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# eating together at mealtimes: the role of family meals in the health and wellbeing of young people in new zealand

J UTTER, S DENNY, S GRANT,  
E ROBINSON, S AMERATUNGA, T FLEMING

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Families Commission  
Public Trust Building  
Level 6, 117-125 Lambton Quay  
PO Box 2839  
Wellington 6140  
  
Telephone: 04 917 7040  
Email: [enquiries@nzfamilies.org.nz](mailto:enquiries@nzfamilies.org.nz)  
[www.nzfamilies.org.nz](http://www.nzfamilies.org.nz)

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### The AHRG investigators on the Youth'07 project are:

Simon Denny, Terry Fleming, Peter Watson  
Department of Community Paediatrics

Shanthi Ameratunga, Elizabeth Robinson, Jennifer Utter  
Section of Epidemiology & Biostatistics, School of Population Health

Terryann Clark, Robyn Dixon  
School of Nursing

Sue Crengle  
Te Kupenga Hauora Māori, School of Population Health

Sally Merry  
Werry Centre for Child and Adolescent Mental Health,  
Department of Psychological Medicine

David Schaaf  
Pacific Health, School of Population Health

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## EXECUTIVE SUMMARY

Social changes during the past few generations have sparked an academic interest in the changing activities and rituals of families; in particular, the family meal. The family meal has become the focus of research within the disciplines of sociology, medicine and education, forming an emerging body of research into how family meals influence the nutritional and health indicators of children and young people. Most of this research has been conducted outside of New Zealand, but the universal nature of food and families means that international research into the family meal is also relevant to New Zealand families. This report aims to summarise the literature on health and wellbeing indicators associated with the sharing of family meals, and to determine if these associations can be observed in a nationally representative population of New Zealand secondary school students.

Approximately one-third of young people in New Zealand shared meals with their families on seven or more occasions in the previous week; an extra 40 percent shared meals between three and six times. Young people sharing frequent family meals had few differing demographic characteristics; however, nearly one-quarter of young people shared meals with their families twice a week or less. In the current analyses,

New Zealand students who reported frequent family meals also reported better family relationships, better communication and more parental support for healthy eating. Frequent family meals were associated with consuming more healthy foods and less unhealthy foods, and with better wellbeing, fewer indicators of depressive mood, and fewer risk-taking behaviours.

The findings of the analyses of the Youth'07 data were generally consistent with international literature that suggests that family meals are a positive family activity for children and young people. With regard to nutrition, the literature suggests that children and young people who eat meals with their families have better dietary profiles and consume healthier foods more frequently. Though the research is more limited with regard to other health behaviours, it also appears that regular family meals may help protect against depression, substance use and misuse and disordered eating behaviours.

For New Zealand secondary school students, frequent family meals are also associated with better family relationships, better dietary behaviours and fewer depressive symptoms and substance misuse. Though it is difficult to determine if family meals alone can improve health outcomes for young people, it appears that sharing meals together is one characteristic of a healthy family environment.

## 1. INTRODUCTION

Social changes including the introduction of television, more women in the workforce and the ubiquity of cheap convenience foods, have affected how families regard the 'family meal'. Consequently, the 'family meal' has become the focus of research within disciplines ranging from sociology, to medicine, to education. Celebrity chefs, health professionals, media outlets and political parties have all expressed interest, concern and investment in ensuring families continue to prioritise the mealtime as a core family activity.

Behind these public campaigns, a body of research attempting to determine how family meals influence the nutrition and health indicators of children and young people has emerged. While most of this has been conducted outside of New Zealand, the universal nature of food and families makes this research also relevant to New Zealand families.

This report aims to summarise international literature on the health and wellbeing indicators associated with

the sharing of family meals, and aims to determine if these associations are observed in a nationally representative population of New Zealand secondary school students. Specifically, the literature review aimed to identify the health and wellbeing outcomes for children and young people who regularly share meals with their families, and to identify barriers to families sharing meals together. The data analysis aimed to describe the characteristics of a household that consumes family meals more frequently, in a nationally representative sample of young people in New Zealand, and to determine how frequent family meals are associated with health and social behaviours that result in better outcomes for young people.

The report focuses on children and young people; in particular, adolescents. We have focused the literature review on school-aged children (not pre-schoolers) and adolescents, as existing evidence demonstrates that families share fewer meals together as children age, and adolescents become more autonomous and involved in activities outside the family. We are interested in the family meal's role in bringing families together.

## 2. WHAT DO WE KNOW?

This section aims to provide a comprehensive but concise overview of the state of the science on the role of family meals in developing children and young people. To achieve this, we searched databases (eg, Medline, PsychInfo, GoogleScholar), our personal files and article reference lists to identify the most salient research on the topic. We selected research primarily focused on examining a range of health indicators (nutritional indicators, body size and emotional wellbeing) that are associated with young people sharing meals with their families. Our findings are described below. During our literature search, we identified many other articles that provide a context around family meals, such as barriers to family meals, and how young people feel about them. These articles are summarised in the section of this review titled, 'The context of the family meal'.

A major challenge to assessing the totality of the research is inconsistency in the definition and measurement of family meals across studies. Throughout this section we will refer to many studies that conceptualised family meals in different ways. Examples of the variety of measures used are included in Table 1. While the differences among these various questions appear subtle, the definitions of 'family' and 'meal' are quite disparate. Definitions of 'family' include: one parent, both parents, everyone living in the house, most of the family living in the house or entirely unspecified. 'Meals' are also defined in numerous ways including dinner or supper, evening meals or unspecified eating. Thus, while the review attempts to describe individual findings as accurately as possible, to reflect the true measures, in total we interpret the research as capturing the concept of family meals.

**Table 1: Examples of various measures used for assessing family meals**

How often do you sit down with other members of your family to eat dinner or supper?

During the past seven days, how many times did all, or most, of your family living in your house eat a meal together?

Typically, how many days per week do you eat dinner or supper with at least one parent?

In an average week, how many times do all of the people in your family who live with you eat dinner together?

How often do you eat with your parents?

### 2.1 The context of the family meal

Eating together is a frequent activity for families (Mestdag & Vandeweyer, 2005). A nationwide US study of adolescent health, conducted in 1995, reported that nearly 50 percent of young people shared family meals six to seven times per week, and 30 percent of young people shared meals with their families fewer than three times per week (Videon & Manning, 2003). Likewise, a study of young people in South Auckland found that more than 40 percent of young people ate meals with their families on all of the previous five school nights (Utter, Scragg, Schaaf, & Mhurchu, 2008). Mestdag and Vandeweyer (2005) reported that eating together was the main activity that Belgian families did together in both 1966 and 1999, although the time spent doing so decreased markedly during that period.

#### 2.1.1 Family meals are important for families

Several studies have highlighted the value of eating together to young people and their parents. Most young people feel that it is important their family eat together and enjoy eating with their family, and dinner time provides an opportunity for everyone to talk together (Fulkerson, Neumark-Sztainer, & Story, 2006; Neumark-Sztainer, Story, Ackard, Moe, & Perry, 2000b). Likewise, studies of American families have found that more than 80 percent of parents of young people reported that it was important for their families to eat together (Fulkerson, Neumark-Sztainer et al, 2006) and most parents report that mealtimes provide opportunities for conversation and family togetherness (Fulkerson, Story, Neumark-Sztainer, & Rydell, 2008). Furthermore, in a study comparing parent and adolescent perceptions of mealtimes in their families, Boutelle, Lytle, Murry, Birnbaum and Story (2001) found that young people were less likely to report that their dinners were characterised by arguing than their parents. With regard to nutrition, nearly half of young people report that there are rules around mealtimes that they are expected to follow (Neumark-Sztainer et al, 2000b) and they would eat healthier foods if they ate more meals with their families (Neumark-Sztainer, Story, Ackard, Moe, & Perry, 2000a).

#### 2.1.2 Barriers precluding families from eating together more often

Despite the importance of families eating together, several factors prevent families doing so. Numerous studies (Boutelle, Birnbaum, Lytle, Murray, & Story, 2003; Fulkerson, Neumark-Sztainer et al, 2006;



Neumark-Sztainer et al, 2000a, 2000b) have found that 'scheduling issues' make it difficult for parents and children to eat together. In a study of more than 900 adolescents and their parents, more than half of the adolescents and more than three-quarters of parents said that different schedules made it hard for the family to eat together. Other barriers included a young person's desire for autonomy (Neumark-Sztainer et al, 2000a), dislike of the foods served (Neumark-Sztainer et al, 2000a) and unhappiness with family relationships (Fulkerson, Story et al, 2008; Neumark-Sztainer et al, 2000a, 2000b). In a small study of adolescents, approximately 20 percent reported that mealtimes were characterised by arguments (Neumark-Sztainer et al, 2000b). A separate study of parents found that more than 10 percent would like to change their mealtimes to create less conflict (Fulkerson, Story et al, 2008).

Perhaps the most challenging barrier is time constraints due to working commitments. Qualitative research conducted with American working parents found that parents use a number of food-related coping strategies to deal with work-family spillover and stress (Devine et al, 2006). For example, parents report doing things like reducing the time and effort involved in food preparation, reducing expectations around family meals and making tradeoffs around the quality of food provided with time and money (Devine et al, 2009; Devine et al, 2006). Furthermore, mothers and fathers tended to measure success around balancing work and family commitments with food and meals differently. Mothers tended to mark satisfaction through providing healthy meals to their families, while fathers tended to mark satisfaction through participating in the family meal (Blake et al, 2009).

## 2.2 Family meals and nutrition indicators

Family meals are thought to improve the nutritional intakes of children and young people, as meals prepared at home are generally healthier than those prepared outside the home: parents can role-model eating healthy foods, children and young people can help prepare the meals and parents can monitor what their children are eating. One of the earliest empirical studies that examined the relationship between family meals and health indicators was published in 2000 (Gillman et al). In this study, Gillman et al examined the quality of children's and adolescents' diets by the frequency of their family dinner consumption. The

data were drawn from the children of the Nurse's Health Study and included more than 16,000 children of nurses (aged nine to 14 years). The study found that children who ate frequent family dinners had significantly better dietary indicators (eg, ate more fruits and vegetables, had better nutrient profiles, consumed fewer takeaway foods and soft drinks) than children who ate family dinners infrequently. The consistently strong findings, across numerous dietary indicators, make this study important; however, the children participating all had parents who were health professionals (nurses) and we do not know if these findings can be generalised to other populations.

Following Gillman et al's study, numerous other publications have examined the nutritional indicators associated with family meals across diverse populations. More than 10 cross-sectional studies in the past 20 years have attempted to determine the link between family meals and the nutritional intakes of children and young people. These studies have included populations from the US (Befort et al, 2006; Feldman, Eisenberg, Neumark-Sztainer, & Story, 2007; Fitzpatrick, Edmunds, & Dennison, 2007; Granner et al, 2004; Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003; Neumark-Sztainer, Wall, Perry, & Story, 2003; Videon & Manning, 2003), Canada (Woodruff & Hanning, 2009; Woodruff, Hanning, McGoldrick, & Brown, 2010), the UK (Cooke et al, 2004), Finland (Haapalahti, Mykkanen, Tikkanen, & Kokkonen, 2003) and New Zealand (Utter et al, 2008). Taken together, the findings indicate a strong, positive relationship between frequent family meals and consumption of healthier foods (eg, fruits and vegetables). Nearly all of these studies reported a positive relationship between sharing family meals and consuming fruits and vegetables, regular breakfast consumption or healthier dietary profiles. Furthermore, Feldman et al (2007) demonstrated that having the television on during the family meal weakened the association between family meals and dietary indicators, but young people who share family meals with the television on still had better dietary profiles than those who do not share family meals at all. There were only two studies (Befort et al, 2006; Cooke et al, 2004) that did not observe a relationship or observed only a weak relationship between family meals and dietary indicators; these studies had small sample sizes (<500) from a demographically homogeneous segment of the population.

Interestingly, the findings of these cross-sectional studies are far less conclusive in describing the associations between family meals and consumption of unhealthy foods (eg, snack foods, fast food, soft drinks). In at least three of the larger studies across three different countries (Neumark-Sztainer, Hannan et al, 2003; Utter et al, 2008; Woodruff & Hanning, 2009), there were no observed differences in the consumption of fast food, soft drinks or snack foods by frequency of family meals. That is, young people in regions of the US, Canada and New Zealand who frequently shared meals with their families were as likely to consume fast food, soft drinks or snack foods as young people who shared meals with their families less often. This may be because fast food, soft drinks or snack foods are not likely to be consumed during mealtimes. Not all studies included all measures of unhealthy foods or measured them in the same way, but the strength and consistency of these findings are adequate to question the likelihood that the family meal alone can prevent the excessive consumption of unhealthy snack foods and drinks among young people.

One of the great challenges to interpreting cross-sectional research is the issue of temporality. From the above studies, it cannot be determined if the family meals preceded the healthier eating behaviours or vice versa. At least three studies have been published recently that have attempted to examine the nutritional impact of family meals over time (Burgess-Champoux, Larson, Neumark-Sztainer, Hannan, & Story, 2009; Larson, Neumark-Sztainer, Hannan, & Story, 2007; Larson et al, 2008). All three were drawn from the Project EAT studies, which comprise several cohorts of adolescents living in an urban region of the Midwestern US. Larson et al (2008) found that family meal frequency in high school was associated with greater fruit and vegetable intakes five years later, for both males and females. However, when the analyses accounted for how much fruit and vegetables were consumed during the baseline measurements, family meal consumption was associated with greater fruit consumption five years later for males only. In separate analyses of data from the same cohort of young people, Larson et al (2007) also found that frequency of family meal consumption during the baseline measurement was positively associated with numerous markers of nutritional quality for both males and females five

years later. Burgess-Champoux et al (2009) conducted a similar study with the young people who were in middle-school at the time of the baseline measurement and found that regular family meals during early adolescence was associated with regular meal (breakfast, lunch, dinner) patterns and better dietary profiles five years later.

The findings of the early studies that suggested a nutritional benefit of family meal sharing led to a body of research attempting to determine if family meals help protect against unhealthy weight gain. Taken together, the results of the studies reporting cross-sectional analyses (Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Haines, Kleinman, Rifas-Shiman, Field, & Austin, 2010; Mamun, Lawlor, O'Callaghan, Williams, & Najman, 2005; Sen, 2006; Taveras et al, 2005; Utter et al, 2008) provide minimal evidence that family meals are associated with lower body weights. Of the studies that found a significant inverse association between family meal frequency and body size (Fulkerson, Neumark-Sztainer et al, 2008; Sen, 2006; Taveras et al, 2005), all used measures of body size that were self-reported (rather than objectively measured). One observed an association among younger females only (Fulkerson, Neumark-Sztainer et al, 2008) and one observed an association among US students of European background, but not other ethnicities (Sen, 2006). Findings from studies incorporating longitudinal designs are also mixed in their findings. Three longitudinal studies reported a significant inverse relationship between family meals and body size (Gable, Chang, & Krull, 2007; Haines, Kleinman et al, 2010; Sen, 2006), but two of these relied on self-reported body size measurements (Haines, Kleinman et al, 2010; Sen, 2006) and one observed a relationship in females, but not males (Haines, Kleinman et al, 2010). In a nationally representative sample of American children entering school at age five, Gable et al (2007) found that children eating family meals infrequently during their first year of school were more likely to be overweight four years later. However, at least two longitudinal studies (Fulkerson, Neumark-Sztainer et al, 2008; Taveras et al, 2005) found no relationship between family meals and subsequent body size. It is likely that, given the number of environmental and individual factors that influence body size, the relative contribution of family meals, if any, is likely to be small.

## 2.3 Family meals and wellbeing

Family meals help develop healthy children by increasing family communication, allowing parents to monitor their children's eating and by improving trust and relationships in the family. A paper presented to the American Psychological Association in 1997 was one of the first to examine the psychological wellbeing of young people who share meals with their families (Bowden & Zeisz). This paper suggested that young people who frequently shared meals with their families had far better psychological adjustment than those who did not. Since this early work, numerous publications have explored whether family meals benefit children's health behaviours and indicators including unhealthy dieting and disordered eating, mental health and depression and substance use.

One of the earliest studies examining the relationship between frequency of family meals and disordered eating behaviours was published in 2001. In this study, Ackard and Neumark-Sztainer surveyed university students about their family mealtimes growing up and their current symptoms of bulimia nervosa. Though it is possible that young people with more severe bulimic symptoms may recall their family's mealtimes differently from those with no or minimal symptoms, this study found that frequent family meals may help prevent bulimia in females. Subsequently, three large US cross-sectional studies (Fulkerson, Story et al, 2006; Haines, Kleinman et al, 2010; Neumark-Sztainer, Wall, Story, & Fulkerson, 2004) have suggested that frequent family meals are inversely associated with disordered eating behaviours (eg, skipping meals, binge eating, laxative use, dieting) for males and females (Fulkerson, Story et al, 2006) or for females only (Haines, Kleinman et al, 2010; Neumark-Sztainer, et al, 2004). These findings were significant even after accounting for family support and communication (Fulkerson, Story et al, 2006; Neumark-Sztainer et al, 2004). Only two published cross-sectional studies did not report any relationship between family meals and disordered eating (Fulkerson, Kubik, Story, Lytle, & Arcan, 2009; Sierra-Baigrie, Lemos-Giraldez, & Fonseca-Pedrero, 2009). One of these studies included a small sample of alternative education students (Fulkerson et al, 2009) and the other a small sample of Spanish young people; of whom, more than 82 percent shared daily midday meals with their families (Sierra-Baigrie et al, 2009).

At least two longitudinal studies have examined the link between family meals and young people's later disordered eating behaviours. In a study of more than 2,500 middle and high school students in the Midwestern US, Neumark-Sztainer et al (Neumark-Sztainer, Eisenberg, Fulkerson, Story, & Larson, 2008) found that, for females, frequent family meals reduced the likelihood of extreme weight control behaviours (eg, vomiting, diuretic/ laxative use), but not binge eating, chronic dieting or less severe, unhealthy weight control behaviours (eg, skipping meals) five years later. For males, frequent family meals were associated with fewer unhealthy weight control behaviours (eg, skipping meals, fasting), but not other disordered eating indicators. Haines, Gillman, Rifas-Shiman, Field, & Austin, (2010) also found that females who ate meals with their families were less likely to initiate purging, binge eating and frequent dieting. However, these relationships did not reach statistical significance for males.

As with disordered eating behaviours, a body of research is emerging to suggest that family meals may help protect against depression and suicidal thoughts and behaviours, independent of other indicators of positive family functioning. At least three studies have been published examining the relationship between family meal consumption and depressive symptoms among adolescents (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Fulkerson et al, 2009; Fulkerson, Story et al, 2006). All of these studies were cross-sectional and conducted in the US. In a study of adolescents in the Midwestern US, Eisenberg et al (2004) found that depressive symptoms, suicidal thoughts and suicide attempts were all inversely associated with family meals and these relationships were significant after controlling for measures of family connectedness. Likewise, Fulkerson and her colleagues reported similar results in a large survey of middle schools and high schools (2006) and a smaller study of alternative education high school students (2009). In a nationally representative study of New Zealand secondary school students in 2001, Fleming, Merry, Robinson, Denny and Watson (2007) reported that frequent family meals were associated with fewer suicide attempts, but the relationships were not significant after accounting for parental caring, closeness and depression. As the research to date has been cross-sectional, it is still possible that young people who are

depressed may avoid eating with their families. Thus, from the few studies available it is not possible to draw firm conclusions of the role of family meals in preventing depressive behaviours. Likewise, there has been no research to date that confirms that frequent family meals create a positive mood.

Evidence about the role of family meals in preventing substance use and misuse by young people is suggestive, but also inconclusive. Of the published studies that included cross-sectional analyses, the majority (Eisenberg, Neumark-Sztainer, & Feldman, 2009; Eisenberg et al, 2004; Fulkerson, Story et al, 2006; The National Center on Addiction and Substance Abuse at Columbia University, 2007; White & Halliwell, 2010) found that young people who frequently share meals with their families are less likely to smoke, binge drink, use marijuana or illicit drugs. Only one cross-sectional study did not demonstrate a significant relationship between family dinners and substance use (Fulkerson et al, 2009); this study included a small sample of alternative education high school students who are likely to differ from students in mainstream schools. However, the available longitudinal studies are far less consistent in their findings. Only one study was able to demonstrate that infrequent family meals were associated with later alcohol use for males (Sen, 2010). Two additional studies found a significant association between family meal consumption and substance use for girls, but not boys, such that frequent family meals was associated with lower substance use (Eisenberg, Neumark-Sztainer, Fulkerson, & Story, 2008; Fisher, Miles, Austin, Camargo, & Colditz, 2007). Franko, Thompson, Affenito, Barton and Striegel-Moore (2008) also reported a significant association between family meals and reduced alcohol and cigarette use in later adolescence, but the sample included only females. Taken together, the available literature suggests that family meals may help protect against substance use and misuse in adolescence; however, there is more evidence for females.

An evaluation of interventions that increase the frequency of family meals can provide better evidence of the positive effects of family meals. However, these types of interventions must create an acceptable behaviour change in families, sustain the behaviour change long enough to change outcomes and properly measure the right outcomes. Furthermore, families' socio-political and nutritional environments prevent them from spending

more time preparing food and eating together. To date, few interventions aiming to increase and improve family meals have been evaluated and published. The Hi5+ study (Harrington, Franklin, Davies, Shewchuk, & Brown Binns, 2005) was a randomised trial of schools, targeting families of US children in Grade 3 (approximately age eight). The family intervention comprised a variety of activities, including a 'family fun night' that emphasised sharing food and game experiences. The preliminary results of the Hi5+ programme suggested that the intervention did increase fruit and vegetable intake, but long-term outcomes and outcomes beyond nutrition have not been reported. Similarly, it is unknown what aspects of the family intervention explained the improvement in fruit and vegetable intakes.

Rosenkranz and Dziewaltowski (2009) reported on a pilot study of six- to 12-year-old girls at summer camp. The girls were encouraged to undertake activities to improve the frequency and quality of family meals in their homes (eg, turn off the television). The findings of the pilot study suggested that after the intervention families reported more frequent meals together. In another pilot study, Fulkerson et al (2010) used a series of skill-building activities to facilitate family meals (eg, cooking skills, education, meal preparation). This study also found a likely increase in fruit and vegetable consumption. However, these studies were pilot studies; we need adequately powered, randomised trials to determine the full impact of the interventions over time.

## 2.4 Summary

Literature suggests that participating in frequent family meals, particularly for adolescents, is a positive activity for children and young people. With regard to nutrition, the available literature suggests that children and young people who eat meals with their families have better dietary profiles and consume healthier foods more frequently. While these findings fit with the expectation that family meals provide opportunities for children and young people to eat healthier foods, evidence that young people who share family meals eat fewer unhealthy foods is less consistent. This may be because unhealthier foods are commonly consumed outside the home and as snacks. There is limited evidence to suggest that family meals help prevent obesity and this is consistent with a wide body of research on the multitude of factors that influence body size.

Evidence that family meals prevent poor wellbeing outcomes for young people is suggestive, but limited. Research suggests that regular family meals may help protect against depression, substance use and misuse and disordered eating behaviours. In total, however, the consistency and amount of published studies are limited. While the cross-sectional studies

provide some evidence of the association between family meals and wellbeing, the findings from the available longitudinal studies are less compelling. The longitudinal studies, overall, provide a greater level of evidence as they have the ability to monitor the effects of frequent family meals over time and ascertain the direction of the relationships.

### 3. RESULTS FROM THE YOUTH'07 SURVEY

The great majority of evidence on the role of family meals in the healthy development of young people has been drawn from non-representative populations, and from young people living in the US. Given the unique characteristics of New Zealand and its ethnic diversity, we do not know if family meals are important for the health and wellbeing of young people living in New Zealand. This section aims to describe the associations between family meals and nutrition and wellbeing indicators of a nationally representative sample of secondary school students in New Zealand. The data analysed here were drawn from the Youth'07 survey.

#### 3.1 How we did the survey

The national youth health survey aims to provide information that represents most young people growing up in New Zealand. To do this, we randomly picked 115 schools in New Zealand (from those with 50 or more students in Years 9 to 14) and then randomly selected students from these schools to take part. The survey, therefore, did not include young people who were no longer in school.

In total, 96 (83.5 percent) of the 115 schools selected took part in the survey. Of the participating schools, the majority were large, state funded, co-educational schools. Only 13 schools declined to participate and a further six schools withdrew their agreement to participate during 2007. Of the non-participant schools, 14 of 19 (74 percent) were in Auckland, Wellington or Hamilton, 11 of 19 (58 percent) were state schools, 13 of 19 (68 percent) were co-educational and 17 of 19 (89 percent) were large schools.

To be eligible to participate, students had to be 18 years old or younger. In total, 12,549 students were invited to participate in the survey. Three-quarters (9,107) agreed to take part. This represents about 3 percent of the total 2007 New Zealand secondary school roll. Students' reasons for not participating in the survey included not being at school on the day of the survey, being unavailable when the survey was conducted or not wanting to take part in the survey.

#### 3.1.1 Ethical procedures

The design of the Youth'07 project was checked by the University of Auckland Human Subject Ethics Committee before it started. The ethics committee is responsible for advocating on behalf of research participants, and ensures that researchers at the University of Auckland conduct research to the highest ethical standard. Therefore, before we began, the survey's methods and questionnaires had all been scrutinised by an independent group of academics and community representatives. The principals of each participating school then consented to us carrying out the survey. A few weeks before each school's survey was conducted, information about the survey was distributed to parents and students. They were assured that participation in the survey was voluntary and that all information collected would be anonymous and confidential. All participating students consented to being surveyed.

#### 3.1.2 Using internet tablets in health surveys

The survey was carried out using internet tablets; essentially, hand-held computers. At the start of the survey students were given an anonymous code that enabled them to log in to the questionnaire. The survey questions were displayed on the tablet's screen and read out through headphones. Response options were also read out when the corresponding text on the screen was selected. This 'voiceover' was available in both English and Māori, with students able to toggle between the two languages. Students answered the questions by using a small stylus to touch the appropriate response on the screen. Students could choose not to answer any question or section of the survey. As it was a branching program, students were not questioned about issues that were not part of their life experiences.

During the survey, we measured each student's height, weight and waist circumference to obtain data on the physical measurements of New Zealand secondary school students. These measurements were taken in private part-way through the survey, when students were also asked to provide their usual place of residence, from which we ascertained their census Meshblock number. This was used to derive New Zealand Deprivation Index scores based on the area where the student lived, and to identify students who lived in rural settings.

Before the sensitive sections of the questionnaire, students were reminded that their involvement in the survey was voluntary and their answers would remain confidential and anonymous. For potentially upsetting questions, 'safety' messages were added; these provided advice and contact details of people to talk to (including the people administering the questionnaire).

The questionnaire used in Youth'07 covered important health and wellbeing topics, as well as risk and protective factors that increase or decrease the likelihood of positive and negative outcomes for young people in New Zealand. The questionnaire contained a total of 622 questions, but students answered fewer than this due to the questionnaire's branching design. This design meant that students were questioned in depth in certain areas, but not in areas where they had no direct experience.

## **3.2 Measures**

### **3.2.1 Family meals**

To assess the frequency with which students' families shared meals together, students were asked: "During the past seven days, how many times did all, or most, of your family living in your house eat a meal together?" Students chose from five responses: never; one to two times; three to four times; five to six times; or seven or more times. As this measure of family meals did not specify a meal consumed in the evening and allowed students to define their own families, this question was as inclusive as it could be, to cover the diverse family experiences for New Zealand young people.

### **3.2.2 Demographic variables**

Students self-reported their age, gender and ethnicity. Most students (97 percent) were aged between 13 and 17 years, and 65 percent were aged 15 years or less. Students who selected more than one ethnicity (40 percent of students) were assigned to one ethnic group using prioritised ethnic groupings (Statistics New Zealand, 2005). The main ethnic groups students identified with were: European (53 percent), Māori (19 percent), Pacific (10 percent) and Asian (12 percent). Apart from a slightly higher percentage of male students (54 percent), the participating students were similar demographically to the national population of secondary school students in New Zealand (Adolescent Health Research Group, 2007).

Small area deprivation was assessed using the New Zealand Deprivation Score 2006 (NZDep). NZDep is an area-based, socio-economic deprivation index that assesses eight dimensions using 2006 New Zealand census data (Salmond, Crampton, & Atkinson, 2007). Each student's NZDep score was calculated by linking their residential meshblock number to their respective neighbourhood NZDep score (Adolescent Health Research Group, 2007). Data are presented across five categories of NZDep, low deprivation (deciles 1-2) through to high deprivation (deciles 9-10).

### **3.2.3 Household and family characteristics**

Students answered a number of questions about their homes and families. The questions most relevant to whether families share meals together are described in Table 2.

**Table 2: Description of household and family characteristics measures**

Measure	Question	Responses
<b>Household characteristics</b>		
Where students live	How many homes do you have?	One More than one
Who students live with	Who do you live with (in your main home*)? *For students living in more than one home	Two parents One parent Other Students could choose from 12 options, discrete categories created as above
Paternal employment	Does your dad (or someone who acts as your dad) have a job?	Yes – full-time Yes – part-time No
Maternal employment	Does your mum (or someone who acts as your mum) have a job?	Yes – full-time Yes – part-time No
<b>Family relationships</b>		
Family connection	Scale of nine items, including: > How often do you and your family have fun together? > How do your family members get along? > Not getting on well with people in your family can make life difficult. How do you view your relationships with your family? > How much of the time do you feel close to your mum? > How much of the time do you feel close to your dad? > Do you get to spend enough time with your mum? > Do you get to spend enough time with your dad? > How much of the time is your mum warm and loving towards you? > How much of the time is your dad warm and loving towards you? Cronbach's $\alpha = 0.84$	All responses standardised and averaged  Mean score -0.00 Range -.88, 0.96  Three categories of family connection (low, medium, high) created based on terciles of distribution
Family monitoring	Does your family want to know who you are with and where you are?	Always Usually, sometimes, never
Can talk with mum	How much can you talk about problems or worries with mum?	A lot Some, a little, not at all
Can talk with dad	How much can you talk about problems or worries with dad?	A lot Some, a little, not at all
Mum encourages healthy eating	How much does your mum (or someone who acts as your mum) encourage you to eat healthy food?	Very much Some, a little, not at all
Dad encourages healthy eating	How much does your dad (or someone who acts as your dad) encourage you to eat healthy food?	Very much Some, a little, not at all



### 3.2.4 Nutrition behaviours and body size

Students answered a number of questions about their eating behaviours as described in Table 3 below. Students were also weighed, and their height was measured, by trained research staff. Student body mass index (BMI) was determined with the following

equation:  $BMI = \text{weight (kilograms)} / \text{height (metres)}^2$ . Based on their BMI measurement, students were categorised as underweight/healthy weight, overweight, or obese, based on internationally recognised definitions for children and young people (Cole, Bellizzi, Flegal, & Dietz, 2000; Cole, Flegal, Nicholls, & Jackson, 2007).

**Table 3 Description of measures of nutrition behaviours**

Measure	Question	Responses
<b>Nutrition behaviours</b>		
Fast food consumption	During the last seven days, how often did you eat food from any of these places? Fast-food place (eg, McDonalds, KFC, Burger King, Subway, Pizza Hut), other takeaways or fast-food shops (fish and chips, Chinese takeaways), dairies or petrol stations	For each item, students could choose from five responses ranging from none in the past seven days to two or more times a day. Responses to the items were aggregated and dichotomised at 'Four times a week or more' or 'Less than four times a week'
Soft drink consumption	During the last seven days, how often did you drink fizzy or soft drinks (eg, Coke, Sprite, Fanta)?	Once a day or more
Fruit consumption	During the last seven days, how often did you eat fruit?	Twice a day or more
Vegetable consumption	During the last seven days, how often did you eat potatoes, kumara, taro, etc?	For each item, students could choose from five responses ranging from less than once a day to five or more times a day
	During the last seven days, how often did you eat vegetables (not including potatoes, kumara, taro)?	

### 3.2.5 Emotional wellbeing and risk-taking behaviours

Several well-validated measures of emotional wellbeing were included in the Youth'07 survey. Psychological wellbeing was assessed with the World Health Organisation (Five) Wellbeing Index (Bech, Olsen, Kjoller, & Rasmussen, 2003). Five items comprised the scale assessing constructs of positive mood, vitality and general interests. The five items were rated on a 6-point Likert scale from 0 to 5 and then summed for a final score. Higher scores indicate better wellbeing. The median score was 16.6 with a range of scores from 0 to 25.

Depressive symptoms were assessed using the previously validated Reynolds Adolescent Depression Scale – short form (Reynolds, 2004). The RADS-SF has been developed from the Reynolds Adolescent Depression Scale (RADS) to screen for depression

among adolescents. The RADS-SF is a shorter version of the RADS, and is designed to provide a brief measure for the assessment of depression (Reynolds, 2004). The RADS-SF contains 10 items, with four Likert response options: almost never; hardly ever; sometimes; most of the time. The RADS-SF is scored in a similar way to the RADS with some questions being reverse scored. We have assessed the RADS-SF using data from the first Youth2000 survey which showed the RADS-SF has acceptable reliability and validity and has similar psychometric properties to the RADS (Milfont et al., 2008). Higher scores indicate greater depression symptomatology and a score greater than 28 indicates significant depressive symptoms for New Zealand young people (Milfont et al, 2008). The median score was 18 with a range of scores from 10 to 40.

Students also answered other questions about their wellbeing and risk-taking behaviours, as described in Table 4.

**Table 4: Description of measures of emotional wellbeing and risk-taking behaviours**

Measure	Question	Responses
<b>Emotional wellbeing indicators</b>		
Serious thoughts of suicide	During the last 12 months, have you seriously thought about killing yourself (attempting suicide)?	Once or more Not in the last 12 months, not at all
Attempted suicide	During the last 12 months, have you tried to kill yourself (attempted suicide)?	Once or more Not in the last 12 months, not at all
<b>Risk-taking behaviours</b>		
Binge drinking	In the past four weeks, how many times did you have five or more alcoholic drinks in one session – within four hours?	Once in the past four weeks or more None at all
Current smoking	How often do you smoke cigarettes now? *asked to students who reported that they had smoked. Students who have never smoked are included in the non-smoking responders	Occasionally or more often Never – I don't smoke now, never smoked
Current marijuana use	In the last four weeks, about how often did you smoke marijuana? *asked to students who reported that they had ever smoked. Students who have never smoked marijuana are included in the non-smoking responders	Once or more often Not in the past four weeks, not at all, never used marijuana
Inconsistent contraception	About how old were you when you first had an experience of sex? (By this we mean sexual intercourse or going all the way.)  How often do you use condoms as protection against sexually transmitted infections?  How often do you or your partner use contraception?	Students were defined as engaging in unsafe sexual behaviours if they were sexually active and indicated inconsistent use (sometimes or never) of condoms and contraception

### 3.3 How to interpret the findings in this report

The tables in this report present information reported by students who participated in the Youth'07 survey. This survey is among the largest surveys of the health and wellbeing of young people in New Zealand and is of considerable importance for the purposes of planning and programme development for communities, schools and policy-makers. However, when interpreting these results, remember that only students who were at school on the day of the survey were included, which may affect whether the findings reflect the wider youth population. Also, as the survey was carried out at a single time point, observed differences between groups of students do not necessarily indicate a cause and effect relationship.

As the Youth'07 survey was designed to describe health and wellbeing issues for students attending New Zealand secondary schools, we randomly selected schools, and then students from these schools, to participate. From the information we got, we estimated the prevalence (or average means) of the various behaviours, risk factors, etcetera in the New Zealand student population. The uncertainty of these estimates is indicated by their 95 percent confidence intervals. Confidence intervals indicate the precision of the estimated prevalence by providing an interval (ie, two values) in which we are relatively sure the true prevalence (or New Zealand student population prevalence) lies. Wide confidence intervals indicate more uncertainty in the estimates. Note that all the

confidence intervals in this report have been adjusted for the clustering of students within schools. This is because students from the same school are more alike than students from different schools.

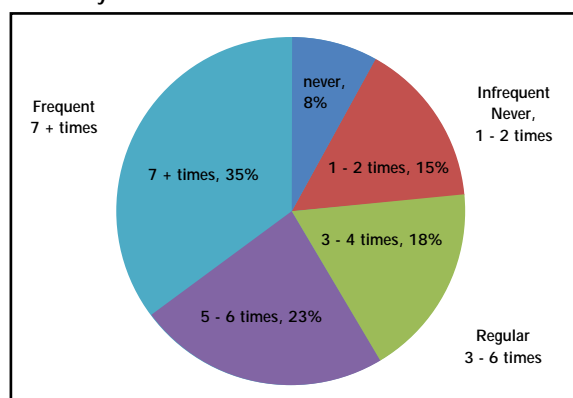
To describe the health and wellbeing issues of these sub-groups of New Zealand students, the report presents the information broken down by the student's demographic or household characteristics. However, it is important not to place too much emphasis on apparent differences between groups, especially when the numbers of students reporting on specific issues are small. As a rule of thumb, if the confidence intervals around two estimates do not overlap then the differences are more likely to be real.

### 3.4 Findings

#### 3.4.1 Prevalence of family meals among young people

In total, more than one-third of secondary school students had shared a meal with their families seven or more times in the previous week (Figure 1). Approximately 25 percent of young people reported that they shared a meal with their family five to six times, while a similar proportion shared meals with their families only two times or fewer in the previous week.

Figure 1: Frequency of sharing family meals in the past seven days

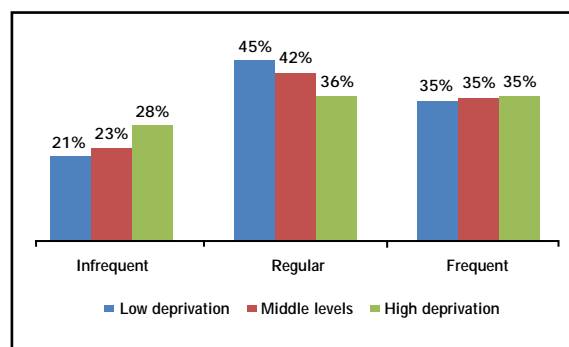


#### 3.4.2 Demographic characteristics by frequency of family meals

There were few demographic differences between students who frequently (7+ times) shared meals with their families in the past week (Table 5). Frequently sharing meals with family was most common among males and younger students. There were few differences by ethnicity and no differences by small area deprivation among students who frequently shared meals with their families.

In contrast, students who infrequently shared meals with their families (two times or less) were more likely to be female, older and reside in high-deprivation areas than other students. Nearly 30 percent of students living in high-deprivation areas infrequently shared meals with their families, compared with 20 percent of students living in low-deprivation areas (Figure 2). Likewise, approximately 30 percent of Māori students and Pacific students infrequently shared meals with their families compared with approximately 20 percent of European students.

Figure 2: Frequency of family meals in the previous week by small area deprivation



**Table 5: Demographic characteristics of students by frequency of family meals in previous week**

	Infrequent (2 times or fewer)		Regular (3-6 times)		Frequent (7+ times)	
	%	CI	%	CI	%	CI
<b>Total</b>	23.56	22.2,25.0	41.32	39.8,42.8	35.12	33.5,36.7
<b>Gender</b>						
Males	21.53	19.7,23.3	40.06	38.0,42.1	38.41	36.7,40.1
Females	25.93	24.3,27.5	42.77	40.8,44.8	31.29	29.3,33.3
<b>Age</b>						
13y	19.41	17.5,21.3	35.65	32.8,38.5	44.94	42.1,47.7
14y	22.28	20.3,24.3	39.37	37.1,41.6	38.35	35.7,41.0
15y	22.58	20.4,24.8	43.27	41.1,45.5	34.15	31.8,36.5
16y	27.57	25.0,30.1	43.52	41.1,46.0	28.91	26.4,31.4
17y	27.25	24.1,30.4	46.06	42.6,49.5	26.69	23.6,29.8
<b>Ethnicity</b>						
Māori	30.57	27.7,33.4	39.29	36.4,42.1	30.14	27.2,33.0
Pacific	29.60	26.6,32.6	33.94	30.8,37.1	36.46	32.2,40.7
Asian	20.18	16.7,23.7	35.93	32.4,39.4	43.89	40.5,47.3
European	21.18	19.9,22.5	45.05	43.4,46.7	33.77	32.2,35.3
Other	20.09	16.5,23.7	38.23	33.4,43.0	41.68	37.2,46.2
<b>Small area deprivation</b>						
Low deprivation	20.78	18.7,22.6	44.68	42.5,46.8	34.54	32.5,36.6
Middle levels	22.99	21.4,24.5	41.52	39.6,43.4	35.50	33.4,37.6
High deprivation	28.47	26.2,30.7	35.75	33.4,38.1	35.78	32.5,39.0

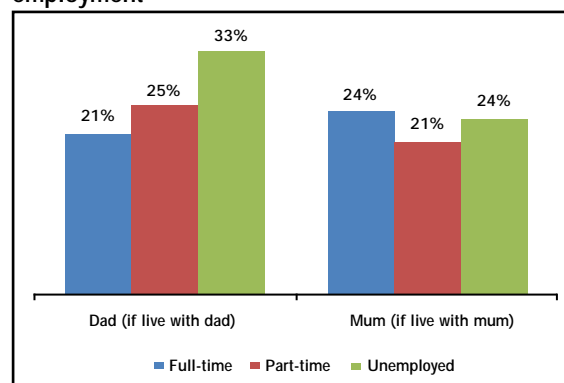
### 3.4.3 Household characteristics by family meals

There were few differences in the household characteristics of students who frequently (seven or more times) shared meals with their families in the past week (Table 6). Students who live primarily in one home are as likely to frequently share meals with their family as students living in more than one home. Similarly, there were no differences in maternal or paternal employment among students who frequently share family meals. There were few differences in the proportion of students who frequently shared family meals by who students lived with.

Students who infrequently shared meals with their families were more likely to live in more than one home, live with one parent only or someone else and more likely to have a dad who is unemployed. Approximately one-third of students whose father was unemployed infrequently shared meals with their

families, compared with 20 percent of students whose father was employed full-time (Figure 3). There were no differences in the prevalence of infrequent family meals by maternal employment.

**Figure 3: Infrequent family meals by parental employment**



**Table 6: Household characteristics of students by frequency of family meals in previous week**

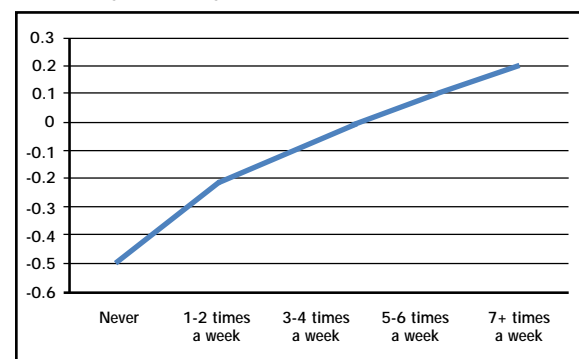
	Infrequent (2 times or fewer)		Regular (3-6 times)		Frequent (7+ times)	
	%	CI	%	CI	%	CI
<b>Where students live</b>						
One home	22.31	20.8,23.8	41.82	40.1,43.6	35.88	34.2,37.5
More than one home	26.76	24.7,28.8	40.11	37.8,42.4	33.12	30.4,35.9
<b>Who live with at home (or main home)</b>						
Other	34.71	28.9,40.6	32.89	26.7,39.0	32.40	26.1,38.7
One parent	27.60	25.1,30.1	41.22	38.2,44.2	31.18	28.0,34.4
Two parents	21.54	20.1,23.0	42.10	40.4,43.8	36.36	34.6,38.1
<b>Paternal employment<sup>1</sup></b>						
Dad works FT	21.48	20.2,22.8	43.13	41.6,44.7	35.38	33.7,37.0
Dad works PT	25.38	21.1,29.7	36.61	32.7,40.5	38.01	33.8,42.2
Dad no work	32.54	27.0,38.1	33.46	28.2,38.7	33.99	26.9,41.1
<b>Maternal employment<sup>2</sup></b>						
Mum works FT	24.47	22.8,26.1	40.78	39.0,42.6	34.75	32.8,36.7
Mum works PT	20.65	18.6,22.7	44.86	42.4,47.4	34.49	32.1,36.9
Mum no work	23.62	21.2,26.1	38.40	35.5,41.3	37.97	35.4,40.5

### 3.4.4 Family meals and family relationships

Overall, students reporting more frequent family meals were more likely to report better family relationships and parental monitoring (Table 7). The mean family connectedness score was associated with frequency of family meals (Figure 4) such that students reporting the most frequent family meals reported the highest mean family connectedness. Students who shared frequent family meals were also more likely to report that their parents always wanted to know where they were and who they were with and that they could talk to their mum and dad about their problems or worries, a lot (Figure 5). Students who shared frequent family meals were also more likely to report that their mum and dad encouraged them to eat healthy food (Figure 6). All of these relationships

were significant after controlling for the effects of age, gender, ethnicity and deprivation.

**Figure 4: Mean family connectedness score by frequency of family meals in past week**



<sup>1</sup> Among those students who live with their fathers.

<sup>2</sup> Among those students who live with their mothers.

Figure 5: Extent to which students feel they can talk to their parents by frequency of family meals

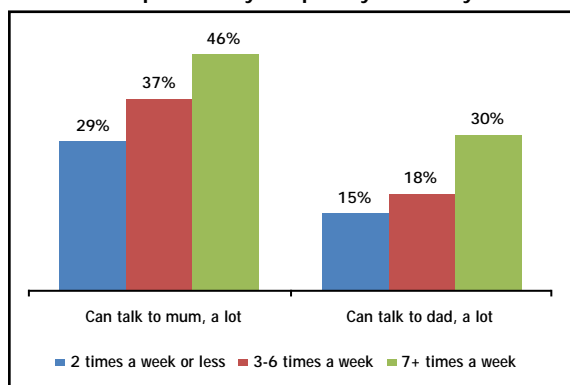


Figure 6: Extent to which parents encourage students to eat healthy foods by frequency of family meals

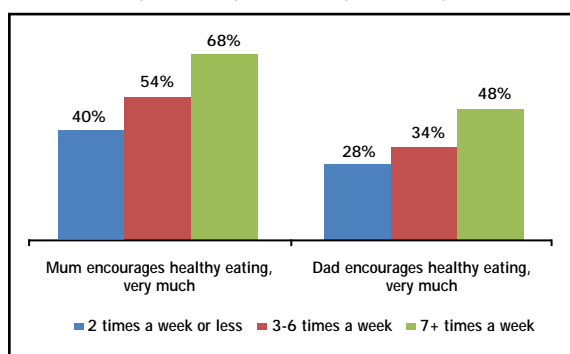


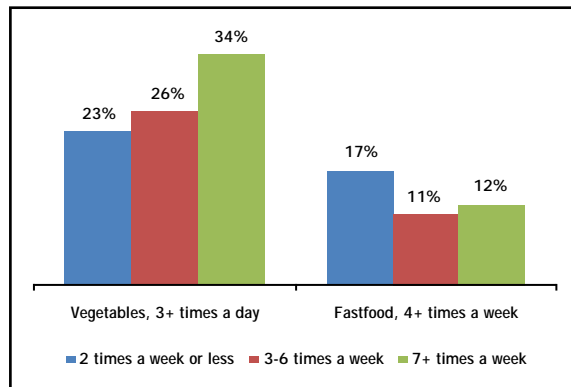
Table 7: Family relationships by frequency of family meals in past week

	Infrequent (2 times or fewer)	Regular (3-6 times)	Frequent (7+ times)
<b>Family connection</b>			
Mean	-0.31	0.02	0.19
CI	-0.35, -0.27	0.00, 0.04	0.17, 0.22
<b>Parents want to know where you are and who you're with, always</b>			
%	52.3	52.3	66.0
CI	49.7, 54.9	49.7, 54.9	63.3, 68.7
<b>Can talk to mum about problems, a lot</b>			
%	28.9	36.9	45.8
CI	26.8, 30.9	35.0, 38.8	43.4, 48.3
<b>Can talk to dad about problems, a lot</b>			
%	14.6	18.4	29.9
CI	13.0, 16.1	16.9, 19.9	28.0, 31.9
<b>Mum encourages healthy eating, very much</b>			
%	39.9	54.1	67.8
CI	37.3, 42.5	52.1, 56.1	65.4, 70.2
<b>Dad encourages healthy eating, very much</b>			
%	28.1	34.4	48.3
CI	26.2, 30.1	32.8, 35.9	46.0, 50.6

### 3.4.5 Family meals and body size and dietary behaviours

Overall, the prevalence of overweight/obesity was similar for students who shared frequent family meals and those who share family meals less often (Table 8). Though it appears that the prevalence of obesity was highest for students who ate family meals infrequently, these differences were not statistically significant when age, sex, ethnicity and deprivation were accounted for. However, students who share frequent family meals are more likely to eat healthier foods (eg, fruits and vegetables) and less likely to frequently eat unhealthy foods (eg, fast food) (Figure 7). The associations between frequency of family meals and the healthier and less healthy nutrition behaviours were all statistically significant after accounting for age, sex, ethnicity and deprivation.

**Figure 7: Vegetable and fast food consumption by frequency of family meals**



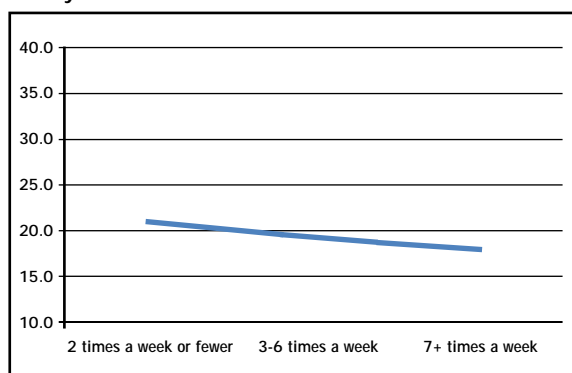
**Table 8: Family meals and nutrition and weight indicators**

	Infrequent (2 times or fewer)	Regular (3-6 times)	Frequent (7+ times)
<b>Overweight/obese</b>			
%	36.90	32.10	32.77
CI	34.0,39.8	29.7,34.5	29.5,36.0
<b>Healthier behaviours</b>			
<b>Fruit consumption, 2+ times a day</b>			
%	42.11	49.23	54.39
CI	39.7,44.5	47.3,51.2	52.1,56.7
<b>Vegetable consumption, 3+ times a day</b>			
%	22.62	25.62	33.86
CI	20.8,24.4	23.9,27.4	31.7,36.0
<b>Less healthy behaviours</b>			
<b>Fast food consumption, 4+ times a week</b>			
%	17.12	10.85	11.91
CI	14.6,19.6	8.9,12.7	9.5,14.3
<b>Soft drink consumption, 1+ times a day</b>			
%	18.63	12.02	15.55
CI	16.4,20.9	10.2,13.9	13.3,17.8

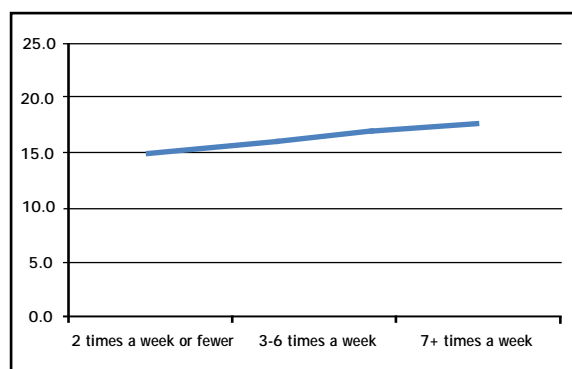
### 3.4.6 Family meals and emotional wellbeing

Students who frequently share meals with their families reported better indicators of emotional wellbeing (Table 9). Mean depression scores decreased (Figure 8) and mean wellbeing scores increased (Figure 9) with increasing frequency of family meals. Likewise, students sharing frequent family meals were less likely to report serious thoughts about suicide or to have attempted suicide in the past year than students who shared meals with their families infrequently. All of the relationships between family meals and emotional wellbeing indicators were statistically significant after controlling for age, gender, ethnicity and deprivation.

**Figure 8: Mean depression scores by frequency of family meals**



**Figure 9: Mean wellbeing scores by frequency of family meals**



**Table 9: Family meals and emotional wellbeing indicators**

	Infrequent (2 times or fewer)	Regular (3-6 times)	Frequent (7+ times)
<b>Depression score</b>			
Mean	21.0	19.1	17.9
CI	20.7,21.4	18.9,19.3	17.7,18.2
<b>Wellbeing score</b>			
Mean	14.9	16.4	17.9
CI	14.6,15.2	16.2,16.6	17.7,18.2
<b>Serious thoughts about suicide, past year</b>			
%	21.8	13.1	9.6
CI	20.0,23.6	11.8,14.4	8.5,10.7
<b>Attempted suicide, past year</b>			
%	8.0	4.1	2.9
CI	6.8,9.1	3.3,4.9	2.2,3.6

### 3.4.7 Family meals and risk-taking behaviours

Young people who share frequent meals with their families are less likely to engage in risk-taking behaviours (Table 10). For example, approximately 10 percent of students who frequently share meals with their families were smokers, compared with nearly one-quarter of students who report infrequent family meals (Figure 10). Students who shared meals with their families frequently were less likely to report binge drinking, current smoking, current marijuana use and inconsistent contraception use than students who share meals with their families infrequently. The relationships between family meals and risk-taking behaviours were significant after controlling for age, gender, ethnicity and deprivation.



Figure 10: Current cigarette use by frequency of family meals

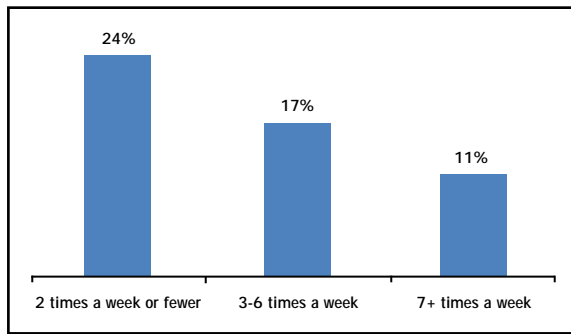


Table 10: Family meals and risk-taking behaviours

	Infrequent (2 times or fewer)	Regular (3-6 times)	Frequent (7+ times)
<b>Binge drinking, past four weeks</b>			
Mean	44.17	37.52	24.03
CI	40.8,47.6	34.4,40.6	21.4,26.6
<b>Wellbeing score</b>			
Mean	23.92	16.56	11.00
CI	21.9,25.9	15.0,18.1	9.4,12.6
<b>Serious thoughts about suicide, past year</b>			
%	24.60	15.61	9.70
CI	22.3,26.9	14.0,17.2	8.1,11.3
<b>Attempted suicide, past year</b>			
%	7.06	3.81	2.80
CI	5.7,8.4	3.1,4.5	1.9,3.7

## 4. DISCUSSION

Findings from the literature, and the survey findings presented in this report, suggest that frequent family meals may help promote the healthy development of children and young people.

We found that approximately one-third of young people in New Zealand shared meals with their families seven or more times in the previous week, with an additional 40 percent sharing meals between three and six times. There were few demographic characteristics that differed among young people sharing frequent family meals.

Interestingly, maternal employment was not associated with the frequency of family meals. This suggests that families with working mothers are sharing family meals as often as those with mothers who are not employed outside the home. However, it is possible that maternal employment affects the family mealtime in other ways, such as through content and quality. For example, families with a mother in employment may share family meals comprising less healthy convenience foods or takeaways, rather than healthier, home-cooked meals.

Note that nearly one-quarter of young people shared meals with their families twice a week or less often. Furthermore, nearly 30 percent of students living in high-deprivation areas infrequently shared meals with their families and approximately 30 percent of Māori and Pacific students also infrequently shared meals with their families. The social gradient in family meal frequency has been reported in American studies (Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010), though the ethnic differences are more difficult to relate given the unique ethnic demography of New Zealand. It is important to note that the ethnic differences in family meal frequency observed in the current study may be attributable, in part, to socio-economic factors, as Māori and Pacific people in New Zealand are overrepresented on indicators of socio-economic deprivation (Howden-Chapman & Tobias, 2000).

Previous literature examining the relationships between parental employment and frequency of family meals has primarily examined maternal employment, with little to no research on the impact of paternal employment and family meals (Neumark-Sztainer, et al 2010). Thus, it was interesting that young people with fathers who were unemployed were much more likely to share

family meals infrequently. Though the overall proportion of young people with unemployed fathers was very low, this finding suggests that families with fathers out of work face unique challenges with regards to family meals. It may be that families with unemployed fathers face significant adversity, particularly socio-economic difficulties, and frequent family meals are a low priority.

As discussed in Section 1, the available literature suggests that the family mealtime environment is important for children and young people as it provides opportunities for building family relationships, increasing communication and providing healthy foods. Studies of young people and parents have found that the family mealtime is important to families. Young people describe the family mealtime as important, enjoyable and as an opportunity for everyone to talk together (Fulkerson, Neumark-Sztainer et al, 2006; Neumark-Sztainer et al, 2000b). Parents have reported that mealtimes provide opportunities for conversation and family togetherness (Fulkerson, Story, et al, 2008). Analyses of the Youth'07 data are consistent with the previous international literature. In the current analyses, New Zealand students who reported frequent family meals also reported better family relationships, better communication and more parental support for healthy eating.

With regard to nutrition, previous research has highlighted that young people report that there are rules around mealtimes that they are expected to follow (Neumark-Sztainer et al, 2000b) and young people view family meals as a strategy for eating more healthy foods (Neumark-Sztainer et al, 2000a). As described in Section 1, the international literature suggests that children and young people who eat meals with their families have better dietary profiles and consume healthier foods more frequently. However, the link between family meals and unhealthy foods is less consistent. There is also limited evidence to suggest that family meals alone are important in preventing obesity.

The analyses presented in Section 2 reflect the international research. For young New Zealanders, frequent family meals were associated with consuming healthier foods and inversely associated with consuming unhealthy foods; however, we did not observe a relationship between family meals and body size.

Our results also demonstrated that more frequent family meals were associated with better wellbeing, and fewer indicators of depression or risk-taking behaviour. The

data presented in this report provide early evidence to suggest that family meals promote a broad range of health and wellbeing indicators for young New Zealanders. Our findings are generally consistent with international research that suggests that regular family meals are associated with lower rates of depression, substance use and misuse and disordered eating behaviour.

Published literature, coupled with the analyses presented within this report, suggest that family meals are an important activity for families with children. However, the evidence available does not help us understand how family meals interact with other aspects of positive family relationships to improve outcomes for young people. For example, we do not know if sharing family meals increases family communication, or if families who communicate well are more likely to eat together. Likewise, we do not know how frequently family meals need to occur and

who needs to participate to gain a protective benefit, and if simply increasing the frequency that families share meals together will improve nutrition, wellbeing and other health indicators.

Interventions that increase the frequency of family meals can provide better evidence of the effectiveness of family meals on health outcomes for children and young people. The difficulty with these interventions is creating a behaviour change in families that is accepted, sustains the behaviour change long enough to change outcomes and measures the right outcomes and measures them well. Furthermore, the socio-political and nutritional environments may prevent New Zealand families spending more time preparing food and eating together. It is important to note that without an adequate evaluation framework around any new initiatives to encourage family meal consumption, it will remain unknown if families sharing food together can truly result in better outcomes for young people.

## 5. CONCLUSIONS

Frequent family meals were associated with better family relationships, better dietary behaviours and lower rates of depressive symptoms and substance misuse among New Zealand secondary school students. It

may be that family meals create opportunities for communicating and building relationships, monitoring children's eating and providing healthy foods. While it is unclear how family meals create better family relationships, we do know that the sharing of meals together characterises healthy family environments.

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Families Commission  
PO Box 2839  
Wellington 6140  
Telephone: 04 917 7040  
Email: [enquiries@nzfamilies.org.nz](mailto:enquiries@nzfamilies.org.nz)

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#### **Wellington office**

Public Trust Building, Level 6  
117–125 Lambton Quay  
PO Box 2839, Wellington 6140  
Phone 04 917 7040  
Fax 04 917 7059

#### **Auckland office**

Level 5, AMI House  
63 Albert Street, Auckland 1010  
Phone 09 985 4106

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