

# Caregivers' beliefs about the risk of improper infant formula preparation and their understanding of infant formula preparation risks

New Zealand Food Safety Paper No: 2020/05

ISBN No: 978-1-99-001774-2 (online)

ISSN No: 2624-022X (online)

**March 2020**

## **Disclaimer**

While every effort has been made to ensure the information in this publication is accurate, the Ministry for Primary Industries does not accept any responsibility or liability for error of fact, omission, interpretation or opinion that may be present, nor for the consequences of any decisions based on this information.

This publication is available on the Ministry for Primary Industries website at <http://www.mpi.govt.nz/news-and-resources/publications/>

**© Crown Copyright - Ministry for Primary Industries**

# New Zealand Food Safety

Haumaru Kai Aotearoa

---



Caregivers' beliefs about the risk of improper infant formula preparation and their understanding of infant formula preparation risks

---

**December 2019**



## **Confidential**

---

Caregivers' beliefs about the risks of improper infant formula preparation and their understanding of infant formula preparation instructions

PREPARED FOR      Ministry for Primary Industries  
PREPARED BY      Research New Zealand  
CONTACT DETAILS    Phone 04 499 3088  
                                  [www.researchnz.com](http://www.researchnz.com)

PROJECT NUMBER    #5089



# Contents

---

<b>1.0</b>	<b>Executive summary</b>	<b>4</b>
1.1	Key findings	5
1.2	Conclusions	10
<b>2.0</b>	<b>Introduction</b>	<b>12</b>
2.1	Purpose and information objectives of survey	12
2.1.1	Purpose	12
2.1.2	Information objectives	12
2.2	Survey methodology	13
2.2.1	Respondent definition	13
2.2.2	Survey questionnaire	13
2.2.3	Survey implementation	15
<b>3.0</b>	<b>Caregivers' current beliefs and behaviour regarding the preparation of infant formula</b>	<b>21</b>
3.1	Caregivers state they are highly confident with regard to the preparation of infant formula	21
3.2	Caregivers' awareness of the risks of improper preparation and storage of infant formula is low	23
3.3	Current practices with regard to the preparation and storage of infant formula are less than ideal	26
<b>4.0</b>	<b>Perceived importance and use of preparation and storage instructions and the feeding guide</b>	<b>31</b>
4.1	Caregivers place high importance on following the preparation and storage instructions	31
4.2	Despite their views on importance, caregivers do not regularly refer to the instructions or the feeding guide	41
<b>5.0</b>	<b>Understanding of the instructions is varied</b>	<b>46</b>
5.1	Understanding based on current set of instructions	46
5.2	Improvements based on potentially improved instructions	47

## **Appendix A: Questionnaire**

## **Appendix B: Questionnaire Images**

## **Appendix C: Tabular results**



# 1.0 Executive summary

---

This report presents the results of a quantitative survey, completed in both Australia and New Zealand, with the caregivers of children up to the age of 18 months who received some infant formula or follow-on formula between the ages of 0-12 months.

The survey was specifically undertaken in order to contribute to the Food Standards Australia New Zealand (FSANZ) Proposal P1028 – Infant Formula. In particular, whether changes to the instructions for the preparation and storage of formula feeds on tins of infant formula (i.e. the labels) should be made.

The background to the survey is that previous qualitative research carried out by FSANZ had revealed that caregivers often do not follow the label instructions for the preparation, storage and use of powdered infant formula products. This, in turn, exposes infants to microbial and nutritive risks and can result in illness or health issues.

The survey was completed online between 5 and 23 September 2019 with a sample of n=600 caregivers in Australia and n=733 in New Zealand who met the criteria outlined above. This included specific quotas for caregivers with non-English speaking backgrounds, and caregivers in New Zealand who identified as Māori/Pacific.

While caregivers who identified themselves as secondary preparers of infant formula were also interviewed, it should be noted that the large majority of respondents (94%) identified themselves as primary preparers.

The survey questionnaire was developed in collaboration with our clients at MPI and FSANZ and cognitively tested before being administered to samples of caregivers sourced from a panel provider. A copy of the questionnaire may be found in Appendix A of this report.



## 1.1 Key findings

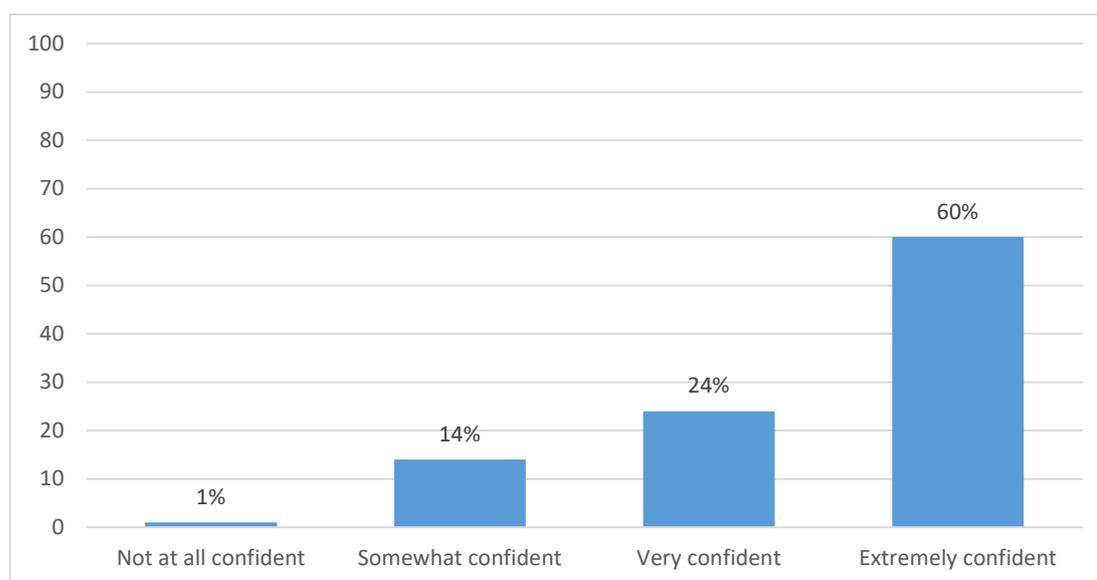
This report is based on the combined survey results for Australia and New Zealand. As such, the results are based on a total achieved sample of n=1,333 caregivers<sup>1</sup>. The main analysis variable used to report the survey results is whether the caregiver completed the survey in terms of the one and only infant they had cared for (n=681) or in relation to a subsequent child (n=630)<sup>2</sup>, as this variable was found to be the most discriminating in terms of the results.

There are six key survey findings as follows:

### 1. Caregivers' confidence with regard to the preparation of infant formula is very high.

The majority of respondents reported they felt **confident** in preparing formula, with 84% stating they were either 'very' or 'extremely confident' (Figure 1).

**Figure 1: Respondents' confidence in preparing infant formula (n=1,333)**



Total may not sum to 100% due to rounding.

Respondents who had cared for more than one infant were much more likely to report feeling 'extremely' confident compared with those who answered the survey in terms of the one and only infant they had cared for (75% compared to 47%).

<sup>1</sup> This is a relatively large sample and as such, results based on the n=1,333 caregivers interviewed for the survey are subject to a maximum margin of error of  $\pm 2.7\%$  (at the 95% confidence level).

<sup>2</sup> Twenty-two respondents stated that they 'would rather not say' whether the infant who was the subject of this survey was the first infant they had cared for or not.

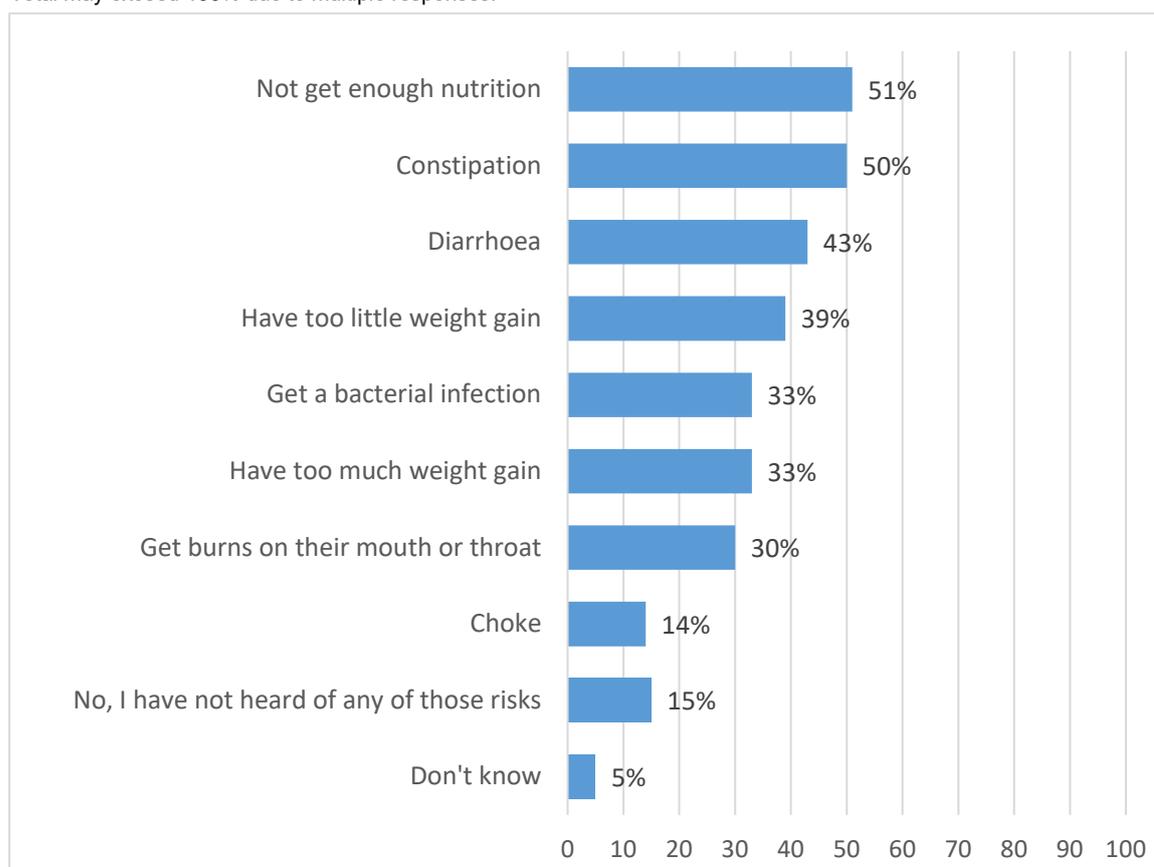


2. **Caregivers' awareness of the risks of improper preparation and storage is low.**

There was a **low** level of prompted awareness of the potential risks if formula is not prepared according to the instructions. Only two of the eight listed risks achieved 50% awareness. These were the infant not getting 'enough nutrition' (51%) and the child having 'constipation' (50%) (Figure 2).

**Figure 2: Respondents' awareness of improper formula preparation/storage risks (n=1,333)**

Total may exceed 100% due to multiple responses.



Respondents who had cared for more than one infant had a higher awareness of the risks than those answering the survey in terms of the one and only infant they had cared for. Respondents who had cared for more than one infant were more likely to have heard that not following the instructions could result in the infant 'not getting enough nutrition' (61% compared with 43% of those answering in terms of the one and only infant they had cared for), having 'constipation' (59% compared with 42%), 'diarrhoea' (48% compared with 38%), and there being 'too little weight gain' (46% compared with 33%) or 'too much weight gain' (37% compared with 29%).



**3. Current practices in regard to the preparation and storage of formula are less than ideal.**

Caregivers' responses regarding their current practices in preparing and storing formula feeds were varied, and less than ideal.

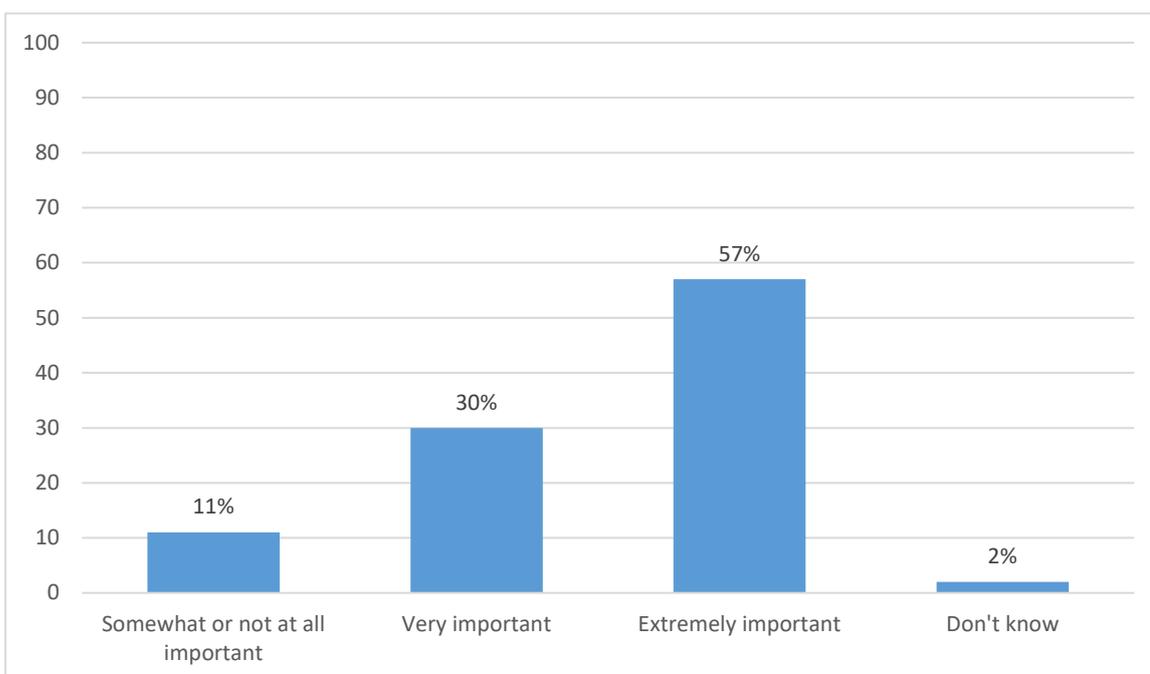
The highest rates of correct practices were in relation to never 'adding extra flavourings or foods to the bottle' (75%) and never 'using something other than the measuring scoop that comes in the tin' (74%). However, only 39% of respondents reported that they never 'warm formula in the microwave', while 33% stated that they 'only ever use cool or lukewarm water to make formula'.

Respondents who had cared for more than one infant were much more likely than those answering the survey in terms of the one and only child they had cared for to report correct practices in preparing and storing formula. This was true for nine of 12 practices tested in the survey.

**4. Caregivers place high importance on following the preparation and storage instructions on tins of infant formula, but their reasons for doing so are non-specific.**

Despite less than ideal practices in the preparation and storage of formula, overall, 87% of respondents reported that they viewed it as either 'very important' or 'extremely' important to exactly follow the preparation and storage instructions on a tin of formula (Figure 3).

**Figure 3: Respondents' view of the importance of following preparation/storage instructions exactly (n=1,333)**



Total may not sum to 100% due to rounding.



Further, respondents were also asked to provide written comments on the importance of following the instructions. While the importance placed on the instructions was rated highly, respondents most frequently provided a general comment as to why this was the case (15% simply said that it was important), while 27% acknowledged that it was important to follow the instructions correctly but did not know why.

Respondents who had cared for more than one infant were more likely than those answering the survey in terms of the one and only child they had cared for to regard the preparation and storage instructions as 'extremely important' (64% compared with 50%).

In fact, this latter group were more likely to report that they did not know why it was important to follow the instructions (33%, compared with 20% who had cared for multiple infants).

**5. Despite placing high importance on information on tins of formula, caregivers do not regularly refer to the instructions or the feeding guide.**

Overall, respondents viewed the information on tins of formula as important. For example, almost all respondents regarded the instructions on how to prepare formula as either 'important' or 'extremely important' (92%). The feeding guide, warning notice<sup>3</sup> and information about the type of formula to use were also considered important by most respondents (all 89%), as were the storage instructions (88%) and warning statement<sup>4</sup> (70%).

Respondents who had cared for more than one infant were more likely than those answering the survey in terms of the one and only infant they had cared for to regard this information as important. This was the case in terms of four of the five specific types of information respondents were asked to rate, with the only exception being in terms of the warning statement.

However, despite the importance placed on following the preparation instructions and feeding guide, respondents' actual use of these instructions was relatively low.

Only 72% of respondents stated they had referred to the preparation and use instructions when they first started preparing formula, while 68% had referred to the feeding guide. For all other listed situations (e.g. when the stage or brand of formula is changed, or once in a while when a reminder is needed), levels of reported use were under 50% for both the preparation and use instructions and the feeding guide (Figure 4).

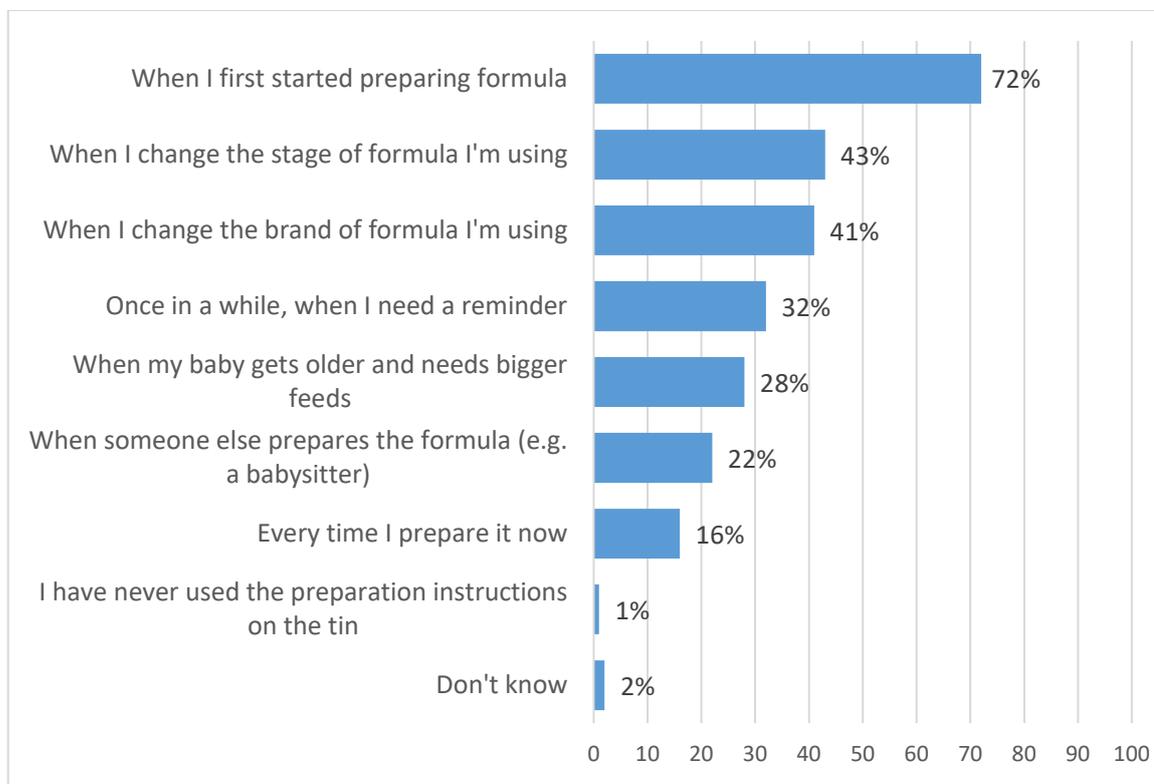
---

<sup>3</sup> For ease of reference, the required warning statements on tins of formula examined in this survey were referred to as the 'warning notice' and the 'warning statement'. The warning notice is as follows: "*Warning - follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill.*"

<sup>4</sup> For ease of reference, the required warning statements on tins of formula examined in this survey were referred to as the 'warning notice' and the 'warning statement'. The full required warning statement is "*Important Notice. Breastmilk is best for babies. Before you decide to use this product, consult your doctor or health worker for advice.*". However, the warning statement examined in this survey was: "*Important Notice. Before you decide to use this product, consult your doctor or health worker for advice.*"



**Figure 4: Respondents' reported use of preparation instructions on tins of formula (n=1,333)**



Total may exceed 100% due to multiple responses.

Across almost all of the listed situations, respondents who had cared for more than one infant were more likely to have referred to the preparation and use instructions and the feeding guide compared with those who answered the survey in terms of the one and only infant they had cared for.

**6. Caregivers' understanding of the instructions on tins of infant formula was varied, and the potentially improved instructions did not markedly improve understanding.**

While, overall, the potentially improved instructions did not significantly improve understanding of the statements, there were three (of 10 improved instructions) exceptions where respondents who had viewed the potentially improved instructions selected the correct answer more than those who viewed the current instructions.

These were, 'it's OK to add other flavourings or foods to made up formula' (81% of those who viewed the potentially improved instructions chose the correct answer 'false' compared with 72% of those who viewed the current instructions), 'any formula left over after a feed can be put in the fridge and reheated' (74% chose the correct answer 'false' compared with 68%) and, 'it doesn't matter if the water of formula is put in the bottle first, as long as it's mixed well' (71% chose the correct answer 'false' compared with 58%).



## 1.2 Conclusions

These findings suggest caregivers see the preparation instructions on infant formula labels as important information. This aligns with previous research, that found labels were often the main source of information on infant formula preparation.<sup>5 6</sup>

Most caregivers used the preparation instructions when they first started preparing infant formula. But they rarely referred to them again after this.

The experienced formula preparers included in this study were very confident about their preparation practices. However, their actual preparation and storage practices were less than ideal.

The research suggests a few potential reasons caregivers are not always following correct preparation and storage practices. The first is that caregivers rarely refer back to the instructions and therefore have little opportunity to correct their preparation practices. Secondly, caregivers become very confident in their preparation practices. As a result, they likely see little need to refer back to the instructions or seek other sources of information on infant formula preparation.

A third factor is the lack of awareness among caregivers of the risks of incorrect preparation. Very few caregivers' were able to name a specific risk (e.g. diarrhoea). Even when they were shown a list of specific risks from incorrect preparation, none were recognised by more than 51% of caregivers. These findings are consistent with international research.<sup>7</sup>

A fourth potential explanation explored in this research is caregivers' understanding of the preparation instructions. A significant proportion of caregivers' did not understand some of the current instructions. The research found some changes to the instructions could improve understanding of key concepts. However, many of the changes made to the instructions did not improve understanding.

These findings highlight the importance of caregivers receiving (or being able to easily access) reliable information on infant formula preparation when they first start using infant formula. It is at this time that they are likely to be most receptive to information on how to prepare infant formula correctly.

---

<sup>5</sup> Redmond, E., & Griffith, C. (2013). An investigation into the attitudes and behaviours of consumers and caregivers in the preparation, handling and storage of powdered infant formula inside and outside the home. Retrieved from Food Standards Agency website: <https://www.food.gov.uk/research/microbial-risk-assessment-b13/an-investigation-into-the-attitudes-and-behaviours-of-consumers-and-caregivers-in-the-preparation-handling-storage-and-feeding>.

<sup>6</sup> Winstanley, A., & Cressey, P. (2008). Information sources and practices. Preparation of powdered infant formula in New Zealand. Qualitative research. Retrieved from <https://www.mpi.govt.nz/dmsdocument/23089-information-sources-and-practices-preparation-of-powdered-infant-formula-in-new-zealand-qualitative-research>.

<sup>7</sup> Redmond, E., & Griffith, C. (2013).



In addition, caregivers should receive information outlining the risks of incorrectly preparing and storing infant formula. It is possible (although not tested in this research) that caregivers would more carefully follow the preparation instructions if they were aware of the potentially serious health risks of incorrect preparation.

One limitation of this research is that it was only conducted with caregivers who already had experience using infant formula. It remains unknown how well caregivers new to infant formula preparation understand the current preparation instructions. Caregivers experienced with infant formula may have picked up additional information from other information sources (e.g. friends, family, healthcare professionals) that could either improve or worsen their typical preparation practices and their understanding of the instructions.



## 2.0 Introduction

---

In this section of the report we outline the purpose, information objectives, and methodology used to complete this survey of caregivers in Australia and New Zealand.

### 2.1 Purpose and information objectives of survey

#### 2.1.1 Purpose

The survey was specifically undertaken in order to contribute to a Food Standards Australia New Zealand (FSANZ) Proposal P1028 – Infant Formula. In particular, whether changes to the preparation and storage instructions on tins of infant formula (i.e. the label instructions) should be made.

Previous qualitative research carried out by FSANZ had revealed that caregivers often do not follow the label instructions for the preparation, storage and use of powdered infant formula products. This occurs for a range of reasons; including, caregivers not noticing or reading the instructions on the label, caregivers not understanding some instructions, and caregivers assuming the risks of deviating from the instructions are low. This, in turn, exposes infants to microbial and nutritive risks and can result in illness or health issues.

This research was conducted to help confirm and quantify those findings.

#### 2.1.2 Information objectives

More specifically, the objectives of this survey were to:

1. Gather representative quantitative information on:
  - ◆ Caregivers' understanding of the infant formula preparation and storage instructions currently on tins of infant formula.
  - ◆ Caregivers' beliefs regarding the risks of improper infant formula preparation and storage.
2. Test the efficacy of different wording for particular instructions on the label in:
  - ◆ Improving caregivers' understanding of the instructions.
  - ◆ Increasing the perceived risk of not following the instructions.



## **2.2 Survey methodology**

### **2.2.1 Respondent definition**

All survey respondents were caregivers of an infant or young child up to 18 months of age. That infant would have received infant formula or follow-on formula between the ages of 0-12 months, which the caregiver would have been mainly or secondarily responsible for preparing.

All survey respondents were living in New Zealand or Australia. The total sample of the survey was n=1,333, with 600 Australian respondents and 733 New Zealand respondents.

The sample included specific quotas for caregivers with non-English speaking backgrounds, and caregivers in New Zealand who identified as Māori/Pacific.

### **2.2.2 Survey questionnaire**

#### **Development of survey questionnaire**

The survey questionnaire was developed in close consultation with MPI and FSANZ representatives in Australia and New Zealand.

A key initial step in the development process was the drafting of a Question Schedule, developed in light of the survey objectives (for survey objectives see section 2.1.2). The schedule cross-referenced each of the information objectives of the survey with the primary question that needed to be asked in order to gather the required information.

When the final version of the Question Schedule was approved, it was used as the blueprint on which to prepare the draft questionnaire. As the survey was to be administered online, particular attention was given to the wording of the questions, the wording of the instructions, and the design qualities of the questionnaire so that its 'look and feel' was inviting to the eye.

During this development process, Research New Zealand submitted an ethics application to the Ministry of Social Development Ethics Committee, and subsequently met with that Committee to discuss the application. Following this meeting, Research New Zealand received an advisory letter from the Committee; the key elements of which (relating to privacy, safety and support) were either built into the questionnaire or the survey processes in general.

#### **Cognitive testing**

When the survey questionnaire was in its final approved draft form, it was cognitively tested. The purpose of the cognitive testing was to confirm that the survey questions would be easily understood, to check whether participants would be confused by any of the questions or instruction wording, that the layout made sense, and that the available response options would be appropriate. The testing also provided an indication of how long the questionnaire would likely take to complete.

The draft questionnaire was cognitively tested with n=15 respondents, recruited through Dynata (for information on Dynata, see section 2.2.3) and Research New Zealand's community networks, on the



basis of the same recruitment criteria as for the survey. As shown in Table 1 below, a diverse range of caregivers was interviewed with respect to their ethnicity, the age of their infant, the number of other children they had, and the device they used to complete the survey. Two respondents identified English as a second or third language, and a third participant reported that English is not the main language she spoke at home.

**Table 1: Profile of respondents in cognitive testing**

Ethnicity of participant	Age of infant at time of survey	Number of participants' other children	Device used to complete the survey	Total survey length
Asian*	7-12 months	0	Mobile	11 mins
European*	4-6 months	0	Computer	10 mins
Māori	7-12 months	1	Mobile	15 mins
Māori and Pacific	13-18 months	2	Tablet	10 mins
Pacific^	13-18 months	3	Tablet	20 mins
Pacific	13-18 months	0	Tablet	18 mins
Pacific	7-12 months	2	Mobile	25 mins
NZ European and Māori	13-18 months	2	Mobile	23 mins
NZ European	13-18 months	0	Mobile	10 mins
NZ European	13-18 months	0	Laptop	14 mins
NZ European	4-6 months	1	Mobile	15 mins
NZ European	0-3 months	2	Mobile	16 mins
NZ European	7-12 months	0	Mobile	7 mins
NZ European	13-18 months	1	Laptop	7 mins
NZ European	7-12 months	0	Computer	12 mins
				<b>Avg:14.2 mins</b>

\*Participant stated English was not their first language.

^Participant stated English is not the main language they speak at home.

Respondents were interviewed on a one-on-one (i.e. individual) face-to-face basis, using Belson's 'double-back' method. This method involved administering the draft survey questionnaire as if in a 'real-life' interview and then doubling-back with the respondent, question-by-question and instruction-by-instruction, checking that they understood the intent of the question/instruction. Where there was confusion or the question/instruction was not easily understood, they were asked for alternative wording suggestions.

As noted earlier, Research New Zealand had met with the Ministry for Social Development Ethics Committee to discuss the ethics application for this research. Some of the Committee's feedback was explored during the cognitive testing, including its concern with the use of the word, 'risk', in the survey questionnaire.

As a result of the cognitive testing and a subsequent workshop meeting with our clients, a number of changes were made to the survey questionnaire, including simplifying the wording of questions, and changing questions more substantially to gain more relevant information. The word, 'risk', was removed from all questioning.



## 2.2.3 Survey implementation

### Piloting

When the final draft of the survey questionnaire had been approved by our clients, it was 'soft launched' on 28 August 2019 in order to test the survey's technical integrity. That is, to test whether respondents could complete the survey on mobile devices, as well as PCs, that the conditional routing would function correctly, and that when they submitted their completed survey it was captured by our online survey system.

No issues were identified as a result of this piloting.

### Sampling frame

The survey samples for both Australian and New Zealand were sourced from Dynata, our online panel provider.

Dynata have the largest online panel in both countries and in demographic terms, can provide nationally representative samples of respondents. For example, in New Zealand, Dynata has the largest online panel of any provider with almost 300,000 active members.

### Interviewing

Interviewing was completed between 5 and 23 September 2019. We targeted the completion of interviews with samples of n=600 caregivers in each country and as noted earlier, with quotas set for the completion of interviews with caregivers with non-English speaking backgrounds (n=65 in each country), and n=60 caregivers who identified as Māori/Pacific in New Zealand.

Table 2 shows what was actually achieved against these quotas. All of the targets were met or well exceeded.

**Table 2: Survey language and ethnicity quotas by country**

	Total sample achieved	Total sample target	New Zealand sample achieved	New Zealand sample target	Australian sample achieved	Australian sample target
Respondents who indicated that English was not their first language	213	130	131	65	82	65
Respondents who identified as Māori and/or Pacific	133	60	133	60	n/a	n/a
Total	1333	1200	733	600	600	600

This table contains frequencies.



## Respondent profile

Table 3 overleaf profiles the achieved samples of respondents in each country. This shows the following:

- ◆ The large majority of respondents (81%) were the mother of the infant or child they were completing the survey in relation to. This was significantly more likely to be the case in Australia (95%) than in New Zealand (69%).
- ◆ At the time of survey, 58% of respondents stated they were a caregiver to an infant aged 0-12 months of age, and 42% cared for a child aged 13-18 months.
- ◆ One-half (51%) of respondents completed the survey in terms of the one and only infant they had cared for; 49% for a subsequent infant.
- ◆ The majority of respondents were under 40 years of age (88%), and female (84%).
- ◆ Most respondents identified as New Zealand European (36%), followed by Australian European (32%), Asian (19%), and Māori/Pacific (11%).
- ◆ Sixteen per cent of respondents did not have English as their first language. This was significantly more likely in New Zealand (18%) than in Australia (14%).
- ◆ Approximately one-third of respondents (31%) reported working full time at the time of survey. This was significantly more likely in New Zealand (38%) than in Australia (21%). Australian respondents were more likely than New Zealand respondents to be on maternity/paternity leave (24% compared with 18%).
- ◆ Well over one-half of all respondents (63%) had an annual household income of less than \$100,000. Australian respondents were more likely than their New Zealand counterparts to have a household income of more than \$100,000 (32% compared with 25%).
- ◆ Approximately one-half of respondents (48%) reported having a graduate qualification. Twenty-one per cent of respondents described their highest level of education as either a secondary school qualification or that they had no qualification.
- ◆ Over one-half of respondents lived in a city (56%), with this being significantly more likely for the New Zealand respondents than the Australian respondents (60% compared with 52%). In comparison, Australian respondents were more likely than New Zealand respondents to live in a rural area (16% compared with 9%).



**Table 3: Respondent profile by country**

	Total	New Zealand	Australia
	%	%	%
Unweighted base =	1333	733	600
<b>Relationship to child</b>			
Mother	81	69	95
Father	15	26	2
Other caregiver	4	6	3
Total	100	100	100
<b>Age of child</b>			
0-3 months	10	8	12
4-6 months	18	19	18
7-12 months	30	31	28
13-18 months	42	42	42
Total	100	100	100
<b>First or subsequent infant</b>			
One and only infant cared for	51	48	54
Subsequent infant cared for	47	49	45
Would rather not say	2	2	1
Total	100	100	100
<b>Age of respondent</b>			
18-24	11	11	10
25-29	26	23	30
30-34	28	26	31
35-39	23	25	21
40+	12	16	8
Total	100	100	100
<b>Gender</b>			
Female	84	72	98
Male	15	26	2
Nonbinary	0	1	0
Total	100	100	100
<b>Ethnicity*</b>			
New Zealand European	36	65	0
Australian European	32	0	70
Asian	19	20	17
Māori/Pacific	11	18	2
Other	8	5	12

Continued



**Table 3: Respondent profile by country (continued)**

	Total	New Zealand	Australia
	%	%	%
Unweighted base =	1333	733	600
<b>English language</b>			
English is first language	83	81	86
English is <u>not</u> first language	16	18	14
Would rather not say	1	1	0
Total	100	100	100
<b>Employment*</b>			
Working full-time	31	38	21
On maternity/paternity leave	21	18	24
Engaged in full time home duties	20	18	22
Working part-time	19	16	24
Other, including students, retirees and those on benefits	14	15	14
<b>Household income</b>			
No income	1	1	2
Under \$20,000	7	7	8
\$20,000 but less than \$40,000	12	12	13
\$40,000 but less than \$60,000	15	16	14
\$60,000 but less than \$80,000	15	16	14
\$80,000 but less than \$100,000	13	13	12
\$100,000 or more	28	25	32
Don't know/Would rather not say	8	10	5
Total	100	100	100
<b>Educational qualification</b>			
Secondary school qualification/No qualification	21	23	19
Certificate, trade qualification or apprenticeship	18	16	22
Undergraduate diploma or associate diploma	10	8	12
Graduate qualification	48	50	45
Would rather not say	3	3	2
Total	100	100	100
<b>Location</b>			
A city	56	60	52
A town	31	30	32
A rural area	12	9	16
Would rather not say	1	1	1
Total	100	100	100

\*Total may exceed 100% because of multiple responses.



## Approach to analysis and reporting

This report is based on an analysis of the combined survey results for Australia and New Zealand. As such, the results are based on a total achieved sample of n=1,333 caregivers.

The main analysis/reporting variable used is that which was found to be the most discriminating (viz. whether the caregiver completed the survey in terms of the one and only infant they had cared for or in relation to a subsequent child). Previous research has found caregivers are more fastidious in following infant formula preparation instructions with their first child than with subsequent children.<sup>8</sup>

As there were no weighting parameters for the population of caregivers who prepare formula, the data was not weighted.

In this report, we have only reported statistically significant differences. Significance testing has been conducted at the 95% confidence level (i.e. a p-value of  $\leq 0.05$ ). Where a result is reported as being significantly different, it means that the result is statistically significantly higher or lower than the comparative result.

In addition to the main analysis variable, where significant, differences based on other variables are also reported. These secondary variables include:

- ◆ Country (Australia vs. New Zealand).
- ◆ Age of child at the time of the survey (0-3 months vs. 4-6 months vs. 7-12 months vs. 13-18 months).
- ◆ English language (English is the respondents first language vs. English is second language).
- ◆ Ethnicity (New Zealand European vs. Australian European vs. Māori/Pacific vs. Asian vs. other ethnicities).
- ◆ Highest educational qualification (secondary school as highest qualification vs. certificate, trade qualification or apprenticeship vs. undergraduate diploma or associate diploma vs. graduate qualification<sup>9</sup>).

The answers to open-ended questions were thematically coded for analysis. The code frame was developed in consultation with MPI and FSANZ.

Tabular results are provided in Appendix C.

---

<sup>8</sup> Winstanley A, Cressey P (2008) Information sources and practices. Preparation of powdered infant formula in New Zealand. Qualitative research. Institute of Environmental Science & Research Ltd. Prepared as part of a New Zealand Food Safety Authority contract for scientific services, Christchurch, New Zealand. <https://www.mpi.govt.nz/dmsdocument/23089/direct>

<sup>9</sup> Graduate qualification includes any of the following: bachelor's degree, graduate certificate or graduate diploma, postgraduate degree.



Table 4 below shows the maximum margin of error (MoE) for the total sample and various sub-samples, at the 95% confidence level.

The MoE for the total sample of n=1,333 is +/- 2.7% (at the 95% confidence level). This means that had we found that 50% of all respondents had blue eyes, we could be 95% sure that we would have got the same result had we interviewed every eligible person in the population, give or take 2.7%.

**Table 4: Margins of error for total sample and key sub-groups**

	Total %	Total count n=	Maximum Margin of Error (MoE) +/- %
<b>First or subsequent infant</b>			
One and only infant cared for	51	681	± 3.8
Subsequent infant cared for	47	630	± 3.9
Total	100	1333	± 2.7
<b>Country</b>			
New Zealand	55	733	± 3.6
Australian	45	600	± 4.0
Total	100	1333	± 2.7
<b>Age of child</b>			
0-3 months	10	134	± 8.5
4-6 months	18	244	± 6.3
7-12 months	30	397	± 4.9
13-18 months	42	558	± 4.1
Total	100	1333	± 2.7
<b>English language</b>			
English is first language	83	1113	± 2.9
English is <u>not</u> first language	16	213	± 6.7
Total	100	1333	± 2.7
<b>Ethnicity*</b>			
New Zealand European	36	477	± 4.5
Australian European	32	420	± 4.8
Asian	19	249	± 6.2
Māori/Pacific	11	148	± 8.1
Other	8	112	± 9.3
Total	**	1333	± 2.7
<b>Educational qualification</b>			
Secondary school qualification/No qualification	21	283	± 5.8
Certificate, trade qualification or apprenticeship	18	245	± 6.3
Undergraduate diploma or associate diploma	10	132	± 8.5
Graduate qualification	48	638	± 3.9
Total	100	1333	± 2.7

\*Total may exceed 100% because of multiple responses.

The base numbers and margins of error for those who refused to answer the demographic questions are not provided in the above table



## 3.0 Caregivers' current beliefs and behaviour regarding the preparation of infant formula

---

In this section of the report, we present the results to a series of questions which explored respondents' current beliefs and behaviour regarding the preparation and storage of infant formula. Particular emphasis was placed on measuring their level of confidence in terms of the preparation of infant formula, their awareness of the relative risks of doing this incorrectly, and the extent to which this was exhibited in their preparation behaviour.

These questions were asked in order to provide context for the questions about the importance caregivers placed on following the preparation and storage instructions on the tins of infant formula and their use of this information, as well as their understanding of this information.

### 3.1 Caregivers state they are highly confident with regard to the preparation of infant formula

In order to measure caregivers' level of confidence with regard to the preparation of infant formula, respondents were asked the following question:

*Q. How confident do you feel about preparing formula?*

Table 5 shows the response to this question for the total sample of n=1,333 respondents, as well as by the respondent groups based on the most discriminating variable (viz. whether the caregiver completed the survey in terms of the one and only infant they had cared for or in relation to a subsequent child).

This table shows that the large majority of respondents reported that they felt **highly confident** preparing infant formula, with 84% stating they were either 'very' or 'extremely confident'. Note that 60% of respondents gave the best possible response of 'extremely confident'.

In contrast, 15% of respondents stated they were not at all/somewhat confident.

When this overall result is examined by the sub-samples based on whether the respondent was answering the survey in terms of the one and only infant they had cared for or in relation to a subsequent child, the latter group was significantly more likely to report they were 'extremely confident' compared with respondents who were answering in terms of the first infant they had ever cared for (75% and 47% respectively).



**Table 5: Respondents' reported confidence in preparing infant formula**

	Total	One and only infant cared for	Subsequent infant cared for	Would rather not say
Unweighted base =	1333	681	630	22**
	%	%	%	%
Not at all confident	1	2	0	5
Somewhat confident	14	22	6	27
Very confident	24	29	19	36
Extremely confident	60	47	75	5
Don't know	0	0	0	5
Total	100	100	100	100

Total may not sum to 100% due to rounding

\*\*Caution: low base number of respondents - results are indicative only

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ At 67%, Australian respondents were significantly **more** likely to state they were 'extremely confident' in preparing formula than New Zealand respondents (54%).
- ◆ Respondents with infants aged 7-12 months and 13-18 months (i.e. with older infants) were significantly **more** likely to report they were 'extremely confident' in preparing formula than caregivers with infants aged 0-3 months (62% and 62% compared with 51% respectively).
- ◆ Respondents with English as their first language were significantly **more** likely to report being 'extremely confident' in the preparation of formula, compared with those for whom English is not their first language (63% compared with 44%).
- ◆ Australian Europeans were the **most** confident ethnic group, with 71% reporting they were extremely confident in regard to formula preparation. This was significantly higher than New Zealand European (58%) and Asian carers (39%).
- ◆ Respondents with secondary school qualifications as their highest academic qualification, or who have a certificate, trade qualification or apprenticeship, were significantly **more** likely to be 'extremely confident' in preparing formula than those with graduate qualifications (70% and 68% compared with 53%).



## 3.2 Caregivers' awareness of the risks of improper preparation and storage of infant formula is low

To measure caregivers' awareness of the potential risks if formula is not prepared according to the instructions, respondents were presented with a list of eight possible risks and asked the following question. Note that the word, 'risk', was not used in the question:

*Q. Have you heard that any of the following could happen to a child if the instructions on a tin of formula are not followed?*

Table 6 overleaf shows that, across the board, there was **low prompted awareness** of the potential risks, with only two of the risks achieving 50% awareness (viz. 'not get enough nutrition' at 51% and 'constipation' at 50%). Also, of particular note, is the fact that 20% of respondents reported they had either **not** heard of any of the listed risks, or they didn't know.

Respondents who were answering the survey in terms of a subsequent infant they had cared for had a significantly higher awareness of the risks compared with respondents who were answering in terms of the one and only infant they had cared for. For example, they were significantly more likely to be aware that not following the instructions could result in an infant suffering the following effects:

- ◆ 'Not get enough nutrition' (61% compared with 43% of those caring for their first infant).
- ◆ 'Constipation' (59% compared with 42%).
- ◆ 'Diarrhoea' (48% compared with 38%).
- ◆ 'Have too little weight gain' (46% compared with 33%).
- ◆ 'Have too much weight gain' (37% compared with 29%).



**Table 6: Awareness of risks if instructions on tins of formula are not followed**

	Total	One and only infant cared for	Subsequent infant cared for	Would rather not say
	%	%	%	%
Unweighted base =	1333	681	630	22**
Not get enough nutrition	51	43	61	18
Constipation	50	42	59	23
Diarrhoea	43	38	48	41
Have too little weight gain	39	33	46	27
Have too much weight gain	33	29	37	18
Get a bacterial infection	33	32	36	18
Get burns on their mouth or throat	30	27	32	23
Choke	14	15	14	9
No, I have not heard that any of the above could happen to a child if the instructions on a tin of formula are not followed	15	16	13	23
Don't know	5	5	5	14

Total may exceed 100% because of multiple responses.

\*\*Caution: low base number of respondents - results are indicative only.

In general, the following groups were also **less** aware of the risks of not exactly following the preparation and storage instructions; respondents with older infants (16% for those caring for infants aged 7-12 months and 13-18 months had not heard any of the risks listed), respondents for whom English was not their first language (21%), New Zealand Europeans when compared with Australian Europeans (16% to 11%), and those with an undergraduate diploma or associate diploma (7%).

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to report being aware of the following risks; 'diarrhoea' (46% compared with 40%), not 'getting enough nutrition' (55%, compared with 49%) and 'constipation' (56% compared with 44%).
- ◆ Respondents with English as their first language were **more** likely than respondents for whom English was not their first language to have heard that not following the instructions could result in the child 'not getting enough nutrition' (54% compared with 41%) and 'too little weight gain' (42% compared with 23%).
- ◆ At 59%, Australian Europeans were significantly **more** likely to be aware that an infant might 'not get enough nutrition' compared with New Zealand Europeans (52%), Māori/Pacific (48%) and Asian (40%) carers. At 58%, Australian Europeans, were also **more** likely to have heard of 'constipation' as a risk compared with New Zealand Europeans (44%), Māori/Pacific (45%) and Asian (48%) carers.



- ◆ Respondents with a certificate, trade qualification or apprenticeship, and respondents with an undergraduate diploma were **more** likely to have heard of 'diarrhoea' as a risk compared with those with a graduate qualification (49% and 51% compared with 41% respectively). These groups were also **more** likely to report being aware that the child might 'not get enough nutrition' compared with those with graduate qualifications (59% and 58% compared with 49% respectively) or suffer from 'constipation' (60% and 60% compared with 45% respectively).



### 3.3 Current practices with regard to the preparation and storage of infant formula are less than ideal

To understand current practices in regard to the preparation and storage of formula, respondents were presented with a list of 13 practices, and asked how often they undertook these when preparing and storing formula. The list included both correct and incorrect practices.

*Q. Caregivers prepare formula in different ways. When you prepare formula for [insert name of child or 'this child'] how often do you currently do each of the following<sup>10</sup>*

Figure 5 shows that the highest rates of **correct** practices were in relation to respondents never 'adding extra flavourings or foods to the bottle' (75%), and never 'using something other than the measuring scoop that comes in the tin to measure the formula powder' (74%). Conversely, only 39% of respondents reported that they never 'warm the formula up in the microwave', and 33% stated that they 'use cool or lukewarm water to make formula' every time<sup>11</sup>.

---

<sup>10</sup> Depending on the age of the child at the time of survey and whether the child was still being fed formula, respondents were asked slightly different versions of this question to capture practices when the child was still being fed formula and under 12 months of age.

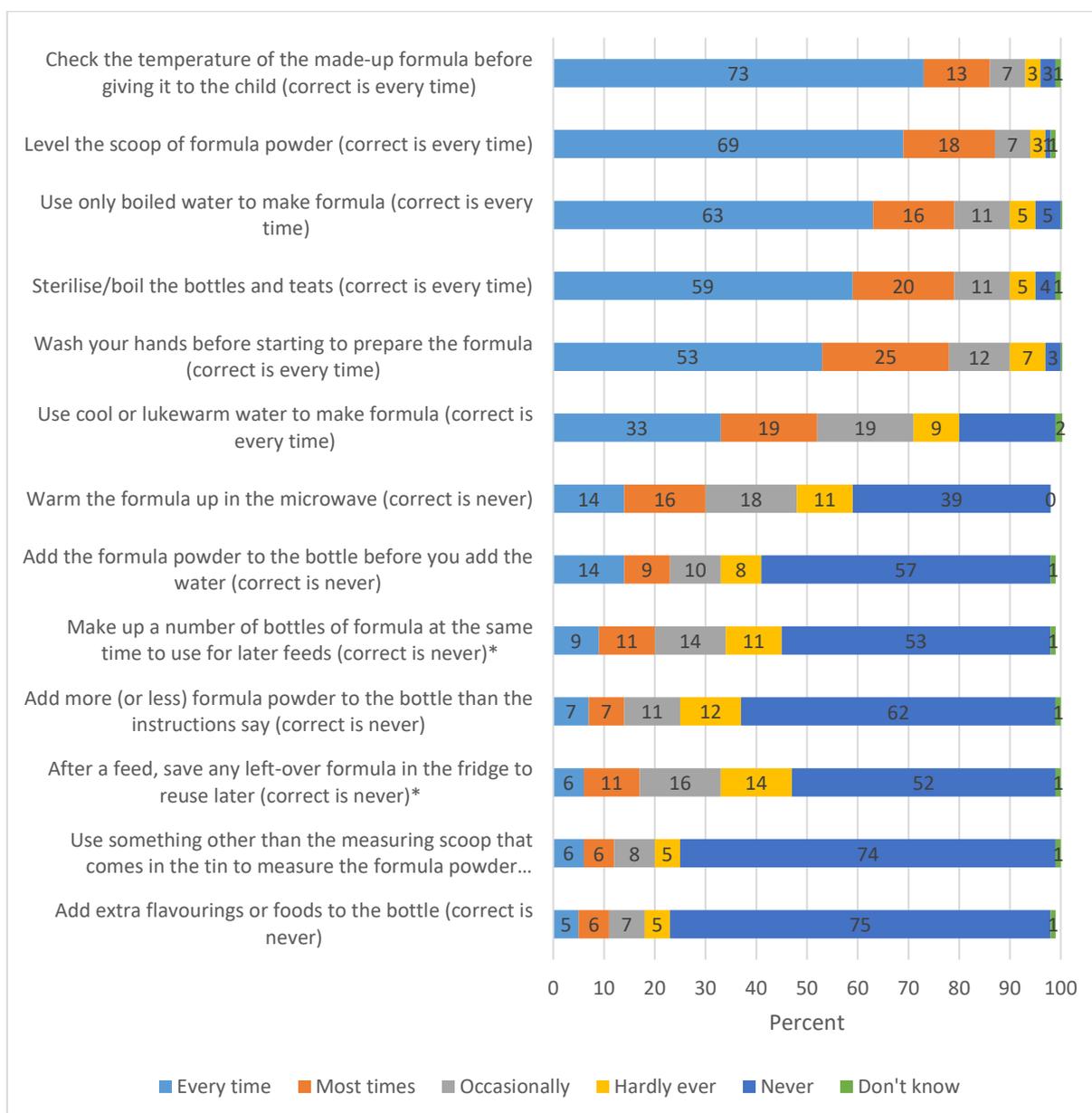
<sup>11</sup> Guidance from the New Zealand Ministry of Health and the Australian National Health and Medical Research Council recommend boiling and then cooling the water used to make formula feeds:

<https://www.healthed.govt.nz/resource/feeding-your-baby-infant-formula>

<https://www.nhmrc.gov.au/about-us/publications/infant-feeding-guidelines-information-health-workers>.



**Figure 5: Frequency of respondents' practices in the preparation and storage of formula**



\*Guidance from both the New Zealand Ministry of Health and the Australian National Health and Medical Research Council (NHMRC) is that it is best to only prepare one feed at a time for infants. However, they also recommend that where people need to prepare feeds ahead of time the feeds should be refrigerated <https://www.healthed.govt.nz/resource/feeding-your-baby-infant-formula> and <https://www.nhmrc.gov.au/about-us/publications/infant-feeding-guidelines-information-health-workers>.

The results have been examined by the number of correct practices respondents reported they followed, when they prepared and stored formula. Correct practice was defined as either in the positive, where respondents indicated they 'always' followed a desirable behaviour, such as washing hands before starting to prepare the formula, or in the negative, where respondents indicated they 'never' followed an undesirable behaviour, such as warming the formula up in the microwave.



Approximately one-half of all respondents (52%) reported that they correctly followed between six and 10 practices in the preparation and storage of formula. A quarter (25%) indicated they followed only up to five of the correct practices, while at the other extreme, just under a quarter (24%) followed more than 10 practices correctly (Table 7).

The table shows that 76% of the respondents who reported correctly following less than six of the practices, completed the survey in terms of the one and only infant they had cared for. Only 21% of these respondents completed the survey in terms of a subsequent infant.

In comparison, a smaller percentage of respondents (43%) who reported correctly following more than 10 practices completed the survey in terms of the one and only infant they had cared for whilst over one-half (56%) completed the survey in terms of a subsequent infant.

**Table 7: Number of correct practices respondents follow in the preparation and storage of formula**

	Total	0-5 correct practices	6-10 correct practices	More than 10 correct practices
Unweighted base =	1333	327	689	317
	%	%	%	%
One and only child cared for	51	76	43	43
Subsequent infant cared for	47	21	56	56
Would rather not say	2	3	1	1
Total	100	100	100	100

Total may not sum to 100% due to rounding.

In general, respondents who answered the survey in terms of a subsequent infant they had cared for reported significantly more correct practices compared with respondents who were answering in terms of the one and only infant they had cared for. For example, they were significantly more likely to state they **always** follow these **correct practices**:

- ◆ 'Use only boiled water to make formula' (70% compared with 58% for those answering the survey in terms of the one and only infant they had cared for).
- ◆ 'Level the scoop of formula powder' (78% compared with 61%).
- ◆ 'Check the temperature of the made-up formula before giving it to the child' (80% compared with 67%).

Further, caregivers who answered the survey in terms of a subsequent infant they had cared for were significantly **more** likely than those who answered in terms of the one and only infant they had cared for to **never** follow these **incorrect practices**:

- ◆ 'Add the formula powder to the bottle before you add the water' (73% compared with 42% who answered the survey in terms of the one and only infant they had cared for).



- ◆ 'Use something other than the measuring scoop that comes in the tin to measure the formula powder' (90% compared with 60%).
- ◆ 'After a feed, save any left-over formula in the fridge to reuse later' (60% compared with 44%).
- ◆ 'Make-up a number of bottles of formula at the same time to use for later feeds' (66% compared with 41%).
- ◆ 'Add extra flavourings or foods to the bottle' (89% compared with 63%).
- ◆ 'Add more (or less) formula powder to the bottle than the instructions say' (76% compared with 50%).

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to report never 'saving any left-over formula in the fridge to reuse later' (55% compared with 49%).
- ◆ Respondents with a child in their care aged under 6 months were significantly **more** likely than respondents with older children to report they always 'sterilise/boil bottles and teats'<sup>12</sup>. (For younger children aged 0-3 months, this was 70% and for 4-6 months 68%, compared with those with children aged 7-12 months at 52% and 13-18 months at 57%).
- ◆ Respondents for whom English is **not** their first language, were significantly **more** likely than those with English as their first language to always 'use cool or lukewarm water to make formula' (41% compared with 31%).
- ◆ Australian Europeans were the **most** likely of the different ethnic groups to correctly never 'save left-over formula in the fridge to reuse later' (56% compared with 45% for Asian caregivers, for example).
- ◆ Australian Europeans and those of Asian ethnicity were the **most** likely to report the correct practice of always 'using cool or lukewarm water to make formula' (at 38% for both). This was significantly more likely than New Zealand Europeans (28%), Māori/Pacific (27%) and 'other' ethnicity groups (28%).
- ◆ Respondents with secondary school qualifications as their highest level of education were **more** likely than those with graduate qualifications to correctly report they never 'use

---

<sup>12</sup> Some educational materials for caregivers on infant formula preparation note that sterilising feeding equipment is particularly important for younger infants (e.g. Ministry of Health NZ 'Feeding Your Baby Infant Formula' booklet: <https://www.healthed.govt.nz/resource/feeding-your-baby-infant-formula>).



something other than the scoop to measure the formula powder' (81% compared with 69%). They were also **more** likely to 'level the scoop every time they made formula' (78% compared with 61%).



## 4.0 Perceived importance and use of preparation and storage instructions and the feeding guide

---

In this section of the report, we provide the results to a series of questions which demonstrate the importance caregivers place on following the preparation and storage instructions on tins of formula, caregivers' reasons behind these beliefs, and in what situations caregivers are using these same instructions.

These questions were asked to explore any disparity between the importance caregivers place on following preparation and storage instructions on tins of formula, their knowledge behind their importance, and in what situations caregivers are referring to these same instructions.

### 4.1 Caregivers place high importance on following the preparation and storage instructions

In order to assess how much importance caregivers place on following the instructions on tins of formula, the following question was asked:

*Q. In your personal opinion, how important is it to follow the preparation and storage instructions on a tin of formula exactly?*

Table 8 overleaf shows that, overall, 87% of respondents reported that they viewed it as either 'very' or 'extremely important' **to exactly follow** the preparation and storage instructions on tins of formula.

Respondents who were answering the survey in terms of a subsequent infant they had cared for were significantly more likely to give a rating of 'extremely important' compared with those who were answering in terms of the one and only infant they had cared for (64% compared with 50%). Further, respondents who were answering in terms of this infant were significantly more likely to rate the preparation and storage instructions as 'somewhat or not at all important' (15% compared with 7% for those who were answering in terms of a subsequent infant).



**Table 8: Respondents' view of the importance of exactly following preparation and storage instructions**

	Total	One and only infant cared for	Subsequent infant cared for	Would rather not say
Unweighted base =	1333	681	630	22**
	%	%	%	%
Somewhat or not at all important	11	15	7	23
Very important	30	31	28	27
Extremely important	57	50	64	32
Don't know	2	3	1	18
Total	100	100	100	100

Total may not sum to 100% due to rounding.

\*\*Caution: low base number of respondents - results are indicative only.

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to view it as 'extremely important' to exactly follow the instructions on tins of formula (63% to 52% respectively).
- ◆ At 63%, Australian Europeans were significantly **more** likely to report that the instructions were 'extremely important' when compared with New Zealand European (52%) and Asian carers (51%). Further, those who identified as Asian were significantly more likely to report that the instructions were 'somewhat important' than Australian Europeans (14% compared with 9%).
- ◆ There are no significant results of note when comparing the age of the child at the time of survey, whether or not English is the respondent's first language, or in terms of respondents' highest educational qualification.

In order to gain further insight into respondents' understanding of the potential risks if the instructions on tins of formula are not followed, respondents were asked to provide an explanation as to why they provided the rating on how important it is to follow the preparation and storage instructions on tins of formula exactly, as below:

*Q. In your personal opinion, how important is it to follow the preparation and storage instructions on a tin of formula exactly? "Can you explain why you felt this way?"*



Most respondents provided a **general comment** (15%), as well as slightly more specific but still general comments that the 'baby can become ill/sick' (13%) and for 'safety reasons/to prevent risk/avoid harm' (12%) (Table 10).

These general comments included responses such as:

*I feel that the instructions are there for a reason and I want it to be in the best condition for my baby.*

*Because you could make your child sick if it's not prepared correctly.*

*I think preparing it incorrectly could be harmful to the baby.*

- ◆ Few respondents mentioned a specific health risk (e.g. vomiting or diarrhoea) that could occur if instructions were not followed. In addition to the propensity to provide general comments, note that 27% of respondents did not know why it was important to follow instructions correctly.

Table 9 shows the explanations respondents provided for their rating of the importance of the instructions based on whether they were 'somewhat or not at all important', 'very important' or 'extremely important'. Respondents who gave a rating of 'somewhat or not at all important' or 'very important' were significantly **more** likely than those who rated the instructions as 'extremely important' to indicate that they didn't know why they had given that rating (52% and 33% compared with 19%). That is, respondents who rated the instructions as 'extremely important' were more likely to provide a reason for their rating.

Comments from respondents who **did not** view it is as always important to exactly follow the instructions on a tin of formula included:

*I kind of feel like they're being a little precious.*

*No matter how quality controlled you try to be, when you are potentially making bottles up with zero sleep, mistakes will be made or lackadaisical approaches taken.*

*Because the safety standards are very high for infant formula so you can be a little lax with the rules and measurements and all will still be fine.*

*Some babies don't mind a sort of cold bottle and some do, so their instructions about heating aren't a big deal.*

*I followed instructions exactly at first but have found my own way to be fine.*

*From my understanding it's more important to follow them strictly when baby is under 6 months, once they start eating solids and putting things from the floor, toys, etc, in their mouth it's probably still important to get amounts right but things like sterilising before each bottle, etc, you can relax a bit more on.*



**Table 9: Respondents' rating of the importance following preparation and storage instructions on tins of formula exactly by the explanation they provided for that rating**

	Total	Somewhat or not at all important	Very important	Extremely important
Unweighted base =	1305*	152	398	755
	%	%	%	%
For baby's nutrition/to get the nutrients baby needs	6	1	5	8
Safety reasons/to prevent harm/avoid risk	12	3	9	16
Baby can become ill/sick - general mention	13	3	9	16
Baby could become constipated	1	1	1	1
Baby could get diarrhoea	0	0	0	0
Baby could vomit	0	0	0	0
Baby could get a sore tummy	3	2	2	4
To prevent bacterial issues/contamination/for hygiene reasons	7	2	9	6
Formula can go off or spoil	3	0	4	4
To get the amount/proportion/ratio of formula right/to avoid under or over feeding	11	4	9	13
Because it's expert advice/proven research	5	3	6	6
The health/development of baby in general	8	1	7	10
General comment about the importance of following the instructions	15	5	15	17
It is not always important to follow the instructions	3	14	5	0
Other	7	16	8	6
Don't know	27	52	33	19

Total may exceed 100% because of multiple responses.

\*Sub-sample based on those respondents who gave a rating of 'not at all important' to 'extremely important' in terms of whether to follow the preparation and storage instructions on a tin of formula exactly.



Reflecting the earlier results, Table 10 below shows respondents who were answering the survey in terms of the one and only infant they had cared for were significantly more likely to report that they did not know why it was important to follow instructions compared with caregivers who were answering in terms of a subsequent infant they had cared for (33% compared with 20%).

In comparison, respondents who were answering in terms of a subsequent infant were significantly more likely to report that it is important to follow the instructions because 'baby can become ill/sick' (16% compared with 9%), 'for baby's nutrition' (8% compared with 4%), and 'to get the amount/proportion/ratio of the formula right/to avoid over or under feeding' (14% compared with 8%).

**Table 10: Respondents' comments on the importance of exactly following preparation and storage instructions on tins of formula**

	Total	One and only infant cared for	Subsequent infant cared for	Would rather not say
Unweighted base =	1305*	661	626	18**
	%	%	%	%
General comment about the importance of following the instructions	15	14	16	6
Baby can become ill/sick - general mention	13	9	16	6
Safety reasons/to prevent harm/avoid risk	12	12	12	6
To get the amount/proportion/ratio of formula right/to avoid under or over feeding	11	8	14	0
The health/development of baby in general	8	9	7	0
To prevent bacterial issues/contamination/for hygiene reasons	7	6	8	0
For baby's nutrition/to get the nutrients baby needs	6	4	8	6
Because it's expert advice/proven research	5	5	6	0
Baby could get a sore tummy	3	2	4	0
Formula can go off or spoil	3	3	4	0
It is not always important to follow the instructions	3	2	4	6
Baby could become constipated	1	1	1	0
Baby could get diarrhoea	0	0	0	0
Baby could vomit	0	0	0	0
Other	7	9	5	11
Don't know	27	33	20	67

Total may exceed 100% because of multiple responses.

\*Sub-sample based on those respondents who gave a rating of 'not at all important' to 'extremely important' in terms of whether to follow the preparation and storage instructions on a tin of formula exactly.

\*\*Caution: low base number of respondents - results are indicative only.



Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ New Zealand respondents were significantly **more** likely than Australian respondents to not provide a reason as to why it was important to follow the instructions (31% compared with 23%). That is, they were more likely to state they did not know.
- ◆ Respondents who do not have English as their first language were significantly **more** likely to cite 'safety reasons/to prevent risk/avoid harm' compared with those with English as their first language (18% compared with 11%). On the other hand, respondents with English as their first language were significantly **more** likely to state 'baby can become ill/sick' (14% compared with 5%).
- ◆ At 9%, Australian Europeans, were significantly **more** likely to state that following the instructions was important 'for baby's nutrition/to get the nutrients baby needs' compared with Māori//Pacific (3%) and Asian (4%) caregivers.
- ◆ Respondents with secondary school qualifications/no qualifications were significantly **more** likely to provide a general mention of 'baby can become ill/sick' compared with those with a university-based qualification (18% compared with 8%). Conversely, those with graduate qualifications were significantly more likely to report that following the instruction was important for 'safety reasons/to prevent harm/avoid risk' (14% compared with 9% of those with low/no qualifications).

In addition to being asked about the importance of exactly following the preparation and storage information on the label of formula, respondents were also asked what specific information was important:

*Q. There is a lot of feeding information on tins of formula. Using the scale across the top of the table below, please rate how important each of these is to you.*

Overall, respondents viewed the information on tins of formula as **important** (Table 11 overleaf). Almost all respondents, viewed the instructions on how to prepare the formula as either important or extremely important (92%). Similarly, the large majority rated as important the 'feeding guide', 'warning notice'<sup>13</sup> and the information about the 'type of formula to use' (all 89%), the 'storage instructions' (88%), and the 'warning statement' (70%).<sup>14</sup>

In general, respondents who answered the survey in terms of a subsequent infant they had cared for were more likely to regard the information on tins of formula as important compared with those answering in terms of the one and only infant they had cared for. In fact, they were more likely to

---

<sup>13</sup> The warning notice is as follows: 'Warning - follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill'.

<sup>14</sup> The warning statement is as follows: "Important Notice. Before you decide to use this product, consult your doctor or health worker for advice".



rate four of the five specific types of information as 'extremely important' compared with respondents who were answering in terms of the one and only infant they had cared for:

- ◆ 'Instructions on how to prepare formula' (74% compared with 60% of respondents answering in terms of the first infant the one and only infant cared for).
- ◆ 'The feeding guide' (73% compared with 60%).
- ◆ 'Information about the type of formula to use' (59% compared with 53%).
- ◆ 'Storage instructions' (59% compared with 52%).
- ◆ 'The warning notice' (71% compared with 59%).

**Table 11: Respondents' views on the importance of different information on tins of formula**

	Total %	One and only infant cared for %	Subsequent infant cared for %	Would rather not say %
<b>Instructions on how to prepare the formula</b>				
Unweighted base =	1333	681	630	22**
Not at all important	1	1	0	0
Not important	2	3	0	9
Neither important nor unimportant	4	6	2	9
Important	25	27	23	32
Extremely important	67	60	74	41
Don't know	2	3	1	9
Total	100	100	100	100
<b>The feeding guide (i.e. the amount of water to add per scoops of powder, and number of feeds per day for the age of the infant)</b>				
Unweighted base =	1333	681	630	22**
Not at all important	1	2	0	5
Not important	2	2	0	9
Neither important nor unimportant	6	7	4	9
Important	23	26	21	32
Extremely important	66	60	73	36
Don't know	2	3	1	9
Total	100	100	100	100

Continued



**Table 11: Respondents' views on the importance of different information on tins of formula (continued)**

	Total %	One and only infant cared for %	Subsequent infant cared for %	Would rather not say %
<b>Information about the type of formula to use and when (e.g. infant formula from birth)</b>				
Unweighted base =	1333	681	630	22**
Not at all important	1	1	0	5
Not important	2	4	1	5
Neither important nor unimportant	5	7	3	5
Important	33	31	35	27
Extremely important	56	53	59	50
Don't know	2	3	2	9
Total	100	100	100	100
<b>The warning notice: 'Warning - follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill'.</b>				
Unweighted base =	1333	681	630	22**
Not at all important	1	1	0	5
Not important	2	2	1	5
Neither important nor unimportant	5	8	3	9
Important	25	26	24	32
Extremely important	64	59	71	36
Don't know	3	4	1	14
Total	100	100	100	100
<b>Storage instructions (i.e. where to store the tin, and how long to keep it for)</b>				
Unweighted base =	1333	681	630	22**
Not at all important	1	2	0	9
Not important	2	3	1	5
Neither important nor unimportant	7	9	4	9
Important	33	31	35	18
Extremely important	55	52	59	50
Don't know	2	3	1	9
Total	100	100	100	100

Continued



**Table 11: Respondents' views on the importance of different information on tins of formula (continued)**

	Total %	One and only infant cared for %	Subsequent infant cared for %	Would rather not say %
<b>The warning statement: 'Important Notice. Before you decide to use this product, consult your doctor or health worker for advice'.</b>				
Unweighted base =	1333	681	630	22**
Not at all important	3	2	3	5
Not important	7	5	9	9
Neither important nor unimportant	18	16	19	14
Important	34	36	31	23
Extremely important	36	37	34	36
Don't know	3	3	3	14
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Total may not sum to 100% due to rounding.

\*\*Caution: low base number of respondents - results are indicative only.



Overall, respondents who rated the information on tins of formula as 'extremely important' were more likely to report following 10 or more correct practices in the preparation and storage of formula (see section 3.3) for more information on caregivers' practices in terms of the preparation and storage of formula). In comparison, respondents who rated the information as 'not at all important' or 'not important' were more likely to report only following up to five correct behaviours).

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to regard the instructions on 'how to prepare formula' as 'extremely important' (69% compared with 64%). They were also more likely to view the 'feeding guide' as 'extremely important' (70% compared with 62% of New Zealanders).
- ◆ Respondents with English as their first language were **more** likely to report that the 'feeding guide' was 'extremely important' than those who do not have English as their first language (67% compared with 60%).
- ◆ Australian Europeans were significantly **more** likely than Asian respondents to regard the instructions on 'how to prepare formula' as 'extremely important' (70% compared with 60%), and the 'feeding guide' as 'extremely important' (71% compared with 58% of Asian carers).



## 4.2 Despite their views on importance, caregivers do not regularly refer to the instructions or the feeding guide

Having established the importance placed on the information on tins of formula, respondents were asked how often they referred to this information with the following question:

*Q. In which of these situations, if any, have you used (referred to) the preparation and use instructions on any tin of formula?*

Table 12 overleaf illustrates that across the total sample, the number of situations in which respondents reported that they referred to the preparation and use instructions on tins of formula was **relatively low**.

For example, 72% of respondents stated they had referred to these instructions when they first started preparing formula. For all other listed situations, levels of reported use were under 50%. These results are concerning as different stages and brands of formula often use a different number of scoops of formula powder per 100mL of water. Caregivers need to check this information (which is available in the feeding guide and, generally, also in the preparation instructions) when they change stage or brand to ensure the formula is reconstituted correctly.

For example, respondents with children aged 13-18 months were more likely than respondents with infants aged 0-3 months to refer to the instructions when changing the stage of formula they were using (47% compared with 34%).

Across almost all of the listed situations, respondents answering the survey in terms of a subsequent infant they had cared for were significantly **more** likely to have referred to the preparation and use instructions compared with those who were answering in terms of the one and only infant they had care for. It should be noted that caregivers caring for their one and only infant may not have changed the stage and/or brand of formula by the time of the survey (particularly if their infant was aged under six months of age), so for some of this group, these parts of the question may not have been relevant.

- ◆ 'When I first started preparing formula' (77% compared with 67% of those caring for the one and only infant they had cared for).
- ◆ 'When I change the stage of formula I'm using' (53% compared with 34%).
- ◆ 'When I change the brand of formula I'm using' (49%, compared with 34%).
- ◆ 'Once in a while, when I need a reminder' (35%, compared with 30%).
- ◆ 'When my baby gets older and needs bigger feeds' (33% compared with 24%).
- ◆ 'When someone else prepares the formula' (e.g. a babysitter) (28% compared with 16%).



**Table 12: Respondents' reported use of preparation and use instructions on tins of formula**

	Total	One and only infant cared for	Subsequent infant cared for	Would rather not say
Unweighted base =	1333	681	630	22**
	%	%	%	%
When I first started preparing formula	72	67	77	41
When I change the stage of formula I'm using	43	34	53	36
When I change the brand of formula I'm using	41	34	49	36
Once in a while, when I need a reminder	32	30	35	18
When my baby gets older and needs bigger feeds	28	24	33	27
When someone else prepares the formula (e.g. a babysitter)	22	16	28	9
Every time I prepare it now	16	19	13	18
I have never used the preparation instructions on the tin	1	1	1	5
Don't know	2	3	2	9

Total may exceed 100% because of multiple responses.

\*\*Caution: low base number of respondents - results are indicative only.

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to report that they referred to the instructions 'when they first started preparing formula' (75% compared with 69%) and when their 'baby gets older and needs bigger feeds' (32% compared with 26%).
- ◆ Respondents with English as their first language were **more** likely to report using the preparation and use instructions on a tin of formula when their 'baby gets older and needs bigger feeds' compared with those for whom English is not their first language (31% compared with 17%).
- ◆ Respondents of Asian ethnicity were significantly **more** likely to report that they use the instructions 'every time they prepare it' compared with New Zealand Europeans and Australian Europeans (24% compared with 11% and 16%, respectively).
- ◆ At 34%, respondents of Asian ethnicity were **less** likely to refer to the instructions when they 'changed the stage of formula they were using' compared with New Zealand Europeans (46%), Australian Europeans (45%) and Māori/Pacific (46%). At 20%, Asian carers were also significantly **less** likely than these groups to refer to the instructions when their baby 'gets older and needs bigger feeds' (New Zealand European (28%), Australian European (34%) and Māori/Pacific (30%)).



- ◆ Respondents with a graduate qualification were significantly **less** likely to report using the instructions when their 'baby gets older and needs bigger feeds' compared with those with a secondary school qualification as their highest level of education attainment, and those with a certificate, trade qualification or apprenticeship (25% compared with 32% and 33% respectively).

Respondents' use of the feeding guide on tins of formula was similar to their use of the preparation and use instructions and was relatively low across all of the situations listed. Aside from referring to the feeding guide when they 'first started using formula' (68%), all other levels of reported use were under 50% (Table 13 overleaf).

Consistent with the results relating to the preparation and use instructions, respondents who answered the survey in terms of a subsequent infant they had cared for were significantly **more** likely to have referred to the feeding guide compared with those who had answered in terms of the one and only infant they had cared for. This was the case for almost all of the listed situations:

- ◆ 'When I first started preparing formula' (74% compared with 62% of those answering the survey in terms of the one and only infant they had cared for).
- ◆ 'When I change the stage of formula I'm using' (48% compared with 34%).
- ◆ 'When I change the brand of formula I'm using' (45%, compared with 33%).
- ◆ 'Once in a while, when I need a reminder' (38%, compared with 32%).
- ◆ 'When my baby gets older and needs bigger feeds' (39% compared with 27%).
- ◆ 'When someone else prepares the formula (e.g. a babysitter)' (27% compared with 16%).



**Table 13: Respondents' reported use of the feeding guide on tins of formula**

	Total %	One and only infant cared for %	Subsequent infant cared for %	Would rather not say %
Unweighted base =	1333	681	630	22**
When I first started preparing formula	68	62	74	45
When I change the stage of formula I'm using	41	34	48	27
When I change the brand of formula I'm using	39	33	45	27
Once in a while, when I need a reminder	34	32	38	18
When my baby gets older and needs bigger feeds	32	27	39	23
When someone else prepares the formula (e.g. a babysitter)	21	16	27	5
Every time I prepare it now	15	18	10	27
I have never used the feeding guide on the tin	2	2	3	5
Don't know	3	2	3	18

Total may exceed 100% because of multiple responses.

\*\*Caution: low base number of respondents - results are indicative only.

Other significant results of note include the following (refer to Appendix C for tabular results):

- ◆ Australian respondents were significantly **more** likely than New Zealand respondents to report that they referred to the feeding guide 'every time they prepare formula' (18% compared with 12%) and when their baby 'gets older and needs bigger feeds' (36% compared with 30%).
- ◆ Respondents with English as their first language were **more** likely compared with those for whom English is not their first language to report using the feeding guide when 'changing the stage of formula they are using' (42% compared with 33%) and when their baby 'gets older and needs bigger feeds' (35% compared with 22%).
- ◆ Asian and Māori/Pacific respondents were significantly **more** likely to report using the feeding guide 'every time they prepare formula' compared with New Zealand Europeans (20% and 18% compared with 11% respectively).
- ◆ At 24%, Asian respondents were **less** likely to refer to the feeding guide when their baby 'gets older and needs bigger feeds' compared with New Zealand Europeans (32%) and Australian Europeans (39%).



- ◆ Respondents with graduate qualifications were significantly **less** likely to report using the feeding guide when their 'baby gets older and needs bigger feeds' compared with those who have a secondary-school qualification as their highest level of education, and those with a certificate, trade qualification or apprenticeship (29% compared with 36% and 40% respectively).



## 5.0 Understanding of the instructions is varied

---

In this section of the report, we present the results to questions designed to test the wording for particular instructions on a label of formula. Respondents were presented with either a current set of instructions, or a set of potentially improved instructions and asked to respond to a series of statements based on these instructions.

These questions were asked in order to establish how well caregivers understand current instructions and whether making changes to the wording of instructions on labels of formula improves their understanding of correct preparation and storage practices.

Respondents were randomly assigned either a set of instructions currently found on tins of formula, or a set of potentially improved instructions (see Appendix B). Respondents were then presented with the same set of true-false statements (based on the main preparation and storage risks) and were asked the following question:

*Q. Instructions on tins of formula are not always worded in the same way. We want to test some of the instructions to see how clear they are. Please carefully read these instructions and tell us which of the following statements are true or false, based on these instructions.*

The extent to which both sets of instructions were rated correctly, is presented in Figure 6.

### 5.1 Understanding based on current set of instructions

Respondents who viewed the current set of instructions were **most likely** to give correct responses to the following statements (Figure 6):

- ◆ 'You need to sterilise the bottle you're using every time you make up formula' (correctly identified as 'true' by 84% of these respondents).
- ◆ 'You can add an extra scoop of formula powder if your baby is really hungry' (correctly identified as 'false' by 81% of these respondents).
- ◆ 'You need to let the boiled water cool down before mixing it with the formula powder, rather than mixing it when it is still hot' (correctly identified as 'true' by 80% of these respondents).



Respondents who viewed the current set of instructions were **least likely** to give correct responses to the following statements (Figure 6):

- ◆ 'It's OK to prepare a few bottles or a 'batch' of formula at once, rather than just preparing each bottle as you need individually' (correctly identified as 'false' by 57% of these respondents).
- ◆ 'It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well' (correctly identified as 'false' by 58% of these respondents).
- ◆ 'It's OK to store made-up formula in the fridge for 24 hours' (correctly identified as 'true' by 66% of these respondents).

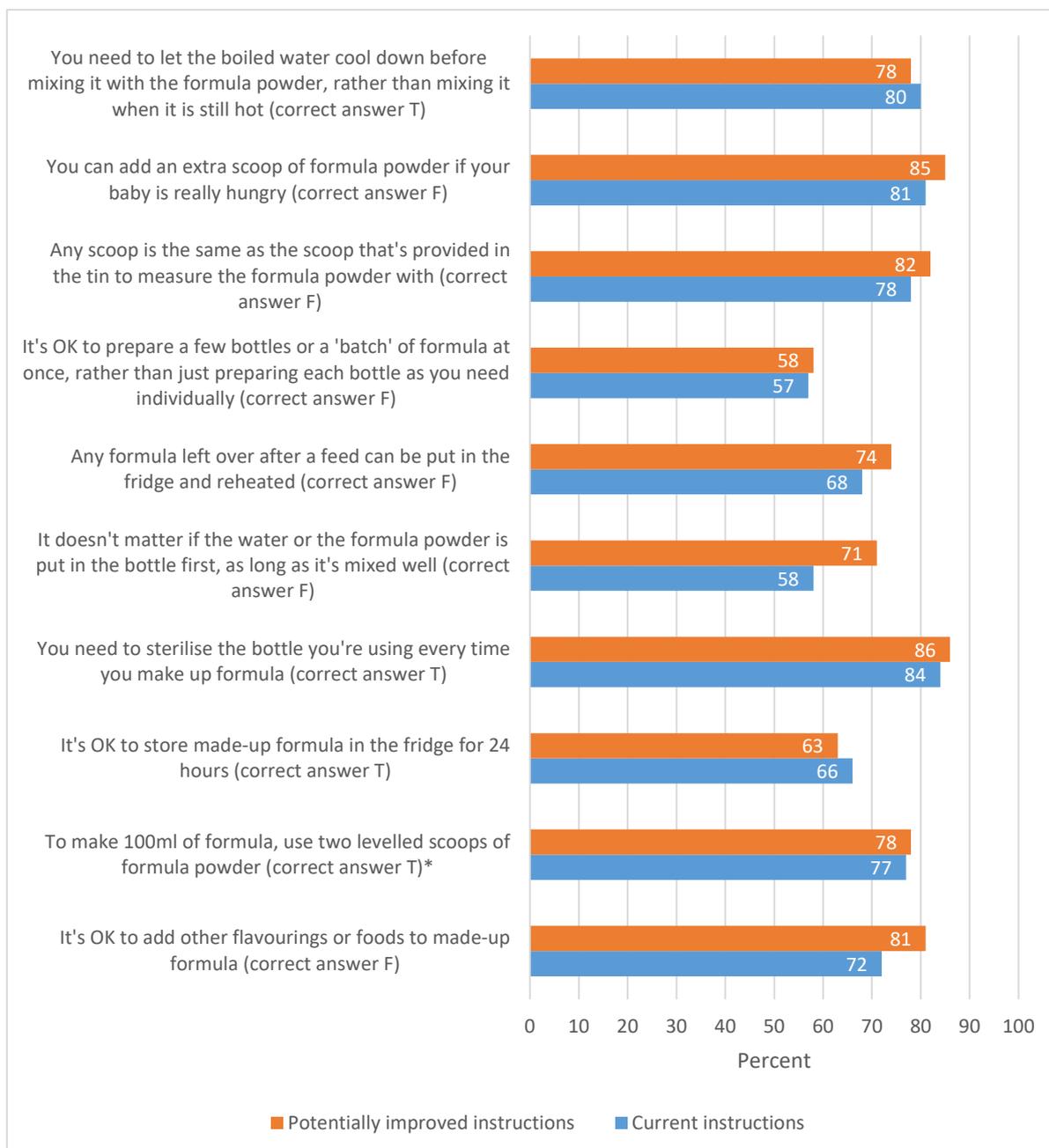
## 5.2 Improvements based on potentially improved instructions

In general, Figure 6 shows that there were relatively few differences in understanding between the current and the potentially improved instructions. However, comprehension was significantly improved with regard to three of the new or potentially improved instructions:

- ◆ 'It's OK to add other flavourings or foods to made up formula' (81% of those who viewed the potentially improved instructions gave the correct answer 'false' compared with 72% of those who viewed the current instructions).
- ◆ 'Any formula left over after a feed can be put in the fridge and reheated' (74% of those who viewed the potentially improved instructions gave the correct answer 'false' compared with 68% of those who viewed the current instructions).
- ◆ 'It doesn't matter if the water or the formula is put in the bottle first, as long as it's mixed well' (71% of those who viewed the potentially improved instructions gave the correct answer 'false' compared with 58% of those who viewed the current instructions).



**Figure 6: Extent to which caregivers correctly understood current and potentially improved formula preparation and storage instructions**



\* While it is correct that someone using two level scoops of powder would use 100ml of water, technically this would make 112ml of formula (not 100ml). So, it is possible that some caregivers may have answered that this statement was 'false' (and been technically correct).



The three potentially improved instructions that recorded higher understanding than in the current instructions, recorded significant improvements in understanding amongst the following sub-groups of respondents:

- ◆ 'It's OK to add other flavourings or foods to made up formula':
  - ◆ Respondents who answered the survey in terms of a subsequent infant they had cared for (91% correctly interpreted this potentially improved instruction compared with 78% for the current version).
  - ◆ Respondents who cared for an infant aged 0-3 months (84% interpreted this potentially improved instruction correctly compared with 68% for the current version).
  - ◆ New Zealand respondents (81% correctly interpreted the potentially improved instruction compared to 71% for the current version).
  - ◆ Māori/Pacific respondents (86% correctly interpreted the potentially improved instruction compared to 72% who viewed the current version).
- ◆ 'Any formula left over after a feed can be put in the fridge and reheated':
  - ◆ Respondents who answered the survey in terms of a subsequent infant they had cared for (83% correctly interpreted the potentially improved instruction compared with 74% for the current version).
- ◆ 'It doesn't matter if the water or formula is put in the bottle first, as long as it's mixed well':
  - ◆ Respondents who answered the survey in terms of a subsequent infant they had cared for (77% correctly interpreted this potentially improved instruction compared with 69% for the current version).
  - ◆ Respondents caring for their one and only child (66% correctly interpreted the potentially improved instruction compared with 48% of those interpreted this correctly with the current instruction).
  - ◆ New Zealand respondents (71% correctly interpreted the potentially improved instruction compared to 56% with the current instruction).
  - ◆ Respondents who did not have English as a first language (69% correctly interpreted the improved instruction compared to 54% of those viewing the current instruction).
  - ◆ Māori/Pacific respondents (71% correctly interpreted potentially improved version, compared to 54% viewing the current version).



# **Appendix A: Questionnaire**

---

**Ministry for Primary Industries – Caregivers’ practices, understanding and beliefs to infant formula preparation**

Research New Zealand #5089

**DATE** September 2019

---

**WELCOME TO THE NEW ZEALAND MINISTRY FOR PRIMARY INDUSTRIES’ SURVEY ABOUT FEEDING INFANTS**

Thank you for taking part in this survey. The survey should take up to 15 minutes to complete (excluding any additional comments you make). Please take your time to carefully read the survey questions before you answer them.

As you move through the survey, please use the *Save and Continue* buttons - Do not use your browser buttons.

**Confidentiality**

Participation in this survey is completely voluntary. You may choose to exit at any time.

Any information you provide will be confidential. We will group your responses with the responses of other people, so that individual participants cannot be identified.

You can read more about our privacy policy [here](#).

Please provide your consent to complete the survey by ticking this box.

**If box is not selected, Terminate**

If you are having trouble reading this text and would like the text to appear larger in the survey, please tick this button.

**\*\*\*QUALIFYING QUESTIONS\*\*\***

Q1 First of all, are you the caregiver of a child who is under 18 months of age?

Note: If you have more than one child in your care who is under the age of 18 months, please answer the questions in this survey with the youngest child in mind.

- 1 ....Yes
- 2 ....No **Terminate**
- 98 ...Don't know **Terminate**

**CAREGIVER TERMINATION IF 1 NOT CODED: Thank you for your time, but for this survey we need to hear from people who are caregivers of a child who is under the age of 18 months.**

Q2 What is your relationship to this child?

- 1 .....Mother
- 2 .....Father
- 3 .....Professional caregiver **Terminate**
- 96 ...Other caregiver (**Specify**)

**RELATIONSHIP TERMINATION IF 3 CODED: Thank you for your time, but for this survey we need to hear from people who are not professional caregivers.**

Q3 And how old is this child **today**?

- 1 .....0-3 months
- 2 .....4-6 months
- 3 .....7-12 months
- 4 .....13-18 months

Q4 **If Q3=1,2, or 3 ask:** Which of the following has been fed to this child?

**If Q3=4 (child aged 13-18 months) ask:** Which of the following were being fed to this child when they were under 12 months of age? **Code many**

- 1 .....Infant formula, which is suitable for babies from birth
- 2 .....Follow-on formula, which is suitable for babies aged 6 to 12 months
- 3 .....Formula product designed for a particular medical/dietary condition e.g. lactose intolerance, allergies, reflux
- 4 ....Breast milk
- 5 .....Liquids other than breast milk, formula or water
- 6 .....Solids (e.g. fruit, vegetables, or baby food)
- 98 ...Don't know ;E

**NUTRITION TYPE TERMINATION IF 1, 2 or 3 NOT CODED: Thank you for your time, but for this survey we need to hear from people who [feed/have fed] the child they care for formula.**

Q5 **If Q3=1,2,or 3 ask:** Are you **mainly** responsible for preparing the formula feeds for this child each week?

Note: If the child is not currently being fed formula, please think back to when they were.

**If Q3=4 (child aged 13-18 months) ask** Were you **mainly** responsible for preparing the formula feeds for this child each week when they were under 12 months of age?

- 1 .....Yes
- 2 .....No
- 98 ...Don't know

Q6 **If Q5=2 or 98 and if Q3=1,2, or 3 (child aged 0-12 months) ask:** During a typical week, do you prepare...

Note: If the child is not currently being fed formula, please think back to when they were.

**If Q5=2 and if Q3=4 ask (child aged 13-18 months) ask** And when they were under 12 months of age, during a typical week did you prepare...

- 1 .....None of the feeds **Terminate**
- 2 .....Less than half of the feeds **Terminate after quota of 150 is met**
- 3 .....About one-half of the feeds
- 4 .....More than one-half of the feeds
- 5 .....All of the feeds
- 98 ...Don't know

**PREPARER TERMINATION IF 1 is CODED: Thank you for your time, but for this survey we need to hear from people who are caregivers who are a main preparer of formula for the child they care for.**

**If 2 is CODED sufficiently to meet the quota: Thank you for your time, but we have enough people that match your criteria for this survey.**

\*\*\*CHILD DEMOGRAPHICS \*\*\*

Q7 It would be easier to complete this survey if we were able to refer to this child by their first name. Please write the name of this child in the space provided below:

Please note, the child's name will be kept entirely confidential and will not be used beyond this survey.

- 1 .....Yes **Specify**
- 99 ...Would rather not say

Q8 The next few questions are about [insert name from Q7 or 'this child']. First of all, are they a **boy or girl**?

- 1 .....Boy
- 2 .....Girl
- 99 ...Would rather not say

Q9 How old was [insert name from Q7 or 'this child'] when they were **first** fed formula?

- 1 .....0-3 months
- 2 ....4-6 months
- 3 ....7-12 months
- 98 ...Don't know/Can't remember

\*\*\*CAREGIVER DEMOGRAPHICS \*\*\*

Q10 Is [insert name from Q7 or 'this child'] living with you?

- 1 .....Yes, all the time
- 2 .....Yes, 50/50
- 3 .....Yes, less than 50/50
- 4 .....No
- 99 ...Would rather not say

Q11 Are they the first infant you have cared for?

This includes other children you have, and/or other children that you have looked after on a regular basis

- 1 .....Yes
- 2 .....No, I have cared for other infants (**Specify, how many**)
- 99 ...Would rather not say

Q12 Is this the first child you have prepared formula for?

- 1 .....Yes
- 2 .....No (**Specify, how many**)
- 99 ...Would rather not say

Q13 Which of the following age groups do you come into?

- 1 .....18-19 years
- 2 .....20-24 years
- 3 .....25-29 years
- 4 .....30-34 years
- 5 .....35-39 years
- 6 .....40-44 years
- 7 .....45-49 years
- 8 .....50-54 years
- 9 .....55-59 years
- 10 ...60-64 years
- 11 ...65 years and over
- 99 ...Would rather not say

Q14 What is your gender?

- 1 .....Female
- 2 .....Male
- 3 .....Nonbinary (i.e. you do not identify as either male or female, but both, neither, or a combination)
- 96. Not listed (**Specify**)
- 99 ...Would rather not say

Q15 And which ethnic groups do you belong to? **Code many**

Q15a For Australian respondents

- 1 .....Australian European
- 2 .....Australian Aboriginal or Torres Strait Islander
- 3 .....Pacific
- 4 .....Asian
- 5 .....Middle Eastern/Latin America/African
- 96 ...Other ethnic group (**Specify**)
- 99 ...Would rather not say ;**E**

Q15b For New Zealand respondents only

- 1 .....New Zealand European (or Pakeha)
- 2 .....Māori
- 3 .....Pacific
- 4 .....Asian
- 5 .....Middle Eastern/Latin America/African
- 96 ...Other ethnic group (**Specify**)
- 99 ...Would rather not say ;**E**

Q16 Is English your first language?

- 1 .....Yes
- 2 .... No
- 99 ...Would rather not say

**\*\*\*FORMULA PREPARATION, STORAGE AND USE\*\*\***

Q17 Is [insert name from Q7 or 'this child'] **still** being fed formula?

This may be the same formula they started on, or it may be a different infant formula, follow-on formula or a formula product for special dietary requirements.

- 1 .....Yes
- 2 .....No
- 98 ...Don't know

Q18 **If Q3=1,2,3 and Q17=1 (child aged 0-12 months and currently using formula) ask** Thinking about last week, **how often** did you prepare formula for [insert name from Q7 or 'this child']?

**If Q3=4 and Q17=1 (child aged 13-18 months and currently being fed formula) ask** Thinking back to when [insert name from Q7 or 'this child'] was around 12 months of age, about **how often** did you prepare formula for them?

- 1 .....More than once a day
- 2 .....Once a day
- 3 .....Every second day
- 4 .....Once or twice during the week
- 5 .....Not at all
- 98 ...Don't know

Q19 **If Q17=2 or 98 (child is not currently using formula or don't know ask)** How old was [insert name of child from Q7 or 'this child] when they **stopped** being fed formula?

- 1 .....0-3 months
- 2 ....4-6 months
- 3 ....7-12 months
- 4 .....13-18 months

Q20 **If Q19=1,2,3 or 98 (child stopped being fed before 12 months of age) ask** Thinking back to when [insert name from Q7 or 'this child'] was being fed formula, about how often did **you** usually prepare formula...

**If Q19=4 (child stopped being fed formula at 13-18 months) ask** Thinking back to when [insert name from Q7 or 'this child'] was around 12 months of age, about how often did **you** usually prepare formula...?

- 1 .....More than once a day
- 2 .....Once a day
- 3 .....Every second day
- 4 .....Once or twice during the week
- 5 .....Less than once during a week
- 98 ...Don't know/Can't remember

Q21 **If Q3=1-3 and Q17=1 (child currently aged 0-12 months and currently being fed formula) ask** Caregivers prepare formula in different ways. When you prepare formula for [insert name from Q7 or 'this child'], how often do you **currently** do each of the following? **Random order.**

**Statements in present tense**

**If Q3=1-4 and Q17=2 and Q19=1,2,3 (child currently aged 0-18 months and not currently being fed formula and stopped formula 0-12 months) ask** Caregivers prepare formula in different ways.

Thinking back to when [insert name from Q7 or 'this child'] was [insert age from Q19], when you were preparing their formula, how often did you do each of the following? **Random order.**

**Statements in past tense**

**If Q3=4 and Q17=1 (child currently aged 13-18 months and currently being fed formula) ask AND**

**If Q3=4 and Q17=2 and Q19=4 (child currently aged 13-18 months and not currently being fed formula and they stopped formula after 12 months) ask**

Caregivers prepare formula in different ways. When you prepared formula for [insert name from Q7 or 'this child'] when they were **around 12 months of age**, how often did you do each of the following? **Random order. Statements in past tense.**

	Every time	Most times	Occasionally	Hardly ever	Never	Don't know
a. Wash your hands before starting to prepare the formula	1	2	3	4	5	98
b. Sterilise/boil the bottles and teats	1	2	3	4	5	98
c. Use only <b>boiled</b> water to make formula	1	2	3	4	5	98
d. Use <b>cool or lukewarm</b> water to make formula	1	2	3	4	5	98
e. Add the formula powder to the bottle <b>before</b> you add the water	1	2	3	4	5	98
f. Use something <b>other</b> than the measuring scoop that comes in the tin to measure the formula powder	1	2	3	4	5	98
g. <b>Level</b> the scoop of formula powder	1	2	3	4	5	98
h. Check the <b>temperature</b> of the made-up formula before giving it to the child	1	2	3	4	5	98
i. After a feed, save any left-over formula in the fridge to reuse later	1	2	3	4	5	98
j. Make up a <b>number of bottles</b> of formula at the same time to use for later feeds	1	2	3	4	5	98
k. Add <b>extra flavourings or foods</b> to the bottle	1	2	3	4	5	98
l. Add <b>more (or less) formula powder</b> to the bottle than the instructions say	1	2	3	4	5	98
m. Warm up the formula up in the <b>microwave</b>	1	2	3	4	5	98

Q22 How confident do you feel about preparing formula?

- 1 .....Not at all confident
- 2 .....Somewhat confident
- 3 .....Very confident
- 4 .....Extremely confident
- 98 ...Don't know

Q23 In your personal opinion, how important is it to follow the preparation and storage instructions on a tin of formula exactly? **If respondent =1-4 ask respondents to specify "Can you explain why you feel this way?"**

- 1 .....Not at all important
- 2 .....Somewhat important
- 3 .....Very important
- 4 .....Extremely important
- 98 ...Don't know

Q24 Have you heard that any of the following could happen to a child if the instructions on a tin of formula are not followed? **Random order for options 1-8**

- 1 .....Diarrhoea
- 2 .....Not get enough nutrition
- 3 .....Get burns on their mouth or throat
- 4 .....Constipation
- 5 .....Have too little weight gain
- 6 .....Have too much weight gain
- 7 .....Get a bacterial infection
- 8 .....Choke
- 9 .....No, I have not heard that any of the above could happen to a child if the instructions on a tin of formula are not followed
- 98 ...Don't know

**\*\*\*PREPARATION INSTRUCTIONS ON TINS OF INFANT FORMULA\*\*\***

Q25 **Show image of preparation instructions.**

In which of these situations, if any, have you used (referred to) the **preparation and use instructions** on any tin of formula? **Code many.**

**If Q17=1 the statements will be in the present tense. If Q17=2 or 98 statements will be in the past tense**

- 1 .....When I first started preparing formula
- 2 .....Every time I prepare it now
- 3 .....Once in a while, when I need a reminder
- 4 .....When I change the **brand** of formula I'm using
- 5 .....When I change the **stage** of formula I'm using
- 6 .....When my baby gets older and needs bigger feeds
- 7 .....When someone else prepares the formula (e.g. a babysitter)
- 8 .....I have never used the preparation instructions on the tin
- 98 ...Don't know

Q26 **Show image of feeding guide.**

And in which of these situations, if any, have you used (referred to) the **feeding guide** on any tin of formula? **Code many.**

- 1 .....When I first started preparing formula
- 2 .....Every time I prepare it now
- 3 .....Once in a while, when I need a reminder
- 4 .....When I change the **brand** of formula I'm using
- 5 .....When I change the **stage** of formula I'm using
- 6 .....When my baby gets older and needs bigger feeds
- 7 .....When someone else prepares the formula (e.g. a babysitter)
- 8 .....I have never used the feeding guide on the tin
- 98 ...Don't know

**If Q17=1 the statements will be in the present tense. If Q17=2 or 98 statements will be in the past tense**

**Q27** Half of the sample will view one set of instructions and the other half will view the **'Potentially improved labelling' instructions**. Instructions on tins of formula are not always worded in the same way. We want to test some of the instructions to see how clear they are. Please carefully read these instructions and tell us which of the following statements are true or false, **based on these instructions**. You can tick don't know if you are unsure.

**Random order**

	True	False	Don't know
a. It's OK to add other flavourings or foods to made-up formula	T	F	98
b. To make 100ml of formula, use two levelled scoops of formula powder	T	F	98
c. It's OK to store made-up formula in the fridge for 24 hours	T	F	98
d. You need to sterilise the bottle you're using every time you make up formula	T	F	98
e. It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well.	T	F	98
f. Any formula left over after a feed can be put in the fridge and reheated	T	F	98
g. It's OK to prepare a few bottles or a 'batch' of formula at once, rather than just preparing each bottle as you need individually.	T	F	98
h. Any scoop is the same as the scoop that's provided in the tin to measure the formula powder with	T	F	98
i. You can add an extra scoop of formula powder if your baby is really hungry	T	F	98
j. You need to let the boiled water cool down before mixing it with the formula powder, rather than mixing it when it is still hot	T	F	98

Q28 There is a lot of feeding information on tins of formula. Using the scale across the top of the table below, please rate how important each of these is to you.

	Not at all important	Not important	Neither important nor unimportant	Important	Extremely important	Don't know
a. Instructions on how to prepare the formula	1	2	3	4	5	98
b. The feeding guide (i.e. the amount of water to add per scoops of powder, and number of feeds per day for the age of the infant)	1	2	3	4	5	98
c. Storage instructions (i.e. where to store the tin, and how long to keep it for)	1	2	3	4	5	98
d. The warning notice: 'Warning - follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill'.	1	2	3	4	5	98
e. The warning statement: 'Important Notice. Before you decide to use this product, consult your doctor or health worker for advice'.	1	2	3	4	5	98
f. Information about the type of formula to use and when (e.g. infant formula from birth)	1	2	3	4	5	98

**\*\*\*CAREGIVER DEMOGRAPHICS \*\*\***

These remaining questions are about you and are to ensure that we survey a wide range of people.

Q29 Are you currently ...? **code many**

- 1 .....On maternity/paternity leave
- 2 .....Working full-time
- 3 .....Working part-time
- 4 .....A full-time student
- 5 .....A part-time student
- 6 .....Both working and studying
- 7 .....Engaged in full time home duties
- 8 .....Not in paid work but looking
- 9 .....Retired
- 10 ...On a benefit/pension (other than retirement/superannuation)
- 96 ...Other (**Specify**)
- 99 ...Would rather not say

Q30 Which of these best describes your total income before tax, for the last year? Please include your partner's income, any child support, benefits or other income support you may receive.

- 1 .....No income
- 2 .....Under \$20,000
- 3 .....\$20,000 but less than \$40,000
- 4 .....\$40,000 but less than \$60,000
- 5 .....\$60,000 but less than \$80,000
- 6 .....\$80,000 but less than \$100,000
- 7 .....\$100,000 but less than \$120,000
- 8 .....\$120,000 but less than \$140,000
- 9 .....\$140,000 but less than \$160,000
- 10 ...\$160,000 but less than \$180,000
- 11 ...\$180,000 or more
- 98 ...Don't know
- 99 ...Would rather not say

Q31 And which one of these best describes your highest educational qualification?

- 1 .....NCEA, Senior Secondary Certificate in Education, or other secondary school qualification
- 2 .....Certificate, trade qualification or apprenticeship
- 3 .....Undergraduate diploma or associate diploma
- 5 .....Bachelor's degree
- 6 .....Graduate certificate or Graduate diploma
- 7 .....Postgraduate degree, for example a Master's or PhD
- 96 ...Other (**Specify**)
- 97 ...None / No qualifications
- 98 Don't know

Q32 [Location question]

For Australian respondents only

Q32a In which part of Australia do you live?

- 1 .....New South Wales
- 2 .....Victoria
- 3 .....Queensland
- 4 .....Western Australia
- 5 .....South Australia
- 6 .....Tasmania
- 7 .....Australian Capital Territory
- 8 .....Northern Territory
- 99 ...Would rather not say

For New Zealand respondents only

Q32b In which part of New Zealand do you live?

- 1 .....Northland
- 2 .....Auckland
- 3 .....Waikato
- 4 .....Bay of Plenty
- 5 .....Gisborne
- 6 .....Hawke's Bay
- 7 .....Taranaki
- 8 .....Manawatu
- 9 .....Whanganui
- 10 ...Wairarapa
- 11 ...Wellington
- 12 ...Tasman
- 13 ...Nelson
- 14 ...Marlborough
- 15 ...West Coast
- 16 ...Canterbury
- 17 ...Otago
- 18 ...Southland
- 99 ...Would rather not say

Q33 And do you live in...

- 1 .....A city
- 2 .....A town
- 3 .....A rural area
- 99 ...Would rather not say

**\*\*\*CLOSING QUESTION \*\*\***

Q34 That is the end of our survey. Thank you for your time in taking part. Do you have any other comments you'd like to make about the subject of this survey?

- 1 .....Comments **Specify**
- 2 .....No

If this survey has raised any questions for you regarding the nutrition or feeding practices of young children, or you would like to find out more, please go to:

**For Australian Respondents**

The Raising Children website  
<https://raisingchildren.net.au/>

If you would like to speak to someone, Pregnancy, Birth and Baby is available on 1800 882 436. Their phone line is open 7 days a week (7am to midnight AET).

For 24-hour health advice, call Health Direct on 1800 022 222.

**For New Zealand Respondents**

The Ministry of Health website  
<https://www.health.govt.nz/your-health/pregnancy-and-kids/first-year/helpful-advice-during-first-year/formula-feeding>

If you would like to speak to someone, the following health and parenting advice is available by phone 24 hours a day, 7 days a week:

- PlunketLine on 0800 933 922
- Heathline 0800 611 116



## Appendix B: Questionnaire Images

---

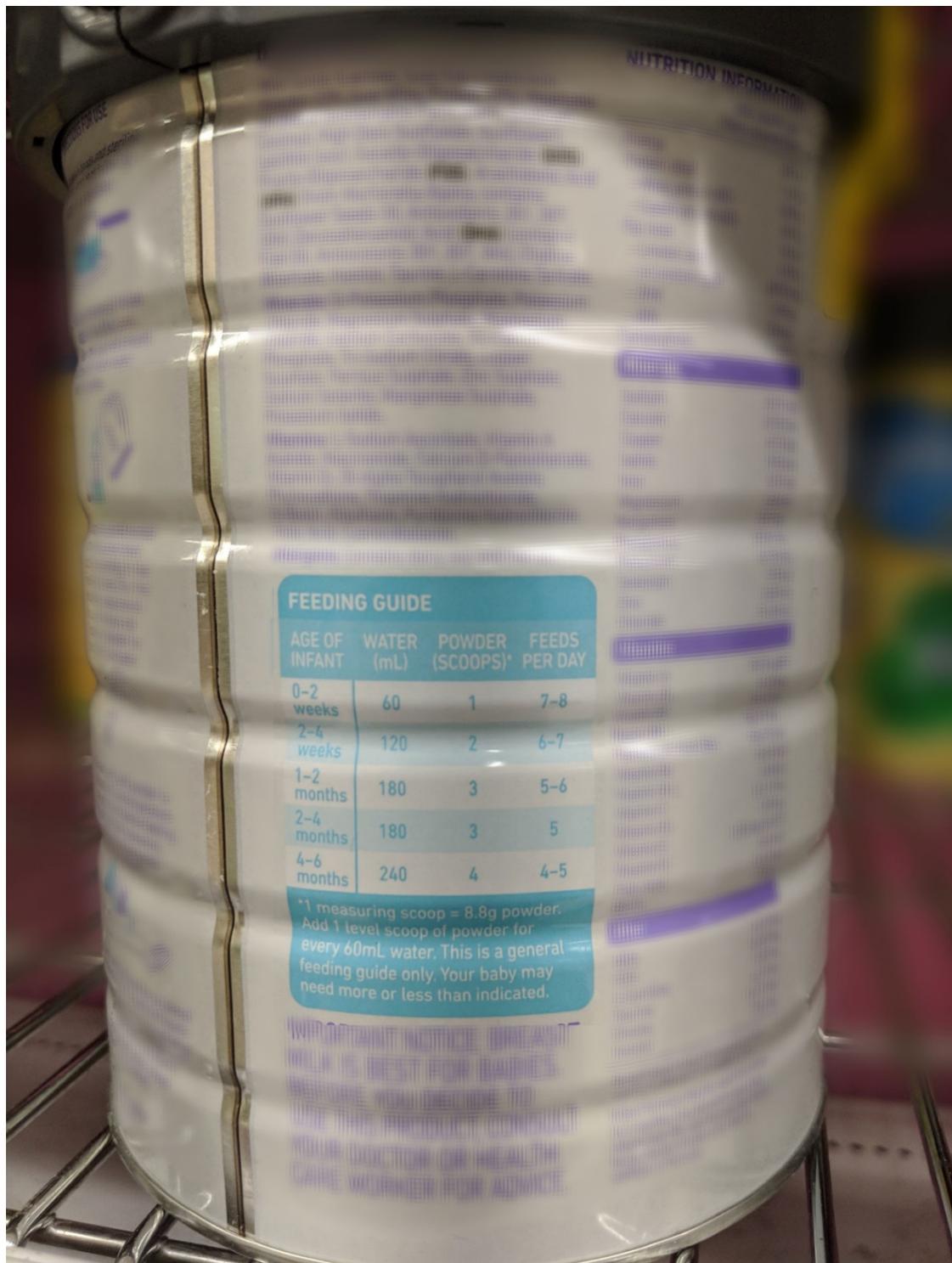
The following images were embedded in the online survey.

**Image presented to respondents for Q25.** *In which of these situations, if any, have you used (referred to) the preparation and use instructions on any tin of formula?*





Image presented to respondents for Q26. In which of these situations, if any, have you used (referred to) the feeding guide on any tin of formula?





## Potentially improved preparation and storage instructions presented to respondents for Q27

*Instructions on tins of formula are not always worded in the same way. We want to test some of the instructions to see how clear they are. Please carefully read these instructions and tell us which of the following statements are true or false, based on these instructions. You can tick don't know if you are unsure.*

1. Wash hands before preparing the feed. Clean and then sterilise all utensils by boiling, for 5 minutes, or using an approved steriliser.
2. Boil safe drinking water and allow to cool until lukewarm.
3. Prepare each bottle individually. Measure the required volume of water (consult FEEDING GUIDE for quantity of water) into the sterilised bottle. Always put the water into the bottle first, before adding the powder.
4. Use only the enclosed scoop, fill scoop and level off using inner rim. Always add 1 level scoop of powder for each 50mL of water. Never add more or less formula powder or water than recommended unless directed by a healthcare professional. Do not add any other food (e.g. cereal) or flavouring to the feed.
5. Cap the bottle and shake briskly to dissolve the powder.
6. Test the temperature on your wrist. It should feel warm, but cool is better than too hot. Feed your baby immediately.
7. Once prepared, formula can spoil quickly. Discard any formula left in the bottle after a feed.
<i>Preparing feeds in advance</i> It is safer to prepare each bottle as needed. If a bottle of formula is made up prior to use, it must be refrigerated and used within 24 hours.
Warning – follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill.



### Current preparation and storage instructions presented to respondents for Q27

*Instructions on tins of formula are not always worded in the same way. We want to test some of the instructions to see how clear they are. Please carefully read these instructions and tell us which of the following statements are true or false, based on these instructions. You can tick don't know if you are unsure.*

1. Wash hands before preparing the feed. Clean and then sterilise all feeding equipment by boiling, for 5 minutes, or using an approved steriliser.
2. Boil drinking water and allow to cool.
3. Measure the required volume of water (consult FEEDING GUIDE for quantity of water) into the sterilised bottle.
4. Use only the enclosed scoop, fill scoop and level off using inner rim. Measure the correct quantity of formula (consult FEEDING GUIDE) into the bottle.
5. Cap the bottle and shake briskly to dissolve the powder.
6. Test the temperature on your wrist and feed immediately. Discard unfinished feeds.
Prepare each bottle individually. If a bottle of made up formula is to be stored prior to use, it must be refrigerated and used within 24 hours.
Warning – follow instructions exactly. Prepare bottles and teats as directed. Do not change proportions of powder except on medical advice. Incorrect preparation can make your baby very ill.

### Feeding Guide presented to respondents for Q27

*Instructions on tins of formula are not always worded in the same way. We want to test some of the instructions to see how clear they are. Please carefully read these instructions and tell us which of the following statements are true or false, based on these instructions. You can tick don't know if you are unsure.*

Age of infant	Water added (mL)	Number of scoops	Number feeds per day
0-2 weeks	50	1	7-9
2 weeks – 1 month	100	2	6-7
1-2 months	150	3	5-6
2-4 months	200	4	4-5
4-6 months	250	5	4-5

Note: One level scoop = 8.8g of formula. 2 scoops of powder added to 100mL of water yields approximately 112mL.



## Appendix C: Tabular results

**Table 14: Key questions by whether the subject of the infant in the survey was the respondent's one and only child or a subsequent child**

	Total n=1333 %	One and only infant cared for n=681 %	Subsequent infant cared for n=630 %
<b>Q21. Caregivers practices in the preparation of formula</b>			
Always use cool or lukewarm water to make formula	33	33	33
Never warm the formula up in the microwave	39	37	41
After a feed, never save any left-over formula in the fridge to reuse later	52	44	60
<b>Q22. Confidence in preparing formula</b>			
Extremely confident in preparing formula	60	47	75
<b>Q23. Importance of following preparation and storage instructions</b>			
Extremely important to follow preparation and storage instructions exactly	57	50	64
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>			
General comment about the importance of following the instructions	15	14	16
Baby can become ill/sick - general mention	13	9	16
Safety reasons/to prevent harm/avoid risk	12	12	12
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>			
Not get enough nutrition	51	43	61
Constipation	50	42	59
Diarrhoea	43	38	48
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>			
When I first started preparing formula	72	67	77
When I change the stage of formula I'm using	43	34	53
When I change the brand of formula I'm using	41	34	49
<b>Q27a. Correct responses given by respondents who viewed the <u>current</u> set of formula instructions*</b>			
It's OK to add other flavourings or foods to made-up formula	72	68	78
Any formula left over after a feed can be put in the fridge and reheated	68	64	74
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	48	69

Note: Results for those respondents who did not wish to disclose whether the infant who was the subject of this survey was the first infant they had cared for or not are not shown in this table.

\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

Continued



**Table 14: Key questions by whether the subject of the infant in the survey was the respondent's one and only child or a subsequent child (continued)**

	Total n=1333 %	One and only infant cared for n=681 %	Subsequent infant cared for n=630 %
<b>Q27b. Correct responses given by respondents who viewed the <u>potentially improved</u> set of formula instructions**</b>			
It's OK to add other flavourings or foods to made-up formula	81	71	91
Any formula left over after a feed can be put in the fridge and reheated	74	65	83
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	66	77
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>			
Instructions on how to prepare the formula	67	60	74
The feeding guide	66	60	73

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).



**Table 15: Key questions by the respondent's country**

	Total n=1333 %	New Zealand n=733 %	Australia n=600 %
<b>Q21. Caregivers practices in the preparation of formula</b>			
Always use cool or lukewarm water to make formula	33	29	38
Never warm the formula up in the microwave	39	39	39
After a feed, never save any left-over formula in the fridge to reuse later	52	49	55
<b>Q22. Confidence in preparing formula</b>			
Extremely confident in preparing formula	60	54	67
<b>Q23. Importance of following preparation and storage instructions</b>			
Extremely important to follow preparation and storage instructions exactly	57	52	63
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>			
General comment about the importance of following the instructions	15	15	14
Baby can become ill/sick - general mention	13	11	14
Safety reasons/to prevent harm/avoid risk	12	12	12
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>			
Not get enough nutrition	51	49	55
Constipation	50	44	56
Diarrhoea	43	40	46
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>			
When I first started preparing formula	72	69	75
When I change the stage of formula I'm using	43	43	42
When I change the brand of formula I'm using	41	41	41
<b>Q27a. Correct responses given by respondents who viewed the <u>current</u> set of formula instructions*</b>			
It's OK to add other flavourings or foods to made-up formula	72	71	73
Any formula left over after a feed can be put in the fridge and reheated	68	68	68
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	56	60

\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).

Continued



**Table 15: Key questions by the respondent's country (continued)**

	Total n=1333 %	New Zealand n=733 %	Australia n=600 %
<b>Q27b. <u>Correct</u> responses given by respondents who viewed the <u>potentially improved</u> set of formula instructions**</b>			
It's OK to add other flavourings or foods to made-up formula	81	81	80
Any formula left over after a feed can be put in the fridge and reheated	74	73	75
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	71	71
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>			
Instructions on how to prepare the formula	67	64	69
The feeding guide	66	62	70



**Table 16: Key questions by age of child at time of survey**

	Total	0-3 months	4-6 months	7-12 months	13-18 months
	n=1333	n=134	n=244	n=397	n=558
	%	%	%	%	%
<b>Q21. Caregivers practices in the preparation of formula</b>					
Always use cool or lukewarm water to make formula	33	40	32	34	31
Never warm the formula up in the microwave	39	46	39	41	36
After a feed, never save any left-over formula in the fridge to reuse later	52	54	53	55	48
<b>Q22. Confidence in preparing formula</b>					
Extremely confident in preparing formula	60	51	56	62	62
<b>Q23. Importance of following preparation and storage instructions</b>					
Extremely important to follow preparation and storage instructions exactly	57	59	56	58	56
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>					
General comment about the importance of following the instructions	15	13	17	14	15
Baby can become ill/sick - general mention	13	14	12	14	12
Safety reasons/to prevent harm/avoid risk	12	9	12	11	14
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>					
Not get enough nutrition	51	52	53	51	51
Constipation	50	55	48	48	51
Diarrhoea	43	43	37	41	38
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>					
When I first started preparing formula	72	78	70	74	69
When I change the stage of formula I'm using	43	34	37	44	47
When I change the brand of formula I'm using	41	39	39	41	43
<b>Q27a. Correct responses given by respondents who viewed the current set of formula instructions*</b>					
It's OK to add other flavourings or foods to made-up formula	72	68	67	77	72
Any formula left over after a feed can be put in the fridge and reheated	68	71	64	71	67
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	59	51	61	57

\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

Continued



**Table 16: Key questions by age of child at time of survey (continued)**

	Total	0-3 months	4-6 months	7-12 months	13-18 months
	n=1333	n=134	n=244	n=397	n=558
	%	%	%	%	%
<b>Q27b. Correct responses given by respondents who viewed the potentially improved set of formula instructions**</b>					
It's OK to add other flavourings or foods to made-up formula	81	84	82	82	78
Any formula left over after a feed can be put in the fridge and reheated	74	79	70	74	74
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	73	59	76	72
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>					
Instructions on how to prepare the formula	67	72	64	66	67
The feeding guide	66	69	65	66	65

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).



**Table 17: Key questions by whether English was the first language of the respondent**

	Total n=1333 %	English first language n=1113 %	English not first language n=213 %
<b>Q21. Caregivers practices in the preparation of formula</b>			
Always use cool or lukewarm water to make formula	33	31	41
Never warm the formula up in the microwave	39	36	53
After a feed, never save any left-over formula in the fridge to reuse later	52	51	54
<b>Q22. Confidence in preparing formula</b>			
Extremely confident in preparing formula	60	63	44
<b>Q23. Importance of following preparation and storage instructions</b>			
Extremely important to follow preparation and storage instructions exactly	57	57	56
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>			
General comment about the importance of following the instructions	15	15	14
Baby can become ill/sick - general mention	13	14	5
Safety reasons/to prevent harm/avoid risk	12	11	18
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>			
Not get enough nutrition	51	54	41
Constipation	50	50	47
Diarrhoea	43	43	43
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>			
When I first started preparing formula	72	73	70
When I change the stage of formula I'm using	43	44	38
When I change the brand of formula I'm using	41	42	37
<b>Q27a. <u>Correct</u> responses given by respondents who viewed the <u>current set</u> of formula instructions*</b>			
It's OK to add other flavourings or foods to made-up formula	72	73	68
Any formula left over after a feed can be put in the fridge and reheated	68	67	75
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	59	54

Note: Results for those respondents who did not wish to disclose whether English was their first language or not are not shown in this table.  
\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

Continued



**Table 17: Key questions by whether English was the first language of the respondent (continued)**

	Total n=1333 %	English first language n=1113 %	English <u>not</u> first language n=213 %
<b>Q27b. Correct responses given by respondents who viewed the <u>potentially improved</u> set of formula instructions**</b>			
It's OK to add other flavourings or foods to made-up formula	81	82	77
Any formula left over after a feed can be put in the fridge and reheated	74	74	70
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	71	69
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>			
Instructions on how to prepare the formula	67	67	62
The feeding guide	66	67	60

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).



**Table18: Key questions by the respondent's ethnicity**

	Total	NZ European	Australian European	Maori/Pacific	Asian	Other
	n=1333	n=477	n=420	n=148	n=249	n=112
	%	%	%	%	%	%
<b>Q21. Caregivers practices in the preparation of formula</b>						
Always use cool or lukewarm water to make formula	33	28	38	27	38	28
Never warm the formula up in the microwave	39	39	34	41	45	43
After a feed, never save any left-over formula in the fridge to reuse later	52	51	56	51	45	53
<b>Q22. Confidence in preparing formula</b>						
Extremely confident in preparing formula	60	58	71	65	39	62
<b>Q23. Importance of following preparation and storage instructions</b>						
Extremely important to follow preparation and storage instructions exactly	57	52	63	59	51	66
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>						
General comment about the importance of following the instructions	15	17	15	14	11	17
Baby can become ill/sick - general mention	13	13	17	13	3	16
Safety reasons/to prevent harm/avoid risk	12	11	10	12	14	18
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>						
Not get enough nutrition	51	52	59	48	40	50
Constipation	50	44	58	45	48	53
Diarrhoea	43	38	48	47	41	47
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>						
When I first started preparing formula	72	71	77	71	65	71
When I change the stage of formula I'm using	43	46	45	46	34	41
When I change the brand of formula I'm using	41	42	43	44	37	41

Continued



**Table 18: Key questions by the respondent's ethnicity (continued)**

	Total	NZ European	Australia n European	Maori/Pacific	Asian	Other
	n=1333	n=477	n=420	n=148	n=249	n=112
	%	%	%	%	%	%
<b>27a. Correct responses given by respondents who viewed the <u>current</u> set of formula instructions*</b>						
It's OK to add other flavourings or foods to made-up formula	72	75	72	72	67	75
Any formula left over after a feed can be put in the fridge and reheated	68	68	67	63	69	70
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	58	61	54	51	67
<b>Q27b. Correct responses given by respondents who viewed the <u>potentially improved</u> set of formula instructions**</b>						
It's OK to add other flavourings or foods to made-up formula	81	82	84	86	76	69
Any formula left over after a feed can be put in the fridge and reheated	74	74	78	72	66	71
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	72	73	71	67	67
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>						
Instructions on how to prepare the formula	67	66	70	68	60	71
The feeding guide	66	65	71	64	58	68

\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).



**Table 19: Key questions by the educational qualification of the respondent**

	Total n=1333 %	Secondary school qualification /No qualification n=283 %	Certificate, trade qualification or apprenticeship n=245 %	Undergraduate diploma or associate diploma n=132 %	Graduate qualification n=638 %
<b>Q21. Caregivers practices in the preparation of formula</b>					
Always use cool or lukewarm water to make formula	33	35	34	32	32
Never warm the formula up in the microwave	39	36	38	42	40
After a feed, never save any left-over formula in the fridge to reuse later	52	55	50	58	50
<b>Q22. Confidence in preparing formula</b>					
Extremely confident in preparing formula	60	70	68	57	53
<b>Q23. Importance of following preparation and storage instructions</b>					
Extremely important to follow preparation and storage instructions exactly	57	58	56	54	57
<b>Q23a. Most commonly mentioned reasons as to why it was considered important to follow the preparation and storage instructions exactly</b>					
General comment about the importance of following the instructions	15	14	13	20	15
Baby can become ill/sick - general mention	13	18	14	16	8
Safety reasons/to prevent harm/avoid risk	12	9	12	12	14
<b>Q24. Most common risks of not following the instructions on tins of formula that respondents were aware of (prompted)</b>					
Not get enough nutrition	51	49	59	58	49
Constipation	50	51	60	60	45
Diarrhoea	43	42	49	51	41
<b>Q25. Most common situations in which respondents used the preparation and use instructions on any tin of formula</b>					
When I first started preparing formula	72	75	76	74	69
When I change the stage of formula I'm using	43	46	45	47	41
When I change the brand of formula I'm using	41	39	42	45	42

Note: Results for those respondents who did not wish to disclose their highest education qualification are not shown in this table.

Continued



**Table 19: Key questions by the educational qualification of the respondent (continued)**

	Total n=1333 %	Secondary school qualification /No qualification n=283 %	Certificate, trade qualification or apprentices hip n=245 %	Undergraduate diploma or associate diploma n=132 %	Graduate qualification n=638 %
<b>Q27a. Correct responses given by respondents who viewed the <u>current</u> set of formula instructions*</b>					
It's OK to add other flavourings or foods to made-up formula	72	73	75	74	71
Any formula left over after a feed can be put in the fridge and reheated	68	64	73	76	67
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	58	56	67	58	56
<b>Q27b. Correct responses given by respondents who viewed the <u>potentially improved</u> set of formula instructions**</b>					
It's OK to add other flavourings or foods to made-up formula	81	80	85	83	80
Any formula left over after a feed can be put in the fridge and reheated	74	71	84	66	73
It doesn't matter if the water or the formula powder is put in the bottle first, as long as it's mixed well	71	67	72	66	75
<b>Q28. Respondents who rated the following feeding information on tins of formula as extremely important</b>					
Instructions on how to prepare the formula	67	70	70	69	64
The feeding guide	66	70	67	70	63

\*Sub-sample based on those respondents who viewed the current set of instructions (n=632).

\*\*Sub-sample based on those respondents who viewed the potentially improved set of instructions (n=701).