



External Evaluation of Fruit in Schools Final Report

August 2018

Prepared for
5+ A Day Charitable Trust

By Carolyn Watts
Quigley and Watts Ltd.



ACKNOWLEDGEMENTS

This work would not have been possible without the support of many people. We could not have hoped for a better response from schools. The response rate from school and kura principals is a testament to the high regard they have for Fruit in Schools.

Thank you to all the school principals that completed the survey and those who also undertook an interview.

We appreciate the willingness of school and kura principals to take part in an interview, of whom we could only select a few to take part. Likewise, a big thank you to the many principals who offered to assist us with the survey of parents. Again, we could only select a few, but we are grateful to all those who offered.

Thank you to the over 700 families who took part in the survey of parents and caregivers. Your insights and feedback are an important part of this work.





CONTENTS

Executive summary	02
Introduction	04
Evaluation purpose and questions	04
Evaluation methods	04
Structure of the evaluation report	05
Fruit in Schools description	05
Findings of Previous Evaluations	06
Findings from 2018 Evaluation	08
Participation rates	08
Health and Education Outcomes	09
Fruit in Schools supports healthy school environments	10
Fruit in School supports teaching food and nutrition	12
Fruit in Schools supports schools to promote healthy eating	14
Fruit in Schools feeds hungry children without creating stigma	15
Promoting the Ministry of Health's Food and Nutrition Guidelines	16
Positive impacts for children at home as well as school	16
Positive impacts for families	18
What could be improved	19
Evaluation conclusions	20
References	21
Appendix A: Evaluation methods	22

TABLES AND FIGURES

Table 1:
Participation (of Fruit in Schools schools)
in other health promotion initiatives

08

Table 2:
Health promotion activities and policies

11

Table 3:
Resources used to support curriculum
teaching for nutrition and healthy eating

12

Table 4:
Impact of Fruit in Schools on children
at home

16

EXECUTIVE SUMMARY

The Fruit in Schools initiative is funded by the Ministry of Health and supplies a piece of fresh produce for each child each school day in low decile schools. The programme is delivered by United Fresh New Zealand Incorporated (United Fresh) and Dudley Ltd, supported by the 5+ A Day Charitable Trust (5+ A Day) with curriculum-linked resources.

In 2018, 5+ A Day commissioned Quigley and Watts Ltd to conduct an independent evaluation of the initiative. The purpose of the evaluation was to continue to explore and document the effectiveness and value of the Fruit in Schools initiative.

All 547 primary and intermediate schools that participate in Fruit in Schools were invited to participate in the evaluation. The evaluation used both quantitative and qualitative methods and drew on a range of information from two online surveys of principals (492 completed surveys, response rate 90%), interviews with seven school and kura principals and a paper-based survey of parents at 11 schools (responses were received from 703 families of the 2,010 sent surveys, response rate 35%).

Fruit in Schools reaches more low decile schools than any other food and nutrition health promotion initiative in New Zealand.

Fruit in Schools improves both health and educational outcomes. One of the key ways it does this is by ensuring all students have access to healthy food. Children who are hungry struggle to concentrate and learn. Eighty-three percent of principals surveyed said the overall health of their children would decline if Fruit in Schools ended, concentration would suffer (74%), academic outcomes would suffer (62%), behaviour problems would increase (56%) and absenteeism would increase (53%).

Feeding hungry children remains the number one benefit of Fruit in Schools. Eight out of ten of principals surveyed reported their school or kura had fewer hungry tamariki as a result of Fruit in Schools. Nine out of ten of principals said Fruit in Schools led to a sense of equality between students regardless of their family circumstances.

Of all the food and nutrition programmes in schools **Fruit in Schools is rated the most effective programme at promoting a healthy school food environment.** 9 out of 10 principals said Fruit in Schools was very effective at promoting a healthy school environment.

There are a lot of incidental lessons that [because of Fruit in Schools] we don't actually have to teach. The older children are responsible for collecting and distributing the fruit, there are fruit monitors in class, we compost the scraps, it is a whole cycle but it is not something you have to teach as a separate lesson. It is integrated into what we do with the Fruit in Schools (Principal, Bay of Plenty).

Ninety-eight percent of principals told us that Fruit in Schools helps keep health and wellbeing on the agenda.

These other little healthy things (like health promoting schools) you might do them once in a year for 5 days, it's a one off, the fruit is here every day we talk about fruit every day (Principal, Wellington).



Principals are clear that the initiative represents far more than just a piece of fruit, it is health promotion in action, embedded into the curriculum and life of the school. Ninety-four percent of principals said Fruit in Schools contributed to increasing students' knowledge about nutrition and health.

Fruit in Schools is more integrated into the school for example, in food and nutrition we don't have to talk about fruit and vegetables, the kids know that, it is a given. When they look at a lunch box their first thing is, is there fruit there? (Principal, Northland).

Ninety-five percent of principals said Fruit in Schools contributes to raising awareness among staff and students about the importance of healthy eating and 96% said it promoted positive attitudes among students about eating fruit and vegetables. **Fruit in Schools supports learning about kai and how to prepare kai.**

The fruit is everywhere, in classrooms and part of every day. The teachers have a high regard for the fruit, so they talk about it to the tamariki, I have a bowl of fruit on my desk (Principal, Hawke's Bay).

Both principals and parents said Fruit in Schools removed the worry and anxiety for themselves and also for their children if there was not enough food to take to school. The availability of the fruit for all children meant there was no stigma involved. Fruit in Schools reduced the anxiety and stress for children, whānau and teachers that is caused when families don't have enough food.

They don't need to worry if there is nothing at home. Talk about Maslow's hierarchy of needs, the things we need in life to function, food is top of that list. When you have a child coming to school worried because they haven't had a proper meal the night before or breakfast, and how are they going to last the day, it's amazing what that fruit does (Principal, Wellington).

Fruit in Schools has positive impacts for children at home as well as school. Three quarters of the parents surveyed (76%) said their child ate more fruit because of Fruit in Schools. Nearly half (47%) also ate more vegetables. Seven out of ten parents said Fruit in Schools supports them to provide healthy food at home.

Over a third of families (39%) said the whole family now eats more fruit and about a quarter (27%) eat more vegetables. Parents described how their children will encourage other family members to eat fruit as a snack.

As an investment the quality, outcomes and value are excellent. We recommend that Fruit in Schools is continued and consideration is given to the expansion of the initiative to decile 3 and 4 schools, and low decile secondary schools.

Introduction

The Fruit in Schools initiative is funded by the Ministry of Health and supplies a piece of fresh produce for each child each school day in low decile schools. The programme is delivered by United Fresh New Zealand Incorporated (United Fresh) and supported by the 5+ A Day Charitable Trust (5+ A Day) with curriculum-linked resources.

In 2018, 5+ A Day commissioned Quigley and Watts Ltd to conduct an independent evaluation of the initiative. This report presents the findings of the external evaluation.

Evaluation purpose and questions

The purpose of the evaluation was to continue to explore and document the effectiveness and value of the Fruit in Schools initiative.

Evaluation questions:

For schools new to Fruit in Schools since the last evaluation:

1. To what extent has the Fruit in Schools initiative improved education and health outcomes for children?
2. What are the success factors for Fruit in Schools, and other programmes that support child health and health promotion in schools.
3. To what extent has the Fruit in Schools initiative produced other outcomes of value to schools?
4. How could Fruit in Schools be improved?

For existing schools (pre-2015):

1. How valuable is the Fruit in Schools initiative compared to other programmes at:
 - a. Creating a healthy school environment
 - b. Supporting teaching about food and nutrition
 - c. Promoting healthy eating
 - d. Feeding hungry children with healthy food
 - e. Supporting the Ministry of Health's food and nutrition guidelines
2. How valuable is the Fruit in Schools initiative to children?
 - (fruit consumption, learning, attitudes, knowledge and behaviour regarding fruit)
3. How valuable is the Fruit in Schools initiative to parents?
 - (impact on weekly budget, parental attitudes, knowledge and behaviour)
4. How could Fruit in Schools be improved?

Evaluation methods

The evaluation used both quantitative and qualitative methods and drew on a range of information sources including:

1. An online survey of principals of schools that had started Fruit in Schools since the evaluation in 2015 (n=76/77 completed, response rate 99%). The school surveys were conducted in April 2018.
2. An online survey of principals of schools who started Fruit in Schools prior to 2015 (n=416/470, response rate of 89%).
3. Interviews with seven school principals selected from the 211 who were willing to be contacted for a follow up interview. Principals were interviewed over the phone in May 2018. There was a good geographical spread, and a range of different school types represented including Kura Kaupapa Māori, an intermediate school, bilingual schools, rural and urban, large and small.



4. A paper-based survey of parents at 11 schools randomly selected from the 327 schools that offered to help administer the survey. (Responses were received from 703 families of the 2,010 sent surveys, response rate 35%). The parents' survey was conducted in May 2018.
5. Previous evaluations of Fruit in Schools, and other programme documents.

The methods are described in full in Appendix A.

Structure of the evaluation report

The report is organised around the evaluation questions. It begins with a programme description, and a brief summary of findings from previous evaluations. This is followed by a section detailing the findings of the current evaluation about the benefits of Fruit in Schools to schools, children and parents. The concluding section brings the evaluation findings together and presents conclusions about the overall effectiveness of the programme. Appendix A provides detail about the evaluation methods.

Fruit in Schools description

This section provides a brief overview of the Fruit in Schools initiative.

Fruit in Schools is available to all decile one and two primary and intermediate schools in New Zealand. Fruit in Schools currently supports 547 schools providing a piece of fruit or vegetable for 118,551 students and staff on school days. In May 2016 Fruit in Schools was extended to an additional 76 schools (15,025 students).

The 5+ A Day Charitable Trust provides participating schools with support including aprons, posters, teaching resources, fruit monitor certificates, stickers, and food safety and storage information. United Fresh is contracted to supply the fresh produce and freight.

A wide variety of quality fresh produce is delivered nationwide to participating schools. Priority is given to provide locally grown, seasonal, New Zealand produce whenever possible. The 5+ A Day Charitable Trust continues to develop and provide participating schools with curriculum-linked teaching resources to support the fresh produce provision. 5+ A Day also engages in ongoing communication with principals, teachers and school-appointed Fruit in Schools coordinators through newsletters and phone calls for example.

With guidance from United Fresh and 5+ A Day, schools have developed their own systems for storing, managing and distributing the fruit, often with student leaders playing a key role. In many schools the class teacher chooses when the class will have a fruit break, and the class all eat together; at other schools the whole school eats the fruit at a particular time (at the beginning of morning break for example); and a few schools opt for a 'grazing' option where children help themselves to fruit as and when they want. Schools reported they received an ample supply, and that fruit was never wasted any surplus was used in cooking projects, distributed to nearby preschools or kohanga reo, or sent home with children for example.

Findings of Previous Evaluations

The Ministry of Health commissioned a comprehensive process and outcome evaluation of Fruit in Schools, which was carried out by the New Zealand Council for Educational Research (NZCER) from 2005-2009 using both quantitative and qualitative methods. The final report was published in 2009 and concluded 'Fruit in Schools has had a positive impact on schools' and students' approaches to healthy lifestyles, is starting to impact on home behaviours, and is strengthening public health infrastructure' (Boyd et al, 2009, p viii). Quantitative findings showed that Fruit in Schools students were more likely than comparison students to have either maintained their initial positive health related practices (which generally decline as children get older) or made small positive improvements. This pattern was evident across all four health areas: Nutrition, Physical Activity, Smokefree and Sunsmart. Other positive changes identified in the evaluation included:

School level

- higher priority placed on health and wellbeing
- strengthened healthy eating and SunSmart policies
- increased opportunities given to students for physical activity
- increased engagement with other health initiatives and agencies
- students given more health-related leadership opportunities

Individual student level

- maintained positive attitudes towards, and awareness of, healthy behaviours
- increased consumption of fruit and vegetables
- increased physical activity
- had positive attitudes toward school

Internal surveys carried out by 5+ A Day in 2008 and 2009 supported the finding that Fruit in Schools was starting to impact on home behaviours. In both years about 80% of schools reported that teachers had noticed a difference in lunchboxes. In 2009, 40% reported more fruit in lunchboxes, and 77% reported healthier lunches (5+ A Day, 2008/09).

Subsequently Colmar Brunton was commissioned by 5+ A Day to conduct two surveys in 2010: one gauging public opinion of the Fruit in Schools initiative, and the other measuring the impact of the programme according to school principals. The public opinion survey found that 38% of New Zealanders were aware of Fruit in Schools; 9 out of 10 believed the programme should be government funded, and 87% wanted to see Fruit in Schools funded beyond 2010 (Colmar Brunton, 2010a).

In the survey of 200 principals (about 45% of participating schools), all reported that Fruit in Schools had helped reinforce healthy eating messages in their school, and all had seen an increase in pupil consumption of fruit and vegetables as a result of participating in the programme. 89% of principals reported increased concentration in class as a result of Fruit in Schools; 84% said pupils were generally healthier; and 67% said pupils had fewer sick days. Other programme benefits reported by over 85% of principals were: pupils gaining more knowledge about fruit and vegetables; pupils taking more interest in fruit and vegetables; pupils eating a wider variety of fruit; pupils eating healthier lunches; and pupils encouraging each other to eat more fruit and vegetables. Principals valued the programme very highly, and when asked to rate its impact on a scale of 1 to 10, 90% rated it 8, 9, or 10 (Colmar Brunton, 2010b).

The 2014 evaluation completed by Quigley and Watts drew on a range of information sources including findings from an online survey of principals of Fruit in Schools schools (n=378) with a response rate of 81%; 16 key informant interviews with school principals, Health Promoting Schools facilitators, and a Ministry of Health official; and previous Fruit in Schools evaluations. The evaluation found principals valued Fruit in Schools highly, and believed it was very beneficial for their school and the wider community (Ball J and Watts C, 2015).



According to principals, feeding hungry children was the number one benefit of Fruit in Schools. 85% of principals surveyed reported their school had fewer hungry children as a result of Fruit in Schools. 80% reported reduced stigma as a result of Fruit in Schools, and said that children were more willing to ask for food if they were hungry.

In the survey, 72% of principals agreed or strongly agreed that 'if Fruit in Schools was ended, academic outcomes would suffer.' Principals explained that the main way fruit provision contributed to academic outcomes was by providing 'brain food' that enabled children to concentrate and stay on task, and 74% reported they had observed increased concentration in class as a result of Fruit in Schools. Many principals also observed that Fruit in Schools was contributing to learning by providing authentic learning opportunities (89%), reducing behaviour problems (46%), and improving attendance and engagement (60%).

Both principals and Health Promoting Schools facilitators agreed that Fruit in Schools was providing direct health benefits for children in low decile schools due to increased consumption of fresh produce, and wider dietary changes triggered by Fruit in Schools. For example, in the survey:

- 66% of principals reported they had observed an improvement in students' general health as a result of Fruit in Schools;
- 43% had observed fewer cases of school sores and skin infections;
- 35% said students had fewer sick days due to Fruit in Schools;
- 91% agreed or strongly agreed that 'the overall health of children would decline' if Fruit in Schools was ended; and
- 97% agreed or strongly agreed that 'if fruit in schools was ended many of our kids would eat little or no fruit'.

The majority of key informants agreed that Fruit in Schools was successful because:

- It is meeting a genuine need and making a real difference
- It is very well managed, and easy for schools to participate
- The fruit and vegetables provided are varied and of high quality
- It has been consistent and reliable over many years

These factors, and that fact that the programme is delivered at no cost to schools or communities, made Fruit in Schools sustainable from the schools' perspective.

FINDINGS FROM 2018 EVALUATION

The findings in this section are drawn from two online surveys of principals, the survey of parents from 11 schools, and interviews with seven principals.

Participation rates

Fruit in Schools reaches more low decile primary and intermediate schools than any other food and nutrition health promotion initiative. Health Promoting Schools had the second greatest reach, with 64% of schools participating (see Table 1 below).

Table 1: Participation (of Fruit in Schools schools) in other health promotion initiatives ¹

Fruit in Schools	100%
Health Promoting Schools	64%
5+ A Day	55%
Food and Nutrition Programme (Life Education Trust)	45%
Project Energize	21%
Heart Foundation (school support)	18%
Garden to Table	11%
Food for Thought (PAK'nSAVE, New World, Four Square)	9%
Fuelled4Life (Food and Beverage Classification System)	3%

Low decile schools participate in a range of initiatives that provide food. Fruit in Schools reaches the most schools, followed by the KidsCan 'Food for Kids' programme (83% of schools), the Kickstart Breakfast programme - supported by Fonterra and Sanitarium (77%), Fruit Trees in Schools (13%) and Eat my Lunch (10%).

¹ Actual participation rates for some initiatives may be higher than reported by principals.



Health and Education Outcomes

Eighty-three percent of principals surveyed said the overall health of their children would decline if Fruit and Schools ended, concentration would suffer (74%), academic outcomes would suffer (62%), behaviour problems would increase (56%) and absenteeism would increase (53%).

As a result of Fruit in Schools principals said:

Students are more engaged with school	58%
Fewer cases of school sores/skin infections	30%
Improved dental health/hygiene	28%

Principals said Fruit in School provided healthy food enabling children to have the fuel they need to be healthy and to learn. Children who are hungry cannot focus or learn. Fruit in Schools improved wellbeing and behaviour for all children and was especially important for those tamariki who might otherwise not have fruit.

I find after a fruit break they are more engaged, ready to learn, they have something in their tummies they are more focused (Principal, Bay of Plenty).

The huge impact is how the kids feel about themselves has changed because they can eat fruit whenever they want...their wellbeing and their behaviour has improved (Principal, Wellington).



Fruit in Schools supports healthy school environments

Principals rated Fruit in Schools as the most effective programme at promoting a healthy school food environment. 9 out of 10 principals said Fruit in Schools was very effective at promoting a healthy school environment.

When asked why Fruit in Schools was the most effective, principals said because it is so integrated into school life, Fruit in Schools is a positive part of every school day.

Schools don't see this as a one-off programme, it is part of what they do every day.

Fruit in Schools is embedded into the curriculum and is a key support for creating a healthy school. It demonstrates that eating fruit and vegetables is just what we do around here. It isn't a one-off programme that slots in once a term or something schools only do on special occasions.

There are a lot of incidental lessons [from Fruit in Schools] that we don't actually have to teach. The older children are responsible for collecting and distributing the fruit, there are fruit monitors in class, we compost the scraps, it is a whole cycle but it is not something you have to teach as a separate lesson. It is integrated into what we do with the Fruit in Schools (Principal, Bay of Plenty).

If classes go out on school trips they always remember to take the fruit bucket, they might forget the tent pegs, but the fruit always goes (Principal, Central North Island).

It aligns with school values

Fruit in Schools is part of school values such as manaakitanga, hospitality and caring for others.

It's part of who we are as a kura and the values we try to install in our tamariki. We are a bilingual school we go to the marae every week, it is one of our classrooms, so part of that is manaakitanga. Every time we go to the marae we take kai with us, we take the fruit with us (Principal, South Island Kura).

Ninety-eight percent of principals told us that Fruit in Schools helps keep health and wellbeing on the agenda.

These other little healthy things (like health promoting schools) you might do them once in a year for 5 days, it's a one off, the fruit is here every day we talk about fruit every day (Principal, Wellington).

Promotes leadership

Fruit in Schools has a lot of benefits beyond eating the fruit. The older children become leaders looking after the fruit for the younger ones.

The fruit is prepared and cut up and put out, it teaches service for our leaders and good manners. All our senior children year 5-8 have a week on, they are modelling behaviours, routines it is very much embedded into the school day (Principal, Central North Island).



A catalyst for healthy action

Seventy-four percent of principals said that Fruit in Schools had been a catalyst for action on other health issues in their school or kura. Fruit in Schools supported schools and kura to start the health promotion activities or policies described in Table 2 below.

Table 2: Health promotion activities and policies

School garden	53%
Cooking at school	50%
Initiatives to encourage parents/whānau to pack healthy lunches for pupils	48%
Fruit trees in schools	48%
Water only policy	42%
Increased opportunities/encouragement for kids to be physically active during breaks	41%
Increased physical activity during class time	38%
School-home-community initiative(s) or event(s) focused on health and wellbeing	34%
School orchard	30%
No fizzy drinks policy	28%
Changes to what is sold at the tuck shop	22%
School food policy	22%
Dental health programme (e.g. teeth brushing)	16%

*The boxes get recycled and the company pays us in trees for the weight we have recycled. We can go onto a website and pick trees and shrubs and we wouldn't be at the weight we are if we didn't get the fruit **(Principal, Bay of Plenty)**.*

*All the scraps go into our worm farm that creates the fertile soil we grow our veges in, it is very connected throughout our school **(Principal, Wellington)**.*



Fruit in School supports teaching food and nutrition

Schools and Kura used a range of resources to support curriculum teaching for nutrition and healthy eating. Table 3 shows the percent of schools that use different resources.

Table 3: Resources used to support curriculum teaching for nutrition and health eating

Ministry of Education / TKI online curriculum online resources	85%
5+ A Day	81%
Heart Foundation resources	40%
Guidelines for School Food Programmes (Ministry of Education)	39%
Health Promotion Agency HPA nutrition resources	37%
Healthy Eating for Young People or Eating for Healthy Children Aged 2-12 (Ministry of Health)	26%
Nutrition Foundation healthy eating online resources	25%
Healthy Food Guide	25%
Vegetables.co.nz	8%
Beef + Lamb NZ	5%

The most commonly used resources are those from the Ministry of Education and 5+ A Day. The 5+ A Day resources were rated as most effective at supporting curriculum teaching, with 51% of principals who used them saying they were a great support compared to 39% of those using the Ministry of Education/TKI resources.

Fruit in Schools provides context that learning can be linked to. It is used as part of other programmes that include curriculum activities for food and nutrition. It is also used to provide context to health, technology, science, mathematics, and social sciences. One principal described an inquiry-based project on the Commonwealth games which had included fruit from different countries.

*We link it with Project Energize, the Heart Foundation, Hauora days. Where do we get bananas from, we linked it to the Commonwealth Games, what does their flag look like and also in core literacy and numeracy **(Principal, Central North Island)**.*

*Working with kai and knowing about kai is a big thing for us...our tamariki are not only reading about what is good kai to eat, they are learning how to prepare the kai **(Principal, Northland)**.*

Ninety-four percent of principals said Fruit in Schools contributed to increasing students' knowledge about nutrition and health.

*Fruit in Schools is more integrated into the school for example, in food and nutrition we don't have to talk about fruit and vegetables, the kids know that, it is a given. When they look at a lunch box their first thing is, is there fruit there **(Principal, Northland)**.*

Eighty-six percent of principals say Fruit in Schools encourages a range of authentic learning opportunities.

*We use it as part of food technology classes. If we have something that kids don't like for example, the carrots we roasted them and made carrot soup, now they love carrots. Leftover kiwifruit were made into pickle, it's part of learning. We stew the apples sometimes **(Principal, Wellington)**.*





8 out of 10 principals said Fruit in Schools is a great support to promoting healthy eating

Fruit in Schools supports schools to promote healthy eating

Ninety-five percent of principals said Fruit in Schools contributes to raising awareness among staff and students about the importance of healthy eating and 96% said it promoted positive attitudes among students about eating fruit and vegetables. Fruit in Schools supports learning about kai and how to prepare kai.

*There is a real respect for the fruit. The kids love the fruit. They will leave chips and things in their lunch boxes and grab fruit **(Principal, Bay of Plenty)**.*

*The fruit is everywhere, in classrooms and part of every day. The teachers have a high regard for the fruit, so they talk about it to the tamariki, I have a bowl of fruit on my desk **(Principal, Hawke's Bay)**.*

Students really value the fruit, they are proud of being able to share the fruit with others, it is an important part of activities inside and outside the classroom.

*If we go up to the marae to do a powhiri for another school, we take the fruit with us for our manuhiri, our visitors. We run kapa haka days we always tell the teachers, we have fruit, if your tamariki don't have fruit they can help themselves. So, we are always ensuring that we share it with others. If there is anything left we let tamariki take the fruit home at the end of the week. **(Principal, South Island Kura)**.*



Fruit in Schools feeds hungry children without creating stigma

Feeding hungry children remains the number one benefit of Fruit in Schools. Eight out of ten of principals surveyed reported their school had fewer hungry children as a result of Fruit in Schools.

Ninety-one percent of principals said Fruit in Schools led to a sense of equality between students regardless of their family circumstances.

It is there for everyone, its non-judgemental, it doesn't matter what your background is you still get to eat the fruit. That is one of the good aspects of it (Principal, Hawke's Bay).

9/10

PRINCIPALS SAID

Fruit in Schools is a great support for feeding hungry children with healthy food

86%

REPORTED LESS STIGMA

as a result of Fruit in Schools – children are more willing to ask for food if they are hungry

Both principals and parents said Fruit in Schools removed the worry and anxiety for themselves and also for their children if there was not enough food to take to school. The availability of the fruit for all children meant there was no stigma involved.

The quality of our kids' lunches are not always the best but we don't worry so much now as we used to because we have the fruit. That takes a bit of pressure off us, it is comforting for parents and for staff that we can say grab some more fruit and the quality is so good (Principal, Hawke's Bay).

Some tamariki will ask for fruit as soon as they get here, they know that's the right thing to do, we encourage them to ask if they are hungry (Principal, South Island Kura).

It was described as one less worry for the children who come to school without lunch, they know they are going to have fruit every day, they know if they are hungry they can have fruit. One principal said they have a handful of children who come to school with no kai, not every day but once or twice a week.

Fruit in Schools reduced the anxiety and stress for children, whānau and teachers that is caused when families don't have enough food.

They don't need to worry if there is nothing at home. Talk about Maslow's hierarchy of needs, the things we need in life to function, food is top of that list. When you have a child coming to school worried because they haven't had a proper meal the night before or breakfast, and how are they going to last the day, it's amazing what that fruit does (Principal, Wellington).



Promoting the Ministry of Health’s Food and Nutrition Guidelines

Six out of 10 principals said Fruit in Schools is a great support to promoting the Ministry’s Food and Nutrition Guidelines (Ministry of Health, 2012a). The Guidelines for Children and Young People suggest children eat three serves of vegetables and two of fruit every day. The Guidelines also suggest:

- Offering healthy snacks (low in fat, salt and sugar) between meals
- Taking children food shopping and encouraging them to choose healthy foods, such as fruit and vegetables, for the trolley
- Making preparing food fun – involve children from an early age and let them do more as they get older (Ministry of Health, 2012b).

Positive impacts for children at home as well as school

Three quarters of the parents surveyed (76%) said their child ate more fruit because of Fruit in Schools. Nearly half (47%) also ate more vegetables.

Parents reported improved attitudes to fruit and vegetables and increased consumption at home as a result of Fruit in Schools (see Table 4 below).

Table 4: Impact of Fruit in Schools on children at home

They like eating fruit more	70%
They are more positive about eating fruit	64%
They are more willing to try fruit	52%
They ask for fruit as a snack or with their meals more often	52%
They are more willing to try vegetables	42%
They are more positive about eating vegetables	39%
They like eating vegetables more	37%
They ask for vegetables as a snack or with their meals more often	26%

70%

of parents said their child liked eating fruit more

37%

of parents said their child liked eating vegetables more

*It has made him enjoy fruit more and choose it over other foods **(Parent)**.*

*Fruit in Schools has made my moko want to eat a variety of fruit and vegetables and less sweeties, lollies **(Parent)**.*

52%

said their child was more willing to try fruit

42%

said their child was more willing to eat vegetables

*They try different fruit and veges and ask for them in the food shop as normally wouldn't buy as unsure if they would eat **(Parent)**.*

*My child will eat fruit happily now, before they were very reluctant. Will try new fruit now too **(Parent)**.*

64%

said their child was more positive about eating fruit

39%

said their child was more positive about eating vegetables

*More excited about fruit **(Parent)**.*

*They have a much better attitude to healthy and fresh foods **(Parent)**.*

52%

said their child asked for fruit as a snack or with their meals more often

26%

said their child asked for vegetables as a snack or with their meals more often

*More times she will pick fruit at home for a snack instead of going into cupboard for chips and biscuits **(Parent)**.*

*Fills up on something healthy immediately after school vs. other snacks **(Parent)**.*

*Fruit seems to be expected as a snack at home rather than unhealthy things **(Parent)**.*

Positive impacts for families

Seven out of ten parents said Fruit in Schools supports them to provide healthy food at home.

*We can see the benefits of eating more fruit and vege so we are more inclined to buy them when shopping **(Parent)**.*

*It makes it easier for our children to accept fruit & vege as a part of our daily eating, which means less stress for parents – YAY!! **(Parent)**.*

*The leftover fruit at school were given to parents and it helps a lot for us, especially us with only single income **(Parent)**.*

*I don't need to buy those gummy bears/multi-vitamins **(Parent)**.*

Over a third of families (39%) said the whole family eats more fruit and about a quarter (27%) eat more vegetables. Parents described how their children will encourage other family members to eat fruit as a snack.

*Meal times are less of an argument - encouraged us as a family to change our eating habits – more fruit and veges – less junk food **(Parent)**.*

*We will eat fruit before any other snack for that's what they do at school **(Parent)**.*

*It makes us buy fruit and put it on the table and fridge as a snack – at home and work **(Parent)**.*

*It has given us peace of mind when the lunch box isn't so full. Our kids are changing their dad's perspective and he is now trying more veges! **(Parent)**.*



What could be improved

All the principals spoken to were very satisfied with Fruit in Schools. The high quality of the administration for Fruit in Schools was mentioned by all principals. The fruit is delivered on time, is great quality and the communication from 5+A Day is excellent. Fruit in Schools doesn't require additional planning and organisation from the school, it is now an embedded part of the timetable for every school day.

The longevity of the programme the regularity, the communications are really successful. We have never had to chase anything up (Principal, Hawke's Bay).

No, honestly it runs very smoothly for us and we are very grateful. I couldn't see any way that it could be improved. It is very important for the nutrition of our individual children, we have seen a difference in the health of our children (Principal, Bay of Plenty).

The variety of fruit is important to the children, the schools and the parents.

The ease, the quality the variety, which is absolutely amazing, and we don't get any wastage at all (Principal, Central North Island).

One principal did note that some of the fruit had plastic in the packing and the children had picked up on this.



EVALUATION CONCLUSIONS

Fruit in Schools is highly valued by children, teachers and parents.

Fruit in Schools improves both health and educational outcomes. One of the key ways it does this is by ensuring all students have access to healthy food. Children who are hungry struggle to concentrate and learn. Eighty-three percent of principals surveyed said the overall health of their children would decline if Fruit and Schools ended, concentration would suffer (74%), academic outcomes would suffer (62%), behaviour problems would increase (56%) and absenteeism would increase (53%).

Feeding hungry children remains the number one benefit of Fruit in Schools. Eight out of ten of principals surveyed reported their school had fewer hungry children as a result of Fruit in Schools.

Nine out of ten of principals said Fruit in Schools led to a sense of equality between students regardless of their family circumstances.

Fruit in Schools is the most effective programme at promoting a healthy school food environment. 9 out of 10 principals said Fruit in Schools was very effective at promoting a healthy school environment.

Ninety-eight percent of principals told us that Fruit in Schools helps keep health and wellbeing on the agenda.

It is the most valued food and nutrition initiative in schools because it happens every day and is embedded into the curriculum and life of the school. Principals are clear that the initiative represents far more than just a piece of fruit. Ninety-four percent of principals said Fruit in Schools contributed to increasing students' knowledge about nutrition and health.

Ninety-five percent of principals said Fruit in Schools contributes to raising awareness among staff and students about the importance of healthy eating and 96% said it promoted positive attitudes among students about eating fruit and vegetables. Fruit in Schools supports learning about kai and how to prepare kai.

Both principals and parents said Fruit in Schools removed the worry and anxiety for themselves and also for their children if there was not enough food to take to school. The availability of the fruit for all children meant there was no stigma involved.

Fruit in Schools has positive impacts for children at home as well as school. Three quarters of the parents surveyed (76%) said their child ate more fruit because of Fruit in Schools. Nearly half (47%) also ate more vegetables.

Over a third of families (39%) said the whole family eats more fruit and about a quarter (27%) eat more vegetables. Parents described how their children will encourage other family members to eat fruit as a snack.

Fruit in Schools value reaches beyond the school and into the home. Three quarters of the parents surveyed said Fruit in Schools supported them to provide healthy food at home. Their children were more willing to try fruit and vegetables and asked for them as a snack more often.

As an investment the quality, outcomes and value are excellent. We recommend that Fruit in Schools is continued and consideration is given to the expansion of the initiative to decile 3 and 4 schools, and low decile secondary schools.

REFERENCES

5+ A Day (n.d.) *Fruit in Schools Telephone Survey Comparison – 2008 and 2009*. Unpublished report.

Ball J and Watts C (2015) *External Evaluation of Fruit in Schools*. Wellington: Quigley and Watts.

Boyd S, Dingle, R & Hodgen E (2009) *The changing face of Fruit in Schools: 2009 overview report. Final Health Futures evaluation report prepared for the Ministry of Health*. Wellington: New Zealand Council for Educational Research.

Colmar Brunton (May 2010a) *Fruit in Schools research: Gauging public opinion of Fruit in Schools initiative* [Presentation]. Auckland: Colmar Brunton.

Colmar Brunton (July 2010b) *Fruit in Schools* [Presentation]. Auckland: Colmar Brunton.

Ministry of Health. (2012a). *Food and Nutrition Guidelines for Healthy Children and Young People (Aged 2–18 years): A background paper*. Partial revision February 2015. Wellington: Ministry of Health.

Ministry of Health. (2012b). *Eating for Healthy Children (From 2 to 12 years)*. Wellington: Ministry of Health.

APPENDIX A: EVALUATION METHODS

Fruit in Schools Principals Surveys

Two online surveys were prepared using Survey Monkey. The questions were developed in collaboration with 5+ A Day, based on previous evaluations and the aims of the current evaluation. The surveys were pre-tested internally before being finalised.

The first survey was sent to schools that were part of Fruit in Schools at the time of the previous evaluation (2015). This survey included new questions focused on:

How valuable is the Fruit in Schools initiative compared to other programmes at:

- a. Creating a healthy school environment
- b. Supporting teaching about food and nutrition
- c. Promoting healthy eating
- d. Feeding hungry children with healthy food
- e. Supporting the Ministry of Health's food and nutrition guidelines

The second survey was sent to schools that had joined Fruit in Schools since 2015. This survey was similar to the survey used in the 2015 evaluation and focused on:

1. To what extent the Fruit in Schools initiative improved education and health outcomes for children
2. To what extent the Fruit in Schools initiative produced other outcomes of value to schools

Quigley and Watts Ltd emailed a link to the survey to all participating schools for whom email addresses were available (provided by 5+ A Day) in April 2018. The subject line and brief cover message made it clear that the survey was to be completed by the principal.

Two reminder emails were sent out to principals who had not responded, and the survey was left open for 2 weeks.

Fruit in Schools Parents' Survey

Eleven schools were chosen from the 327 schools that indicated they were willing to assist with administering a parent's survey. Schools were chosen randomly by choosing every 30th school from the database. Each school was given a \$150 koha for assisting with the survey, which was paid directly into the school bank account.

Schools were sent enough paper surveys for all of the families in their school and a \$100 grocery voucher to be used for the prize draw. The surveys were sent home to families in May along with a covering letter from the school supporting the evaluation.

The survey included information about the evaluation and the survey including how the results would be reported and used. A tear off portion of the information page could be completed with the person's name if they wished to go into a draw for a \$100 grocery voucher.

Schools collected the surveys in a sealed box in the office. The prize draw details were collected in a separate box. Schools drew the prize and presented it to the winner.

Completed paper surveys were returned in an addressed courier pack to Quigley and Watts where they were entered manually for analysis.

Key informant interviews

Data collection also included 7 key informant interviews with school principals.

The survey included a question asking principals if they would be willing to participate in a follow up interview; 211 responded 'yes'. These records were numbered and every 30th school was used to randomly select 7 principals to be interviewed. There was a good geographical spread, and a range of different school types represented. Two were principals of a school in a main urban centre, three in provincial towns, and two in rural settings. School size ranged from two classes to over 470 children, and school types included Kura Kaupapa Māori, an area school (Years 0-13), contributing schools (Year 0-6) and full primary schools (Year 0-8).

Materials

An information sheet was prepared for potential key informants explaining the purpose of the evaluation, the interview procedure, and explaining that their name would not be used in the final report.

Procedure

In most cases potential participants were invited to be interviewed by email, which included the information sheet about the evaluation. This was followed up by a phone call to establish willingness to be involved, and arrange an interview time. Each interview began with a brief discussion about the purpose of the interview, confidentiality and anonymity, and each interviewee had an opportunity to ask questions. Participants gave verbal consent for the interview to be recorded. They were recorded using a digital voice recorder.

All the interviews were conducted by telephone. The interviews followed a semi-structured format based on a pre-prepared interview schedule. Notes were written up immediately after each interview with reference to the interview recording. Verbatim quotes were marked as such in the notes, and other sections paraphrased.

Analysis

The evaluation objectives and research questions formed the framework for analysis. Material relevant to each objective and question was identified in each data source. Material from each data source was analysed and summarised separately, and then brought together and overall findings identified.

Reporting

The evaluation report was organised according to the evaluation objectives. The draft report was internally peer reviewed by a senior Quigley and Watts staff member before being submitted to the client.

Strengths and limitations

There was an excellent response rate of to the survey, so we can be confident that the findings accurately reflect the majority views of principals. The use of both qualitative and quantitative methods adds depth to the findings, and triangulation of data sources further adds to the validity of the findings.

A limitation of the evaluation is that it is based on the perceptions and observations of school principals and whānau. Objective measurement of outcomes was beyond the scope of the current evaluation.

Notes



www.5adayeducation.org.nz

Visit www.5aday.co.nz for inspiration,
fresh recipes and nutrition information



Join us on social media @5adaynz
for fresh inspiration, recipes and giveaways.

