Do you ever look at the packaging on the food you buy to find out about the salt content?
_Do not read_

_If yes - probe:_ Is that always or sometimes?
"
WIDTH=1
1. Yes, always
2. Yes, sometimes
3. No
4. Do not buy food, someone else does that for me
5. **Don't know**
6. **Refused**

IF 1-2 IN Q11A GO Q11B
GO Q13

Q11B WHAT INFORMATION ON PACKAGING DO YOU USE
"Q11B. What information on the food package do you use to determine how much salt is in the product?
_Do not read_ _Probe to no_
"

MR
WIDTH=4
1. The sodium level in the nutrition information panel
2. The ingredients list
3. Claims for low or reduced salt on the pack
4. Other (specify)
-------------
5. **Don't know**
6. **Refused**

Q13 EXACT AGE
"Q13. And finally I just need to ask you a few questions about yourself. Could I please ask your age?
_Enter age_
NUM 18-99
WIDTH=2

IF 0 IN Q13 GO Q13B
GO Q14

Q13B AGE RANGE
"Q13B. Instead, would you mind telling me which of the following age groups you come into?"

WIDTH=1
1. 18 to 29 years
2. 30 to 39 years
3. 40 to 54 years
4. 55 years and over
5. **Don't know**
6. **Refused**

Q14 ETHNICITY
"Q14. Which ethnic group or groups do you belong to? _Do not read, code all mentioned_
_They can specify New Zealander if they insist on doing so_

MR
WIDTH=12
1. NZ European/Pakeha
2. NZ Māori
3. Samoan
4. Tongan
5. Niuean
6. Cook Island Māori
7. Fijian
8. Fijian Indian
9. Chinese
10. Indian
11. New Zealander
12. Other (specify)
13. Refused

Q15 HIGHEST EDUCATIONAL QUALIFICATION
"Q15. What is your highest educational qualification? Is it ...

WIDTH=1
1. No Qualification
2. Secondary School Qualification
3. Trade or technical qualification
4. University Degree
5. Other (specify)
6. **Don't know**
7. **Refused**

Q16JMP
=0
IF 1 IN Q1 GO Q16
IF 1 IN Q2 GO Q16
GO Q17

Q16 NUMBER CHILDREN UNDER 16 IN HOUSEHOLD
"Q16. How many, if any, children aged under 16 years are living in this household?
"
NUM 0-20
WIDTH=2

Q17 THANK AND CLOSE
"Q17.
_Read to respondent to thank them for their time_

Many thanks for taking part in this survey. That's all the questions I have.

We very much appreciate your help.
"
PAUSE
=0

Q99END
"

Finally, I'd just like to remind you that I'm _[Q0IV]_ from PHOENIX Research, calling on behalf of The New Zealand Food Safety Authority. If you have any queries at all about this survey, please feel free to phone PHOENIX Research during office hours on 0800 2 PHOENIX. That is the same as 0800 274 636.

Thanks again for your time.

BLANK

Q99IQS IQS STATEMENT
"Q99IQS.
_Interviewer note: Please answer Yes if you agree_ _with the statement below regarding this interview_ _or No if you do not._

I hereby certify that this interview I administered was conducted in accordance with the Market Research Society's Code of Practice.
"
WIDTH=1
1. Yes
2. No

IF 1 IN Q99IQS GO Q99END2

Q99IQSR
"Q99IQSR. _Interviewer note: Please state why you don't feel the interview_ _was carried out according to the Code of Practice and what was_ _the difficulty/problem with the interview"
WIDTH=500

Q99END2
"Q99END2. _Hit enter to send interview through_
BLANK

Q0QUO
1. 124 Auckland - Male
2. 135 Auckland - Female
4. 40 Wellington - Male
5. 43 Wellington - Female
7. 38 Christchurch - Male
8. 42 Christchurch - Female
10. 97 Other Upper North Island - Male
11. 105 Other Upper North Island - Female
13. 64 Other Lower North Island - Male
14. 70 Other Lower North Island - Female
16. 69 Other South Island - Male
17. 73 Other South Island - Female

USE Q99A+0 IF 1 IN Q99LOC
USE Q99A+3 IF 2 IN Q99LOC
USE Q99A+6 IF 3 IN Q99LOC
USE Q99A+9 IF 4 IN Q99LOC
USE Q99A+12 IF 5 IN Q99LOC
USE Q99A+15 IF 6 IN Q99LOC