

## **Crunch&Sip Vegetable Project**

### **Focus Group Findings Report**



This report is prepared for Shannon Wright and Steve Pratt, Nutrition and Physical Activity Program, Cancer Council WA, October, 2015.

**Acknowledgements:**

Thanks are extended to Shannon Wright for managing overall recruitment and logistics. Thanks also to Pam Foulkes-Taylor and Severine Koch for their assistance with the organisation and implementation of the Kalgoorlie focus group.

**Citation:**

The report can be cited as follows: Pettigrew, S. and Biagioni, N. (2015). *Crunch&Sip Vegetable Project: Focus Group Findings*. WA Cancer Prevention Research Unit (WACPRU), Curtin University.

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## Executive Summary

This report outlines the findings from formative research designed to identify potential strategies for increasing vegetable consumption during Crunch&Sip sessions in schools. Crunch&Sip is a school-based program that involves primary school children being given the opportunity to consume fruit, vegetables, and water during class time. Cancer Council WA has been running the Crunch&Sip program in Western Australia since 2005. In 2015, the program evolved to adopt a particular focus on vegetables.

Four focus groups with school staff were conducted in September, 2015. Three of the groups were conducted in metropolitan Perth and one was conducted in Kalgoorlie. Three of the groups were comprised of teachers and one group (conducted in Perth) included a range of different types of staff members. The average duration of the focus groups was 78 minutes and the average group size of the groups was 9 participants, ranging from 6 to 12 participants. In total, 37 participants attended the focus groups, almost all of whom were female.

Overall, participants reported favourable attitudes to Crunch&Sip, regardless of whether they were employed at a certified school. Increasing intake of vegetables was perceived to be a highly worthwhile objective, and one that could be achieved with adequate planning, resourcing, and communication with relevant stakeholders.

The findings indicate that the following strategies may be effective in optimising the implementation of a vegetable-focused Crunch&Sip program:

- Develop a rationale document that explains the nutritional value of vegetables and the importance of increasing children's consumption. This document could highlight the associated benefits for children, parents, teachers, and schools.
- Develop support materials that clearly communicate the key points listed in the rationale document and provide useful teaching resources for teachers (e.g., posters and PowerPoint slides).
- Consider producing online videos that concisely communicate the benefits of Crunch&Sip and provide implementation suggestions. These videos could be used

during PD sessions and/or accessed independently by interested school staff.

- Consider entering into supply arrangements with retailers to provide vegetables to schools in disadvantaged areas.
- Ensure resources and suggested activities are sympathetic to the socioeconomic environments of a wide range of schools. For example, give-aways of boxes of vegetables may be more appropriate in disadvantaged areas and within- and between-class competitions may be more relevant in more affluent areas.
- Consider sourcing and providing/recommending equipment that could be used to make vegetables more attractive (e.g., an equivalent of an apple slinkie).
- Consider providing Crunch&Sip branded give-aways such as partitioned lunchboxes and mini-vegetable toys to hang from backpacks.
- Consider accessing volunteering organisations to recruit a taskforce of Crunch&Sip volunteers to assist in preparing vegetables in more disadvantaged areas.

## Introduction

Cancer Council WA has been running the Crunch&Sip program in Western Australia since 2005. Crunch&Sip is a school-based program that involves primary school children being given the opportunity to consume fruit, vegetables, and water during class time.

In 2015, the program evolved to adopt a particular focus on vegetables. This change reflects vast improvements in children's fruit consumption, while average vegetable consumption is still far below current guidelines. Recent ABS data indicate that of children aged 5-11, around two-thirds (69%) are eating two or more serves of fruit per day, but less than one-third (28%) are eating three or more serves of vegetables per day (ABS 2012).

Given the suboptimal levels of vegetable intake among Australian children, it is apparent that substantial barriers exist that are preventing attainment of recommended intakes.

Approximately 40 % of WA schools currently participate in formal or informal variations of Crunch&Sip, representing a unique opportunity to promote vegetable consumption via this program. The purpose of the present study was to undertake formative research to identify potential strategies for increasing vegetable consumption during Crunch&Sip sessions in schools.

## Method

Four focus groups with school staff were conducted in September, 2015. Three of the groups were conducted in metropolitan Perth and one was conducted in Kalgoorlie. Three of the groups were comprised of teachers and one group (conducted in Perth) included a range of staff members (e.g., health and physical education specialist teachers, a special needs education assistant, a deputy principal, and one parent who ran a “Healthy Eating Committee” for her children’s school). The average duration of the focus groups was 78 minutes, ranging from 74 to 84 minutes. The average size of the groups was 9 participants, ranging from 6 to 12 participants. In total, 37 participants attended the focus groups, almost all of whom were female.

The interview guide used during the focus groups is provided at Appendix 1. Broad, open-ended questions were used to permit a free-ranging discussion of issues relevant to Crunch&Sip in general, as well as coverage of the specific topic of encouraging vegetable consumption. The study participants were asked to outline: (i) the nature of any fruit and vegetable breaks currently being implemented in their schools, (ii) the potential for increasing the role of vegetables in these breaks, and (iii) perceived barriers, motivators, and facilitators to this change in focus. In particular, participants were encouraged to consider the various types of resources that could be useful in achieving a vegetable focus for Crunch&Sip. Participants also reported on other nutrition-related activities occurring in their schools and children’s food consumption behaviours during recess and lunch breaks.

All focus group sessions were digitally audio-recorded and the recordings were subsequently transcribed. The transcripts were imported into NVivo10 for coding and analysis. The node hierarchy developed during coding is shown at Appendix 2.

## Findings

Results are reported below relating to various aspects of school food environments. Initially, background information is presented relating to overall attitudes to F&V breaks, current F&V break practices, children's reported food consumption at recess and lunch, and the other nutrition-related programs being undertaken in schools. This information provides the context for the subsequent discussion of perceptions of factors that were described as potentially helping or hindering a new vegetable focus for Crunch&Sip. The report concludes with suggestions for strategies that could be implemented to increase vegetable consumption in schools.

### Overall attitudes to F&V breaks

Virtually all of the participants' references to the practice of including F&V breaks in class time were favourable. There was general agreement that children need to consume more fruit and vegetables, and that increasing their consumption of these foods during the day improves their academic performance and behaviour. In-class F&V breaks were considered by many to be a simple and useful method of achieving this outcome:

*They're healthy with their Crunch&Sip, but the rest of the day is rubbish.*

*We've always been very keen on the Crunch&Sip program and we've pushed it.*

*We do our first hour, then we have like a brain break. I normally do Maths in the morning, then we swap over to a reading session. So we have a brain break, we have Crunch&Sip.*

*I find that - particularly for the boys - they don't eat recess. So we do Crunch&Sip for them. It helps greatly with, like calming them down and getting them through till lunch time.*

*We want the kids to be eating all day because we have a two hour English session, we have a two hour Maths session, and then we have an hour at the end of the day. So kids are learning for long periods of time so they need that food to sustain that education learning.*

*Our kids - it's just natural for them. They just bring three large containers every day. We've done many surveys and the parents have actually come back and said we don't stress too much now at dinner time if they don't eat all their veggies because we know*

*they're getting it throughout the day. So some of our parents have actually loved it because it's taken that load off them when they get home.*

*I know with the senior end, a lot of our kids seem to actually not eat either recess or lunch. That's probably why they bring in such large, heavy containers into our classrooms because they just want to play. We have a lot of sports practices at recess and lunch for our senior kids because they're in a lot of the interschool events throughout the whole year. So I'm finding that a lot of my kids literally aren't eating recess or lunch and they're just relying on their containers of Crunch&Sip.*

There was consensus that including F&V breaks into the school day served to increase total fruit and vegetable consumption rather than merely shifting the timing of consumption:

*Facilitator: Can I just check please – from all those things that they're eating at recess and lunch, do you get the feeling that if you didn't have Crunch&Sip, that they would have more fruit and veg and you're [capitalising] what they would have later? Or do you get the feeling that they're eating more fruit and veg in total because you're doing it in class time?*

*Female: More.*

*Female: Absolutely.*

*Female: I would say absolutely.*

*Male: More.*

*Female: Absolutely.*

*Female: They'd bring the whole apple in, but yeah, I reckon it would get all squashed in their bags if I had no Crunch&Sip. Because I think the lure for a lot of boys going out to play and kick the footy versus sit and eat my healthy nutritional food...*

*Female: Exactly.*

*Female: ...they'll choose the footy and then they will get grumbly in class because they're hungry*

*Female: I agree with that. I think that Crunch&Sip time, especially for the boys, it really gets them to sit down and then have it and they eat every single day. They will have their Crunch&Sip without a problem and chew, chew their vegetables. I think you're right, if they didn't have that time allotted to it they just do it, they wouldn't eat it. They'd eat something like an LCM bar as they're running down to the field.*

The Crunch&Sip brand had high salience, with all participants apparently aware of the program and supportive of its objectives. The timing of the focus groups coincided with Fruit and Veg Month and the Great Aussie Crunch, both of which were mentioned favourably by several participants:

*I've just coordinated the Big Crunch for our school, which we did that in week nine and we had over 700 kids crunching at the same time. That was a lot fun. We had a visit from the Veggie Man.*

*Female: I got the \$65 grant for the Great Aussie Crunch. So I went out and - I could only spend \$60 because my boot was full As the kids walked in in the morning, I had it all out there and they were all going "Wow!". I said, "That's \$60 worth. How much does it cost you to go to Hungry Jacks? Maybe three times to Hungry Jacks and that's it. But this is more than enough for a month's worth of fruit and vegetables". They were all going "Wow!". It was all broccoli, cauliflower, and capsicums of the different colours. So we discussed naming them. But that was only one session. Then I cut up most of them because I won't allow them to have knives. Then they made skeletons - vegetable skeletons. They made several platters to hand out to the other classes - to about six other classes. So that was a whole day's activity incorporated with the Great Aussie Crunch.*

*Facilitator: Did anyone else do the big crunch?*

*Female: Yeah. We tried to encourage the kids to bring vegetables this year. Not a lot of them did though. But they all brought something, whether it was a fruit or a vegetable, and we all got together in the hall and crunched - made a crocodile crunch.*

*Male: We had three tables piled high with fruit and vegetables and just lined them up in the junior, middle, and upper. The kids lined up, took food, went away, and came back until it was all gone. That worked well. It was a good way of - that was for the giant - the big crunch day. We got all these kids to have the...*

*Female: With the meter?*

*Male: Yeah, with the meter.*

*Female: Yeah, we did that too.*

*Male: We had the big crunch and had all the kids get something crunchy and I said, you know, count it down and crunch. They enjoyed that so probably need to do more of those sorts of things.*

*Facilitator: Do the older kids enjoy that as much as the younger kids?*

*Male: Yeah. They all made sure they had something crunchy in their hand and everyone counted down and then they went crunch. I had to measure how big it was. Of course, it was always the biggest crunch. But that worked really well because the kids really got stuck into the fruit and into the vegetables especially, which was good to see.*

Some participants noted that while they considered Crunch&Sip to be worthwhile, they did not personally engage with the program due to implementation difficulties. These difficulties typically related to working with highly disadvantaged communities and the resulting inability to provide for children whose families were not able to supply fruit and vegetables:

*That's one of the reasons why we don't do Crunch&Sip - because we're in a low socioeconomic area. A lot of our kids don't have recess or lunch. So asking them to bring in Crunch&Sip, it's shaming.*

## Current F&V break practices

Very few participants reported that their school does not have some variation of Crunch&Sip, and these individuals typically expressed interest in the practice being introduced in their schools. Most of the other participants were of the understanding that their schools, or at least some classrooms, were formally participating in the program. A minority indicated that they or other teachers at their schools had F&V breaks but were not officially registered as participating in Crunch&Sip.

### Timing

The ways in which Crunch&Sip is implemented in different schools and classrooms was discussed at length during the focus groups. While most reported daily participation, there appeared to be substantial variation in practices. Crunch&Sip was implemented at all different times of the day, including within an hour of commencement at the school day and shortly before home time. The frequency with which Crunch&Sip breaks were scheduled also varied, ranging from a couple of times a week to three times a day:

*We do it sort of - well three times a day. First thing in the morning, after the first hour, and then before the last hour. That seems to be working fine in my class.*

*Female: We have Crunch&Sip and we've just changed our timetable so that we have a big two-hour learning block in the morning, a big two-hour learning block after recess. They're broken up by Crunch&Sip breaks and a quick run around...Twice a day as well as the recess and lunch break. So it's been really good...It's an hour of learning, Crunch&Sip, an hour of learning, recess, an hour of learning, Crunch&Sip, an hour of learning, lunch. So it's been really good.*

*Facilitator: Across all years?*

*Female: Crunch&Sip is for pre-primary and to Year 6, across all years.*

A further variation was constant F&V grazing during the day rather than official breaks:

*Most teachers are just letting kids graze and they will run out by recess because they just eat, eat, eat, eat, and it's all gone by recess.*

*With Crunch&Sip, we don't have it as a set break. Some of the junior classes do, like kindy and pre-primary. But predominantly now we actually have it where the kids just bring a certain amount of containers per day and they graze throughout the whole day during their actual learning time.*

There was also considerable variation in terms of the way in which F&V breaks were integrated into class-room activities (or not). As indicated above, some teachers reported allowing children to eat at any time while undertaking work at their desks. Others used the progression from one type of learning activity (e.g., doing spelling at their desks) to another (e.g., group mat time) to mark the commencement of Crunch&Sip time:

*This year in the Year 2 class I'm in, it's a scheduled break. So it's around 10 o'clock every morning, and I just make sure that I incorporate an activity with that because I find that you lose too much time because it's never only five minutes. So we do our shared news time at that point just to make sure that we've actually got a little bit of learning going on as well. And it's strictly fruit and vegetables, nothing else.*

*With 1s and 2s it's really hard to try and get them to do any task while they're having Crunch&Sip...So I have mine at sort of 1:45pm and that's when we're having our PATHS (positive alternative thinking strategies) session or our news session.*

Some teachers were flexible in their approach, adopting different strategies on different days:

*Often we do it on the mat in the community circle or during news, like in a group on the floor. Sometimes I let them do it at their desk while they're doing their own little work, but it's always quiet, like more of a calming activity.*

In other instances, Crunch&Sip breaks were described as being demarcated as non-work time during which the children focus on eating their F&V and building their social skills. This tended to be more common for children in the earlier years:

*We all stop. We stop. I set the timer for five minutes. Get your Crunch&Sip. We either sit outside or on the mat depending on the weather. Once the five minutes is up, if you haven't finished put it in your lunchbox. You can have it for recess.*

*I find a lot of the kids, I don't think they sit to eat at home. I think it's important that you sit when you're eating and not wander around with food in your hand. So we sit for Crunch&Sip. You can have a little chat with the person you're sitting with but you must sit - you must not wander around - because I think that a lot of them don't do that at home...So we sit and we chat. But it's a social time as well as an eating time.*

*I used to let them eat whenever they wanted. I went through a year of that about five years ago. That was really a disaster because they'd get bored with doing their work and then they'd just sit there and chew and crunch on their carrot. But I find that they have learnt what 10 o'clock is. That's the only time they know. Some will put their hand up and say, "Oh, it's Crunch&Sip time". So we drop everything and they just sit on the carpet - five minutes - or those that finish earlier go back and continue with work. I wouldn't do it during spelling because some of the weaker children would use that as an excuse to stop and chew. So I've tried different versions of it.*

## Location and associated physical activity

Crunch&Sip breaks were typically described as occurring in the classroom, although some reported sitting outside and allowing the children some extra play time once they had finished their food. In a small number of instances, Crunch&Sip was described as occurring in conjunction with physical activity.

*We go for a walk. Like Crunch and Sip and walk around the oval. Just do a gentle walk rather than sit down.*

Of interest to Cancer Council WA was whether Crunch&Sip breaks could be used to reduce sedentary time at school. When specifically asked whether it would be feasible to combine Crunch&Sip with standing time, most participants indicated that this would be practically difficult and unlikely to work for them:

*Facilitator: So we're also kind of thinking along the lines that well, if kids are sitting down a lot during the day at the desk, is a five minute Crunch&Sip break where they're actually standing at their desk and eating - standing, does that sound feasible or does that sound chaotic?*

*Female: Chaotic.*

*Female: Mmm.*

*Male: Because they don't stand.*

*Female: No.*

*Female: They don't stand still.*

*Male: No, they'll move.*

*Facilitator: They'll jiggle around the place, will they?*

*Male: Yeah.*

*Female: Yeah.*

*Female: Standing on the floor – I feel like it would turn into foot stomping or something.*

Moving while eating was noted to be a potential choking hazard:

*In primary we've had a child choke on a cherry tomato sitting down, so we're very strict. There is no walking around while you are eating because they're too excited and we've actually had an incident where they've gone oh and breathed in the whole cherry tomato. So from a younger years perspective, the thought of them wandering around eating their food is a bit of a worry.*

## Other implementation practices

The application of specific 'rules' for Crunch&Sip breaks was discussed by many participants. The most common of these rules related to the types of foods that could be consumed. Almost all teachers reported requiring students to only bring fruit and vegetables. Some noted that this could be challenging, especially when children insisted that their parents said that certain foods constituted fruit (e.g., fruit roll-ups).

- Female: You know, you use your newsletters, you use your information nights and everything else, but at the end of the day I have kids come to school with those packets of little jelly lollies and because it says...*
- Male: Exactly.*
- Female: ...fruit...*
- Male: Exactly.*
- Female: ...the kid goes yeah, this is fruit. Ah, no, it's not.*
- Male: Mum says this is healthy. Well...*
- Female: Yeah. Mum said...*
- Male: ...I don't want to go against...*
- Female: What do you say? Your mum's wrong?*
- Male: Yeah, exactly.*

As a result of these difficulties, limiting foods to just fruit and vegetables was still a work in progress for some schools:

*But the other thing is packaged food - little packets of crackers, dips and stuff like that instead. We're pushing to get rid of all that stuff.*

Other schools took a much more regulated approach, which involves restrictions on the type of fruit brought to Crunch&Sip to reduce messiness and prevent children from having to leave the classroom to wash their hands. Encouraging parents to provide cut-up fruit and vegetables in plastic containers was seen to be the most effective method of ensuring the Crunch&Sip break stayed manageable:

*We don't have as much of a problem with the fruit because it's actually stated when we send home newsletters that they're not allowed to bring like juicy watermelon or anything that's going to make a mess.*

*We predominantly say only fruit or vegetables. And in regards to the fruit, if it's orange or like watermelon or things like that, we ask for it to be pre-cut and for the kids to bring a fork, because otherwise they end up with juice all over their work.*

Being consistent in the requirement for only healthy foods was reported to result in compliance because children didn't want to miss out by bringing in the wrong items:

*The kids do the battle for you because otherwise they have to sit there - well in my class they sit there with no food if they've brought in something junky and the other ones are happily munching on healthy stuff. So the next day they've got the healthy stuff back.*

A further aspect of Crunch&Sip implementation that was spontaneously raised by participants was the importance of teachers modelling consumption to normalise eating F&V and optimise the positive influence of their positions as authority figures in the classroom:

*Facilitator: During (Crunch&Sip), are you eating fruit or veg yourself?*  
*Female: Absolutely.*  
*Female: Even when I'm on duty, I'm making sure I'm eating something healthy. When I'm out on duty, I'm eating.*

### Types of fruit and vegetables

Most teachers reported that the majority of products brought to Crunch&Sip breaks was fruit, with a minority being vegetables:

*Female: We were getting 95% fruit. But, like I said, now that I've started bringing in vegetables, we get about 60/40. Still more fruit than vegetables though.*  
*Female: We're probably 70/30 fruit.*

*It's very fruit dominant.*

*Facilitator: So those of you who do something in class like that, have fruit and veg breaks, what proportion is fruit, what proportion is vegetable at the moment?*  
*Female: Oh, more fruit.*  
*Female: I'd say two-thirds fruit.*  
*Female: I'd say about 75% fruit, definitely.*  
*Male: Same here. Mostly fruit.*

There was the occasional exception where it was reported that vegetables were common:

*I make it very strict. Fresh fruit and vegetables cut into pieces. I also say ones that aren't juicy - like no watermelons. But everything else is small, edible pieces that can be eaten quickly. I have out of the 22 in my class, at any one time 21 children will have cut up fruit and veggies ready to go. Most of them have vegetables.*

In terms of specific kinds of fruit and vegetables, apples and carrots respectively were the most commonly mentioned varieties:

- Facilitator:* So what's the most popular fruit? What comes in most?  
*Female:* Apples.  
*Female:* Apples.  
*Female:* Apples.  
*Facilitator:* What's the most popular vegetable?  
*Female:* Carrots.  
*Female:* Carrots.  
*Female:* Carrots.  
*Female:* Celery.  
*Facilitator:* Any other veggies other than carrots and celery that you see routinely?  
*Female:* Cherry tomatoes come in quite a lot.
- Facilitator:* Could we just do a bit of a tally about which fruit are the most popular for Crunch&Sip? What do you see most coming in the door?  
*Female:* Apples.  
*Female:* Apples.  
*Female:* Bananas.  
*Female:* Bananas yes, get a lot of strawberries.  
*Female:* Strawberries when they're in season.  
*Male:* It depends, I find on the season, a lot of mandarins at certain times, strawberries at the moment.  
*Facilitator:* Thank you. And veg, if it does come in, what kind are we talking about?  
*Female:* Celery, carrot.  
*Female:* Carrot.  
*Female:* Cherry tomatoes or cucumber diced.  
*Female:* Cauliflower.  
*Male:* Peas now.

### Summary of derived benefits

Although not specifically asked to comment on the strengths of the Crunch&Sip program, various perceived benefits were apparent across participants' discussions of the way in which they currently implement Crunch&Sip. The primary perceived advantages, as indicated in the quotes shown above, are listed in Table 1.

Table 1: Teachers' perceptions of the primary benefits of Crunch&Sip

<b>Benefits:</b>
<b>Nutritious</b>
<b>Enjoyed and anticipated by children</b>
<b>Calming</b>
<b>Flexible</b> (amenable to incorporation into the school day in numerous ways)

### Children's food consumption during recess and lunch breaks

Most of the participants painted a grim picture of students' food consumption during recess and lunch breaks. While the occasional school was different and some reported that sandwiches were still common, the overall view was that children's nutritional intake during schools hours is suboptimal. Crunch&Sip was noted to be the sole time at which some children consumed healthy foods:

*I think I must be naïve because I was quite impressed about the amount of kids, my kids this year, who bring sandwiches and rolls to eat. Maybe I am naïve in not seeing all the packet stuff as well, but I was actually quite impressed that they are getting a decent lunch in them each time.*

- Facilitator: What's in a typical lunch box for recess?*  
*Female: Little chip packets.*  
*Female: Muesli bars and those Fruit Roll-Ups, which are full of sugar.*  
*Female: Whatever the latest gimmick is. LCMs.*  
*Female: A lot of juice boxes as well.*  
*Female: Like we encourage kids only water, but they seem to bring in juice boxes into their lunch boxes.*
- Female: Dried fruit, sultanas*  
*Female: Crackers. Shapes.*  
*Female: Shapes, a lot of Shapes. Squeezy yoghurts and those squeezy pureed fruit.*
- Facilitator: So what comes in the lunchbox? What are most of them having for lunch?*  
*Female: Packaged, processed rubbish.*  
*Facilitator: Okay. So more packets for lunch as well?*  
*Female: Aha.*  
*Facilitator: The good old sandwich? Is that...*  
*Female: We get a lot of sandwiches and fruit.*  
*Facilitator: Okay.*

*Female: We've got a lot of multicultural kids so we'll see a lot of rice and noodles now. They're not afraid of sushi. They're not afraid to bring their own.*

*I think that the parents, because they know that we're monitoring what the kids are bringing for Crunch&Sip, then they're going to the effort, even though it's still easier to put in a piece of fruit rather than cut up vegetables. But they know that we're not really monitoring what the kids are having for recess and lunch, even though we wander around. So they don't make as much effort maybe.*

*Facilitator: What would their lunch boxes look like at lunchtime?*

*Female: Oh, they'll [get their] sandwiches, but there are still all the other bits that go with them.*

*Female: Well, at our school there's not many with sandwiches. A lot of the parents just go into the pantry and they'll put a muesli bar in, a pack of chips, LCM. I say, "I want to see your lunch". I go, "Where's your sandwich?"*

*Female: A lot of packaged stuff again at our school. So there'll be the sandwich, but then there'll be a packet of popcorn or crackers, that cracker cheese, whatever that cheese is.*

*Female: Le Snack.*

*Female: Those sorts of things. There's normally always a packet something in every lunchbox, or two or three.*

*At recess times, it's all the junk food that parents put in their stuff. They think, "Oh yeah, they're healthy so they can have some junk food, a treat". They don't realise that treats everyday aren't good for them.*

*We probably have more than 50 per cent of the kids in the classroom with the Crunch&Sip food and it's all eaten by recess. But at recess they've all got junk. At lunch, their lunch is junk.*

A reliance on unhealthy foods was identified as being the result of parents being either economically disadvantaged or being time poor because they are two-income families. This highlights the difficulties faced by schools when attempting to encourage healthier lunchboxes:

*Maybe it's the schools that I work in are lower socio economic. The fruit side of it is too expensive for a lot of parents to be able to purchase for the students, so they tend to have sandwiches, packets of biscuits they can pick up for 80, 90 cents, and that will be their lunches.*

*It's more the convenience. Within our school there's lots and lots of working parents and they've got plenty of money, but it's (packaged food is) so much easier.*

## Other food-related programs in schools

While discussing in-school food-related issues, participants made reference to several other programs and practices. Breakfast Club was commonly mentioned and was perceived to be a valuable service that assists disadvantaged children. Other children were reported to also try to take advantage of the foods on offer, indicating that stigma may not be a limitation to usage and the foods offered are considered appealing by the target age group.

- Female: About the breakfast club, and I understand that you can't split the, you know, your socio [unclear] kids up, or whatever, so you've got to have it open for everyone, I understand that. But the kids, like I've got boys who come in with seven pieces of toast.*
- Facilitator: And they're eating it during class?*
- Female: They try to. In the morning I say, "How many have you already had?", and they go "Three". But they've got five in their hand.*
- Female: There are some kids that are trying to abuse the system. Like when - with our school as well...*
- Female: They have breakfast at home.*

Foodbank was mentioned numerous times in relation to their provision of Breakfast Club food. It was occasionally noted that Foodbank produce was also used for Crunch&Sip, although one teacher noted that this can be problematic when the items are past their prime:

*This year we had the breakfast club start, and we had this lady, fantastic, who was always going to go the Foodbank and getting the fruits and stuff. And she'd say, "If there's any spare fruit and veggies at Foodbank, do you want it for Crunch&Sip time?" (she) didn't call it that, and I'd say yes. Then the quality of some of that put the kids off because the carrots were really soft.*

Several schools had vegetable gardens. Although these gardens were acknowledged to be labour-intensive resources that require champions to ensure their feasibility and longevity, overall attitudes were highly favourable:

*The previous school I was at had great big gardens as well, and we had a range of things in each garden so that you had, say, six different veggies. At the end of the growing time, and twice it happened at the end of the year, we picked everything we could and then cut it all up - the kids cut it all up - made salads, made pizzas or wraps - that sort of stuff - and were really involved in getting it all. Quite a lot of them ended up eating things they would never have touched. Their parents were amazed and - "Oh wow, how did you get them to eat that?". But they grew it, they cut it and prepared it, so they were going to have a try.*

Cooking activities were also mentioned in the context of vegetable consumption. Sometimes this related to eating the produce that was grown on school premises, and in other circumstances the teachers and/or children supplied the ingredients:

*After we'd spent two weeks going on about different vegetables, bringing them in, and looking at them, all the kids had brought in a vegetable that could be cooked and we made a vegetable stew. It worked out really well and the kids loved it. There were a lot of kids who kind of said, "Oh, I'm not going to eat that!", but they loved it and most of them came back for more.*

*We'll read a book about food and fruit and vegetables and then we go into cooking. We've done stir fries, we've done fried rice. They mash because it's all fun, motor skills. We mash the potatoes.*

A further school initiative that was reported to influence fruit and vegetable intake was package-free (or 'nude food') days. On these days, children were encouraged to bring foods for recess and lunch that were not packaged. Some schools did this on a particular day each week while others did it on an ad hoc basis:

*We have wrapper-free Wednesday. So any wrappers that come in they have to take home. I've seen a huge increase in the fruit and veg since we've done that. But then there will be the occasional parent that will tip the Tiny Teddies into a container.*

*Once a year or so ago, and again it was the same teacher that runs the veggie garden, did a wrapper-free lunch. That was like the most fruit and veg I'd ever seen my kids bring in.*

## Attitudes to a vegetable focus for Crunch&Sip

Very high levels of support were expressed for a vegetable focus for the Crunch&Sip program. All participants appeared to agree with the need for children to consume more vegetables and for schools to be an appropriate place to encourage this behavioural change. Most teachers already involved in Crunch&Sip considered a conversion to a vegetable focus to be manageable with appropriate planning:

*Facilitator: What do you think the take up rate would be? So if you actually said to your classes, "Right, tomorrow you can only bring vegies", would compliance be high or low?*

*Female: Yes high.*

*Female: If you continued with it.*

*Female: I think probably more than a day's notice for parents, but yes.*

*Female: I like it.*

Various potential strategies for achieving this were discussed, including some relating specifically to Crunch&Sip and others relating to other aspects of the school day. These strategies are summarised in Table 2 below and then outlined in more detail. Also included in the table and the following discussion are the barriers and facilitators that were nominated by the focus group participants as being relevant to this initiative.

*Table 2: Strategies, Barriers, and Facilitators*

Strategies	Barriers	Facilitators
Modelling	Parents: <ul style="list-style-type: none"> <li>- Nutrition literacy</li> <li>- Motivation</li> <li>- Time</li> </ul>	Enthusied teachers
Communication with parents <ul style="list-style-type: none"> <li>- Direct</li> <li>- Via children</li> </ul>	Children's nutrition literacy	Teaching resources: <ul style="list-style-type: none"> <li>- Professional development training</li> <li>- Posters</li> <li>- PPT slides</li> <li>- Activities and competitions</li> <li>- Equipment</li> </ul>
Centralised provision arrangements with potential suppliers	Perceived cost of vegetables	Assistants/volunteers to assist with preparation
Integration with curriculum	Preparation	Give-aways
Promotion	School structures <ul style="list-style-type: none"> <li>- Crowded curriculum</li> <li>- Subject demarcation</li> <li>- Canteens</li> </ul>	Parents
	Fear of shaming	

## Strategies

### Modelling

As discussed earlier, the participants were conscious of the importance of their own food choices in influencing their students' attitudes and consumption behaviours. They noted that this aspect of Crunch&Sip implementation is also effective for vegetables:

*I was modelling - I was having vegetables. So then the kids would go home and go, "Can I have celery sticks because Mrs XXXX has celery sticks and she says they're really yummy". Then one kid brings it in and the others go, "Oh, I might do that too".*

*I've modelled eating a carrot in front of them on purpose, so you can do it. You don't need it all cut up.*

*Mine didn't realise you could have something like cucumber and just munch away on it whole. Like they'd only had it in salads, and it was after I brought one in for my Crunch&Sip, and they were like "Whoa!", and they brought cucumber in the next day.*

One teacher noted that while her students mimicked her vegetable consumption, some assumed vegetables were best eaten with dip. Encouraging children to bring vegetables for Crunch&Sip may therefore require some education to ensure it is understood that they should be eaten 'nude':

*I found my kids were all bringing fruit until I started bringing in carrots, celery, and that kind of thing. Then it was - they started bringing in that as well. But I did have some of mine bringing in dip with their vegetable sticks. I said to them, "No, you need to save that until recess time. Just eat your vegetables and save a couple of carrot sticks to go with your dip".*

### Communication with parents

As noted in the table above (and described in more detail further below), parents were identified as a potential barrier to a vegetable focus for Crunch&Sip. To increase the likelihood of achieving parental compliance, participants highlighted the importance of ensuring parents receive information about the change and suggestions for ways to provide appropriate and inexpensive vegetables:

*If we could...have a Crunch&Sip education session with the kids and then open it up to the parents as well once a term, I think that would really, I think it would just solve a lot of questions.*

- Facilitator: So how feasible is it to write home to parents and say, look you know, we do Crunch&Sip every day but could you please send in a vegetable at least three of those five days, for example?*
- Female: Because at our school, we could probably focus on the cost as well. Like a bag of carrots that you can pick up for \$1.50, and that is a lot cheaper than buying...*
- Female: A bag of apples.*

Participants also commented on the possibility of reaching parents via their children. Some teachers were quite explicit in their advice to students about how to encourage their parents to buy vegetables that would be appropriate to bring to school:

*I've told my kids at Woolies, I said "Don't even ask your Mum, actually just go and get the bag of carrots, they're like a dollar". Like I've had a bag of carrots (and said) "Go and get, and then say to Mum, "This is only a dollar" and just ask to put it in the trolley. If she says "No", it's okay. Don't get upset and sorry if you get into trouble. But just try if it's only a dollar". I've told them to do that.*

*I think education is the key. With our upper primary, they recently viewed that sugar film and then got the motivation within themselves to say, "Hey Mum, I don't want the juice box anymore and I don't want too much fruit. Can you give us some more veggies please?". I think it needs to come from within here for the upper primary and the high school. With the little kids, it's parent education, workshops, notes home, links.*

### Centralised arrangements

A major concern for some teachers was the availability of vegetables for their students. This was most evident among those at lower socioeconomic schools who already experienced difficulties attempting to implement the traditional form of Crunch&Sip. As noted earlier, some of these teachers sourced items from Foodbank, and some had also had some luck with retailers:

*IGA is really good in donating fruit, so I got them in the past to do like whole school days. So twice a year we used to - haven't done it this year because I went on leave mat leave - but IGA would actually donate up to \$300 for the whole school and they'd give all the fruit. I'm sure if you spoke to like IGA they might be able to do a regular weekly bag donation or something.*

However, others reported a lack of response to their attempts to make contact:

*I tried to access SecondBite through Coles..about two years ago, where they discard the food that isn't appealing. I tried to get us involved in that. I did not hear from the coordinator after three attempts at trying to get some communication there.*

As a result of these difficulties, substantial interest was expressed for a centralised produce sourcing system for all schools participating in Crunch&Sip:

- Facilitator: Would that be helpful if centrally another organisation like Cancer Council or someone else negotiated with Coles or Woolies...*
- Male: Oh yeah.*
- Female: Absolutely.*
- Male: That'd be huge.*
- Female: Definitely.*

There was also the suggestion that a major arrangement could be organised with commercial organisations that involved a type of loyalty system whereby notional points are awarded that can accrue to substantial benefits for the school. The purchases accruing points and the school rewards could be directly linked to healthy eating:

- Female: I think what I'm about to suggest probably costs too much money, but what works really, really well, and as I'm saying it probably would cost a lot of money to do, but Woolworths and Coles when they do those stickers where the kids hand in, they put that on the big charts and they get sports equipment for their school. Could the Cancer Council not do something like that in line with Woolworths or Coles where they collect veggie stickers, they put them on these charts and hand it into the school. The school then can use that to buy seeds, big planting boxes et cetera. Then that's getting that whole community involvement.*
- Female: They could even use the same program they have now, instead of giving sports equipment why don't they yeah get...*
- Female: Bunnings voucher.*
- Female: Planting pots for soils and seeds.*

## Integration with the curriculum

Participants were very open to the suggestion of incorporating a Crunch&Sip vegetable focus into children's learning activities in addition to encouraging them to bring vegetables for their Crunch&Sip break. They could readily see opportunities for educating students about vegetables and motivating consumption as part of their day-to-day teaching activities. The quotes below illustrate how this could be operationalised via integration across multiple subject areas, the use of specific syllabus materials, and involvement of the school canteen:

- Female: Crunch&Sip used to have, and you can still order them, they used to do a lot of things for free. I think now a lot of things you've got to pay for though. They used to have these Crunch&Sip class charts where the kids - you could write all the kids' names and then it would have the weeks at the top and then you put stickers and whatever on it. You could do that for like a veggie day...So we have waste-free Wednesdays so our kids get points for their factions. We could do the*

*similar thing. So on a Wednesday as well as being waste free, it's your veggie day. So how many in that class got veggies and then they get x amount of points for their faction.*

*Female: You could even tie it in with maths and do your graphing and how many carrots were brought in today, how many snow peas, how many whatever, and try to encourage it that way. So let's see if the veggie graph can beat the fruit graph or something.*

*Female: You might incorporate into the maths and English, things like that.*

*Have a veggie week, bring in a new vegetable each week and get the canteen on board so that the kids are bringing that vegetable in all week, the canteen's making recipes with that vegetable all week. It's subsidised through Crunch&Sip, that vegetable a week, introduce over the year. I mean, obviously you've got 40 different vegetables and we can do it because of all the Chinese vegetables and everything else coming through. How incredible it would be to show them and bring it in, how is it grown, where is it grown, how to prepare it. You can bring it in at every year level.*

*Female: I would say I'd like some literacy resources. So some books - some really good books...*

*Male: Yeah, that's true.*

*...*

*Female: ...having a list of books that you could use that we already have, like Wombat Stew. But to go through all your books and okay, yes, I can use this, no, I can't use that, yes, I can use this. If there was a list you'd go "Oh, of course I could use that!"*

*Male: Vegetable Glue is a good one.*

*Female: It's like The Enormous Turnip. Our pre-primaries use that and they grow turnips. But they grow them and they'll cook soup and stuff like that. But it's all related around the literature. So the measuring, the talking, the activities - everything is related around that. So that would be something that I would like.*

*Female: That'd be perfect.*

## Promotion

Some participants mentioned the need for the Crunch&Sip message to be promoted outside of Crunch&Sip breaks. This included in-school promotional activities, such as the Crunch&Sip Crew mentioned in the quote below, and societal-level messaging:

*We've a Crunch&Sip Crew which is Year 4 kids and we change it all the time. But they have got Crunch&Sip T-shirts that they wear and big sombreros. It's kind of groupie thing to do - everybody wants to be a part of the Crunch&Sip crew. So we're kind of getting towards where it's kind of cool to be - you know, on this Crunch&Sip Crew...We're getting the kids to go through a Coles or Farmer Jack's with a go-pro. We're going to have the Crunch&Sip Crew and the other just students, you know, picking out all the crappy foods and just make a little skit about that. So we try to do fun things like that. So it's fun eat fruit and vegetables and it's fun being part of the Crunch&Sip Crew, and just make it a bit more funky.*

*Male: Really, I know it's expensive but really there needs to be - Healthways needs to start putting out counter advertising at the same time as all these big companies...*

*Female: Equally as powerful, yeah.*

*Male: ...that is just as powerful. And getting the support of the Canning Vale Markets or someone like that to hone in on the vegetables and that. Then a guy like Tony Galati would probably be into that just to give the hooks to the government.*

*Female: The Spud Shed.*

*Male: The Spud Shed. You know, just to get in there and start counter-advertising against all the other sugary garbage and the high content of saturated fats and all that sort of junk.*

## Barriers

### Parents

Parents were acknowledged to be an important target group for information relating to any changes in the Crunch&Sip program because of their important role in determining the foods children bring to school. In some instances a major barrier to parental compliance with Crunch&Sip requirements was nutrition literacy and an understanding of what foods are appropriate and why:

*We had a lot of Aboriginal students, a lot of Muslim families, a lot of families that have just arrived in Australia that don't speak English. So we're sort of having to - that's quite a barrier. So for them to - they really don't understand what Crunch&Sip is. But we do encourage it at the school but it's just not really working. Yeah, so hoping to get some ideas and some ideas forward.*

*The other thing is that the parents, they don't quite understand when they move into our culture that it's - that we want them to still be bringing healthy things. They think that it's the done thing in the Western societies to buy pre-made stuff.*

In other instances it was interpreted as a lack of time, interest, or motivation:

*We used to run parent workshops and you get two or three parents come.*

*Facilitator: What do you reckon the biggest barriers for us would be in terms of trying to encourage kids to bring in vegetables for Crunch&Sip?*

*Female: Time - because it's easy for a parent to put a banana or an apple and a mandarin in their lunchbox. But it's more difficult to cut up carrots, celery, capsicum, or whatever.*

*Female: Parent cooperation.*  
*Female: People are time poor. So they go for the unhealthy option.*

There was an understanding that competition is fierce for the hearts and minds of both parents and children in terms of dietary choices. It was noted that it was an uphill battle to counteract this pervasive and highly targeted advertising from well-resourced multinational organisations:

*Facilitator: Suggestions for helping - to help parents? That - what's the best mechanism to get to them?*  
*Female: We're fighting multimillion, multibillion, dollar companies here.*

### Children's nutrition literacy and learned preferences

Several teachers commented on the poor nutrition knowledge of many children and their resulting limited dietary repertoire. Dismay was expressed at the lack of familiarity with vegetables that are commonly available and could be expected to constitute a part of most Australians' diets:

*We've got to educate them on what is a vegetable. So that's not just modelling, that's actually teaching them what is a vegetable.*

*I've got Year 4 who didn't know - on their 30 day challenge calendar, "What's that stick thing Miss XXXX, what's that stick picture?". Looking up at the white board and it was a cucumber. So even a simple thing, like from a 10 year old not knowing what a cucumber is.*

*Female: It's amazing to see how many of them don't have anywhere near a healthy diet. You get them to plan their day's food using these food groups and then you get cereal, biscuits, bread roll. They don't have a clue.*

*Female: It's interesting that a lot of children don't know the names of a lot of vegetables. They know the fruits but they don't know the vegetables. They don't know whether you eat them raw or whether you cook them.*

Potentially from a lack of exposure, some children were reported to be highly averse to eating vegetables:

*Kid(s) who won't eat veggies - that's actually a very real problem. I've got several eight year olds who just say, "Oh no, I don't like that, that, that, that, that and that. No, the only thing I like is potato". Their parents have let them get to eight and not changed that. That makes it really hard.*

## Perceived cost

While some teachers noted that carrots, for example, are a very cost-effective Crunch&Sip item, others felt that cost would be one of the more substantial barriers to changing to a vegetable focus for Crunch&Sip. Similarly, perceived cost was discussed as a reason offered for unhealthy lunchbox contents:

*Facilitator: What are the barriers in getting the kids to eat more veggies? So one is preparation by the sound of it?*

*Female: Yeah.*

*Female: The expense.*

*Female: The expense.*

*You just see basic rubbish in lunchboxes. The excuse is, "Oh, it's too expensive", or what have you.*

## School structures

The conversion to a vegetable focus within the Crunch&Sip break was generally considered to be worthwhile and possible, and, as noted in the strategy section, there was also support for greater inclusion of education about vegetables in other parts of the school day. The main barriers to greater representation of vegetables in other aspects of the school environment were an already crowded curriculum and an apparent lack of awareness of available teaching resources to facilitate integration into teaching practices. In some cases, unsupportive canteens were also seen to make things difficult:

*Health is one of the first to go because there's no health in NAPLAN.*

*Our canteen wouldn't be on board and our curriculum is really tight and we wouldn't have time to do that.*

*Female: The problem is then you've got to sit there and sift through six hours' worth of something to plan a half an hour lesson on something that's engaging for the kids.*

*Female: Yeah, you do.*

*Female: It would be nice if it could be handed to us.*

*Female: That's the problem. Teachers are just too overwhelmed, they don't have time. If you could just hand them a kit.*

*Female: Yeah, that's right.*

*Female: Saying, here's a suggested itinerary for your health classes.*

*Female: I'm not really happy with our school canteen. It could be a lot better but...*

- Female: There's a bowl of fruit there to buy at recess time but I don't see any vegies.*
- Female: It needs a big push, a big revamp*
- Female: We have pie day on Friday and that would be the biggest lunch order day. I'd have 50 per cent of my kids order on pie day because they can only order pies on one day a week.*
- Female: There's not much vegetables actually in the meals. They could do better with that.*

## Fear of shaming

Amongst the teachers working at schools in low socioeconomic areas, there was a concern that an increased focus on foods that children are required to bring to school could result in some children experiencing humiliation. As shown in the extended extract below, this can make it difficult to use certain teaching activities (e.g., monitoring and competitions) due to the potential for the poorest children being further disadvantaged:

- Female: We've got someone on our admin team - I think it stems from the fact that they - their kids don't eat fruit and veggies themselves and they're very heavy on the "You can't shame other kids that can't bring it because it's not their fault what they bring". If they've got a parent who says, "Grab your food, grab your lunch", and it's all in packages in their cupboard, that's what they'll get. Then those kids start to feel embarrassed, ashamed and start avoidance tactics to cover up that.*
- Facilitator: So can it (competitions) be done at a more generic class level then, that as a class how many veggies have we got today. As a class, how many pieces of fruit?*
- Female: I'm going to be the negative on that one again because then it ends up if one class has the most amount and the other class - you know, there's a group of kids that don't bring anything so they're dropping their class numbers, then it's shaming for those kids and the rest of the children in the class will start to pick on them because they're not winning.*
- Female: Yeah.*
- Female: So their class is not getting the most amount of fruit or veggies in, and that's when those children who it's beyond their means and beyond their controls because their parents don't have the money, don't know any better or cant' provide, those kids end up getting shamed more and they're already going through enough at home.*

## Facilitators

### Enthusied teachers

Many of the teachers spoke with pride about healthy eating initiatives in their schools and their own classrooms. They discussed a range of activities and almost always reported favourable outcomes and high levels of acceptance among their students:

*Rather than treat it as a program or that's our weekly health lesson, which a lot of people do, it's got to be woven into everything else. So if you're doing maths, you're not just counting cars. Or if you're doing a graph, don't just count cars, pets, or whatever. Let's count vegetables. Let's count fruit. Sorting. Science lessons about growing fruit and veggies. At our school we are really lucky because we've got a fanatic who is actually is half time sustainability person. We've got the garden, we've got the veggies, we've got the worms, and so on. But she also pushes the healthy food, and we lean on the canteen fairly heavily. Sometimes you can't do that and I understand a lot of schools haven't got the wherewithal or the cooperation from the parents. So if you've got that you're really lucky.*

*Female: It's not particular trendy to be there with your carrot sticks. I think a big barrier for the older kids is how do you make it look as if it's trendy to be...*

*Facilitator: Which veggies would be trendy?*

*Female: Multicultural lunchbox and then they suddenly realise that all these veggies are from all around the world and we are all united and go how multicultural is your lunchbox through your fruit and veg. You'd be amazed at the conversation that started up with the kids once they realised where it all came from.*

A self-identified role for teachers was 'talking up' vegetables (and fruit) to show to children that these foods are considered desirable by an important authority figure:

*Female: I'm a real big actor or actress with it. I'm like, "Oh my goodness, you have strawberries. Guys, guys, Patrick's got strawberries!". I don't really care that much, but I really make a big fuss about it as they come up the stairs and Hi Fives and, "Oh wow, what have you got?", just to really feel like the kids who don't have anything get that little push to, "Oh my God, I better bring in something tomorrow". So, yeah, that celebration.*

*Female: I tend to make a fuss about vegetables.*

*Female: Yeah, I'm the same.*

## Teaching resources

Apparently there can never be enough teaching resources. Participants were able to quickly nominate numerous different kinds of support that would assist them 'sell' the vegetable concept to their students. These resources ranged from training sessions and curriculum materials to equipment for processing vegetables and give-aways to excite the children.

Training was discussed in the context of the professional development (PD) sessions that teachers attend each term. It was suggested that a Crunch&Sip representative could attend in person to inform and galvanise the teachers at a particular school. Alternatively, a recorded video that could be screened during PD training was also considered acceptable given the logistical difficulties associated with attending a large number of schools in a very small time period:

*Most schools have a PD day the first day of every term, I know ours does. So if you were to come to our PD day and present for an hour max because, I mean, let's face it, admin usually has their own run of show that they want you to do that day. So half an hour to an hour, and just present to the whole school. This is Crunch&Sip, this is SunSmart, this is what we can link with. I think that would help.*

*Just quickly on that whole PD thing, can I just make one suggestion which would be you can't get to every school. That's just unrealistic for a PD. And then you're probably only going to get to the schools where they're really motivated and want you to come, so they're not the schools you want to target. But maybe having like a video kind of package...If there was like a video that could be shown that's got the key information, especially research and facts and what's in it for me as a teacher. If you're selling in a video to teachers, well, you're going to have kids who are more focused and the benefits that are going to come into the classroom from those kids having the fruit and veggie and what the statistics and the research say about having Crunch&Sip as part of a regular school day.*

Several different kinds of curriculum materials were nominated as being potentially useful. These included posters and PowerPoint slides that provide basic information in an engaging way. Examples of relevant information included facts about what a vegetable is, different kinds of vegetables, how these products compare nutritionally to unhealthy foods, how to pack a healthy lunchbox, and the amount of sugar in common products:

*Female: A poster kit - because displays can be very powerful and they can be moved around the school - library, front office, classrooms.*

*Facilitator: What kind of things do you want on those posters?*

*Female: Well, I suppose for the younger ones the differentiation between the fruit and the vegetables or their - I don't know. Maybe a setting of a family...*

*[Over speaking]*

*Male: Maybe the different uses for each vegetable.*

*Female: Yeah.*

*Male: How you could use each veggie.*

*Female: Or comparisons of vegetables and fruit and health food and compare them.*

*Female: In different criteria.*

*I just think in posters - you know how parents say that they don't have the money or - to have a clear just simple poster to say - like you were saying with the comparison. Here's \$0.69 and you get 10 carrots and here's - so cost effectiveness of a snack that your child might bring for Crunch&Sip or some comparison and actually showing them oh okay, I buy a bag of Tiny Teddies and it's costing me - I don't know what it costs - \$4.*

*That's having resources like the PowerPoints - those sorts of resources that teachers can just pick up and use straight away that do actually discuss what is a vegetable, which ones do we cook, where do they come from - all of those sorts of things that make it easier for us as teachers to actually start to promote more veggies.*

The appeal of these visual aids appeared to lie in their ability to convey information quickly and effectively. They were also flexible in that they could be part of a broader classroom focus on F&V involving term-length themes, or they could be used for more ad hoc activities:

*Female: Posters could be better. If you could teach the poster and then do something little. Instead of, yeah, a big long program that will take a few weeks to get through.*

*Female: But I really like - we're doing the 30 day challenge as well, and that's really been great. Like just counting how many fruit and vegetables you have every day. Quick, sharp, daily thing that you do.*

While some participants referred to existing resource portals as being readily available and adequately comprehensive, others felt there was inadequate support for them to effectively incorporate more vegetable education into their lesson plans. There was strong support for a Crunch&Sip online 'hub' that included both 'official' materials produced by agencies such as the Cancer Council and shared items produced by their colleagues:

*Have everything brought into one site so we're not having to go to heaps of different places to get the resources; have all your PD videos and your resources all on a portal that you can log into once you've completed the PD, (then) you get access to this portal which has all this for you.*

*The suggestions that are on the Crunch&Sip (website) for activities, they're all great activities, but you have got to go and do five hours preparation for the suggestion. So I don't know if it's possible to have something that's ready set to go. For example, a PowerPoint showing vegetables from around the world. If someone could do that for me instead of me having to spend hours and hours making my own PowerPoint, which might be a half hour lesson. But if there were things that we could just grab - I know it's being lazy, but hey - I can come up with the ideas but it's bringing it to fruition that is the difficult part.*

*Facilitator: So if there was one nice fruit and veggie or Crunch&Sip depository that had the web links, the recipes, print offs, PowerPoints...*

Female: That would be fabulous.  
 Male: Mmm.  
 Female: Mmm.  
 Female: Like a sharing hub...all of us go back to our schools and say right, we went to this group and this website has links to all the stuff that we talked about. Karen's going to put on her two lessons that she had on the thing and Tanya's going to put up her PowerPoint that she had on vegetables. So just that sharing. So like Tanya's already done it - why reinvent it? She's already done the PowerPoint on vegetables. Great. Then (other people) would go, "Oh, I'll grab that thing that someone else did". So just knowing that there's one place that you could go to - I'm not an IT person so I don't know how that's possible, but sort of a sharing place.

Other desired curriculum elements included activities and competitions that would be considered fun and appealing by students of a range of ages:

*Ideas on what to do. Like, you know, I was talking about the Jamie Oliver Food Revolution – that was amazing and that was powerful. We did it with a classroom of 40 and I reckon 15 of them said that they would eat it. The others said, "I'm not eating that". They had a ball. They made it and there was only two that didn't like it.*

Female: Your Crunch-o-meter was good if they could have something each term.  
 Female: Have something smaller, but have it every term.  
 Facilitator: Oh, so it's a refresher, it's a reminder?  
 Female: Maybe in the middle of the term rather than the end of the term.  
 Female: Yeah, mid-terms.  
 Female: Summer veg, winter veg kind of..  
 Interviewees: Yes.  
 Female: Yeah, focus in on vegetables.

*A good like competition (like) an iMovie. The school or any class in the school could do an iMovie. I know there's a little App that you put on the iPads and it can be like up to a minute to three minute long and the kids could do like Captain Crunch, do like a little video skit. We could send that in and the best top three schools for their iMovie, which then you could publicise maybe on the local TV media. Then you get your free advertising that way. We score some prizes maybe a new, you know, iPad.*

Specific pieces of equipment were mentioned as being conducive to increasing children's F&V consumption. These included (i) apple slinkies that were reported to drastically increase the intake of apples and (ii) kiddie knives that enable children to assist with cutting F&V, thereby allowing more F&V to be available for consumption relative to the situation where the teacher has to do all the preparation work.

Female: So the parents would bring in the apples and of course the younger ones missing their teeth and the older ones not actually eating all of the apple, not liking the core. So with the slinkies, they'd either pay 20

*cents and have their apple cut in to a slinky, and that was a fundraiser and a money side Maths program for the students. The students themselves would actually eat the apple and it would be a game with the slinky and nothing would be wasted.*

*Facilitator: So labour intensive is it for someone to operate a slinky?*

*Female: Yes, the students would be shown how to do it on student council and they would set up at lunchtime and before school and things. They started - because there would be such long lines clip lock bags, popping it into a clip lock and doing it before school in the morning as a student council fundraiser and responsibility. Then the students then from all the grades to take it back in their little clip lock bag and use it for their Crunch&Sip as well.*

*Just on your point of cutting up, I bought - I think they're called kiddie knives. They're brilliant. The kids can use them.*

One teacher suggested that being provided with mock vegetables would be useful to be able to show children what specific vegetables looked like without having to go out and buy a huge range of fresh vegetables for demonstration purposes:

*If you get a 3D model of vegetables, certainly for your first lesson or two lessons it would be handy - so you didn't have to buy them all. That way you can keep them until next year or the next class can use it.*

The issue of the time needed for chopping and cutting was raised numerous times, although it was mainly confined to teachers with younger students. For these children, it was considered impractical for them to consume entire vegetables, especially given the prevalence of wobbly teeth. As such, the introduction of a vegetable focus was likely to require either child-friendly equipment (such as the kiddie knives mentioned above), considerable time dedication before class to prepare the vegetables, or assistance. In terms of the latter, teacher assistants, parents, and volunteers from the community were listed as possible labour resources:

*We do also have a couple of teachers who cut up some celery or carrot at home, because quite often you'll see the container ready to be tipped out into the bowl which has already been pre-cut before school starts.*

*We don't get parent volunteers in our school. We have trouble maintaining our school canteen and our uniform shop with volunteers. So getting parents in to help cut up is not really an option. So even if we did buy the veggies or the fruit, there's not - it's up to a staff member to cut the fruit and veggies up. So that's something that we're struggling with. That's why we haven't pursued it further.*

*We have a slinky machine so I'm lucky enough to have an EA so she does my little slinkies every day.*

*Female: The other thing I was going to mention that would be helpful for schools in our situation is the possibility of finding older people in the community who would like to come in and be a part of the team and actually just be there to cut up and share.*

*Female: Good point.*

*Female: Because there are so many people that are isolated in the community but how do we find them as teachers? We can't. So that sort of finding those sort of mentors or those people in the community that would like something to do that's giving back that may only take an hour or two out of their day but that they're willing to do it or in a rotational basis.*

Finally, participants noted that give-aways associated with Crunch&Sip help to raise its profile and generate interest and enthusiasm among the students:

*About five or six years ago Crunch&Sip sent us out water bottles - Crunch&Sip water bottles - for the whole school. The kids were so excited. I found that because they had those Crunch&Sip water bottles and that was for Crunch&Sip, every single child in the school that year brought their water bottle to school every day.*

The give-aways could include vegetables to enable tasting events to be conducted in schools:

*Is the resource available for veggies to be sent to our school for the kids to try the different veggies as opposed to us giving them paperwork saying now go out and buy a cauliflower and "Oh, by the way, if you don't like cauliflower you've still got the rest of the cauliflower"? Could we not have a box of vegetables delivered to the classrooms and then just one day a year, one day a term, one day or whatever, we cut up the vegetables and they can have Crunch and Sip on us?*

One participant suggested that giving away vegetable-related trinkets could be useful for making vegetables aspirational. She specifically nominated little vegetable toys that could be attached to backpacks because:

*They're always hanging things off their backpacks. You know, get one of those things that they - because our kids - I don't know what everybody else's kids are like, but they've always got stuff hanging off their backpack.*

## Parents

As well as being mentioned as a barrier, parents were described as being instrumental in determining whether children brought appropriate foods to consume during Crunch&Sip and had healthy foods at recess and lunch. In a more affluent school, 'deconstructed lunches' were reported to be a recent phenomenon that involved parents going to considerable trouble to provide their children with special lunchboxes featuring several partitions. Each segment of the lunchbox contained different types of foods that could be combined into a healthy meal:

*What I notice here at our school now are these kids are into deconstructed lunches, which is fantastic because they'll take, you know, a deconstructed taco. So the meat goes in the thermos and then they take their salad and their cheese and their capsicums and everything and they make their own tacos.*

## Potential implementation strategies

The findings outlined above suggest the following potential strategies for increasing schools' interest in and implementation of a revised Crunch&Sip program that features a vegetable focus:

- Develop a rationale document that explains the nutritional value of vegetables and the importance of increasing children's consumption. This document could highlight the associated benefits for children, parents, teachers, and schools.
- Develop support materials that clearly communicate the key points listed in the rationale document and provide useful teaching resources for teachers (e.g., posters and PowerPoint slides).
- Consider producing online videos that concisely communicate the benefits of Crunch&Sip and provide implementation suggestions. These videos could be used during PD sessions and/or accessed independently by interested school staff.
- Consider entering into supply arrangements with retailers to provide vegetables to schools in disadvantaged areas.
- Ensure resources and suggested activities are sympathetic to the socioeconomic environments of a wide range of schools. For example, give-aways of boxes of vegetables may be more appropriate in disadvantaged areas and within- and between-class competitions may be more relevant in more affluent areas.
- Consider sourcing and providing/recommending equipment that could be used to make vegetables more attractive (e.g., an equivalent of an apple slinkie).
- Consider providing Crunch&Sip branded give-aways such as partitioned lunchboxes and mini-vegetable toys to hang from backpacks.
- Consider accessing volunteering organisations to recruit a taskforce of Crunch&Sip volunteers to assist in preparing vegetables in more disadvantaged areas.

## Appendix 1

### **Crunch&Sip Interview Guide**

- Welcome and brief description of the research project
- Introductions – each person’s role at the school, teaching history
- How is C&S implemented at their school
  - With or without water
  - Distance to water dispenser
- Any other food-related programs
  - E.g., School breakfast or vegetable garden programs
  - Describe canteen offerings
- What do kids typically bring for C&S
- What do kids typically bring for recess and lunch
- Where do vegetables factor in
  - How do we make veg the new fruit
  - Differences in preparation and serving for veg vs fruit
- Ideas to increase vegetable intake
- Perceived barriers
- Ways to increase motivation
- What resources would be useful
- Preferences relating to curriculum embeddedness

## Appendix 2

### NVivo10 Node Hierarchy

Hierarchical Name
Nodes\\Demographics\Location\Metro
Nodes\\Demographics\Location\Regional (Kalgoorlie)
Nodes\\Fruit and Veg\Curriculum embeddedness of fruit and veg
Nodes\\Fruit and Veg\Perceived barriers to increased intake
Nodes\\Fruit and Veg\Perceived barriers to increased intake\Need to educate the parents
Nodes\\Fruit and Veg\Teacher modelling behaviours
Nodes\\Fruit and Veg\Ways to motivate intake, make more appealing
Nodes\\How C&S is implemented in schools\Formal
Nodes\\How C&S is implemented in schools\Formal\Activities during C&S
Nodes\\How C&S is implemented in schools\Formal\Activities during C&S\Active C&S breaks
Nodes\\How C&S is implemented in schools\Formal\Rules about consumption
Nodes\\How C&S is implemented in schools\Formal\Temporal aspects
Nodes\\How C&S is implemented in schools\Informal
Nodes\\How C&S is implemented in schools\Not implemented
Nodes\\Other food related programs\Big Crunch
Nodes\\Other food related programs\Breakfast club
Nodes\\Other food related programs\Canteen
Nodes\\Other food related programs\Compost, worms, chickens
Nodes\\Other food related programs\Foodbank
Nodes\\Other food related programs\FOODcents
Nodes\\Other food related programs\In-class cooking
Nodes\\Other food related programs\Nude Food, Waste Free Days
Nodes\\Other food related programs\Other
Nodes\\Other food related programs\Vegetable garden
Nodes\\Vegetables\Barriers preventing veg intake
Nodes\\Vegetables\Differences in prep for fruit and veg
Nodes\\Vegetables\Ideas to increase veg intake
Nodes\\Vegetables\Resources to encourage intake
Nodes\\Water
Nodes\\What kids bring for lunch and recess
Nodes\\What kids bring to C&S
Nodes\\What kids bring to C&S\Increasing overall daily intake of fruit and veg