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Normalised Eating in the Treatment of Eating Disorders

**A thesis presented in partial fulfillment of the requirements for the
degree of**

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Abstract

Background: Normalising eating behaviour is one of the primary goals for recovery from eating disorders. There is a lack of consensus or working definition about what normalised eating is. Investigation of eating patterns in recovered eating disorder patients has been limited. The assumption appears to be that normalised eating will automatically follow weight restoration.

Aim: To describe normalised eating as a treatment goal for eating disorders among women aged 18 to 60 years using a sample of “expert opinions”.

Methods: Mixed methods design, including an online survey and in-depth interviews to expand on findings from the survey. Participants were recruited through online and print advertising. The online survey asked respondents to assess the “normality” of a range of eating practices and to give examples of eating in a “normal day”. Nutrient analysis was carried out using FoodWorks and SPSS was used for statistical tests. Content analysis was used for depth interviews and qualitative data from the online survey.

Results & Conclusion: Sixty-seven online surveys were completed by six women who had recovered from an eating disorder, 20 eating disorder dietitians, 15 other eating disorder clinicians and 26 healthy control women. A range of eating patterns and practices were described as normalised (e.g. 2-7 eating episodes in a day; cutting muffins in 1-4 pieces). While normalised eating is more likely to involve a specific set of actions (e.g. 3 meals and 2-3 snacks), reasons for eating seem to underpin normalised eating more than specific actions (e.g. “if hungry after dinner will have a piece of fruit”). Eating for a variety of reasons gives rise to flexibility. Flexibility within the confines of a nutritionally adequate diet was the central theme of normalised eating which emerged from this study.

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Abbreviations

EDNOS	Eating disorder not otherwise specified
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, 4 th Edition
DAA	Dietitians Association of Australia
EDE-Q	Eating Disorder Examination Questionnaire
BMI	Body Mass Index (kilograms / meters squared)
SD	Standard Deviation
NES	Normal Eating Scale
AMDR	Acceptable macronutrient distribution ranges
FANG	New Zealand Food and Nutrition Guidelines
NNS97	National Nutrition Survey 1997
ANS08/09	New Zealand Adult Nutrition Survey 2008/2009
IBW	Ideal body weight

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Chapter 1: Introduction

Eating disorders are becoming increasingly recognized as a serious illness in New Zealand. Lifetime prevalence of all eating disorders in New Zealand is 1.7%, rising to 2.9% for females (Browne, Wells, Scott, McGee, & New Zealand Mental Hlth Survey, 2006). Mortality for individuals diagnosed with anorexia nervosa is almost six times that expected for their age group, while those with bulimia nervosa and eating disorder not otherwise specified (EDNOS) mortality are almost twice that expected (Arcelus, Mitchell, Wales, & Nielsen, 2011). Normalising eating behaviour is one of the primary goals for recovery from eating disorders (American Dietetic Association, 2011). However, there is a lack of consensus or working definition of what 'normal eating' is (Hart, Russell, & Abraham, 2011). This leaves individual clinicians to rely on their own personal definitions of what constitutes normalised eating content and behaviour. Work towards a relevant definition of normalised eating is needed to inform and guide the treatment goals for those clinicians who assist people with eating disorders to make dietary changes. Providing further clarification around what makes up normal eating may also help inform what constitutes disordered eating. The research carried out and discussed in this thesis seeks to describe normalised eating as a treatment goal for eating disorders.

Chapter 2: Literature review

2.1 The concept of normal

Eating disorders are classified as mental health disorders. The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV; American Psychiatric Association, 1994) definition of a mental disorder could therefore give broad guidance to an exclusive definition of normalised eating. The definition refers to a clinically significant manifestation of dysfunction. It is associated with the presence of distress, disability or significantly increased risk of suffering, death or pain. It specifies that it must not be merely an expected and culturally sanctioned response to a particular event, or deviant behaviour or conflicts that are primarily between the individual and society unless the deviance or conflict is a symptom of dysfunction in the individual. The definition makes specific note that no definition adequately specifies precise boundaries for the concept of “mental disorder” and the concept of mental disorder lacks a consistent operational definition that covers all situations. As this pertains to eating disorders, dieting behaviour that is common in society and not detrimental to the individual is not generally considered disordered. In an age of fad diets, “detoxing”, and aggressive fitness routines, one can easily see how it could be difficult to define what is commonplace and not detrimental. Therefore it is important to remember that it may be difficult and potentially irrelevant to attempt an exact definition normalised eating.

2.2 Normal eating as a treatment goal for eating disorders

Normalising eating behaviour is a primary goal of nutritional rehabilitation (American Dietetic Association, 2011; American Psychiatric Association, 2006; Cockfield & Philpot, 2009; Hart, et al., 2011; Henry & Ozier, 2006; Reiter & Graves, 2010). Normalising eating is a key part of most therapies designed for people with eating disorders, including cognitive behavioural therapy, Maudsley family based treatment and specialist supportive clinical management (Carter et al., 2011). Hart, et al. (2011) point out the lack of consensus or working definition of what “normal eating” is. Steinhausen’s (2002) literature review of outcomes in anorexia nervosa found “normalisation” of eating behaviour in only 46.8% of patients, but did not define what this meant. As there is no agreed definition of what normal eating encompasses, this description suggests the absence of abnormal eating behaviours specified in the DSM-IV (1994), such as restriction, bingeing and purging. That fully adaptive eating may involve further factors than absence of eating disorder behaviours has been discussed in the literature (Tylka, 2006). Although there are published descriptions, there has been limited

formal research regarding what characterises the progress made towards normalising eating once abnormal behaviours are addressed, i.e. weight is restored and bingeing and purging has ceased.

Eating disorders are classified by criteria as specified in the DSM-IV (1994). However, over 40-60% of people seeking treatment for an eating disorder do not actually meet full criteria and so are labelled as EDNOS (Thomas, Vartanian, & Brownell, 2009). People who do not have clinical eating disorders may still exhibit disordered eating. However, there are no diagnostic criteria for disordered eating. Providing further clarification around what makes up normal eating may also help inform what constitutes disordered eating.

2.3 Descriptions of normal eating

Ellyn Satter, an American registered dietitian, social worker and therapist well known for her work in feeding dynamics and eating competence, describes normal eating narratively (Satter, 2011). The unpublished description contains themes on eating in response to hunger and satiety, eating hedonically, exercising a moderate level of dietary restraint and eating in response to emotional state. Implication is given to eating regularly throughout the day. The description concludes “In short, normal eating is flexible. It varies in response to your emotions, your schedule, your hunger, and your proximity to food.”

Dietitians Association of Australia (DAA) has produced practice recommendations for dietitians working with eating disorders (Wakefield & Williams, 2009). The practice recommendations give a broad definition of normal eating: “Patients should be encouraged to eat a balanced, wide variety of foods within regular meals and snacks, appropriate for their home and social environment”. Suggestions are given on how to normalise food intake. Main themes are eating at regular times, eating with family or other supportive people, limiting time spent eating meals, limiting time spent talking about food, limiting time spent at supermarkets, not eating diet foods, eating in response to appetite in order to maintain weight and not dieting or counting kilojoules.

Rigaud, et al. (Rigaud, Pennacchio, Bizeul, Reveillard, & Verges, 2011) described normal eating behaviour as one of three criteria for recovery from anorexia nervosa. The definition of normal eating behaviour included energy intake at the level of physiological energy needs, regularly eating three or four meals per day, ability to eat face to face with other people and to eat out (restaurant, friends), no fear of fatty food or added fat, no weighing oneself every day and no obsession concerning body weight or food.

A recent publication provides a similar description as above (Hart, Williams, Wakefield, & Russell, 2012). Normal eating is described as 'good enough' as opposed to an idealized perfect diet. The authors list eating for enjoyment as well as health, developing spontaneous and flexible eating behaviours rather than rigid inflexible habits, and developing sensitivity to cues for eating that most people follow, such as appetite, time of day, social situation and visual appeal as all part of normal eating patterns.

In the description of a particular type of eating disorder treatment, called specialist supportive clinical management, normal eating is described in some detail (McIntosh et al., 2006). The authors describe normal eating as generally involving 3 "adequate meals" and 2-3 snacks, eating from the full range of food groups to provide adequate nutrition, and eating sufficient food to prevent symptoms of starvation. Further details include having food preferences, not eliminating food groups or food types to control weight or shape, not avoiding eating preferred foods, and knowing when to stop eating. The description appears to be drawn from the authors' own opinions, as no reference is cited.

Although not proposing itself as "normal eating" in the context of eating disorder recovery specifically, the field of intuitive eating is very closely related. Tylka (2006) makes the point that the absence of eating disorder behaviours does not necessarily mean that eating is adaptive. Tylka describes intuitive eating as an adaptive style of eating. Three central features of intuitive eating have been described: a) unconditional permission to eat when hungry and what food is desired, b) eating for physical rather than emotional reasons, and c) reliance on internal hunger and satiety cues to determine when and how much to eat.

These six descriptions of normal eating describe overall styles of eating, (i.e. flexible, in response to appetite signals and environment), eating behaviours (i.e. eating speed, eating times) and nutrition intake (i.e. balanced, variety). Satter's (2011) definition describes an overall style of eating, namely flexibly, under which normalised eating behaviours and nutrition intake are presumed to occur. The description of intuitive eating involves an overall style of eating and does not focus on specific behaviours at all (Tylka, 2006). None of these definitions of normal eating have empirically included the perspective of an individual who has had an eating disorder. These individuals may have a different perspective of what constitutes normal eating and which aspects, if any, are important to their recovery.

2.4 Descriptions of abnormal eating

In practice, normal eating seems to be more descriptively defined by 'what it is not' i.e. it is not that of eating disordered patients. In addition to its broad definition of normal eating, the DAA (Wakefield & Williams, 2009)

practice recommendations also specify aspects of abnormal eating in anorexia nervosa, developed as a consensus of dietitians working in eating disorders and mental health throughout Australia and New Zealand. These include abnormal timing of meals/snacks, avoidance of specific foods, bingeing, compensation, difficulty estimating portion size, disproportionate time spent thinking about food, inability to define or eat a balanced nutrient intake, inability to identify hunger or satiety, inappropriate food combinations, inappropriate food utensils, poor food variety, purchasing and preparing food for others without eating, reduced flexibility around food, abnormal speed of eating, rigidity around food, excessive use of condiments and cutting food into small pieces.

Abraham (2008) describes how women with eating disorders describe 'normal eating', which in the context refers to normal eating with an active eating disorder and so can alternatively be described as 'abnormal' within the larger context. The main themes included eating slowly, eating more slowly when with company and more quickly when alone, refusing food, consuming excess fluids, cutting up food, eating at rigid times, only eating healthy foods, only eating fat-free foods and using condiments excessively.

In contrast to the descriptions of normal eating, the two above descriptions of abnormal eating seem to describe eating behaviours (i.e. eating times, compensation, utensils, eating speed, cutting foods) and nutrition intake (i.e. variety, combinations, use of condiments, fluids, use of diet foods) rather than overall eating styles. It has been noted that abnormal eating behaviour varies quite widely among individuals with eating disorders (Sunday & Halmi, 1996; Tappe, Gerberg, Shide, Rolls, & Andersen, 1998), bringing to mind the possibility that the behaviour per se is not the defining factor of normal eating, but rather perhaps the motivation behind the behaviour.

2.5 Measuring normal eating

A small number of measurement tools have been developed to assess eating behaviour. By definition, these scales draw a distinction between normal and abnormal eating. All identified scales are reviewed here in an effort to set historical context for the investigation of normalised eating.

In 1973, a 22 item Anorexic Behaviour Scale was developed using a Likert scale (Slade, 1973). It was based on a series of discussions with senior nurses at one facility in London, who were experienced in managing patients with anorexia nervosa. The scale items fall into three categories: resistance to eating, disposing of food, and activity. Only the first two categories deal with eating behaviour. Most items under the disposing of food category are unambiguous, e.g. vomits after meals. Some items in the resistance to eating category are

more ambiguous, such as “begins by cutting up food into small pieces”, “picks at food and exhibits extreme food faddiness”. The scale also does not differentiate among frequencies of these behaviours. Two sets of ratings were correlated to obtain a measure of inter-rater reliability, which showed a high correlation ($r=0.9$). Slade’s comments on inter-rater reliability acknowledge how subjective normal eating could be. “The resulting correlation coefficient...is satisfactory, considering that the items of behaviour rated provide considerable latitude for individual judgement.”

In 1985, an eating disorder intervention was assessed using 20 abnormal eating behaviours, which had been previously defined through consultation with the multidisciplinary treatment team at one facility in Sydney (Wilson, Touyz, Oconnor, & Beumont, 1985). The 20 abnormal behaviours were divided into five categories: speed of eating, poor table manners, “obsessional” eating, behaviours which reduce caloric intake and food disposal. The use of the wording “unusual”, “excessive” and “inappropriate” allows for ambiguity in the definition of the behaviour and implies that the rater judged what normal eating behaviour was. The article does not include any discussion of inter-rater reliability.

In 1988, a 45-item survey was developed to assess an individual’s anticipated emotional reaction to different types of fear or “forbidden foods” (Ruggiero, Williamson, Davis, Schlundt, & Carey, 1988). A dietitian assisted in the survey development. The authors designed the tool to assess beliefs about which foods are safe to eat, which should be avoided and which should be purged to prevent weight gain and to maintain control over eating. The survey provided 45 food items, which were divided into five food groups (meat, grain, fruit and vegetables, milk, and beverages). The groups included high energy (e.g. sour cream, porterhouse steak, lima beans, pizza beer), medium energy (e.g. cheddar cheese, fried chicken, potato, biscuit, jello) and low energy food choices (e.g. skim milk, shrimp, carrots, white bread, tomato juice). One vegetarian item (peanut butter) was included under the meat group and non-dairy calcium sources were not included. Five responses were then provided ranging from “I would feel very good about myself after eating this food” to “I would feel very badly about myself after eating this food”. Test-retest coefficients for eight scales (five food groups and three energy levels) were generally high and ranged from 0.63 to 0.90. All but two of the scales (milk and beverage) had test-retest coefficients above 0.70. No normal cut-off was specifically defined, although it is hypothesized that increased anxiety is associated with certain foods only for eating disordered patients. Therefore, normal eating may be characterized by lack of fear of “forbidden foods”.

In 1989, a Likert-type 5 point scale was developed, called the Eating Behaviour Rating Scale (Wilson, Touyz, Dunn, & Beumont, 1989). Nurses used it to classify severity of abnormal eating behaviours. The scale was

generated from clinician comments, previous literature and observation of in-patients with anorexia nervosa at one facility in Sydney. The majority of behaviours included had been previously observed in patients admitted to hospital for the first time; before they were exposed to the behaviours of other patients. Twelve scale items were included: global assessment of eating behaviour, picking at food, poor table manners involving eating utensils, alternation between courses, food disposal, distaste for food, abnormal verbalization during a meal, preference for low-energy food, abnormally slow eating, abnormally rapid eating, ritualistic eating behaviour and excessive activity during a meal. Descriptions of the scale items accompany the article. Most of the descriptions include ambiguous words, such as 'inappropriate', 'normal', 'excessive' and 'unusual', which make it difficult to repeat use of the scale with confidence, as each rater's opinion of these words will vary. Some specific examples are provided for each item which improves the clarity, but does not entirely remove ambiguity. In reviewing the examples, it is debatable if some behaviours are really abnormal and of concern, such as eating low energy food items first, eating dessert with a teaspoon or cutting fat away from the meal. Despite this, there was general agreement among respondents. The inter-rater reliability coefficient was 0.86 and the coefficient of consistency was 0.90 when patients' eating behaviours were determined and compared across consecutive days at the same meal. The test-retest rater reliability was 0.85 and a coefficient of consistency was 0.88 when patients who were rated by direct observation were contrasted with when they were rated at the same meals from videotape recordings.

Most scales used to assess normal eating have been ambiguous and subjective, despite the involvement of experienced clinicians in their design. Where reliability was determined using statistical correlations, the measures were reliable.

2.6 Commentaries on normal eating

Some authors have commented on normal eating within the context of the larger society. Polivy and Herman (1987) attempted to differentiate between normal and abnormal eating patterns. They argued that societally normal eating may not be normal or appropriate by physiological standards; that it displays many features of societally acknowledged eating disorders and may itself be regarded as disordered or pathological. They discussed how normal may be defined and provided an example of dieting behaviour being more prevalent than nondieting behaviour. They went on to say that physiologically, the behaviour of nondieters seems normal in that it is suitably responsive to natural or biological regulatory pressures; numerically, dieters form a majority, which makes their behaviour the norm. Thus, our understanding of normal eating depends on whether we refer to biological norms or societal norms.

Two overall eating styles are discussed: eating in response to hunger and satiety, and self-imposing a diet boundary. Polivy and Herman concluded that pathologies of eating that are observed in eating disordered patients, namely the diet boundary and subsequent overeating when this boundary is breached, are to a great extent apparent in normal dieters (not nondieters). The main distinguishing factors between these groups are the rigidity of the boundary and extent of overeating behaviour. The authors considered that these particular pathological elements, shared as they are with normal dieters, are societally normative and even acceptable: in some circles, they are regarded as commendable!

Polivy and Herman (1987) argued that the current upsurge in the number of patients with eating disorders reflects the prevalence of an eating/weight/appearance pathology in society that preys on those with particular personality traits. The society simply channels the pathology into an eating disorder, rather than into hysteria or conversion disorder, outcomes that were popular a century ago but that are seen only rarely today. The authors define normal eating simply as eating that occurs in response to hunger cues and stops in response to satiety cues.

The question of what is societally normal eating may be partially answered by one study (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). The 10 year longitudinal study included a diverse sample of 2,287 young adults. Half of the young women dieted and used unhealthy weight control behaviours, such as fasting and skipping meals. Over a quarter of young men dieted and used unhealthy weight control behaviours. Twenty percent of young women and around 5 percent of young men used extreme weight control behaviours, such as vomiting, or using laxatives, diuretics or diet pills. Given these statistics, particularly for young women, societally normal eating may be characterized by unhealthy weight control behaviours.

In the discussion by Malson, et al. (Malson, Clarke, & Finn, 2008), the authors reflect on how eating disorder patients' critiques of treatment can be thought of in relation to the current cultural norms of body weight and weight management. They further explore how patients' accounts can be read as unsettling notions of "normality". They assert that several key diagnostic criteria of anorexia hardly appear peculiar, such as an "intense fear" of fatness and "overvaluation of thinness", an "over-concern with body size and shape" and an insistence on the "avoidance of 'fattening foods'". In fact, these attributes characterize health care policy across the world as much as they do the in-patients of eating disorder wards. Malson, et al. went on to say that "the values and practices that have been characterized as 'anorexic' have paradoxically become increasingly indistinguishable from normative values to the extent that, it might be argued, current normative health policy discourses of weight management have become anorexified." The authors referred to then

unpublished research (Malson et al., 2011) in which patients were asked to discuss past and present in-patient treatment experiences. They discussed how one patient suggested that ‘normal’ people do not keep to a ‘perfect little eating plan’ made up of ‘perfect little set up meals’ as she is expected to do. Hence, adherence to her eating plan conflicts with trying to be normal. At the same time, however, she also suggested that she ‘need[s] it to keep you going ... and they [other people] don’t’. The authors argue that what is not normative in the management of this patient’s eating is not that she is given a ‘perfect little eating plan’, but that it is designed to produce weight gain, whereas much of the population self-employs eating plans to reduce weight.

Scholarly discourse describes a variety of perspectives, each of which seems to contain validity. Polivy and Herman’s comments raise questions as to whether overall eating styles in line with biological norms characterize normal eating more appropriately than those eating styles in line with societal norms. In contrast, the comments from Malson, et al. suggest that a structured eating style, while not accepted as normal, is important for patients recovering from eating disorders. Malson, et al. (2011) interviewed participants during hospitalization, so the results may simply reflect need for eating structure during recovery but not to maintain recovery. The articles also raise questions as to what extent clinicians’ perspectives of normal eating are influenced by societal vs. biological norms.

The term “normalised” rather than “normal” will be used throughout the remainder of this discussion. An exception is where the term normal is used in quoting other authors. This is in order to avoid normal being confused with common and focus the discussion on normalised eating as a treatment goal for eating disorders.

2.7 Normalising eating for recovery

Normalising eating is a primary goal of recovery from eating disorders. It is possible that eating disorder recovery may require different end point behaviours, intake and overall eating styles than the behaviours and styles that make up eating common in the absence of an eating disorder history. Some authors have suggested that failure to achieve normalization of eating may hinder progress towards full recovery (Andersen, Stoner, & Rolls, 1996; Cockell, Zaitsoff, & Geller, 2004; Eckert, Halmi, Marchi, Grove, & Crosby, 1995; Sysko, Walsh, Schebendach, & Wilson, 2005; Tappe, et al., 1998). A number of qualitative studies have explored this topic.

2.7.1 Qualitative studies

In the Netherlands, Noordenbos and Seubring (2006) compared former eating disorder patients' and therapists' opinions regarding criteria of recovery and found divergences. Former patients (n=41) accentuated self-esteem, a positive body attitude, and being able to express emotions as important criteria for recovery, while therapists (n=57) accentuated physical recovery and normalised eating behaviour.

Cockell, et al. interviewed 32 women 6 months after discharge from residential treatment in Canada, with an aim to identify factors that help or hinder the maintenance of change and the ongoing promotion of recovery (Cockell, et al., 2004). In the study, the Eating Disorder Examination Questionnaire (EDE-Q) was used to assess diagnostic status. In the introduction, Cockell asserts that one of the factors consistently mentioned in previous research as helpful in promoting lasting change seems to be cognitive factors, including challenging core beliefs about eating, shape and weight. Some themes emerged from the qualitative analyses that pertain to the concept of normalised eating. An identified factor that supported recovery was applying the nutritional knowledge learned in the residential program, particularly challenging distorted thinking with accurate information about what constitutes a "normal" meal. When participants observed that eating reasonable amounts of food did not lead to excessive weight gain, they began to trust their meal plan and their bodies. Planning meals and making eating part of a routine also helped to develop behavioural patterns that supported recovery. Many participants said it was helpful to continue following a meal plan and scheduling time for eating. One participant stated, "I keep meals as a priority; for example, I make time to have dinner, even if this means saying no to hanging out with friends." Interestingly, this comment implies rigidity in following a plan rather than flexible eating. Some participants said it was helpful to spend time with people who do not have eating disorders because these individuals model healthy eating. This is interesting, given the prevalence of dieting among the general population. A participant quote made the implication that including high fat foods constituted normalised eating. "Going back to work was good because the people there eat normal amounts of food. I saw a nice figured woman eating high fat foods, such as French fries, and this gave me the courage to try eating some of my feared foods. I did, and now I buy French fries at work sometimes." Many participants said that loss of structure was a hindering factor in recovery. The authors give mention to using hunger and satiety in normalising eating, commenting that as the residential program prepares clients for discharge and the maintenance of change, the challenge is to help them shift away from relying on the structures of the treatment to trusting resources that exist within themselves (e.g. hunger and fullness cues, emotional message, self-knowledge). The challenges of the diet culture were repeatedly

mentioned by participants as a hindering factor, including the negative impact of hearing people talk about dieting. This supports the notion that, while dieting is common and may be considered “normal”, it does not facilitate recovery. A possible limitation may have been that, while the study was looking at factors associated with recovery, only 5 participants no longer met criteria for an eating disorder at the time of the study. With this in mind, it may be argued that while following a meal plan rigidly could be important during recovery, it is not strictly part of normalised eating.

In Sweden, Bjork and Ahlstrom (2008) described how former patients perceive recovery from an eating disorder. A qualitative phenomenographic approach was used to interview 14 women in Sweden who self-identified as recovered from an eating disorder after having completed treatment 18-26 months prior. All participants reported “regular eating behaviour” and none reported “dieting”. Some participants experienced themselves as healthier than ordinary people when it came to food and weight. Comments were grouped into 4 large categories: *Relaxed in Relation to Food*, *A Healthy Relationship to the Body*, *Self-Esteem and Social Interaction*. Within these large categories, comments were further grouped into sub-categories. In a large category of comments, *Relaxed in Relation to Food*, participants described a new approach to eating, whereby the earlier irrational fear or compulsion had been replaced by a relaxed attitude. Three sub-categories were relevant to the concept of normalised eating. In the category, *Eating Everything*, participants described eating a variety of food in everyday life, without avoiding high-energy ingredients. It also meant permitting oneself to eat unhealthy foods like candy, cookies and rich desserts or whatever one fancies. The concept also included eating “normal-sized” portions without counting kilocalories or balancing the intake with purging or other compensatory behaviour. Portion sizes were not defined. In the category, *Having a Regular Eating Pattern*, participants described “regular eating patterns”, without removing any meals and usually eating breakfast, lunch and dinner and additionally having something to eat between meals. A regular eating pattern also allowed the opportunity for spontaneity, where the routines could be changed if necessary. If a meal was missed, it was because of practical circumstances and not a way of eating less. A participant quote described how she did not perceive always eating at scheduled times as “normal or healthy”. In the category, *Eating Together with Others*, participants described allowing eating to be a social function and eating food even when they could not control the ingredients. It also meant having the freedom to decline eating if they did not want to eat or were not hungry. Participants also mentioned valuing one’s health, which was described as listening to the signals of the body and taking care of it. A participant quote described becoming aware of thirst and hunger, in addition to other body signals. The fact that participants in this study only self-identified

as having recovered rather than meeting an objective criterion may indicate that they were actually at different stages of recovery, limiting the interpretation of the results.

The comment that eating at fixed times during the day is not “normal or healthy” does not necessarily contrast to Cockell (2004), in which following a meal plan seemed to be important for recovery. The most likely reason for this is the stage of recovery the women were in. In the study by Cockell (2004), the women had completed treatment only 6 months ago and so may have been in an earlier stage of recovery than women in the study by Bjork and Ahlstrom (2008). In addition, this group of women self-selected as having recovered. At least one study as shown that a small number of patients (2 out of 16 in the cited study) will self-identify as having recovered while meeting objective criteria for poor outcome (Ratnasuriya, Eisler, Szmukler, & Russell, 1991).

2.7.2 Recovered patients' eating

In addition to qualitative studies, a number of researchers have analysed the eating behaviours and/or nutrient intake of patients who have recovered from an eating disorder.

Ratnasuriya, et al. (1991) conducted a 20-year outcome study in patients diagnosed with anorexia nervosa. Information was obtained by reviewing case notes, patient questionnaires, or interviewing the patient, their general practitioner or a relative. Outcome was categorized as good (normal body weight [$100 \pm 15\%$ average body weight] with normal menstruation, intermediate (normal or near normal weight [75-100% average body weight] and/or menstrual abnormalities) and poor (“low weight” [presumably less than 75% average body weight] and absent or scanty menstruation). Of the 40 participants, 12 (30%) had good outcome and 13 (32.5%) intermediate outcome. Of the 12 who had “recovered” (i.e. good outcome), the authors stated that only 4 could be said to eat “quite normally”. What was meant by “quite normally” was not discussed, although the authors later give an example of eating apparently considered disordered. Outcome criteria were chosen to allow comparison with a previous study. The authors did modify the criteria for some analyses by adding overeating or vomiting weekly to the poor criteria. When overeating or vomiting weekly or more was added to the poor criteria, good outcome decreased to 11 and intermediate outcome decreased to 12.

The authors (Ratnasuriya, et al., 1991) stated that even among those whose outcome was generally good (it was not clear which outcome group the authors were referring to), a third were regularly restricting their diet and a third reported eating irregularly. An example was participants avoiding eating regular meals unless pressured by their husbands, often restricting themselves to irregular “snacks”. The authors commented that

other participants found they were only able to maintain their weight if they kept to a very rigid diet. However, it is not clear what was meant by “rigid”.

Emanuelli (2012) compiled a 52-item recovery criteria checklist, which they used to compare clinicians’ and sufferers perspectives on the meaning of recovery. The checklist was given to 102 self-reported eating disorder sufferers and 136 clinicians working in the field of eating disorders. Clinicians were recruited through professional networks; most were female (79%), worked in the United Kingdom (43%) and were from a psychosocial professionally oriented background (57%). The checklist was divided into five factors for analysis. Participants ranked *weight-controlling behaviours* as the most important to recovery ($p < 0.001$), which included *amount of calories eaten being normal* as part of the 10 items in that group. The study did not give any indication about what participants thought was “normal”. Interestingly, *eating three meals a day* was one of the 9 items omitted from the analysis due to not loading sufficiently strongly on any of the factors. This possibly indicates that a specific eating frequency is not thought to be strongly associated with recovery.

Hansson (2011) sought to examine eating behaviour three years after eating disorder treatment and whether lack of normalised eating behaviour was related to residual psychological symptoms. Patients were recruited from three eating disorder units in Stockholm, Sweden and included 36 recovered patients, 16 with anorexic psychopathology, and 18 with bulimic psychopathology. Age ranged from 15-50 years (mean 26.2) and BMI ranged from 12.4-44 kg/m² (mean 22.4). Recovery was defined as scoring 1 or 2 on the Psychiatric Status Rating Scale. The study data, which included a non-validated dietary questionnaire and a battery of psychological self-report scales (one question was used to identify current dieting), were from a 36-month treatment follow up. Sixty-one controls (mean age 21.4), completed only the dietary questionnaire; no effort was made to screen for eating disorders or account for BMI in the control group. The dietary questionnaire asked about type of diet (mixed or vegetarian), meal pattern, number of 100 g portions of fruits and vegetables eaten per day, number of bread slices eaten per day, and if any and what kinds of foods were avoided due to fear or anxiety. The authors pre-defined a “normal daily meal pattern” as three main meals and two to three snacks, citing national nutrition recommendations and the American Dietetic Association position paper for the treatment of eating disorders. If lighter meals (defined arbitrarily as eating only salads, soups, porridge, grains or bread) were chosen for both lunch and dinner, the meal pattern was not considered “normal”. Less than two meals per day or only lighter meals during the whole day were arbitrarily considered to be restrictive eating. The recovered group was more likely to be vegetarian compared to controls. Recovered patients who ate vegetarian food were more likely to eat restrictively or diet (80%) compared to

recovered patients who ate a mixed diet (46%). Among recovered and currently ill patients, there was little variation in the proportion of individuals with a “normal” meal pattern. Recovered patients were almost four times as likely as controls to engage in restrictive eating. Current dieting was 30% among recovered patients. All three eating disorder groups, including recovered patients, had a higher likelihood of eating at least 5 servings of fruits and vegetables (30-33%) than did controls (11%). This is significantly less than females in the same age group in the Adult Nutrition Survey 2008/2009 (ANS08/09; mean 60-65% for fruit and 56-72% for vegetables, University of Otago and Ministry of Health, 2011). so may not be reflective of the New Zealand population. Recovered patients showed little avoidance of food, tending to resemble the control group in this regard. Among those who practiced food avoidance, 73% of recovered patients and 33% of controls avoided fatty foods (e.g. cream, oils, butter, cheese, potato crisps, ice cream, mayonnaise and pastries). The next most common avoidance was foods with a high sugar content (43% among patients and 33% among controls), followed by fast-food like pizza, chips and hamburgers (30% among patients and 17% among controls), and other foods high in carbohydrates (25% among patients and 8% among controls). Distributions across the different clinical groups were fairly consistent. Some aspects of aberrant eating persisted in recovered patients (vegetarianism and restrictive eating) and were associated with their general level of psychological disturbance, which suggests that eating pattern and psychiatric wellbeing are at least to some extent interrelated. The authors suggest that in order to better aid recovery , it may be important for clinicians to address more directly fears of “forbidden” food, and of fatty foods in particular. The authors state while patients may recover in clinical terms from an eating disorder, they may still exhibit disturbed eating, particularly restrictive eating, dieting or avoidance of fatty foods which they assert could increase the risk of relapse.

These results support the findings of Noordenbos and Seubring (2006), who suggested that normalised eating is not considered a key part of recovery by patients. The authors also allude to the idea that while vegetarianism or other unusual diets may not be unhealthy per se, they could potentially be detrimental for patients with a history of eating disorder. This study indicates that not avoiding foods because of fear or anxiety is an important part of normalising eating for recovery. Including meat in the diet and not restricting (i.e. eating two or more meals per day and eating more variety than only salads, soups, porridge, grains or bread at meals) also seems to be important. This study also begins to draw a distinction between healthy eating, eating for recovery and common eating.

Dellava (2011) explored possible reasons women who have recovered from anorexia tend to maintain a lower BMI than women in the general population. The study was conducted in the United States and included 15 women recovered from anorexia nervosa (mean age 32.5 years, mean BMI 21.4) and 22 women in the control group (mean age 28.9 years, mean BMI 23.6). Participants were not excluded based on maximum BMI. Recovered patients met lifetime diagnostic criteria for anorexia nervosa, had not met diagnostic criteria for any eating disorder during the 3 years before the study, and had not binged or purged or had a BMI less than 17.5 in the last 3 years. The control group reported never having met diagnostic criteria and not having a BMI less than 17.5 in the last 3 years. Eating disorder diagnosis was established using the Module H of the Structured Clinical Interview for DSM-IV Axis 1 Disorders – Patient Edition. Dietary intake data was gathered via 4-day food journals and physical activity data was gathered by wearing an activity monitor for 4 days. Participants also completed a food choice questionnaire to determine what factors impacted on their food choices and an inventory to assess reasons for exercise. Recovered anorexia patients and controls reported mean energy intake of 1942 kcal (SD 543) and 1915 kcal (SD 460), respectively. Percent fat intake was 29.5% (SD 7.1) and 30.1%, (SD 6.5) respectively. Percent protein intake was 14.3% (SD 2.9) and 14% (SD 1.9), respectively. Percent carbohydrate intake was 54.1% (SD 9) and 54.2% (SD 8.1), respectively. Macronutrient intake did not differ between groups and was reported to be within suggested ranges, but it was not reported what reference was used to determine the appropriateness of energy intake. Recovered anorexia patients were more likely than control women to report selecting food items based on perceived health benefits; no other reasons for food choice were significantly different. After health, the most common reasons selected for both groups were convenience, mood and sensory appeal. The authors suggested that individuals who are able to recover from AN may develop healthy eating and lifestyle habits that may be protective against obesity and obesity related chronic diseases.

This seems to be in contrast to adopting patterns that are similar to the general population. Neither groups' diets seemed to be reflective of common intake across the New Zealand population as percentage fat and carbohydrate intake in both groups differed from the ANS08/09 (University of Otago and Ministry of Health, 2011) data. In the ANS08/09, women 15-18 years, 19-30 years and 31-50 years, respectively, had a mean intake of 15%, 15% and 17% energy from protein, respectively, 34%, 33% and 35% energy from fat, respectively and 51%, 49% and 46 % from carbohydrate, respectively. In comparison, the New Zealand Food and Nutrition Guidelines (FANG 2003) recommend 11-15% energy from protein, 30-33% energy from fat and 50-55% energy from carbohydrate. Therefore, both groups' diets were more similar to nutrition recommendations, particularly those pertaining to fat and carbohydrate intake, than the general New Zealand

population. Again, this study brings to light the distinction between healthy eating, eating for recovery and common eating.

2.7.3 Partially recovered patients' eating

Descriptive eating behaviour and nutrient intake have also been reported for patients who have undergone limited eating disorder treatment.

Wilson, et al. (1985) assessed whether information feedback of eating behaviour using videos would improve eating behaviour. The Sydney-based study included 8 current in-patients, with mean age 19 years (range 14-28) and mean weight 78.5% of Standard Body Weight. Patients were randomly divided into two equal groups. Group 1 received two weeks of videotape feedback followed by two weeks of filming without feedback. Group 2 received the same sequence vice versa. Each patient was filmed three times per week at both breakfast and lunch, and two raters recorded the frequency of abnormal eating behaviours. After having received video feedback, patients showed significantly less "*obsessional*" eating behaviour (ritualistic eating behaviour, very precise food measurement, excessive and inappropriate drinking of water or other drinks with a meal) and significantly less *poor table manners* (inappropriate eating with fingers, making inappropriate sandwiches, unusual food combinations, eating minute amounts of entrée or main course or dessert, excessive movement between dining table and food allocation areas, showing distaste for food). There was no significant difference in *speed of eating*, *behaviours which reduce caloric intake* and *food disposal*. The study does support some inclusive aspects of what normalised eating may constitute: estimating portion size rather than measuring and eating a significant amount of each food served at a meal.

Sysko, et al. (2005) measured intake of a laboratory test meal by patients with anorexia nervosa both prior to and immediately after weight restoration. Twelve patients hospitalised in New York City (mean age 21 years, mean BMI 15.8 kg/m²) participated in the initial test meal and 11 of those patients (mean BMI 20.2 kg/m²) were retested at 90% ideal body weight. A control group of 12 women (mean age 23 years, mean BMI 22.2) completed just one test meal. Four hours after consuming a standardized breakfast, participants consumed a test meal of 975 g strawberry shake (1014 kcal) served in a covered, opaque, 2454 ml container with a straw. Hunger, fullness, sickness, loss of control, urge to eat, preoccupation with thoughts of food and fear of fatness were measured before and after the meal. The second test meal occurred a mean of 54 days after the initial testing and a mean of 14.5 days after patients reached 90% ideal body weight. The study found that patients hospitalized for anorexia nervosa consumed substantially less volume of the test meal than did control

subjects (489 g), both before (103 g) and after weight gain (178 g). Patients also showed a significantly slower rate of eating than did control subjects (1.9 g/second), both prior to (0.5 g/second) and after weight restoration (0.4 g/second). The study did not find any significant differences between patients and controls in hunger and fullness ratings. The results suggest that, for individuals with eating disorders, speed of eating and intake volume remains lower than controls immediately after weight restoration. It is, however, difficult to generalise the findings in this study to normal eating, as the test meal was inconsistent with typical meal consumption (i.e. solid foods).

Tappe, et al. (1998) described meal time behaviours of patients (aged 12-25 years) with anorexia before and after specialist in-patient treatment at Johns Hopkins in Maryland and compared them to a group of controls with no history of eating disorders. Controls were described as 'normal weight', but no BMI or weight was reported for either groups. The group for analysis included 10 women with anorexia nervosa and six controls. Controls were excluded based on Eating Disorders Inventory and Eating Attitudes Test scores indicating eating pathology (30 or above on EAT and/or 15 or above on Drive for Thinness subscale of EDI). All participants completed two test meals: first within 7 days of admission and then 2-7 days prior to discharge. The exact length of interval between the meals was not reported. Subjective feelings of hunger and other variables were assessed prior to and upon completion of the meal. All participants were instructed to finish the entire test meal, which consisted of chicken breast on the bone with skin, green beans, carrot sticks, rice, gravy, an apple, two sugar cookies, and 300 ml of water (557 kcal, ~850 g including water). Two vegetarian patients were provided equivalents of tuna, bread and margarine. The participants were videotaped eating and rated. In addition to number of bites taken, order of eating and time spent eating, eight behaviour categories were examined: food manipulation, non-food manipulation, vigilance, concealment, passivity, food preparation and moving of food. Four of the categories were collapsed into 'food oriented behaviour': food manipulation (e.g. moves food around, picks up food and inspects it, twists the stem off the apple, pushes food around the plate aimlessly), food preparation (e.g. cuts food, wipes up juices on plate with food, breaks food before eating, mixes food) and moving of food (e.g. moves plate of food around, dumps food from bowl to plate). The results demonstrated that patients with anorexia had a significantly longer meal time before treatment (mean 44.5 min) than did controls (mean 22.3 min), but that difference was no longer significant after treatment. They also spent more time doing the behaviours analysed, particularly food preparation (mean 5.7 min vs. 2.1 min), food moving (mean 6.8 sec vs. 0.8 sec) and vigilance (mean 21.6 sec vs. 4.2 sec), than did controls (total mean time 11.9 vs. 4.1 min). Total number of bites was not different between anorexics and controls, except in regards to the high protein foods (chicken or tuna), where patients took significantly more (and thus smaller)

bites (median 34.5) than did controls (median 22). Virtually all of these excessive behaviours shown by the patients were reduced significantly during treatment. Patients did not take significantly smaller bites of the cookies. However, if they were eaten, it was not until the final third of the meal, whereas controls were more likely to eat the cookies during the middle phase. This difference continued after treatment, indicating persistent fear of that food. This study supports the notion that decreasing time spent in non-eating behaviours, particularly food manipulation and food moving, and increasing eating speed and size of bites of protein foods is part of normalising eating. The authors noted additional behaviours that may be useful to study in the future: length of chewing time, strange food combinations, rate of eating (number of bites per minute) and looking more closely at order of food ingestion.

Nova, et al. (2001) asserted that correcting eating behaviour was the most important aspect to achieving long-term recovery. Nova, et al. assessed the diets of 14 female patients (mean age 15) in Madrid, Spain at the beginning of hospital admission, and at one, six and 12 months later. Mean duration of illness was 9.4 months at the time of admission. Mean BMI increased from 15.24 (72.2% IBW) at admission to 17.34 (82.5% IBW) at a 12 month follow up. Patients continued treatment as outpatients after being discharged from in-patient treatment during the study. At each stage, a nutritionist took a 48 hour dietary recall. The results showed that patients' energy intake improved considerably during hospital treatment (from 4811 kJ [1145 kcal] per day at admission to 9455 kJ [2251 kcal] per day one month later), but this was not maintained at the 12 month follow up (6253 kJ [1488 kcal] per day). Percentage energy intake from macronutrients at admission was 21.5% from protein, 27.4% from fat and 51.1% from carbohydrate. The authors commented that hospital refeeding normalised the distribution of energy almost to what is typical of the Spanish population (19.2% from protein, 40.9% from fat, 44.9% from carbohydrates). At the 12 month follow up, contribution of fat had increased (22.5% from protein, 30.7% from fat and 46.8% from carbohydrate). Normalised eating in this study reflected eating most common among the general population, rather than population nutrition recommendations.

Andersen (Andersen, et al., 1996) documented eating behaviour changes in a naturalistic cafeteria setting after specialist in-patient treatment in Iowa. Thirty-three patients diagnosed with anorexia nervosa (AN) or bulimia nervosa (BN) and ten controls (mean age 25 years, mean 98% IBW) participated. Controls were required to be $\pm 15\%$ IBW and meet score criteria on the Eating Attitudes Test (EAT) and the Drive for Thinness Subscale of the Eating Disorders Inventory. Average length of treatment was 5.6-9.6 weeks. At admission, patients were 66-102% IBW and at discharge, 90-101% IBW. Test meals were independently chosen and

eaten with the lead researcher at a cafeteria in the first 2-7 days of admission and again before discharge. Participants rated their hunger, satiety and mood before and after each test meal. EAT scores indicated that while patients did improve during their admission, their scores remained within the symptomatic range (>30), while controls' scores were normal at a mean of 9.2. From admission to discharge, weight of meals increased by one third, energy intake by 2.5 and percentage energy from fat by 50% in the AN-restricting group. The results indicated that energy increases in the AN-restricting and BN groups related to the self-selection of more energy dense foods. The authors commented that the AN-restricting group increased their consumption of fats to amounts typical of the non-eating disordered American population. No significant differences were noted in the amount of time taken to eat the meal, which is in contrast to other studies. Pre-meal hunger scores at admission were significantly lower than controls for all patient groups and this difference did not change at discharge. This study indicates that increasing intake of energy dense foods may be part of normalising eating, particularly for AN-restricting patients. It also indicates that appetite signals do not resemble those of controls immediately after weight restoration, although this could simply mean it is an indicator of normalised eating that takes some time at a healthy weight to restore. Hunger and satiety appear to be multi-component in nature, characterized by diverse physical and psychological symptoms (Murray & Vickers, 2009). It may also be that patients early in recovery from eating disorders simply do not recognize these as appetite signals.

Patients with eating disorders may have reduced taste and smell sensitivity. Aschenbrenner, et al. tested olfactory and gustatory function in 16 patients with anorexia nervosa (19-32 years old, mean BMI 14.9), 24 with bulimia nervosa (19-35 years old, mean BMI 19.6) and 23 controls (18-34 years old, mean BMI 21.1; Aschenbrenner, Scholze, Joraschky, & Hummel, 2008). Patients were hospitalized in Connecticut and tested before and after weight restoration. In those with anorexia (n=16), smell and taste alterations improved as BMI increased and eating pathology (as measured by the Eating Attitudes Test) decreased towards the end of therapy. This may provide an explanation for the excessive use of condiments observed in eating disorders and suggests that decreased use of sweeteners, salt and other condiments may also be an indicator of normalised eating.

A Spanish study described the dietary choices of weight-restored patients with anorexia nervosa (n=44) and compared them with a control group (n=34) (Lobera & Rios, 2009). The patient group was at a "normalised BMI" (mean 19.95, SD 1.04) and were engaged in active out-patient treatment during the study. This study was also unusual in that 8 men were included in the patient group. Mean BMI was not reported for the

control group. A dietary assessment was completed for each participant and each diet was analysed for macronutrients, micronutrients, food frequency and compared to adherence to Spanish nutrition guidelines.

The patient group reported a mean of 1,815 kcal (SD 508) and the control group a mean of 2,123 kcal (SD 220). Percentage contribution from macronutrients was not reported, but manually calculated as 15-16% energy from protein, 46-47% from carbohydrate and 36-37% from fat. Mean fibre intake was 24 grams for both groups (SD 2.5 for the control group and 4 for the patient group). Mean calcium was 803 mg (SD 83) in the control group and 776mg (SD 130) in the patient group. The control group reported eating vegetables 1.2 times/day, fruit 2.1 times/day, sweet foods 3.4 times/week and fried foods 4 times/week. The patient group reported eating vegetables 2 times/day, fruit 2.3 times/day, sweet foods 2 times/week and fried foods 3 times/week.

The main findings reported by the authors (Lobera & Rios, 2009) were that patients had a significantly lower energy, niacin, vitamin B12, sodium, zinc, phosphorus, copper and selenium intake than controls. Frequency of consumptions was lower among patients for bread and cereals, meat and cured meats, sweet foods, and fatty and fried foods, but higher for vegetables. The authors noted that patients' diets seemed to be guided by distinguishing foods as "good" (i.e. vegetables) and "bad" (i.e. breads, cereals, meat, fat, sweet and fried foods). When the diets were compared to the Spanish nutrition guidelines, the patient and control group were very similar. The only notable difference was that the patient group met the recommended daily intake of vegetables (2 times/day) while the control group did not. The authors comment that while patients did resort to eating habits associated with anorexia, they also seemed to eat in a way that broadly corresponds to the cultural norm. The study indicates that normalisation of eating may follow broad cultural norms and is not necessarily "healthier" than the general population.

Schebendach, et al. (2008) looked at food intake in weight restored patients, aiming to investigate the association between energy density and diet variety just after weight restoration and clinical outcome one year later. Energy density and variety of foods were analysed as reported in a 4-day dietary recall just prior to discharge from a nutritional stabilization admission in New York, once weight had been maintained over 90% IBW for 2-4 weeks. The short period of weight restoration indicates partial recovery. Participants (n=47) were all diagnosed with anorexia nervosa and aged 18-45 years old. Energy density was calculated as kilocalories divided by the total gram weight of food and beverages. A diet variety score was calculated as the cumulative number of different foods and beverages consumed divided by the total number of food record days. The energy density and variety of foods eaten in the dietary recall was correlated with treatment success (n=29) or

failure (n=12) after one year follow up. Treatment success was defined as BMI over 18.5; the criteria did not exclude those with amenorrhea, anorexia nervosa cognitions, bingeing and purging. The study found the treatment success group scored higher mean diet variety scores and dietary energy density scores. The treatment success group ate a mean of 2415 kcal, 58.7% from carbohydrates, 15.8% from protein and 25.2% from fat. Only total fat intake was significantly less in the treatment failure than the success group.

In another analysis of the same data, the same authors (Schebendach et al., 2011) found the treatment success group specifically ate more variety of starches (sub-categorized under complex carbohydrates and included rice, pasta and potato), added sugars, added fats, miscellaneous foods (e.g. pasta sauce) and caloric beverages. Eating a variety of starches, added sugars and fats and miscellaneous foods and caloric beverages may predict treatment success in anorexia nervosa.

The authors later replicated the study (Schebendach, Mayer, Devlin, Attia, & Walsh, 2012). The same methods were utilised. However, outcome was classified in two categories: “full, good, fair” (equivalent to the success category in the previous study) and “poor” (equivalent to the failure category in the previous study). Sixteen weight-restored women diagnosed with anorexia nervosa (aged 18-45) were included in the final analysis. Compared to the “poor” outcome group, the “full, good, fair” group ate foods with a higher mean energy density. The authors note that diet energy density in this study was similar to that reported in the adult female United States National Health and Nutrition Survey participants (Kant & Graubard, 2005). Although a trend was observed in diet variety, the difference between groups was not significant. The authors suggested that the lack of significance may be due to sample size. The “full, good, fair” group consumed significantly less non-caloric beverages (specifically, water and diet drinks) than did the “poor” group. However, the authors note that the water intake in both groups was higher than the mean reported daily intake of the adult female participants in the Nurses’ Health Study II (Bes-Rastrollo et al., 2008). The “full, good, fair” group ate a mean of 2839 kcal; 53.1% energy from carbohydrates, 16.9% from protein and 30% from fat. Non-caloric fluid was a significant negative predictor of energy density, while fat was a significant positive predictor of energy density. The studies from Schebendach, et al. (Schebendach, et al., 2011; Schebendach et al., 2008; Schebendach, et al., 2012) provide support for the idea that dietary energy density in normalised eating is similar to the general population.

Hsu, et al. (2001) delivered the two components of cognitive behavioural therapy for bulimia nervosa, nutritional therapy and cognitive therapy, both separately and together. One hundred American outpatients with bulimia nervosa (mean age 23.3-26.5) participated. Inclusion criteria included being at 85-125% IBW,

aged 17-45 and bingeing and vomiting at least 3 times a week in the previous 6 months. In addition to body weight, bingeing and vomiting episodes, and psychometrics, the number of meals eaten per week was used as an outcome measure. The nutritional therapy group increased their meal frequency from 11.4 to 16.3 meals per week (mean 2.3 per day), the cognitive therapy group increased from 10 to 15.4 (mean 2.2 per day) and the combined group increased from 10.9 to 18 (mean 2.6). Nutritional and cognitive therapy combined produced the most improvement in all treatment outcomes, including abstinence and psychometric scores. This indicates that increased frequency of eating is considered part of normalised eating. The study did not correlate frequency of eating with other outcome measures, so it is impossible to gauge exactly how many meals per week were most associated with recovery.

Haedt-Matt and Keel (2011) conducted a meta analysis of ecological momentary assessment studies that examined hunger as an antecedent of binge eating. The analysis included 7 studies (n=180, age range 18.4-45.6). Although hunger was rated significantly greater before binge eating compared with average levels of hunger, it was rated significantly lower before binge eating compared with before regular eating episodes. The findings failed to explain why establishing a regular eating pattern is effective in treatment and posited that dysregulated affect may be a more proximal trigger of binge eating than dysregulated hunger. Restraint theories posit that cognitive control over food (e.g. Eating in response to dietary rules) replaces eating in response to physiological cues, such as hunger and fullness.

Schebendach, et al. (2012) compared energy intake among weight restored patients with anorexia nervosa (n=18) healthy controls (n=12) and weight-stable obese individuals (n=10). Although the main objective was to compare self-reported energy intake from a prospective food record with observed and measured intake, the study provides some indication as to how similar eating is between weight restored patients and healthy controls. Patients with anorexia nervosa had previously been in-patients and had restored weight to within 90% of IBW, which correlates to a BMI of about 20. There was no statistically significant difference in BMI between the weight-restored anorexia nervosa and control groups. A laboratory buffet style meal was provided and energy content of meals was measured via weighing. Participants also kept a 4-day food diary which included the test meal. The reported energy intake was compared with measured energy intake of the laboratory meal only. Self-reported intake in the anorexia nervosa group ranged from 4.7 to 999.2 kcal, whereas observed energy intake ranged from 2.7 to 830.2 kcal. The food record significantly over-reported actual energy intake by a mean of 50 kcal. This study probably indicates only partial recovery for a portion of

the participants. Although a normalised energy intake is not clear from this study, it supports the idea that further treatment outside of weight restoration is required to normalise eating.

2.7.4 Utility of normal eating scales

While the studies described above have been descriptive, other authors have attempted to measure differences between normal and disordered eating populations using eating scales (as described in section 2.5).

Wilson (1989) validated the Eating Behaviour Rating Scale (EBRS) with 15 Sydney in-patients diagnosed with anorexia nervosa (mean age 22, mean admission and discharge BMI 14.7 and 18.5, respectively) and 10 controls (mean age 18.9, mean BMI 20.2). Meals were filmed in the first 3 days of admission and just prior to discharge. The scale was completed by a blind rater and a staff member familiar with the patient. The results showed that although anorexic scores were significantly lower at hospital discharge than at admission, they were still significantly higher than control scores. The results supported the assertion that while treatment can have an effect on abnormal eating patterns, it does not eliminate them completely. Again, this may reflect that patients were only partially recovered or that normalised eating as defined in the study is not important to recovery. There was a clear division between controls and untreated anorexia nervosa patients' scores. All controls scored less than 10 and all the patients scored more than 10. Unfortunately, scores for specific subscales was not reported. The findings suggested that the EBRS scores may be a reliable discriminator between anorexia nervosa patients and non-eating disordered subjects, but the authors advised that it should be tested on larger samples of both more diverse clinical populations and control subjects. There was also no significant correlation with the patients' EBRS scores and EAT or Eating Disorder Inventory scores, indicating that abnormal eating behaviour may not be an integral component of general psychological and behavioural disturbance. The authors suggested that specific treatment techniques may be necessary to correct abnormal eating.

Validation of the Anorexic Behaviour Scale conducted by Slade (1973) was completed with 12 in-patients with anorexia nervosa (14-33 years old) and 12 psychiatrically disturbed adolescent controls (13—21 years old) in London. Senior nurses rated patients who had been on the ward for at least a month. As all controls scored 12 or less, the authors indicated that a score of 13 or more may be considered diagnostic. Unfortunately, scores for specific items were not reported.

Reliability and validity of the Forbidden Food Survey was assessed in two surveys by Ruggiero, et al. (1988). Participants for the first survey were recruited from an outpatient eating disorders clinic and an undergraduate class at a university in the United States (n=60, aged 15-30 years). The sample was equally divided into those who binged only (mean 135.85 lb or 61.75 kg), those who binged and purged (mean 122.8 lb or 55.8 kg), and controls (mean 121.5 lb or 55.2 kg). The control group had significantly less fear of milk, and high and medium energy food groups than both eating disorder groups for. Additionally, the control group reported significantly less fear of meat than the purging group, and significantly less fear of grains than the binging group.

Participants for the second survey were recruited from an outpatient psychology clinic and an undergraduate class at a university in the United States. The participants included 15 obese women (defined as weighing 20% over “the normal weight for their height”; mean age 21.1 years), 15 females with bulimia (mean age 20.9 years) and 15 controls (mean age 21.2 years). Mean height and weight for each of the groups, respectively was 64.7 in (164.3 cm) and 159.8 lb (72.6 kg), 64.3 in (163.3 cm) and 120.7 lb (54.8 kg), and 64.2 in (163 cm) and 118.5 lb (53.8 kg). Estimated mean BMI was 26.9 for the “obese” group, 20.6 for the bulimia group and 20.2 for the control group. The control group had significantly less fear than both of the other groups for the high energy food group only. The control group also reported significantly less fear than the purging group for the milk, meat, grain and medium energy food groups. No other significant differences were found between the control and obese groups.

In both of the surveys carried out by Ruggiero, et al., there were no significant differences between any of the groups in fear of fruits/vegetables, beverages or low energy food groups. As the survey was designed, answers of 4 or 5 indicated fear of a food with 3 being neutral and 1 and 2 being positive. Interestingly, only the purging groups showed mean scores above 4 for the high energy food group for both studies and for the grain group for the second study. The results seem to illustrate the difference in food fear between controls and eating disorder patients. However, only high energy foods and grains were associated with fear and only in those who purge. In any case, controls indicated either neutral or positive responses for all foods, so lack of fear around food is a likely indicator of normalised eating.

2.7.5 Summary of normalised eating for recovery

Dieting has often been cited as an important risk factor for developing eating disorders (Kenardy, Brown, & Vogt, 2001; Neumark-Sztainer, et al., 2011; Patton, Selzer, Coffey, Carlin, & Wolfe, 1999). Ceasing eating

behaviour associated with dieting may then be helpful in normalising eating for recovery. Indeed, the studies reviewed support this assertion. Factors consistently supportive of recovery seem to be eating in response to hunger and satiety, eating high energy or high fat foods and eating more variety (Bjork, Clinton, & Norring, 2011; Hansson, et al., 2011; Schebendach, et al., 2011). While other eating factors seem to coincide with increased wellness, they may not necessarily be important to support recovery.

Investigation of eating patterns in recovered eating disorder patients has been limited, with the assumption seeming to be that abnormal eating behaviour will correct itself once the patient has reached target weight (Wilson, et al., 1985) but this is not necessarily the case (Ratnasuriya, et al., 1991). Factors studied can be categorized broadly as overall eating style (i.e. in response to appetite), nutrition intake (i.e. Energy content) and eating behaviours (i.e. Eating speed). Studies have tended to look at patients' diets while the eating disorder is still active (Beumont, 1981; Burd et al., 2009; Hart, Abraham, Luscombe, & Russell, 2005; Huse & Lucas, 1984; Marino et al., 2009; Misra et al., 2006; Taylor et al., 2009; Wallin, Norring, & Holmgren, 1994) or after short periods of intervention (Kaye, Gwirtsman, George, Ebert, & Petersen, 1986; Nova, et al., 2001; Schebendach, et al., 2011; Schebendach, et al., 2008; Schebendach, et al., 2012; Sysko, et al., 2005). Studies of eating and drinking during active eating disorders show great variability (Hart, et al., 2005; Marino, et al., 2009; Sunday & Halmi, 1996; Vaz, Alcaina, & Guisado, 1998). Presumably, these indicate abnormal eating, while recovered patients' diets would reflect normalised eating. When recovered patients' diets have been investigated, the definition of recovery is inconsistent (Bjork & Ahlstrom, 2008; Cockell, et al., 2004; Dellava, et al., 2011; Hansson, et al., 2011) with only one study including both psychological and medical recovery (Dellava, et al., 2011). Arbitrary or opinion-based definitions of normalised eating have been used to assess eating (Hansson, et al., 2011; Slade, 1973; Wilson, et al., 1989), and the distinction between healthy eating, common eating and eating associated with recovery has not been clearly made. No studies have examined subjective definitions of normalised eating. Few studies have explored factors associated with recovery qualitatively (Bjork & Ahlstrom, 2008; Cockell, et al., 2004) and only one group of authors have elicited the specific aspects of normalising eating which are most important for recovery (Schebendach, et al., 2011; Schebendach, et al., 2012).

The studies reviewed above largely describe eating that is only associated with recovery. No studies provide causal evidence in either direction. In other words, there is no evidence that a certain eating pattern, outside those required to gain weight and stop binge and purging, results in recovery. Nor is there evidence that recovery results in a certain eating pattern.

2.8 Eating in healthy controls

Although not consistent, studies suggest there may be some differences between patients who have recovered and healthy controls. In comparison to patients who have recovered, controls may be less likely to be vegetarian (Hansson, et al., 2011) eat restrictively (Hansson, et al., 2011) or have at least 5 serves of fruits and vegetables per day (Hansson, et al., 2011). In comparison to patients who have undergone some form of treatment, controls may eat faster (Sysko, et al., 2005), eat larger quantities (Lobera & Rios, 2009; Sysko, et al., 2005), be more likely to eat the recommended amount of some micronutrients (Lobera & Rios, 2009) and less likely to eat the recommended amount of vegetables (Lobera & Rios, 2009). In comparison to patients with active eating disorders, controls may eat faster (Sysko, et al., 2005; Tappe, et al., 1998), spend less time in non-eating behaviours during meals (Tappe, et al., 1998), take larger bites (Tappe, et al., 1998) and eat larger quantities (Tappe, et al., 1998).

There have been a number of studies looking at eating in patients with active eating disorders which have used control groups to compare. The data from these control groups may provide valuable insight into what is considered normalised eating.

Vaz, et al. (1998) asserted that healthy people who diet have their own lists of “forbidden” foods”, just as those with eating disorders do. Vaz aimed to compare the food aversions of a group of anorexic patients, a group of bulimic patients and a group of individuals with no eating disorders. This Spanish study included 11 outpatients with anorexia nervosa (mean BMI 17, mean age 19.7) 18 outpatients with bulimia nervosa (mean BMI 20.7, mean age 21.1) and 53 female medical students to serve as controls (mean BMI 20.7, mean age 20.7). The controls were required to have dieted on at least one occasion for at least a week and to have never suffered from an eating disorder. Participants completed a diagnostic interview and evaluation of eating disorder symptomatology (EAT-40 and BITE). An open-ended questionnaire was used to obtain data on eating aversions, where each individual was asked to establish, by order of preference, those foodstuffs which she had tried to avoid the last time she had dieted. Although all participants identified food avoidances, all patients had a higher level of aversion than controls towards practically all foods. Controls avoided sweets and cakes, fats and vegetable oils, and cereals. Controls basically avoided foods high in carbohydrates and lipids when dieting, but tended to maintain ingestion of proteins, whereas patients were more likely to also avoid protein rich foods. This could mean that patients tended to restrict total food intake, rather than focus on certain nutrients.

Sunday and Halmi (1996) examined the eating of 29 in-patients with anorexia nervosa (mean age 21.1 and 25.3 and mean BMI 16.4 and 16.1 for AN-restricting and AN-purging, respectively) 26 in-patients with bulimia nervosa (mean age 24.5, mean BMI 22.9), 16 controls who were restrained eaters (mean age 20.1, mean BMI 21.4) and 19 controls who were unrestrained eaters (mean age 21, mean BMI 21.2) in New York. Restraint was defined by restraint sub-scores from the Dutch Eating Behaviour Questionnaire with restrained eaters scoring 3.5 or above and unrestrained eaters scoring 2.4 or below. The test meal was a breakfast of sweet rolls, scrambled eggs and cornflakes. Large quantities of each food (total 2300 kcal) were provided to minimize each subject's ability to judge amount eaten. Each platter rested on a scale which was able to collect data for 1) duration of, and amount of food eaten, in the entire meal, 2) duration of, and amount of food eaten, in each eating bout, 3) order of macronutrient intake and 4) pauses greater than 30 seconds. Prior to each meal, participants were given 5 g sample of each food and asked to rate their liking for it. Participants rated their hunger, satiety and urge to eat before, during and after the meal. For each of the foods, participants rated their preferences, preferred frequency of ingestion, associated guilt, associated danger/safety and perceived macronutrient intake when the foods were imagined but not ingested. Mean meal duration time and energy intake was 7.81 min and 527 kcal for unrestrained controls, and 9.98 min and 676 kcal for restrained controls. Anorexia patients had the longest meal duration and the highest energy intake, while bulimia patients were similar to controls. The study found that the hungrier the participant was before the meal, the thinner the subject, and that the faster the subject ate, the more food they were likely to consume. There were few differences between restrained and unrestrained eaters among the controls, indicating the differences in eating behaviour among eating disorder patients do not merely reflect restraint in eating. Patients showed two patterns of eating – either severe restriction (under 200 kcal) or overeating (ingesting 1000 kcal or more) – while almost all control subjects ate moderate-size meals. Hunger and satiety ratings were less highly correlated among eating disorder patients than among controls and the patients showed a predominance of abnormal patterns of hunger and fullness relative to controls. Patients with AN-restricting ate longer meals of a more variable size than controls. Patients with bulimia showed greater variability in their energy intake and abnormalities in their hunger and satiety ratings, and showed an increased urge to eat in the post meal period as compared with control subjects. The study supports the idea that eating in response to appetite and increased eating speed are part of normalised eating.

Masheb, et al. (2011) compared eating patterns between people with bulimia nervosa (n=39, mean BMI 28.7), binge eating disorder (n=69, mean BMI 34.8) and healthy controls (n=203, mean BMI 27.9). Of note, this healthy control group had a higher mean BMI than many of the other studies reviewed here. The overall

group was female and mostly Caucasian. The mean age was 36.3 years. Participants completed an online survey which included demographic information, self-reported height and weight, and the EDE-Q with 7 additional questions around further eating behaviours added. On average, the control group ate 2.4 meals and 1.2 snacks per day. During the 28 previous days, they “picked or nibbled” (ate food between meals and snacks that were unplanned and repetitious) on 8.9 days, ate “double meals” (two breakfasts, two lunches or two dinners) on 0.7 days and got up during the night to eat on 1.1 days.

Schebendach, et al. compared self-reported energy intakes with observed energy intake in a laboratory test meal (Schebendach, et al., 2012). Controls were females aged 18-45 with BMI 19-21. Control participants were matched to anorexia nervosa patients on age, ethnicity and race. Observed energy intake ranged from 355-1111 kcal. The study indicates that the normalised energy intake of a meal ranges quite widely.

In summary, in the absence of larger scale information for some eating behaviours, data from control groups may offer some insight into what is common in populations similar to those with eating disorders. Healthy women may have very little food avoidance (Hansson, et al., 2011) and choose foods most often for health, convenience, mood and sensory reasons (Dellava, et al., 2011). Healthy women may eat on average anywhere between 355 and 1110 kilocalories in a typical meal (Andersen, et al., 1996; Schebendach, et al., 2012; Sysko, et al., 2005). Healthy women spend 8-22 minutes eating a typical meal (Sunday & Halmi, 1996; Tappe, et al., 1998). Healthy women may spend only 4 minutes/meal doing non-eating behaviours and take 22 bites per meal (Tappe, et al., 1998). Healthy women clearly report more hunger before than after meals and more fullness after than before meals (Andersen, et al., 1996).

2.9 Healthy eating recommendations and eating in the general population

The New Zealand FANG (Ministry of Health, 2003) recommends that adults consume at least 3 servings of vegetables, 2 servings of fruit, 6 servings of breads and cereals, 2 servings of milk and milk products and 1 serving of lean meat, poultry, chicken, seafood, eggs, nuts and seeds and legumes. However, the diet of the general population does not, as a rule, meet these guidelines. According to the National Nutrition Survey 1997 (NNS97; Ministry of Health, 1999), only 8% of all females aged 19-24 years met the recommended 6 or more servings of breads and cereals. Using this as a specific guideline was omitted from the subsequent Adult Nutrition Survey 2008/2009 (ANS08/09; University of Otago and Ministry of Health, 2011). In the ANS08/09, 56% of 19-30 year old females met the recommended 3 or more servings of vegetables. Only 61% met the

recommended 2 or more servings of fruit. This suggests that normalised eating may not always mean meeting fruit and vegetable serving recommendations.

The New Zealand FANG (Ministry of Health, 2003) uses serving sizes which may be at odds with education given to patients with eating disorders (Fleming, 2008), as the Ministry of Health serving sizes are not controlled for energy or relevant micronutrient content. Bjork and Ahlstrom (2008) found eating “normal-sized portions” to be an important manifestation of recovery, but did not define what size portions this meant.

The New Zealand FANG (Ministry of Health, 2003) recommend approximately 2200 ml of daily fluid intake for the average woman, with approximately 1300 ml of that coming from fluid in food and metabolic processes. Water is primarily recommended as a beverage choice. Milk is suggested as an acceptable alternative. Fruit juice, cordial, energy and soft drinks are recommended to be limited due sugar content. A maximum of five cups of coffee is recommended. Tea and other caffeinated drinks are only suggested to be limited in those “susceptible to caffeine”. The ANS08/09 (University of Otago and Ministry of Health, 2011) showed that fruit juice and fruit drinks were consumed three or more days a week by 42% of females aged 19-30 and soft drinks and energy drinks were consumed three or more days a week by 28% of females aged 19-30. Water, tea, coffee and total fluid intake were not reported and, therefore, is unavailable to be compared with recommendations. Hart, et al. found eating disorder patients with lower BMIs had higher mean fluid intakes with more beverages being energy-free (Hart, et al., 2005). The beverages drank most were water, diet cola, coffee, juice and tea (includes coffee and tea with milk added). Increased variety of caloric beverages may predict treatment success in anorexia nervosa (Schebendach, et al., 2011).

Vegetarian diets are common among those with eating disorders. However, it is generally accepted that vegetarian diets do not cause eating disorders but rather, vegetarian diets may be used to mask disordered eating behaviours (Craig, Mangels, & Ada, 2009; Robinson-O'brien, Perry, Wall, Story, & Neumark-Sztainer, 2009; Timko, Hormes, & Chubski, 2012). The NNS97 (Ministry of Health, 1999) found that 2% of females 19-24 years old avoided meat except chicken. One percent were lacto-ovo or lacto-vegetarian. Two percent were vegan. ANS08/09 (University of Otago and Ministry of Health, 2011) found that 7.7% females 19-30 never ate or had not eaten red meat in the last four weeks. Five percent never ate or had not eaten chicken in the last four weeks. It may be more common to include alternative dairy or meat substitutes than fully excluding dairy or meat. ANS08/09 found that 4.2% females 19-30 used soy milk and 4.3% did not use milk at all. Use of meat alternatives was not assessed in ANS08/09. Despite the presence of vegetarian and vegan diets, the low prevalence indicates that these eating patterns may not be part of normalised eating.

Healthy eating recommendations allow the inclusion of vegetarian and vegan substitutes for animal products. The basis of including these substitutions is to meet recommendations for specific nutrients. Calcium is an example of one of these nutrients. The Recommended Dietary Intake included under the Nutrient Reference Values for Australia and New Zealand is 1000mg calcium per day for adult women (Commonwealth Department of Health and Ageing Australia, Ministry of Health New Zealand, & National Health and Medical Research Council, 2005).

Bjork and Ahlstrom (2008) found that not avoiding high-energy ingredients and permitting oneself to eat unhealthy foods like candy, cookies and rich desserts was an important manifestation of eating disorder recovery. These food items are not included in the minimum recommended four healthy eating food groups in the New Zealand FANG (Ministry of Health, 2003). The ANS08/09 found that sugar, sweets, cakes, muffins, biscuits, puddings, desserts, snack bars and snack foods combined contributed 14.1% of total energy intake in females 19-30 years old. Alcoholic and non-alcoholic beverages (excluding milk) combined contributed 11.9% of total energy intake. Only eight percent of females aged 19-30 ate takeaways three or more times per week. Twenty-eight percent of females aged 19-30 drank soft drinks or energy drinks three or more times per week. Forty-one percent of all females (these results were not grouped by age) always or regularly chose low or reduced-fat varieties of food. The NNS97 (Ministry of Health, 1999) found that 18% of 19-24 year old females ate muffins weekly. Twenty-six percent ate cakes, scones or pikelets weekly. Forty-five percent ate cream filled or chocolate biscuits weekly. Forty-two percent ate plain sweet biscuits weekly. Normalised eating may involve eating high energy foods less frequently than that evaluated (e.g. drinking soft drinks less than three times a week).

The New Zealand FANG (Ministry of Health, 2003) does provide recommendations regarding sugar intake, which indirectly informs recommendations about how much high sugar food an individual may consume within a healthy diet. The recommendations state that sucrose and other free sugars should be restricted to no more than 15 percent of total energy due to high sugar foods generally also being a poor source of fibre and essential micronutrients.

The New Zealand FANG (Ministry of Health, 2003) recommend that women of reproductive age consume at least 20% of kcal from fat. Advice is given to use less spread on bread and rolls and to choose margarine instead of butter in an effort to decrease saturated fat intake. According to the NNS97 (Ministry of Health, 1999), females 15-24 years old consume a mean of 34% energy from fat. Butter and margarine contribute the highest proportion (16%) of the total fat in New Zealand diets. Using these figures, if butter and margarine

were excluded from the diet, percentage intake from fat would be 29. This is above minimum recommended levels. In the New Zealand population, 84% and 87% of all females aged 15-18 and 19-24 years, respectively, use butter and/or margarine on bread and crackers. Publications prior to 1980 highlighted an avoidance of carbohydrate in those with eating disorders, while more recent articles note an avoidance of fat (Soh et al., 2009).

Limited evidence suggests that people with varying BMIs who do not have eating disorders engage in dietary compensation as a means of regulating energy intake (McKieman, Hollis, & Mattes, 2008). No studies have directly looked at this issue in the eating disorder context, other than purging, laxative use and over exercise. It may, however, be implied that normalised compensation refers more accurately to eating in response to appetite signals rather than cognitive decisions to alter intake.

2.10 Knowledge in eating disorder clinicians

Registered dietitians working in the field of eating disorders are often the clinicians responsible for teaching or encouraging normalisation of eating. Therefore, the views of these clinicians are most likely to have a significant impact on what is perceived as normalised eating by patients. It is likely that the dietitian view of normalised eating is influenced by general healthy eating recommendations, as ensuring diet quality, amount and variety are some of the eating disorder dietitian's primary interventions (American Dietetic Association, 2011).

While dietitians are typically responsible for supporting normalised eating, this responsibility may fall to other clinicians working within the eating disorder field. This may occur when no dietitian resource is available, which is especially the case in rural areas. It may also occur when family-based treatment is utilised, during which the therapist supports the parents to facilitate their view of normalised eating in the child. Anyone involved in meal planning with patients may bring their perceptions of what is normalised eating into the conversation. Even when advice is not given didactically, the choice of which eating behaviours or food choices to challenge is likely influenced by the clinician's perspective of what normalised eating is.

Cordery and Waller (2006) discussed the influence of clinicians in regards to nutrition knowledge. Clinicians influence patients through role modelling or direct education. During role modelling, the clinician's own values and beliefs can influence the patient through non-verbal communication or clinicians suggesting their own preferred foods. On the other hand, clinicians could deliver education aimed at helping patients develop a rational view of nutrition. The ability to do this depends on the clinician's own knowledge about nutrition.

When comparing the nutritional knowledge of eating disorder professionals, Cordery and Waller (2006) found that the dietitians knew the most about most nutrients, followed by the psychiatrists, then nurses and clinical psychologists. A control group made up of lay people with no eating disorder experience knew more about carbohydrates than either the clinical psychologists or the nurses. Clinicians with restrictive tendencies (as evidenced in the Drive for Thinness sub-score of the Eating Disorder Inventory) knew more about the carbohydrate content of foods. The authors suggested that it may be important to determine whether clinician's attitudes towards carbohydrate-rich foods have an impact on how they advise patients. Although this study explores nutrition knowledge rather than normalised eating, the implications are applicable to the choice of participants used to explore normalised eating.

De la Rie, et al. investigated the quality of treatment of eating disorder services from the therapists' and patients' perspectives and compared their views (S. De la Rie, Noordenbos, Donker, & Van Furth, 2008). This Netherlands study included both present and former patients, and a variety of mental health professionals working as therapists in specialized eating disorder services. No dietitians or nutritionists were specified as participants. When ranking criteria on quality of treatment, therapists focused more on eating disorder symptoms and behavioural change, whereas patients underlined the importance of the relationship with the therapist and addressing underlying problems. Therapists ranked "learning how to eat normally" as the third most important criteria, whereas patients did not rank this item in the top ten criteria. Most of the therapists had an orientation towards cognitive behavioural therapy, which may explain the focus on behavioural outcomes. The study illustrates the involvement that clinicians other than dietitians have in normalising eating with eating disorder patients.

Clinicians support eating disorder in-patients at mealtimes by sitting with them, providing distraction, and role modelling eating. In an in-patient setting, this role is often carried out by nurses, but therapists and dietitians may also fulfil this role at times. In one study, eating disorder ward clinicians (profession not specified) were surveyed and interviewed regarding practices and perceptions of mealtimes on the ward (Long, Wallis, Leung, Arcelus, & Meyer, 2012). Twenty-two units participated in a survey of mealtime practices. One finding of the survey was that 18 of the 22 units imposed a time limit, and these ranged from 30-60 minutes. Sixteen staff members were then interviewed around their perceptions of mealtimes on the ward. Some of the comments illustrated how clinicians do have a role in influencing normalised eating. Interviewees acknowledged needing to be firm and flexible during meals. The author cited as a summary: "Nurses like to accommodate people's do's and don'ts although not if it goes too far." Interviewees also talked about role modelling eating during

mealtimes. Some felt that it was uncomfortable but important: “I feel like they are all watching me. But sometimes I know it is good for them, because they see how to eat normally...I don’t eat with them.” The uncomfortable feeling could indicate clinicians not having confidence of what is “normal eating”, which simply illustrates that the concept is difficult to define.

A recent qualitative study supported the notion that non-dietitian professionals are not comfortable with some tasks associated with normalising eating (Couturier et al., 2012). The study examined therapist perspectives of implementing evidence-based practice, and more specifically, explored factors influencing adoption of family-based treatment into clinical practice.

The participants in the study (n=40) were all treating children and adolescents with anorexia nervosa in public funded services throughout Ontario, Canada. A variety of professions working in the therapist role were represented, with social work being the most common. The professionals were aged 41-50 years (range 25-56). Time spent working with adolescents with anorexia nervosa ranged less than 1 to 20 years and most participants reported treating 1-5 (n=8) or 6-10 (n=8) adolescents with anorexia nervosa per year. Twenty therapists reported using family-based treatment.

Several factors mediating implementation of out-patient family-based treatment were identified. While family-based treatment indicates that dietitians are not necessary to deliver the treatment, only six of the 40 therapists agreed. Five therapists explicitly stated that the dietitian is essential to the eating disorder treatment team, and that not involving the dietitian in the treatment would require therapists to engage in tasks they felt would be considered as outside their scope of practice. Similarly, 15 therapists did not weigh patients and only 10 completed the family meal. The family meal refers to a specific session in family-based treatment, which involves the therapist coaching the parents in real-time as they feed their child. Not one therapist consistently included these three elements (nutritional guidance without a dietitian, weighing, family meal). Although this study was focused on the fidelity of following the family-based treatment model and likely reflects poor understanding of the model by therapists, it also indicates therapists’ discomfort with strategies (i.e. nutrition advice, weighing, direct involvement in meals) commonly used to assist in normalising eating.

In summary, people with eating disorders are best treated within a specialist eating disorder setting with the expertise of a variety of disciplines available. Depending on the circumstances and available clinicians, eating specific work may be done by one of several disciplines. There is some evidence to show nutrition knowledge

varies between disciplines (Cordery & Waller, 2006), which may contribute to varying perceptions of what normalised eating involves. The current study will, therefore, collect data on discipline of eating disorder clinicians.

2.11 Cultural considerations

Bulimia nervosa does not appear outside of Western influence, which may be attributable to food access and thin idealization, while anorexia nervosa does appear across cultures (Keel & Klump, 2003). Although the majority of studies reviewed above did not report ethnicity of participants, it is certain that normalised eating differs between cultures.

2.12 Summary

Normalising eating is well recognised as a key part of eating disorder treatment. Initially, authors arbitrarily defined normalised eating as part of developing eating disorder questionnaires. More recently, some authors have attempted to describe normalised eating based on clinician experience in the eating disorders.

There has been limited formal research into the eating habits of individuals who have recovered from an eating disorder. Researchers looking at recovery in eating disorder patients often seem to assume that abnormal eating behaviour will correct itself once the patient has reached target weight. Some studies have qualitatively explored perceptions of recovery, but none have looked specifically at perceptions of what constitutes normalised eating as a treatment goal.

Eating related outcomes from healthy controls in eating disorder studies offer only limited useful data in understanding normalised eating.

No studies have investigated the relationship between adherence to healthy eating recommendations and eating disorders. Some aspects of adherence to healthy eating recommendations have been explored in the general population. The majority of the general young female population appears to not meet recommendations for breads and cereals (Ministry of Health, 1999). Only about half meet recommendations for fruits and vegetables and although vegetarian/vegan eating practices are present, they still are followed by a very small portion of the population (University of Otago and Ministry of Health, 2011). Some healthy eating recommendations, such as limited use of snack foods and low fat intake, may be at odds with perceptions of normalised eating.

Nutrition knowledge and emphasis on normalising eating in treatment seem to vary between disciplines. Some clinicians seem to lack confidence in helping patients towards normalised eating. Research into normalised eating as a treatment goal for eating disorders must be clinically applicable to all disciplines working in the field of eating disorders.

Chapter 3: Aim and Objectives

A number of possible research questions emerge from the literature review. However, it seemed most practical and timely to focus this study on describing normalised eating.

Aim: To describe normalised eating as a treatment goal for eating disorders among women aged 18 to 60 years

Objectives:

- a) Describe normalised eating as a treatment goal for eating disorders from the perspective of dietitians and other clinicians working in the eating disorder field, women who have recovered from an eating disorder and a group of healthy women with no eating disorder history
- b) Compare descriptions of normalised eating with general population survey data from New Zealand and New Zealand food and nutrition guidelines
- c) Compare perceptions of normalised eating between participant groups

Chapter 4: Methods

4.1 Study design

The current study used a mixed methods approach within a cross-sectional design. Mixed methodology is commonly used in the social sciences (Stice, Fisher, & Lowe, 2004) and qualitative methods are increasingly being integrated into nutrition-related research (Swift & Tischler, 2010), a field that has traditionally relied on quantitative methods primarily.

An online survey was used to gather quantitative data regarding a perceived normalised diet, specific eating behaviours and eating styles. Interviews were used to elicit qualitative data from a sub group of the survey participants. The goal of the interviews was to understand the quantitative data more fully and elicit views which are not possible to gather quantitatively.

4.2 Online survey

An online survey was developed, consisting of three short questionnaires: Eating disorder examination questionnaire (EDE-Q), Normal eating scale (NES), and Opinions on normalised eating (ONE). There were two versions of the online survey. All participants were asked to complete the ONE survey, which include a demographics questionnaire, and were asked about their availability for participating in a focus group. The NES and EDE-Q were only part of the survey for the control and recovered groups.

The online survey was developed using Survey Monkey and was available through a Survey Monkey URL. Participants completed the online surveys at a location of their choice. The online survey was open for about six months; about one month after the last advertisement was placed.

4.2.1 Eating Disorder Examination Questionnaire (EDE-Q)

The Eating Disorder Examination Questionnaire (EDE-Q) global score was used to screen for active eating disorders. Global score one standard deviation above the norm (2.49) has been used to screen for active eating disorders (Cowdrey, Park, Harmer, & McCabe, 2011).

4.2.2 Normal Eating Scale (NES)

The Normal Eating Scale (NES) has been developed by Susan Hart, Accredited Practicing Dietitian and Program Coordinator at the Royal Prince Albert Hospital Eating Disorders Day Program in New South Wales, Australia for the purpose of evaluating treatment outcomes.

4.2.3 Opinions on Normalised Eating (ONE)

A questionnaire, entitled Opinions on Normalised Eating (ONE) was designed by the researcher to elicit opinions on various aspects of eating.

In developing the questionnaire, the distinction between healthy eating, common eating and eating for recovery is drawn. Healthy eating is well defined in the scientific literature and common eating is only partially represented in national nutrition surveys. Eating for recovery, or normalised eating, is not well defined, but may include aspects of both common and healthy eating.

The ONE questionnaire was designed to focus on normalised eating as eating for recovery within the eating disorder context. The exception to this was in regards to the control group, as they were not expected to have opinions on eating for recovery. In the survey, respondents with no eating disorder experience were asked to think about normalised eating as eating most commonly done. Those with eating disorder experience were asked to think about normalised eating as eating for recovery within the eating disorder context. All participants were asked to go with their “gut feeling”.

The literature review was used in combination with consultation with other eating disorder dietitians to define aspects of eating to examine. Aspects of eating explored in the ONE questionnaire are outlined below under the broad categories of food choices, eating behaviour and eating style.

The ONE questionnaire also included demographics questions. The final question asked about availability and interest to participate in a focus group. The ONE questionnaire is available in Appendix A.

4.2.3.1 Food choices

Aspects of food choice explored in the ONE survey included number of serves from food groups and nutrient content (Rigaud, et al., 2011; Wakefield & Williams, 2009), beverage choices (Hart, et al., 2005), food restrictions, including vegan/vegetarianism, use of high fat / high sugar foods, use of diet food (McIntosh, et al., 2006), and use of fats, including spreads and cooking fats (Rigaud, et al., 2011; Schebendach, et al., 2011).

Food and beverage choices, inclusion of specific foods to estimate likelihood of food restrictions and use of fats were determined through an open-ended question asking participants to give an example of a normalised intake in a weekday and weekend day.

4.2.3.2 Eating behaviour

Eating behaviour included eating frequency (McIntosh, et al., 2006), eating speed (Wakefield & Williams, 2009), cutting up or crumbling food (Abraham, 2008; Wakefield & Williams, 2009), and use of utensils (Wakefield & Williams, 2009).

There is a wide variety of disordered eating behaviours present in individuals with eating disorders. However, for the purpose of this project, only a limited number of aspects were explored. These behaviours are often referred to in the literature (Abraham, 2008; McIntosh, et al., 2006; Wakefield & Williams, 2009). They can also all reasonably sit on the continuum of normal to abnormal. Some eating disorder behaviours are more clearly abnormal in Western society, such as hiding food under the table or spilling drinks intentionally.

Eating frequency was determined through the same open-ended question used to determine food choices. Perception of normalised eating speed and food manipulation (cutting up or crumbling) were determined through videos showing a range of these behaviours along a continuum which participants were asked to rate using a 4-point Likert Scale. The speed videos showed a woman eating a dinner plate of food for one minute at various speeds of eating. There were five videos with a calculated eating speed for a plate of food: 5 minutes, 15 minutes, 30 minutes, 45 minutes and 60 minutes (see Table 4.1).

Table 4.1: Speed video calculated rate		
<i>Meal composed of 1 cup macaroni and cheese, 1 cup broccoli, 180g sausages (1440 g or 3 cups or 48 tablespoons). Each bite estimated to be one tablespoon, therefore 48 bites to complete the meal.</i>		
Calculated time per meal	Seconds per bite	Grams per minute
60 minutes	75	24
45 minutes	56	32
30 minutes	47	48
15 minutes	18	96
5 minutes	6	288

The cutting and crumbling videos showed a woman eating a muffin or sandwich for one minute. There were five videos of each depicting the food broken or cut into 2 pieces, 4 pieces, 8 pieces, 16 pieces, or eaten whole with the hands. Additionally, the muffin was shown being eaten by picking pieces off rather than breaking it up first.

Perception of normalised use of utensils was determined through videos showing a woman eating variety of foods with different utensils. There were five utensil videos: a bowl of cereal was eaten with a teaspoon, a bowl of cereal eaten with a regular-sized spoon, fish and chips eaten with the hands, fish and chips eaten with a knife and fork, and fish and chips eaten with chopsticks.

Respondents were asked to rate videos using a 4-point Likert scale: definitely normal, probably normal, probably abnormal, definitely abnormal. All videos are available, either as a hyperlink in the electronic thesis in Appendix B or on a compact disc in a pocket in the paper copy of the thesis.

4.2.3.3 Eating style

Eating style questions included use of compensation (Wakefield & Williams, 2009), eating in response to appetite (Hart, et al., 2012; Wakefield & Williams, 2009), and eating from a meal plan, including weighing / measuring and counting kilocalories (Bjork & Ahlstrom, 2008; Cockell, et al., 2004)

Perception of normalised use of compensation, eating in response to appetite and eating from a meal plan were determined using several examples of each. Examples of eating from a meal plan was on a continuum of rigid to more relaxed. A similar approach was taken with examples of compensation and eating in response to appetite. Four examples were provided for both compensation and eating from a meal plan. Five examples were provided for eating in response to appetite.

All examples used a 4-point Likert scale: definitely normal, probably normal, probably abnormal, definitely abnormal.

4.3 Qualitative in-depth interview guide

The purpose of the in-depth interviews was to clarify results from the survey that were unclear and to gain more insight into what influenced participants' responses to the online survey. The interview guide was finalized by the researcher after the survey results were received and analysed. The main topics for discussion were eating in response to physiological hunger, eating for pleasure, eating regularly, eating flexibly, eating in

a socially acceptable manner, meeting nutrition needs, including all food groups, and eating in a subjectively comfortable manner.

In-depth interviews were held either by telephone or in person. Interviews were carried out in person when it was feasible to arrange a meeting in Auckland. The interview was expected to take approximately 30-50 minutes. Verbal consent was obtained, written notes were taken and the interviews were audio recorded.

The depth interview guide is available in Appendix C.

4.4 Pre-test

A convenience sample of five women meeting control group criteria participated in piloting this study. All participated in the online survey and a focus group. Questions piloted in the focus group were similar to those used in the in-depth interviews. Feedback from the pilot group was used to develop and refine the online survey and interview questions. Results were not analysed.

4.5 Participants

“Expert informers” were sought as participants to gain a detailed view of normalised eating from different perspectives. Four groups of participants were recruited: healthy women with no personal experience of eating disorder to act as a control group, women who had recovered from an eating disorder, dietitians currently working in the eating disorders field and other clinicians currently working in eating disorders field.

4.5.1 Controls

A control group was included in the current study because, as has been done in other studies of eating disorders, it is assumed that a healthy control group exhibits normalised eating (Andersen, et al., 1996; Dellava, et al., 2011; Kaye, et al., 1986; Ruggiero, et al., 1988; Schebendach, et al., 2012; Sysko, et al., 2005; Tappe, et al., 1998; Wilson, et al., 1989). A healthy control group is especially important to elicit data on topics not reported on in national nutrition surveys, such as frequency of eating or use of meal plans. The current study used the following inclusion criteria for the control group: female, aged 18-60, never been diagnosed with an eating disorder by a doctor, BMI over 20, global EDE-Q score less than 1 SD above the norm. These criteria mirror those used for eating disorder recovery in the literature review. Data from survey respondents who did not meet this criteria was not included in analysis.

Further rationale for criteria used for selecting the control group is available in Appendix D.

4.5.2 Recovered

Individuals who have recovered from an eating disorder have theoretically undergone normalisation of eating and so are likely to have a personal understanding of what it entails. For the current study, recovery was defined as having had a previous eating disorder diagnosis from a doctor, maintenance of a BMI over 20 for the last 3 years, no bingeing or purging for the last 3 years, and global EDE-Q score less than 1 SD above the norm. Data from survey respondents who did not meet this criteria was not included in analysis.

Further rationale for criteria used for selecting the recovered group is available in Appendix D.

4.5.3 Dietitians

Dietitians with at least one year experience in eating disorder work were eligible to participate. Dietitians working in the field of eating disorders are likely to have well formed views of what normalised eating entails.

4.5.4 Clinicians

Depending on treatment setting and available clinicians, eating specific work may be carried out by one of several disciplines. Clinicians other than dietitians with at least one year experience in eating disorder work were eligible to participate.

4.6 Ethics

When planning the study, there was concern that viewing pictures or videos of eating behaviour common among people with eating disorders may be triggering to those who have recovered from an eating disorder. However, no evidence could be found that harm resulted from exposing recovered patients to eating videos or food images. McNamara (2008) showed pictures of foods to patients with active eating disorders whilst they were enrolled in treatment. There was no significant correlation between emotive response and EDE-Q scores, indicating minimal risk of mental harm for those with active eating disorders. Gutierrez-Maldonado (2010) used a virtual environment showing foods to eating disorder patients enrolled in treatment. Virtual environments provoked emotional reactions, with environments in which subjects were obliged to ingest high-energy foods provoking the highest levels of anxiety and depression. A psychologist experienced in eating disorder treatment was consulted with, who acknowledged that while the risk was low, some precautionary steps may mitigate any possible risk.

Participation was completely voluntary and participants were free to opt out at any point.

A letter of concern was sent to each participant scoring at or above the 90th percentile on the EDE-Q global score. This simply expressed that the participant's responses to the survey indicated they may have some difficulties with food or eating and suggested they speak to their general practitioner if they had not already done so. Ten participants scored at or above the 90th percentile (8 of which had been previously diagnosed with an eating disorder) and almost all of which had binge or purged, or been at a BMI less than 20 in the last 3 years. This letter was developed in discussion with the Research Psychologist at the Regional Eating Disorders Service.

Ethics approval was received from the Health and Disability Northern X Regional Ethics Committee, ethics reference number NTX/12/EXP/025 and from the Auckland District Health Board Research Review Committee, reference number A+5425. Two amendments were submitted during the study, both seeking to increase the number of participants in the qualitative interviews.

The initial research proposal included use of focus groups. One amendment to the ethics application allowed for the use of online chat rooms in addition to in-person focus groups and the inclusion of recovered participants who had been symptom-free for one year. The final amendment allowed for the use of individual interviews either by telephone or in-person, in place of focus groups.

4.7 Participant recruitment

Volunteer participants were recruited through advertisements sent to organisations in Australia and New Zealand, including eating disorder-focused non-government organisations, universities, professional organisations and networks, and eating disorder treatment teams. Advertisements were tailored to the target participant group. Organisations were requested to distribute the advertisements through their own newsletters and websites.

Advertisements were sent to thirty-seven organizations; twenty-three based in Australia and thirteen based in New Zealand. One organisation represented both Australia and New Zealand.

Additional recruitment methods included a paid advertisement on Facebook, word of mouth and email invitations to individuals. Further details are provided in Appendix B.

Examples of the advertisements are available in Appendix C. All advertisements included the URL address for the online survey. The first page of the survey was the study information sheet (available in Appendix A).

Consent was implied by completion of the survey and this was made explicit in the information sheet. No contact with the researcher was required to enroll in the study.

On completing the online survey, participants were asked to indicate their willingness and availability to participate in a focus group. All those who indicated that they were willing and available were invited by email to participate in follow-up in-depth interviews (the study protocol was altered to replace focus groups with in-depth interviews). An option was given to participate either by telephone or in-person.

Online survey participants were entered into a draw to receive a gift card worth \$100 NZD. In-depth interview participants were provided a \$10 NZD petrol voucher.

4.8 Quantitative data handling and analysis

All survey data was downloaded as an Excel spreadsheet from the online Survey Monkey database onto a USB flash drive and saved as a password protected computer file.

4.8.1 EDE-Q and NES

Some participants skipped questions in the EDE-Q. In order to calculate a global score to determine eligibility for inclusion, the total score was divided by the number of questions completed (e.g. If 4 out of 5 questions in a sub-category were answered, the score for the category was divided by 4 rather than 5).

If questions were skipped in the NES, an overall score was obtained by assigning a score of 3 (possible score 1-5) for each skipped question.

4.8.2 Opinions on Normalised Eating (ONE)

4.8.2.1 Food choices and eating frequency

In order to determine food choices and eating frequency, the open-ended normalised diet examples were analysed for common foods, servings from food groups, eating episodes and patterns. Participants were asked for one normalised weekday example and one normalised weekend day example. Most participants provided both these examples, thus the total number of 'normalised diet' examples was larger than the number of participants.

4.8.2.1.1 Common foods

Foods listed in the normalised diets were categorised and counted in order to determine the foods most commonly mentioned. Every time a food was mentioned, it was counted once under the participant group and meal which it appeared under.

Table 4.2: National Nutrition Survey serving size examples	
Fruit	1 medium piece or 2 small pieces of fruit or ½ cup of stewed fruit (juice and dried fruit excluded)
Vegetables	1 medium potato/kumara or ½ cup cooked vegetables or 1 cup of salad vegetables

(Ministry of Health, 1999)

4.8.2.1.2 Servings from food groups

Each example day was analysed for servings of fruit, vegetables, caffeinated beverages, alcohol and “treat foods” (baked items, ice cream, lollies, chocolate, dessert). Serving analysis was distinct from the analysis of food examples described previously, in order to allow comparison with nutrition survey data of the general population and healthy eating recommendations. Serving examples from the NNS97 (Ministry of Health, 1999) were used to determine number of servings of fruit and vegetables (see Table 4.2). Servings of fruit was additionally analysed with inclusion of fruit juice and dried fruit. Servings of vegetables was additionally analysed with exclusion of potatoes. Example days were excluded from vegetable serving analysis when vegetable content was not specified (e.g. Combo at burger place) or when the word vegetables was listed without another carbohydrate source and potatoes or kumara were not specified or excluded (e.g. meat and veg). When an amount was not specified, one serving was assumed. If a range was specified within the example (i.e. 2-4 pieces of fruit during the day), then that participant was given a minimum and maximum value (i.e. minimum of 2 fruit serves and maximum of 4 fruit serves), which were then averaged (i.e. 3 fruit serves) to obtain a mean for that day.

Weekday examples were double weighted against weekend day examples to obtain a mean for each participant. In addition, a range is given based on the minimum and maximum values for all examples (i.e. if 2-4 pieces of fruit in weekday example and 0 pieces of fruit in weekend day example, the range would be 0-4).

4.8.2.1.3 Eating episodes

Average number of eating episodes per day was determined. Some respondents detailed distinct eating episodes (e.g. cereal, fruit and juice for breakfast; sandwich for lunch; muesli bar for afternoon tea; chicken, vegetables and milk for dinner) while others did not identify individual eating episodes (e.g. cereal, fruit, juice, sandwich, muesli bar, chicken, vegetables, milk). If names of meals were not specified, the example was excluded from analysis of number of eating episodes per day, 3 meal and 2 snack pattern and plate model patterns. Dessert was not counted as a separate eating episode unless it was specifically stated at a different time (e.g. dinner at 7pm, dessert at 8:30pm). Supper (when named) was counted as a separate eating episode. This is in line with culturally appropriate use of the terms within Australia and New Zealand culture. Isolated drinks of water, tea, coffee, alcohol or soft drinks were not counted as separate eating episodes. If an option was specified (i.e. sandwich or nothing for lunch), then that participant was given a minimum and maximum value (i.e. minimum of 2 eating episodes and maximum of 3 eating episodes), which was then averaged (i.e. 2.5 eating episodes). Weekday examples were then double weighted against weekend day examples to obtain a mean number of eating episodes per day for each participant.

4.8.2.1.4 Eating patterns

The eating pattern described in each example was identified and categorised as meeting (or not) the following patterns: 3 meals and 2-3 snacks per day, and “plate model” at each meal. The “plate model” pattern refers to the inclusion of a starch food (e.g. bread, cereal, pasta, potato, rice), a protein or dairy food (e.g. chicken, beef, tofu, beans, nuts, cheese, milk) and a fruit or vegetable. This type of model is often used by dietitians and in educational materials to guide food choices (Camelon et al., 1998). Milk drinks and juice were categorised in the dairy food and fruit portion, respectively. Normalised diets were excluded if there was not enough detail to ascertain a food group (e.g. sandwich with filling).

An average for each pattern (3 meals and 2-3 snacks per day, and “plate model” at each meal) was determined for each participant from their weekend and weekday examples, by double weighting the weekday. If options were given that did not agree with each other (e.g. lunch option in a weekday example depicted a “plate model” while another option did not), then that participant was given two values (i.e. – 0 for no “plate model” and 1 for “plate model”) which were then averaged across the weekday and weekend examples separately and rounded to the nearest whole number. For instance, if “plate model” was depicted

at breakfast in the weekday and not the weekend day, that participant received the values 1, 1 and 0. These values were averaged to 0.66 and rounded to 1.

Presence of margarine or butter, meat and dairy was determined by counting whether these foods were mentioned at least once in any of the example days given by a participant.

4.8.2.2 Eating behaviour examples

Participants were asked to rate videos of a range of eating behaviours as normal to abnormal using a 4-point Likert scale. For analysis, abnormal and probably abnormal were collapsed into one category, and normal and probably normal were collapsed into one category.

4.8.2.3 Eating style examples

Questions relating to eating style examples were coded in the same manner as the videos, as above. In addition, ratings were averaged across each category (appetite, compensation, use of meal plan) to obtain an overall score for the entire category.

4.8.3 Statistical analyses

The Shapiro-Wilk test on SPSS Version 20.0 (IBM Corp, 2011) was used to check if the data was normally distributed. Parametric data was analysed using an unpaired t-test on GraphPad Software (GraphPad Software Inc., 2012a) or Pearson's correlation coefficient on Microsoft Office Excel (2007). Unpaired t-tests were used to compare group means of demographic data, questionnaire scores and the first and second nutrient analysis. Non-parametric data was analysed using the Kruskal-Wallis test and post-hoc Mann-Whitney on SPSS Version 20.0 (IBM Corp, 2011). Proportions were compared using a chi-square test on GraphPad Software (GraphPad Software Inc., 2012a). Statistical significance for all tests was set at $p < 0.05$.

4.8.4 Nutrient analyses

When the information in an example was unclear, assumptions were made by the primary researcher based on the specific type or serving size entered by the majority of participants. During analysis, every time an assumption was made, it was recorded and referred back to when the same unspecified item was encountered again. See Appendix H for assumptions used. If a serving size was not specified for fruits or vegetables, an arbitrary serving of one was entered into analysis. Because of this, it is possible that the amount of fruit and vegetables given in the examples was under- or overestimated. When an option of more

than one food was indicated by a participant for an eating episode (e.g. sandwich or salad), the entry was evenly divided between the options (e.g. ½ sandwich, ½ salad). If more than 50% of foods in an example required assumptions, then that day was excluded from nutrient analysis. In this way, a participant who provided two example days (i.e. one weekday and weekend day) may have had only one example day included in the nutrient analysis.

Average nutrient composition was determined for each participant by calculating an average of the weekend and double-weighted weekday.

A registered dietitian determined reliability by completing Foodworks nutrient analysis on a sample of examples using the assumptions in Appendix H. The results of these were compared with the results of the primary researcher, Pearson's correlation in Microsoft Excel (2007) (available in Appendix I).

Nutrient analysis was completed using FoodWorks (Version 5, 2007).

4.9 Qualitative data handling and analysis

Audio recordings were transferred onto a USB flash drive. A numbered code was used to identify participants.

Conventional content analysis (Hsieh & Shannon, 2005) was used to analyse qualitative data, including comments written in the survey, both those made in relation to videos and examples, and comments made within the normalised diet descriptions. Quotes were categorized and grouped by themes using a cut-and-paste technique. Color codes and number lines were used to keep track of where quotes originated. Quotes were grouped by theme and then by similarity.

Written notes were taken during the interviews. The notes were analysed in the same method as the survey qualitative data.

4.10 Summary

In summary, mixed methods were used to collect perceptions of normalised eating from dietitians and clinicians working in the eating disorder field, women who had recovered from an eating disorder and women with no personal experience of eating disorders to act as a control group.

Chapter 5: Results and Discussion of Online Survey

5.1 Participants

One hundred and seven surveys were completed out of the 308 online surveys begun (35% completion rate). Several participants commented that they found the questions difficult to answer. Several participants commented that they found the videos difficult to access. It is possible that a number of people logged in while at their place of employment and found they were not able to access the video clips, so later logged in at home and completed the survey.

Forty surveys were excluded, leaving 67 for analysis. Thirty-six surveys were excluded due to low BMI or EDE-Q score over one SD above the norm (17 previously diagnosed with an eating disorder and 19 never diagnosed). It was postulated during the design of the study that individuals who did not meet these criteria were not “recovered” and thus may have a disordered perception of normalised eating. Additionally, one previously diagnosed respondent was excluded due to age and another not previously diagnosed respondent was excluded due to gender. One control respondent responded yes to the question “Have you ever worked in the field of eating disorders before?” This respondent was included. No control respondents indicated being dietitians or nutritionists.

Participant demographic characteristics are shown in Table 5.1. All participants were female (one participant skipped the question). A wide range of ages, country of birth, education and income were represented. As half of the participants were born in New Zealand, the data likely represents New Zealand culture the most.

Mean BMI of 25.38 is just in the overweight range (25-29.9) for control and recovered participants (see Table 5.2). Mean age for control and recovered participants was 39 and 41, respectively. Recovered individuals had been diagnosed 12 or more years ago. This, along with BMI and EDE-Q scores, supports the assumption that recovered participants had indeed experienced full recovery. The mean BMI for recovered and control participants compares well with the mean BMI for New Zealand women (27.6; Ministry of Health, 1999), in contrast to many of the previous eating disorder studies.

Table 5.1: Demographic characteristics of participants						
		Control	Recovered	Dietitians	Clinicians	Total
Participants meeting inclusion criteria		26	6	20	15	67
Gender						
	Female	26	6	20	13	66
	Male	0	0	0	0	0
Age						
	Mean	39	41	35	36	38
	Range	19-60	28-59	22-60	22-54	19-60
	SD	12	13	12	10	12
Country of birth						
	New Zealand	17	3	6	7	34
	Australia	1	1	10	3	15
	Pacific Islands	1	0	0	0	1
	United Kingdom	0	0	1	5	6
	Other	6	2	3	2	13
Education						
	High school	4	1	0	0	5
	Vocational training or certificate course	3	0	0	2	5
	Some university	2	0	0	0	3
	Bachelors degree	11	2	15	7	35
	Masters degree	5	3	5	5	18
	Doctorate degree	1	0	0	0	1
Income						
	Less than 39,999	3	1	2	1	7
	40,000-59,000	12	3	4	3	23
	60,000-79,000	5	1	11	8	25
	80,000 or more	6	1	2	2	11

Mean BMI for the recovered participants (25.2) was much higher than that reported in previous studies (25.22 vs. 20.6-21.9; Cowdrey, et al., 2011; Dellava, et al., 2011; Lindner, Fichter, & Quadflieg, 2012; Pruis, Keel, & Janowsky, 2012; Strigo et al., 2012). Mean BMI for the control participants (25.4) was also much higher than that reported in previous studies (Aschenbrenner, et al., 2008; Clausen, Rosenvinge, Friborg, & Rokkedal, 2011; Cowdrey, et al., 2011; Dellava, et al., 2011; Lindner, et al., 2012; Mond, Hay, Rodgers, & Owen, 2006; Pruis, et al., 2012; Rozenstein, Latzer, Stein, & Eviatar, 2011; Ruggiero, et al., 1988; Schebendach, et al., 2012; Strigo, et al., 2012; Sunday & Halmi, 1996; Sysko, et al., 2005; Vaz, et al., 1998; Wilson, et al., 1989).

An unpaired T-test (95% confidence interval) found no statistically significant differences in BMI, EDE-Q global score or dietary restraint sub-score or NES score between the control and recovered group (see Table 5.2), indicating that both groups had similarly low levels of eating disorder pathology.

Characteristics for participants excluded from primary analysis are available from the author on request. The excluded participants were statistically significantly ($P<0.05$) younger, had a lower BMI, scored higher on the EDE-Q and lower on the NES. Those who had been previously diagnosed with an eating disorder, had been diagnosed more recently than included participants ($P<0.05$).

Table 5.2: Eating disorder criteria for control and recovered participants				
		Control	Recovered	Total
Mean BMI		25.29	25.22	25.38
	Range	21-33.2	22.4-29.4	21-33.2
	SD	3.45	2.79	3.33
Mean EDE-Q global score		1.16	1.1	1.1
	Range	0.03-2.29	0.34-1.75	0.03-2.29
	SD	0.75	0.49	0.61
Mean EDE-Q dietary restraint sub-score		1.39	0.73	1.03
	Range	0-3.6	0-1.2	0-3.6
	SD	1.26	0.47	1.05
Mean NES score		111	103	107
	Range	81-132	90-116	81-116
	SD	13.04	10.64	12.68
Eating disorder diagnosis				
	Anorexia nervosa		0	
	Bulimia nervosa		1	
	Binge eating disorder		0	
	Eating disorder not otherwise specified		1	
	A combination of the above		2	
	I have been diagnosed with an eating disorder, but I don't know what my diagnosis was		2	
Mean years since diagnosis			26	
	Range		12-49	
	SD		15.21	

Exclusion criteria: EDEQ global score ≥ 2.49 , BMI <20 or any bingeing or purging over the last 3 years

A wide range of clinical eating disorder experience was present among dietitians and clinicians (see Table 5.3). One clinician self-designated as a nutritionist. Due to similarity in training and clinical practice, the nutritionist was included in the dietitian participant group for analysis.

The clinician group was dominated by nurses. Many eating disorder treatments utilise one primary clinician (for example, family based treatment), such as psychologists, psychotherapists and family therapists; thus, their views are pertinent. Two clinicians did not disclose their discipline.

An unpaired T-test (95% confidence interval) found no statistically significant difference in years experience between the dietitian and clinician group.

Table 5.3: Experience and discipline of dietitians and clinicians				
		Dietitians	Clinicians	Total
Mean years experience in eating disorders field		6.9	6.2	6.5
	Range	1-25	1-16	1-25
	SD	7	5	6
Dietitian		19	0	19
Nutritionist		1	0	1
Medical doctor		0	1	1
Psychologist		0	3	3
Psychotherapist		0	1	1
Nurse		0	6	6
Discipline not specified		0	2	2

5.2 Normalised diets

5.2.1 Foods represented

As part of the online survey, all participants were asked to give an example one weekday and one weekend day that they considered normalised. Sixty-five participants gave a total of 114 normal day examples. Figures 6.1-6.4 show the total number of times foods were mentioned across all examples (eg. If the weekend example was cereal, while the weekday example was cereal or toast, cereal would be counted twice and toast once). Table 5.4 shows the percentage of participants in each group that mentioned a given food at least once.

Figure 5.1

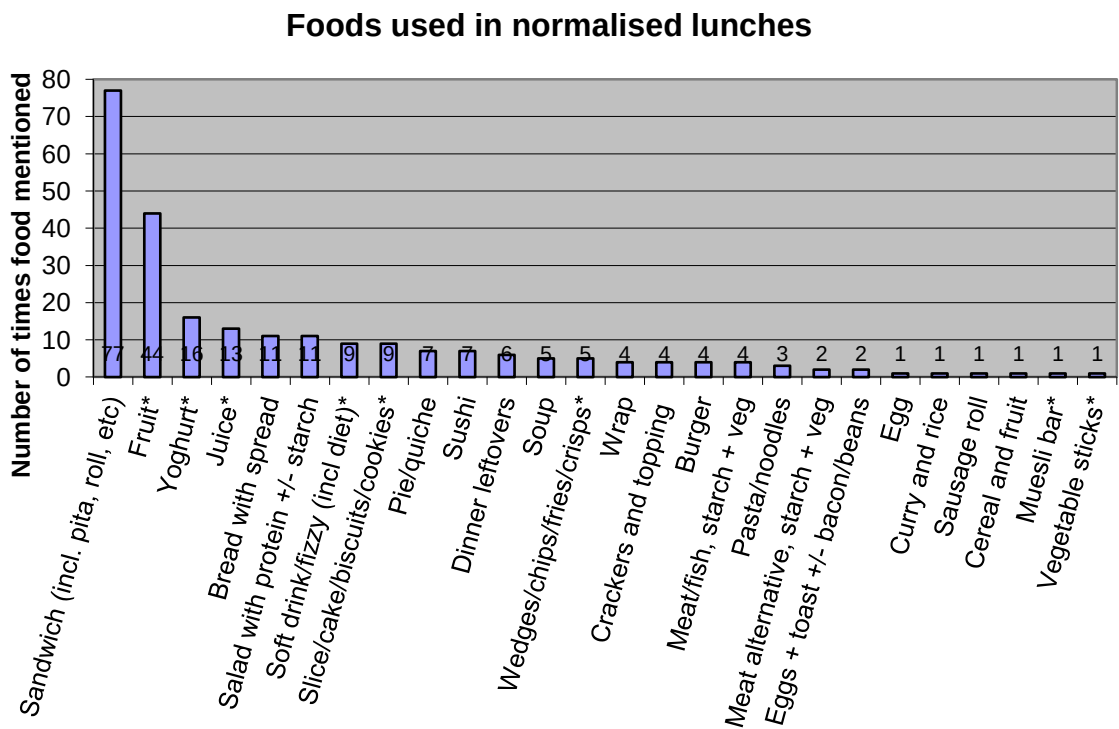
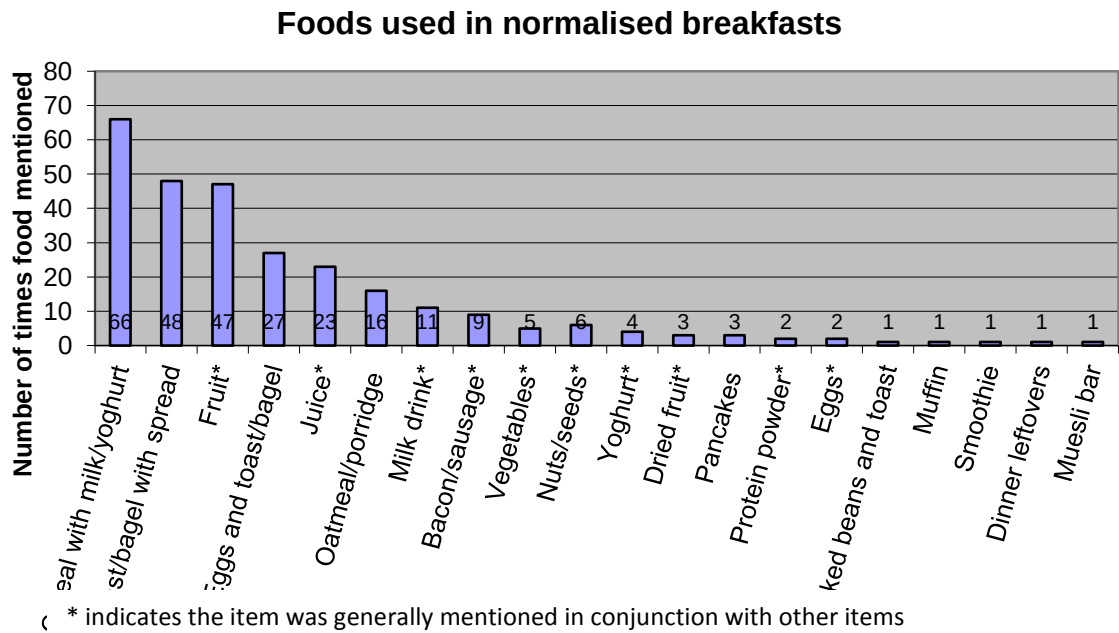
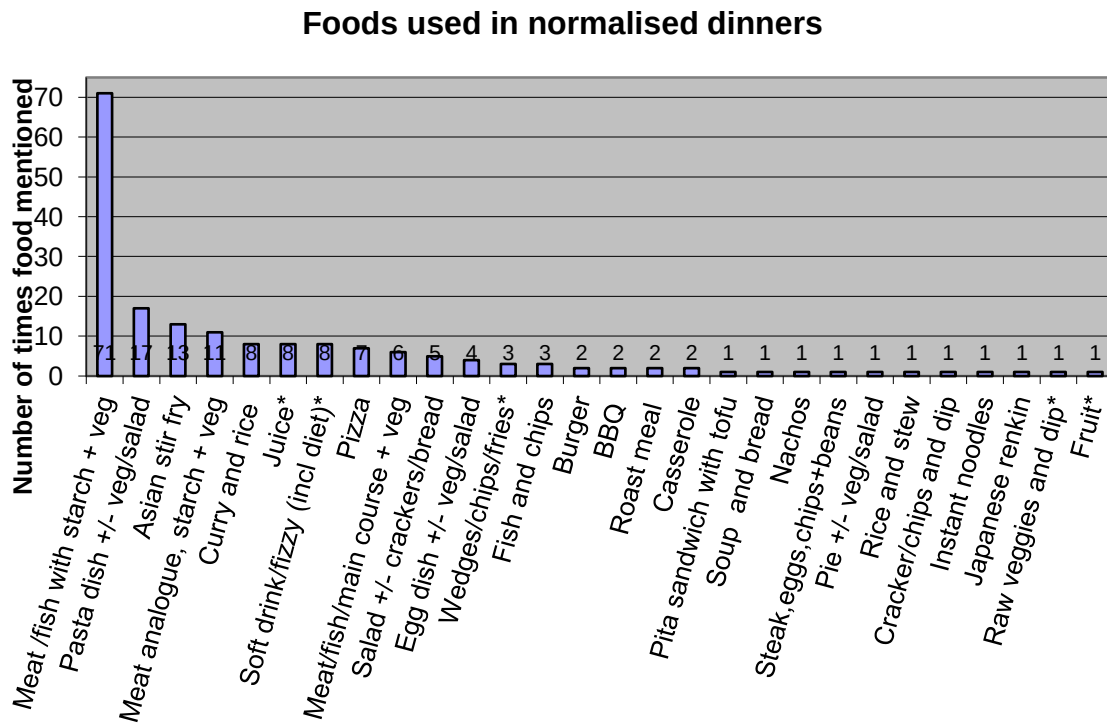


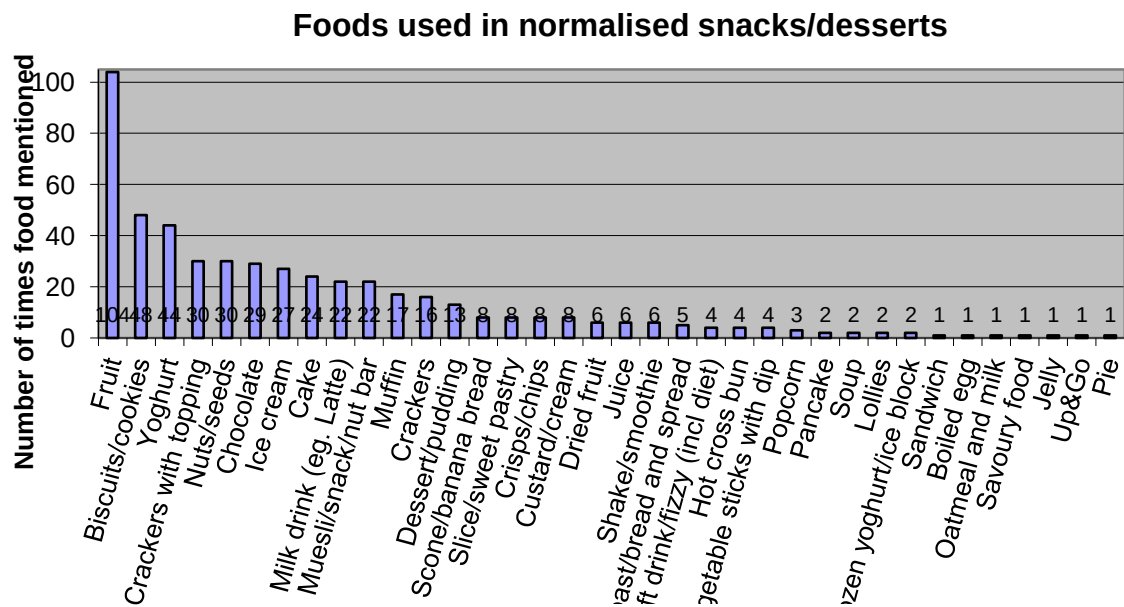
Figure 5.2

Figure 5.3



* indicates the item was generally mentioned in conjunction with other items

Figure 5.4



* indicates the item was generally mentioned in conjunction with other items

* indicates the item was generally mentioned in conjunction with other items

5.2.1.1 Breakfast

The breakfast examples included several commonly eaten types of meals (see Figure 5.1). The two most common suggestions were cereal (including muesli) with milk or yoghurt and toasted bread with spread. Fruit was also commonly mentioned, usually in conjunction with other foods.

Table 5.4: Comparison of most commonly mentioned foods between participant groups					
	Controls	Recovered	Dietitians	Clinicians	P value*
Number of participants who provided normal day examples	25	6	21	13	
Breakfast					
Cereal with milk/yoghurt	72% (n=18)	100% (n=6)	71% (n=15)	85% (n=11)	0.880
Lunch					
Sandwich (incl. pita, roll, etc)	80% (n=20)	100% (n=6)	67% (n=14)	77% (n=10)	0.869
Dinner					
Meat/fish with starch+veg	72% (n=18)	100% (n=6)	71% (n=15)	61% (n=8)	0.840
Snack/dessert					
Fruit	72% (n=18)	83% (n=5)	95% (n=20)	69% (n=9)	0.796

*Chi square test used

Within the breakfast foods, the chi-square test found no statistical significance between groups for proportion who mentioned cereal with milk/yoghurt ($\chi^2[3] = 0.668$, $p=0.0.880$). This may be interpreted as all groups being consistent in their most common idea of normalised breakfast foods.

5.2.1.2 Lunch

The majority of lunch examples described some type of sandwich and may or may not have included fruit, yoghurt or juice with it (see figure 5.2). No statistical significance was found between groups regarding the mention of sandwich ($\chi^2[3] = 0.718$, $p=0.869$). This means that all groups were consistent in their most common idea of normalised lunch foods.

5.2.1.3 Dinner

The majority of dinner examples resembled the plate model pattern. Most participants (72%) either described a meal consisting of meat or fish served with potato, pasta or rice, and vegetables or salad, or explicitly based their example on a plate model pattern (e.g. 90g fish, lamb, beef or chicken, 1 cup serving pasta, rice or potatoes and 1 cup cooked vegetables or salad; see figure 5.3). Looking at figure 5.3, it appears that less variety was mentioned at dinner than other meals. However, the consistency refers to the combination of protein, starch and vegetable foods at dinner rather than style of cooking or type of dish.

There was no statistical significant difference between groups for frequency of mentioning meat/fish with starch and vegetables between groups ($\chi^2[3] = 0.839$, $p=0.840$). This means that all groups were consistent in their most common idea of normalised dinner foods.

5.2.1.4 Snack/dessert

The most common snack/dessert mentioned was fruit (see figure 5.4). The next most common were biscuits/cookies, yoghurt, crackers with topping, nuts/seeds and chocolate.

There was no statistical significant difference between groups for frequency of mentioning fruit between groups ($\chi^2[3] = 1.002$, $p=0.796$).

Overall, there is consistency between groups in the foods mentioned in the normalised diets.

5.2.2 Eating patterns in normalised diets

Participants gave examples of what they thought a normalised diet looked like. When those examples were looked at, specific patterns emerged.

5.2.2.1 Eating episodes per day

On average, the normalised diets depicted 5 eating episodes (see Table 5.5). This would fit with a pattern of 3 meals and 2 snacks. However, there was also large variation present, evidenced in the total range of 2-7 eating episodes per day. This would indicate that at times normalised eating could be flexible to the point that an individual could even skip a meal.

5.2.2.2 Plate model

The plate model pattern refers to the inclusion of a starch food (e.g. bread, cereal, pasta, potato, rice), a protein or dairy food (e.g. chicken, beef, tofu, beans, nuts, cheese, milk) and a fruit or vegetable. Most normalised diets followed the plate model pattern at lunch and dinner daily (80% and 84%, respectively). Participants were less likely to follow the plate model for breakfast daily (43%) and were more likely to suggest both an option following the plate model and one which does not. (see Table 5.5)

Many participants gave examples that met the plate model, but some common examples did not. In particular, when toast was the breakfast meal or pasta was the dinner meal, the examples often did not follow the plate model.

Table 5.5: Eating patterns from normalised diets						
		Control	Recovered	Dietitians	Clinicians	Total
Number of eating episodes per day ^a						
	Median	5 (n=25 ^c)	4.33 (n=6)	5 (n=20 ^c)	5 (n=12 ^c)	5 (n=63)
Range of all examples ^b		3-6 (n=48)	3-5.5 (n=12)	2-7 (n=45)	3-7 (n=20)	2-7 (n=125)
Plate model pattern followed (%)						
At least once	Breakfast	42% (n=24 ^c)	83% (n=6)	65% (n=20 ^c)	90% (n=10 ^c)	61% (n=61)
	Lunch	95% (n=22 ^c)	100% (n=5 ^c)	94% (n=17 ^c)	73% (n=12 ^c)	91% (n=55)
	Dinner	95% (n=21 ^c)	100% (n=6)	79% (n=19 ^c)	83% (n=12 ^c)	88% (n=58)
Daily	Breakfast	30% (n=24 ^c)	50% (n=6)	45% (n=20 ^c)	70% (n=10 ^c)	43% (n=61)
	Lunch	82% (n=22 ^c)	60% (n=5 ^c)	94% (n=17 ^c)	67% (n=12 ^c)	80% (n=55)
	Dinner	95% (n=21 ^c)	67% (n=6)	79% (n=19 ^c)	83% (n=12 ^c)	84% (n=58)
3 meal plus 2-3 snacks pattern followed (%)						
At least once		78% (n=23 ^c)	83% (n=6)	100%(n=20 ^c)	82% (n=11 ^c)	87% (n=60)
Daily		65% (n=23 ^c)	83% (n=6)	85% (n=20 ^c)	73% (n=11 ^c)	75% (n=60)

^aWeekday entries are double weighted against weekend entries to achieve a median value for each participant.

^bRange takes into account all normal day examples rather than the average per participant.

^cInadequate detail in some responses; exclusion criteria applied

5.2.2.3 Three meals plus 2-3 snacks

Most normalised diets followed a 3 meal plus 2-3 snack pattern daily. This was particularly true within the recovered and dietitian groups (83% and 85%, respectively). The pattern was followed daily least often among the control group (65%) although this was not statistically significant. Overall, most participants followed the pattern daily (75%)(Table 5.5).

5.2.3 Presence of food groups in normalised diets

One of the key purposes of asking participants to give an example of a normalised diet was to be able to compare perceptions of normalised eating with New Zealand nutrition survey data and healthy eating guidelines.

About half of all participant examples met the minimum recommendation of 2 servings of fruit per day (see Table 5.6). Only the recovered and dietitian groups met the recommended 2 serves by FANG (2003) (see figure 5.5). However, a wide range (0-6) was present. The general New Zealand diet survey results from the NNS97 and ANS08/09 surveys show that the population generally did not meet fruit recommendations. Juice and dried fruit were initially not included in analysis so as to be able to compare with NNS97 data. However, ANS08/09 did include dried fruit in analysis of fruit servings. When juice and dried fruit were included as fruit serves (200ml and ¼ cup per serve, respectively), the overall percentage of normalised diets meeting the recommendation increased by 10 percent (49% to 59%) and the median number of serves across all groups met the 2 serves recommended by FANG (2003).

When potato was included as a vegetable, a little more than half of the normalised diets met the minimum recommendation of 3 servings per day (see Table 5.6). This is contrary to the findings of the NNS08/09 which found that New Zealanders are more likely to meet fruit recommendations as compared to vegetable recommendations. One possible explanation for the fewer serves of vegetables as compared with fruit is the analysis method of coding only one serve when participants did not specify the amount of vegetables (e.g. meat, potato and veggies). This method may have resulted in underestimation.

Potato is included as a vegetable within the New Zealand Ministry of Health recommendations (FANG 2003). Potato is similar to breads and cereals in energy content and so is sometimes included within that group rather than vegetables (Wheeler et al., 2008). When potato was excluded, only 38% met the minimum vegetable recommendation of 3 serves per day, with the biggest change in the control group.

Table 5.6: Servings per day for food groups from normalised diets						
		Control	Recovered	Dietitians	Clinicians	Total
Fruit serves (excluding juice &dried fruit) ^a						
	Median	1.67 (n=25 ^c)	2 (n=6)	2 (n=20)	1.94 (n=13 ^c)	1.83 (n=64)
	25 th percentile	0.92	0.25	1.33	1.09	1.04
	75 th percentile	2.67	2.84	2.92	2.42	2.63
	At least 2 serves (%)	48%	50%	55%	46%	49%
Range of all examples ^b		0-6 (n=64)	0-4 (n=19)	0-6 (n=58)	0-5 (n=30)	0-6 (n=171)
Fruit serves (including juice&dried fruit) ^a						
	Median	2 (n=25 ^c)	2 (n=6)	2 (n=20)	2 (n=13 ^c)	2 (n=64)
	25 th percentile	1.33	0.83	1.54	1.42	1.33
	75 th percentile	3.25	2.84	3	2.75	3
	At least 2 serves (%)	52%	50%	70%	62%	59%
Range of all examples ^b		0-11 (n=64)	0-4 (n=19)	0-8 (n=59)	0.5-6 (n=33)	0-11(n=175)
VegeTable serves (including potato&kumara) ^a						
	Median	3 ^x (n=25 ^c)	3.33 (n=5 ^c)	4 ^y (n=18 ^c)	3 (n=13 ^c)	3 (n=61)
	25 th percentile	1.75	2.46	2.09	2	2
	75 th percentile	3.5	3.84	4.23	4.75	4
	At least 3 serves (%) ^b	56%	67%	61%	38%	53%
Range of all examples ^b		0.5-8 (n=59)	0-5 (n=17)	0-8 (n=44)	0.5-9.5(n=26)	0-9.5(n=169)
Vegetable serves (excluding potato&kumara) ^a						
	Median	2.33 (n=22 ^c)	3.25 (n=5 ^c)	3 (n=15 ^c)	2 (n=13 ^c)	2.5 (n=55)
	25 th percentile	1.5	2	1.83	1.5	1.67
	75 th percentile	3.04	3.83	3.5	3.66	3.42
	At least 3 serves (%)	27%	67%	53%	38%	53%
Range of all examples ^b		0.5-6 (n=45)	3-5 (n=15)	0-6 (n=36)	0-5 (n=23)	0-6 (n=119)
Coffee/tea/cola entries ^{ad}						
	Median	2 (n=25 ^c)	2.67 (n=6)	2 (n=19 ^c)	2.17 (n=12 ^c)	2 (n=62)
	25 th percentile	1	0	1	1.33	1
	75 th percentile	3	3.5	2.5	2.63	2.75
	Present (%)	84%	67%	89%	100%	87%
Range of all examples ^b		0-10 (n=55)	0-5 (n=16)	0-4 (n=43)	0-5 (n=26)	0-10(n=140)
Alcohol entries ^{ad}						
	Median	0.17 (n=25 ^c)	0 (n=6)	1 (n=20)	1 (n=13 ^c)	0.33 (n=64)
	25 th percentile	0	0	0	0	0
	75 th percentile	0.67	0.08	0.79	1.09	0.67
	Present (%)	44%	17%	55%	62%	48%
Range of all examples ^b		0-8 (n=49)	0-1 (n=12)	0-4 (n=43)	0-3 (n=23)	0-8 (n=127)
Baked product entries (includes muffins, cakes, pancakes, biscuits) ^{ad}						
	Median	0.67 (n=25 ^c)	0.33 (n=6)	0 (n=20)	0 (n=13 ^c)	0.33 (n=64)
	25 th percentile	0	0.13	0.21	0	0
	75 th percentile	1.33	0.96	0.96	0.59	1
	Present (%)	72%	83%	80%	38%	67%
Range of all options ^b		0-3 (n=59)	0-2 (n=20)	0-3 (n=52)	0-2 (n=24)	0-3(n=155)

Table 5.6: Servings analysis from normalised diets (cont)						
		Control	Recovered	Dietitians	Clinicians	Total
Treats entries (includes baked products plus ice cream, chocolate, lollies, dessert) ^{ad}						
	Median	1 (n=25 ^c)	1.33 (n=6)	1 (n=20)	1 (n=13 ^c)	1 (n=64)
	25 th percentile	0	0.62	0.5	0.17	0.33
	75 th percentile	1.67	1.67	1.29	1	1.33
	Present (%)	72%	83%	95%	77%	81%
Range of all options ^b		0-5 (n=59)	0-3 (n=21)	0-3 (n=55)	0-2 (n=24)	0-5(n=159)
Meat present (%)		100% (n=25 ^c)	100% (n=6)	94% (n=18 ^c)	100%(n=13 ^c)	98%(n=62)
	Plus beans and tofu (%)	100% (n=25 ^c)	100% (n=6)	94% (n=18 ^c)	100%(n=13 ^c)	98%(n=62)
Dairy present (%)		100% (n=25 ^c)	83% (n=6)	95% (n=20 ^c)	92% (n=13 ^c)	95%(n=64)
	Plus rice and soymilk(%)	100% (n=25 ^c)	100% (n=6)	95% (n=20)	100%(n=13 ^c)	98%(n=64)
Butter/margarine as spread present (%)		44% (n=25 ^c)	67% (n=6)	83% (n=18 ^c)	46% (n=11 ^c)	57%(n=60)
	Plus avocado, coconut oil, and nut butter as spread (%)	52% (n=25 ^c)	83% (n=6)	89% (n=18 ^c)	46% (n=11 ^c)	65%(n=60)
Butter/margarine/avocado /nut butter/oil/fried foods present (%)		68% (n=25 ^c)	83% (n=6)	89% (n=18 ^c)	73% (n=11 ^c)	77%(n=60)

^aMinimum and maximum examples for each participant were averaged and weekday entries double weighted against weekend entries to achieve median value for each participant.

^bRange and percentages take into account the minimum and maximum of all examples and rather than the average per participant.

^cInadequate detail in some responses; exclusion criteria applied

^dRefers to how many times the item was mentioned and did not take serving size into consideration.

Caffeinated beverages (coffee/tea/cola) were mentioned at least once in 87% of participants' normalised diets. It appears that most people thought it was normalised to include 1-3 caffeinated beverages a day, as indicated by the 25th and 75th percentiles.

Only 48% of normalised diets included alcohol at least once. It is possible that participants simply forgot to include alcohol.

Most participants included "treat foods" such as baked items, ice cream, lollies or chocolate or dessert in the normalised diets. Although eating these foods is not specifically recommended in healthy eating, the results indicate that it is perceived as normalised to consume them at least once a day (as indicated by 75th percentile = 1.33 serves/day). There is no directly comparable data on treat foods in NNS97 or ANS08/09 data.

Figure 5.5

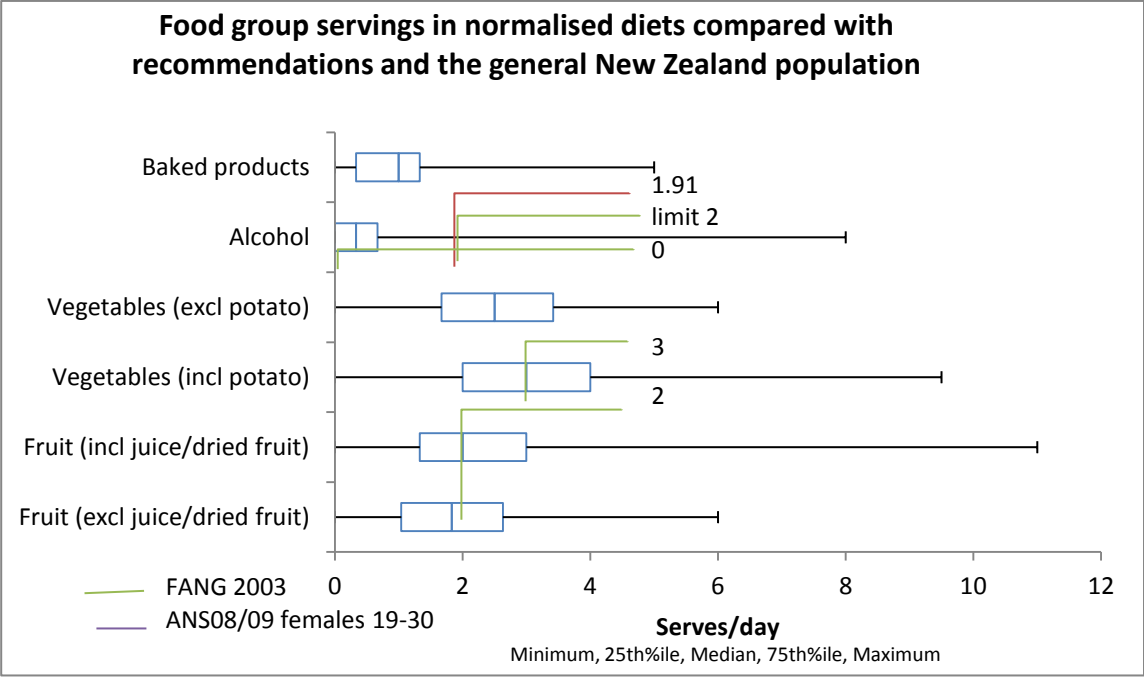
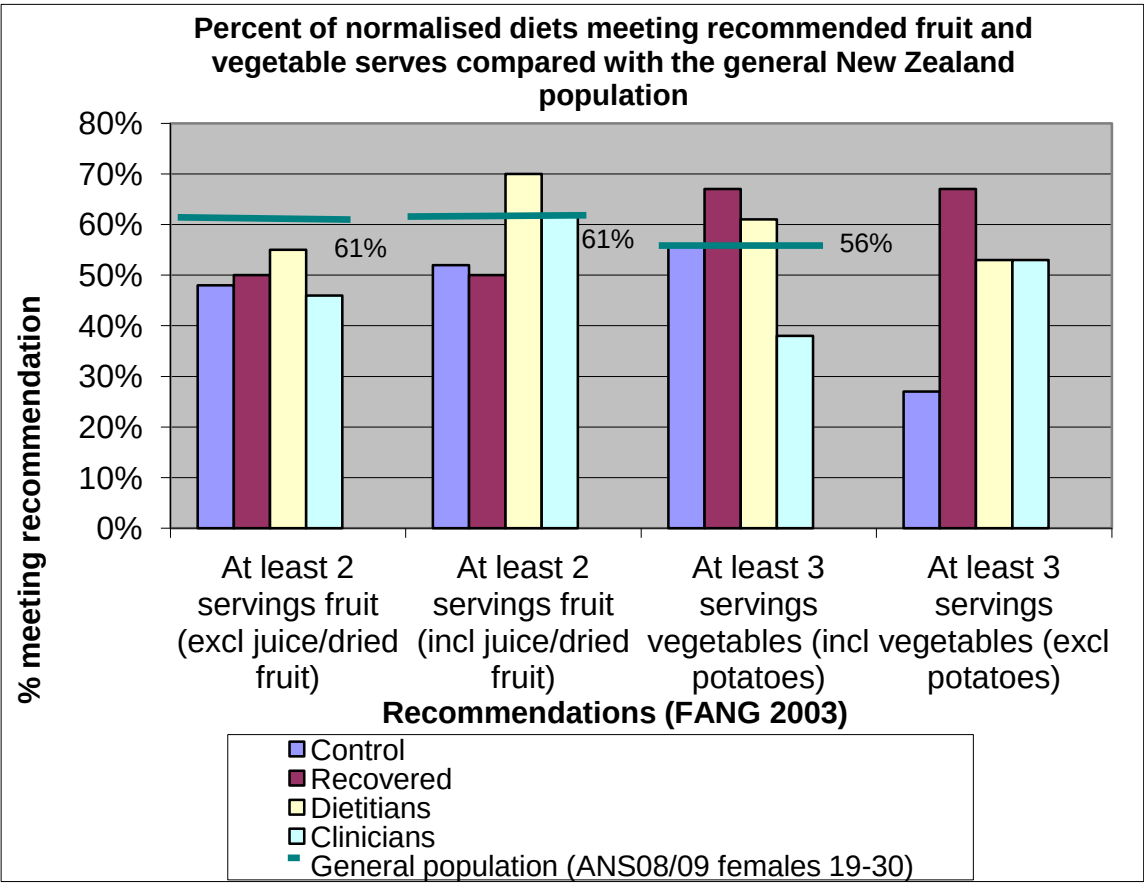


Figure 5.6



The vast majority of participants mentioned meat and dairy at least once. Adding alternatives only increased the percentage slightly. Dairy alternatives, such as soy or rice milk, were mentioned more often than meat alternatives, such as beans and tofu.

Butter and margarine as a spread were not universally mentioned, with only 57% of participants mentioning them at least once. It is possible that some participants unintentionally omitted the item when descriptions were somewhat vague (e.g. sandwich with filling). Another possible reason is that some examples did not include items that would usually have butter or margarine added to them. When avocado, coconut oil and nut butter were included as alternative spreads in the analysis, the percentage using a spread increased somewhat, with the biggest increase in the dietitian group. This makes sense given that dietitians seemed more likely to organise diets by nutrients (i.e. fat) rather than specific foods (i.e. margarine or butter). When any source of added fats, namely, butter, margarine, avocado, nut butter, oil or fried foods anywhere in the example were included in analysis, the percentage increased to 77%.

5.2.4 Nutrient content of normalised diets

Only 57% (n=38) of the participants provided enough detail in their normal day examples for a nutrient analysis to be reasonably performed.

There was wide variation among participants in the nutrient content of their normalised diets, as can be seen by the range (see Table 5.7).

The median energy content (8019 kj) was just under that reported in ANS08/09 (8245 kj/d). Slight underestimation of normalised energy intake was likely due to participants often not mentioning added fats, condiments, and participants using convenient portion sizes (i.e. 1 cup).

The range of estimated energy content of normalised diets was 5128-11852 kilojoules. For comparison, consider the following examples. On the upper end of the spectrum, an 18 year old woman at 77 kg, 179 cm (BMI 24) and moderate activity requires 11213 kj/day (Schofield, 1985) to maintain weight. On the lower end of the spectrum, a 35 year old woman at 51 kg, 160 cm (BMI 20) and inactive requires 6947 kj/day (Schofield, 1985) to maintain weight. The normalised diets on either end of the energy range are likely to reflect eating differing between days, as a daily energy intake at these amounts would not maintain weight for most people.

Table 5.7: Median nutrient content per day from normalised diets					
	Control (n=13) ^b	Recovered (n=6)	Dietitians (n=11) ^b	Clinicians (n=7) ^b	Total (n=38)
Energy/day (kilojoules) ^a	8018	6137	8397	7244	8019
Range	5827-11852	5128-9420	7098-9786	6296-10088	5128-11852
25 th percentile	6752	5412	7959	6870	6791
75 th percentile	8882	8063	9322	8544	9316
Protein/day (% energy) ^a	18	15	19	18	18
Range	11-29	14-22	17-25	15-24	11-29
25 th percentile	15	14	18	16	16
75 th percentile	21	16	21	20	21
Fat/day (% energy) ^a	28	35	27	28	29
Range	22-41	24-39	23-38	24-44	22-44
25 th percentile	24	31	26	28	26
75 th percentile	31	38	32	32	35
Carbohydrate/day (% energy) ^a	52	48	245	49	49
Range	37-62	46-59	42-55	32-54	32-62
25 th percentile	44	47	231	45	46
75 th percentile	57	52	264	53	54
Sugar/day (% energy) ^a	26	26	23	27	24
Range	10-35	16-39	22-30	15-32	10-39
25 th percentile	22	19	22	22	22
75 th percentile	31	34	25	29	29
Calcium/day (mg) ^a	863	676 ^x	1094 ^y	1019	910
Range	534-1831	462-802	800-2616	685-1217	462-2616
25 th percentile	695	650	994	836	701
75 th percentile	1070	727	1279	1109	1102
Fibre/day (g) ^a	29	22	31	22	25
Range	19-43	10-36	20-52	18-29	10-52
25 th percentile	23	17	23	19	22
75 th percentile	33	23	38	28	33

^aWeekday entries are double weighted against weekend entries to achieve above medians, ranges and percentiles for each participant.

^bInadequate detail in some responses; exclusion criteria applied

^{xyz}Results with different letters are statistically significantly different from each other (p<0.05), Kruskal-Wallis test and post-hoc Mann-Whitney used to determine significance

Figure 5.7

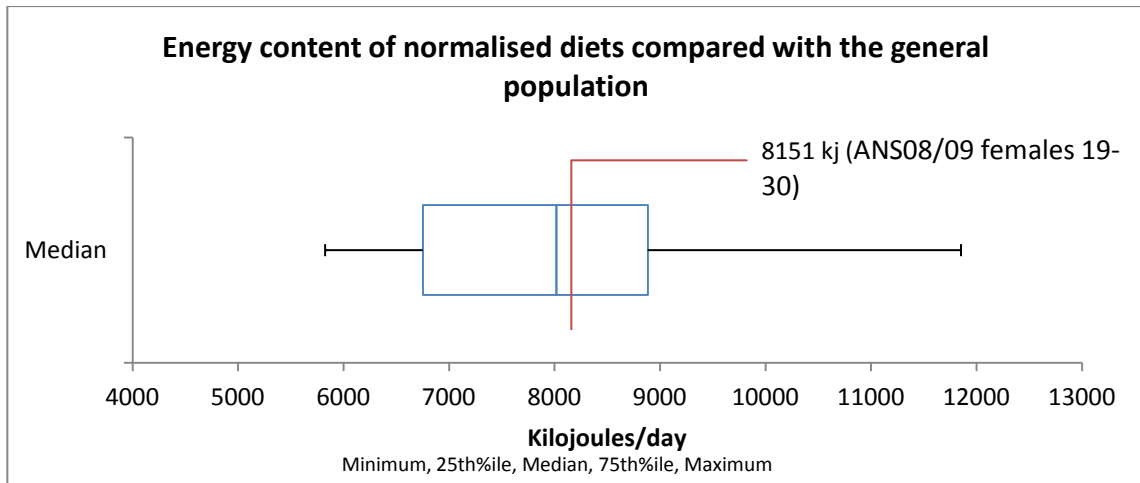
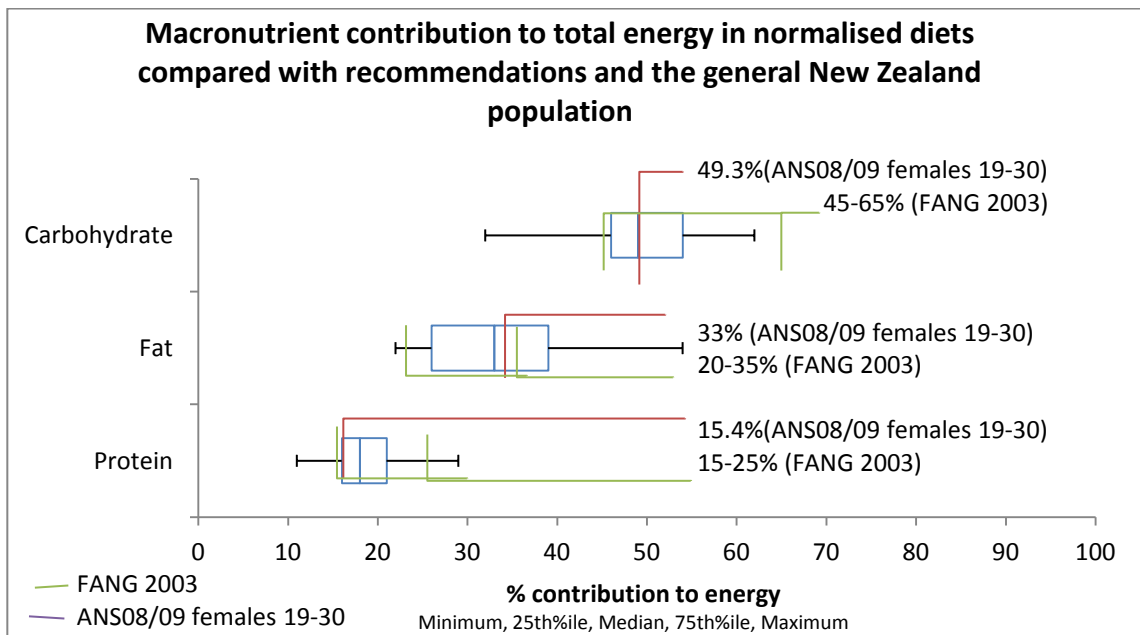


Figure 5.8



Median percentage energy contribution from macronutrients in the normalised diets are within the acceptable macronutrient distribution range (AMDR; see figure 5.8). There were some participants whose examples were below the lower end of the AMDR range for protein and carbohydrate and some who exceeded the upper end of the range (see Table 5.7). Median percentage energy from fat (29%) is above the minimum 20% recommended for women of reproductive age by the FANG (2003) and within the AMDR. The

median percentage energy from fat is less than in ANS08/09 (see figure 5.8). Although some normalised diets exceeded the upper end of the AMDR range for fat (35%), none were less than the lower end of the range (see Table 5.7).

Median fibre content of normalised diets (25 grams) was just met the recommendation for an adult female of 25 g/d and was higher than the intake reported in ANS08/09 (17 g/d). There was, however, wide variation between individuals with a range of 10-52 g/day. The median content of the examples from the control and dietitian group both exceeded recommendations by FANG (2003), while the recovered and clinician groups both did not meet recommendations (see figure 5.9).

Median calcium content of normalised diets (910 mg) was close to the adult female recommendation of 1000mg (ages 18-50; Commonwealth Department of Health and Ageing Australia, et al., 2005). There was, however, wide variation between groups. The recovered group calcium content was significantly lower than that in the dietitian group (676mg, 1094mg, $p=0.004$). The examples from the dietitian group included the most calcium, and was the only group to exceed calcium recommendations. The calcium content in the examples from the recovered group was closest to the reported intake in ANS08/09, but well below FANG (2003) recommendations (see figure 5.10).

The median percentage of energy from sugar across all groups was above the maximum 15% recommended by the FANG (2003; see figure 5.11) and above the reported intake in ANS08/09. Baked items and sweets were included in almost every participant example. If this observation is correct, it would indicate that it may not be possible to practice normalised eating and also meet the recommendations for sugar intake. However, the difference between recommendations and sugar content of the normalised diets is very likely exaggerated. The FANG (2003) recommendation refers to free sugars. This is in contrast to sugar naturally occurring in foods, which has not been shown to contribute to poor health. Unfortunately for this comparison, the nutrient database used did not differentiate and included both free and naturally occurring sugars in the total sugar value. The percent energy from sugar, therefore, reflect both free and naturally occurring sugar combined.

Figure 5.9

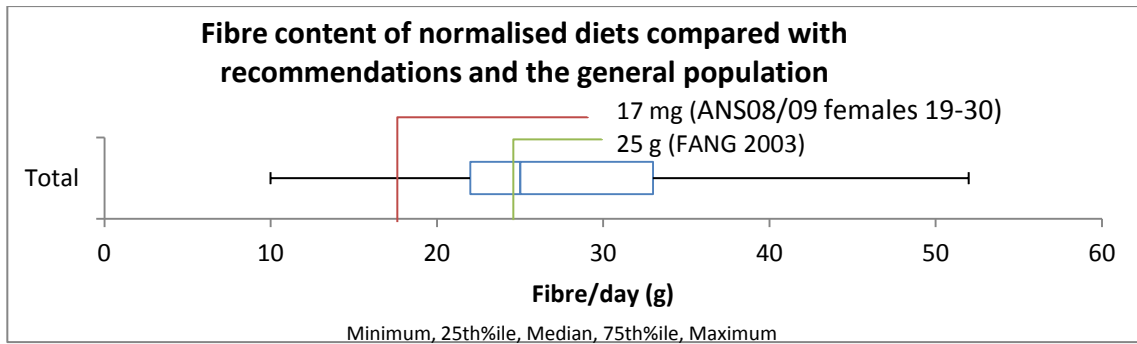


Figure 5.10

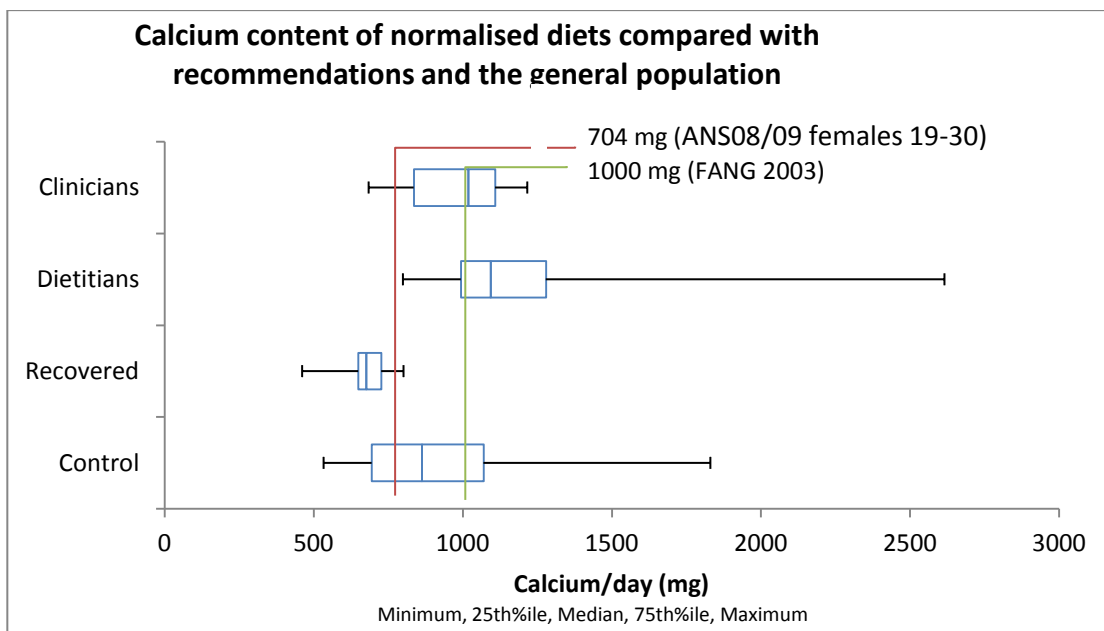
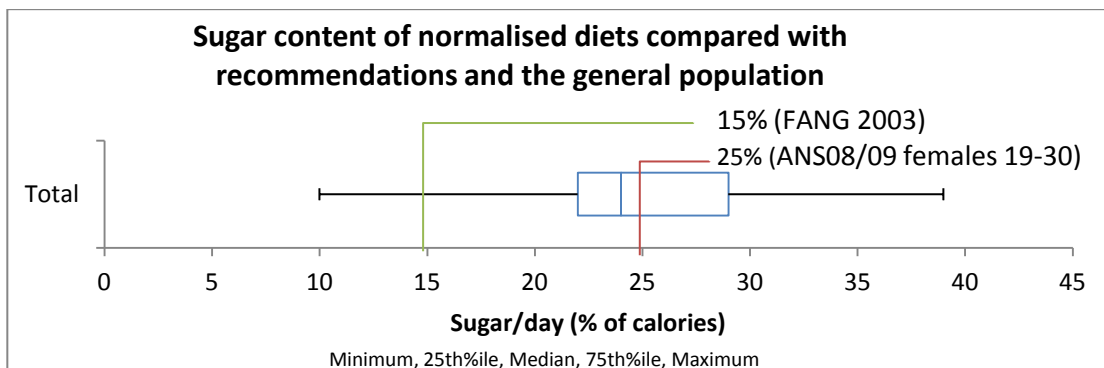


Figure 5.11



Extrapolating information from ANS08/09 may help make sense of the data. About 46% of the total sugar content in the diet of the general population of the ANS08/09 came from core food groups, such as fruit, vegetables, dairy, potatoes and grains. The remainder came from foods typically made with free sugar, such as muffins, cakes, beverages, and sweets. If this percentage were to be extrapolated to the normalised day data, contribution from free sugars would be estimated at 11-12% across the groups. This figure is actually in line with 15% recommended by FANG (2003).

5.2.5 Additional observations from normalised diets

Patterns were identified in the way participants described a normalised diet.

More than half the participants, spread across all groups, specified diet, lite or reduced fat products or cooking methods as part of their normalised diet example. This primarily referred to low fat dairy products, but also included lean meat, light cereal, unsweetened fruit, sweeteners, low fat mayonnaise, hummus or tartare sauce, and diet soft drink/fizzy. This observation is in line with general health recommendations, but does contradict some previously published professional recommendations on how to normalise eating, which specify that “reduced-energy diet foods are not appropriate purchases” (Wakefield & Williams, 2009). Five participants specified non-diet products, all of which were dairy and most of which were providing alternatives, e.g. “cheese (full or low fat)”

These examples resonate with the findings of a recent study looking at food patterns in the United States (Britten, Cleveland, Koegel, Kuczynski, & Nickols-Richardson, 2012). Food pattern modelling analysis was used to determine if American can meet the USDA Food Patterns Moderation Goals and the 2010 Dietary Guidelines for Americans using typical, rather than nutrient-dense foods. The researchers found that failing to choose foods in low-fat, no-added-sugars, and low-sodium forms resulted in not meeting either the USDA Food Patterns moderation goals or the 2010 Dietary Guidelines for Americans.

Portion sizes for many food items were expressed in grams or measurement cups. In addition, participants in all groups used practical items to estimate serving sizes. “Steak (palm size) fillet”, “broccoli, small handful – boiled Potato 2 egg size”, “½ plate vegetables ¼ plate rice/pasta/potato/bread ¼ plate meat/chicken/fish”, “roast potato in jacket (about fist sized).” About a third of participants, spread across all groups, used nutrients to describe some foods, e.g. “Dinner: Protein and fibre with small amount of carbohydrate”, “90-80gm carbohydrate (eg potato, pasta, bread) 90gm protein (meat, fish, egg)” “4 pt sandwich with protein filling”, “Dinner – cooked meal including protein, carbohydrate and vegetables”. This seems to indicate that a

level of cognitive meal planning using nutrition information to guide choices is within normalised eating. An alternative explanation may be that individuals rely on this level of organisation only when asked to describe foods. This observation of how people described foods prompted the analysis of use of the “plate model” (inclusion of protein or dairy, starch and fruit or vegetable) in meals in the normalised diets.

5.3 Normality of eating behaviours

As part of the online survey, participants were given video examples of eating behaviours to observe (i.e. speed) generally on a continuum (i.e. fast to slow). The purpose was to identify participants’ perceptions of what constitutes normalised within each of those categories. The results are summarized in Figures 6.13-6.16. Detailed data is available in Appendix C.

Overall, the majority of participants rated as normal eating both the muffin and the sandwich in one (98% and 94%, respectively), two (94% and 97%, respectively) or four pieces (76% and 84%, respectively). Any more pieces than that was considered abnormal by most. Although there is a clear change in opinion when the food is cut into smaller pieces, it is notable that a minority still rated it as normal and likewise a minority rated eating with few pieces as abnormal.

Comments for the crumbling (muffin) and cutting (sandwich) videos referred to the importance of actually eating the food, social considerations, appearance of being relaxed, and developmentally appropriate eating. , e.g. “Size does matter! If you want to ‘look’ normal. But the main thing is that you EAT!” (control participant), “abnormal? socially impolite? rude?” (dietitian participant), “I think people generally (especially women) pick at food a bit, but in these examples, when it’s overly methodical or in excess I’ve marked it abnormal” (control participant), “last one – bit child like – adults dont tend to cut into 4” (dietitian participant).

Most participants rated as normal the videos which depicted eating a meal over 15 and 30 minutes (86% and 80%, respectively). Ratings were mixed for the videos depicting eating a meal in 5 and 45 minutes (56% and 35% rating them normal, respectively). Participants clearly rated the meal eaten over 60 minutes as abnormal (98%). Again, judgment of normal and abnormal was not universal.

Figure 5.13

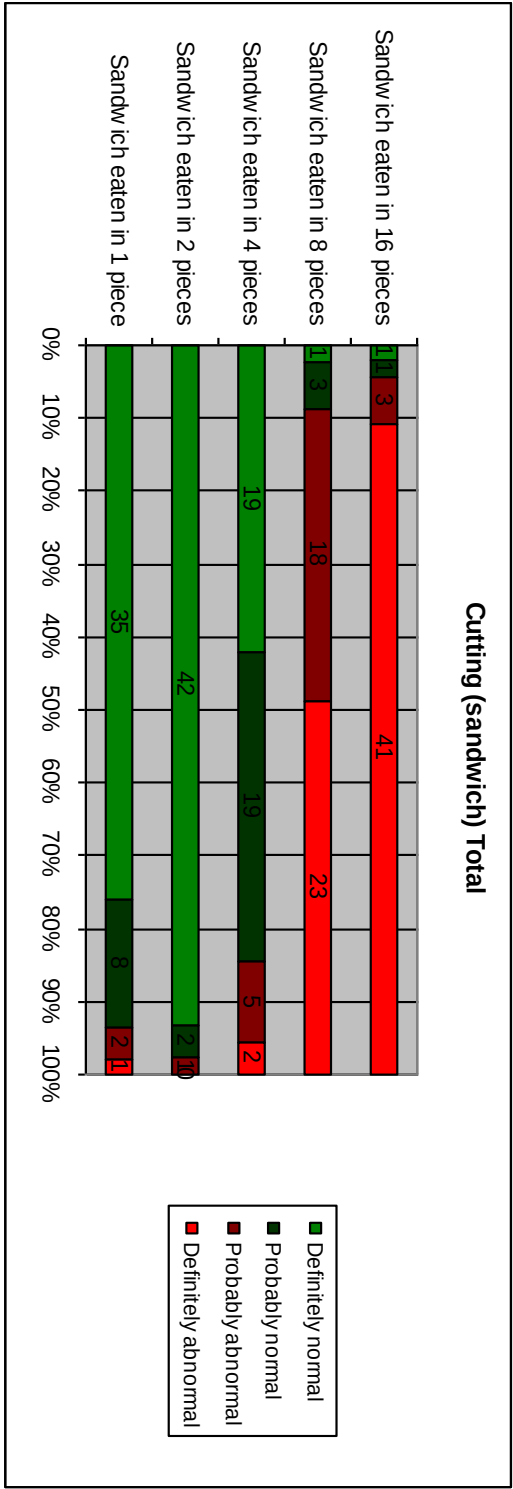


Figure 5.12

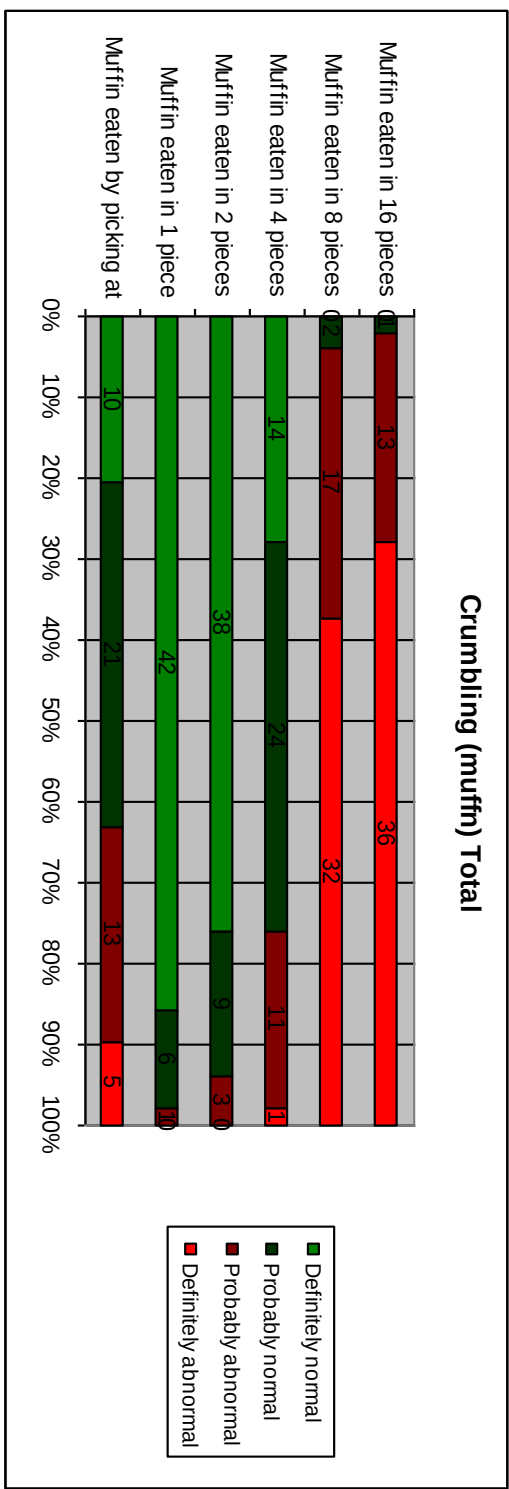


Figure 5.15

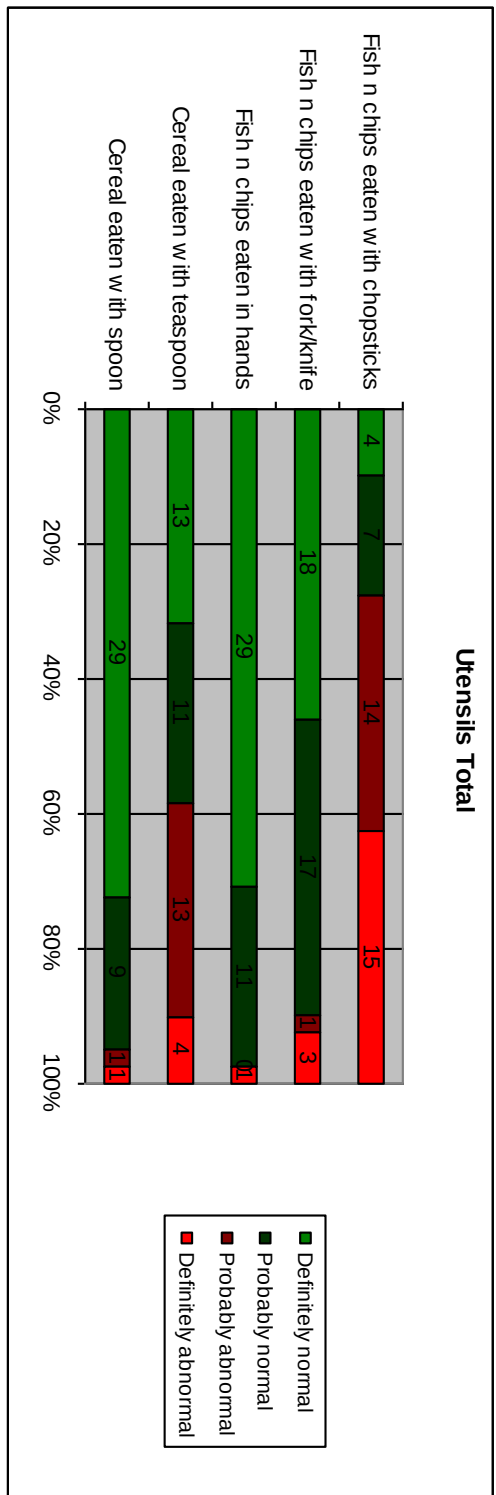
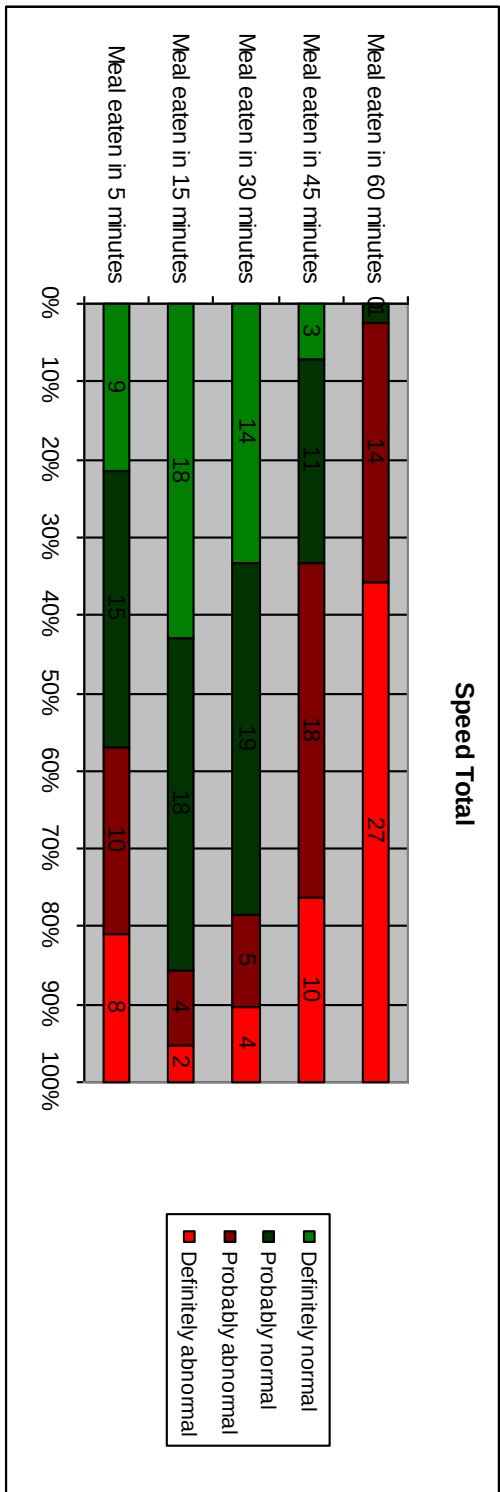


Figure 5.14



Several comments for the speed videos referred to abnormality of not using a knife. , e.g. “I did not put any Def normal because no knife was used, normal to me is knife and fork.”(control participant). Because of this, it is possible that the overall response to all speed videos was biased towards abnormal. Other comments focused on factors that may influence normalised speed, such as temperature of food, appetite or other physiological feedback, and social context, e.g. “once again some of this depends on context: social politeness & good manners; whether the person is actually enjoying the food & then what their personal reasons for eating this way are”(dietitian participant), “could not stand to see the first video eating. it was gluttonary (sic)” (recovered participant).

Most participants rated eating fish and chips with hands, and fork and knife, as normal (97% and 91%, respectively). Most rated eating fish and chips with chopsticks as abnormal (73%). Most rated eating cereal with a regular sized spoon as normal (95%), while participants were split when it came to eating cereal with a teaspoon (60% rating it as normal).

Comments for the utensil videos suggested that normalised choice of utensil may be based on circumstances, e.g. “Chopsticks are weird for chips, but a teaspoon less so for cereal (tho both may be just cos you haven’t washed any clean alternatives!)” (control participant), “eating with teaspoon may be abnormal but not if there is no dessert spoon clean!”(dietitian participant) One dietitian participant commented on psychological triggers for eating behaviour eg “i think compulsivity of behaviour is an important consideration”.

There were no statistically significant differences found between groups in any of the videos depicting eating behaviours.

5.4 Normality of eating styles

Participants were given specific examples of eating styles to identify participant perceptions of what constitutes normalised. Results are summarized in figures 6.17-6.19. Detailed data is available in Appendix C.

Examples of using a meal plan were generally considered abnormal by most participants (see figure 5.16). The one exception was “Following a meal plan that tells you how many food group servings to eat every day”. Counting the number of servings to eat from food groups is similar to FANG (2003) general population recommendations. Compared to the dietitian group, the control group rated counting calories as significantly more normal (5%, 36%; $p=0.001$). When all the meal plan examples were combined into a composite, the overall control group rating was significantly more normal than the dietitian group (46%, 26%; $p=0.049$). This

Figure 5.17

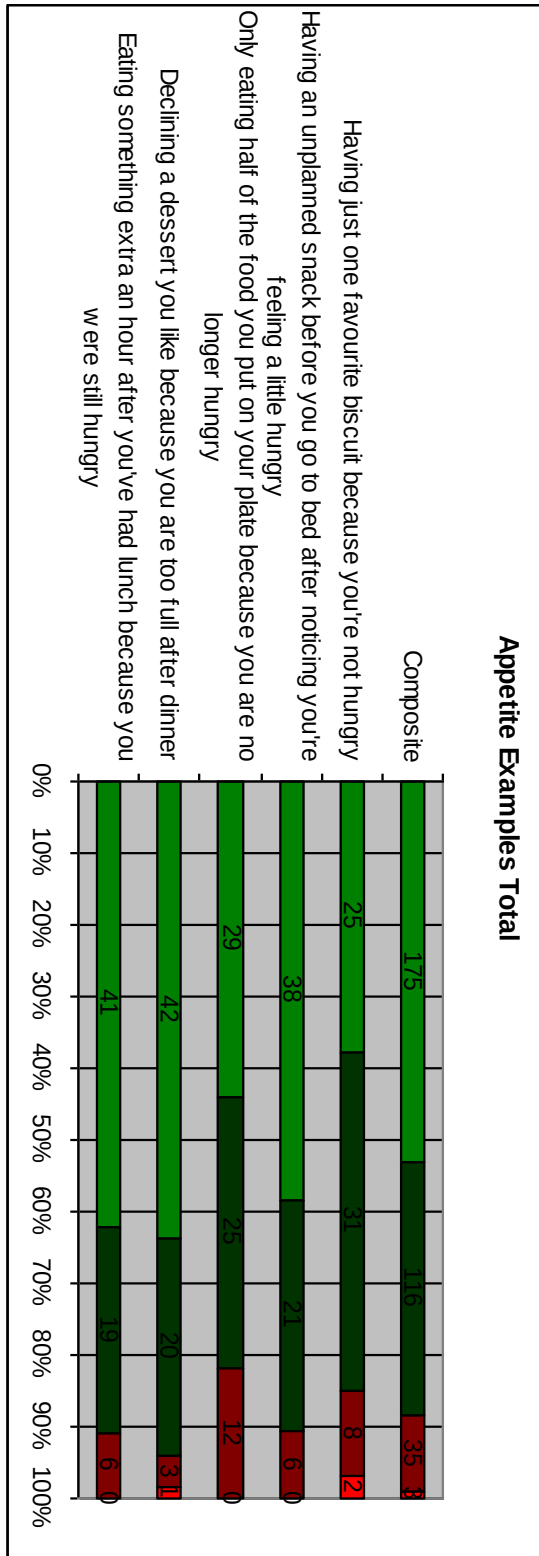


Figure 5.16

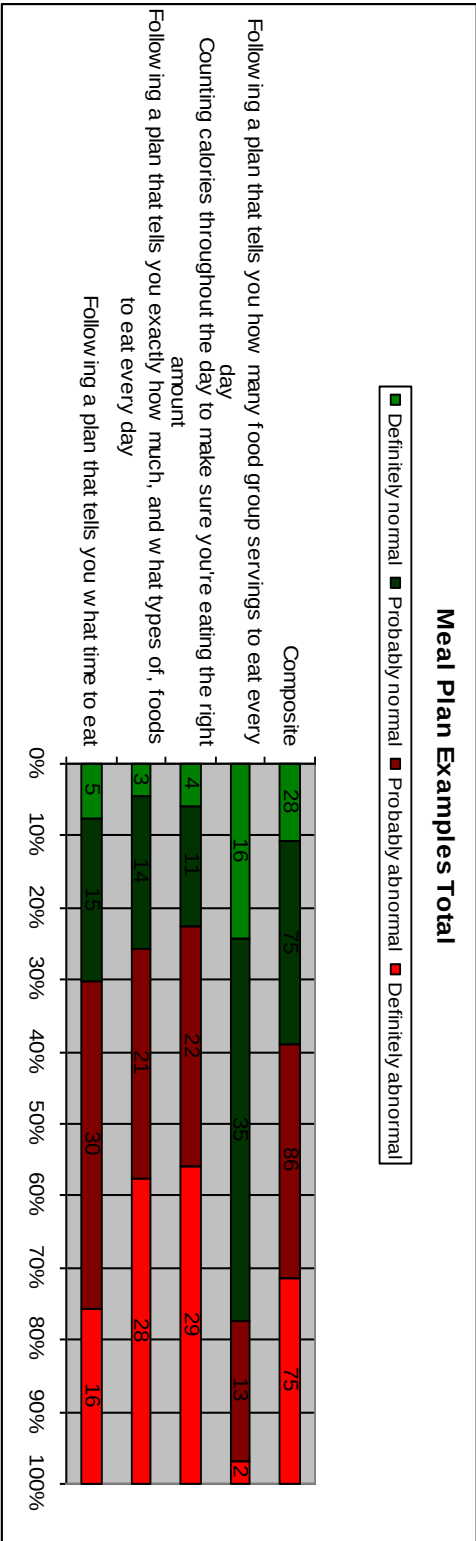
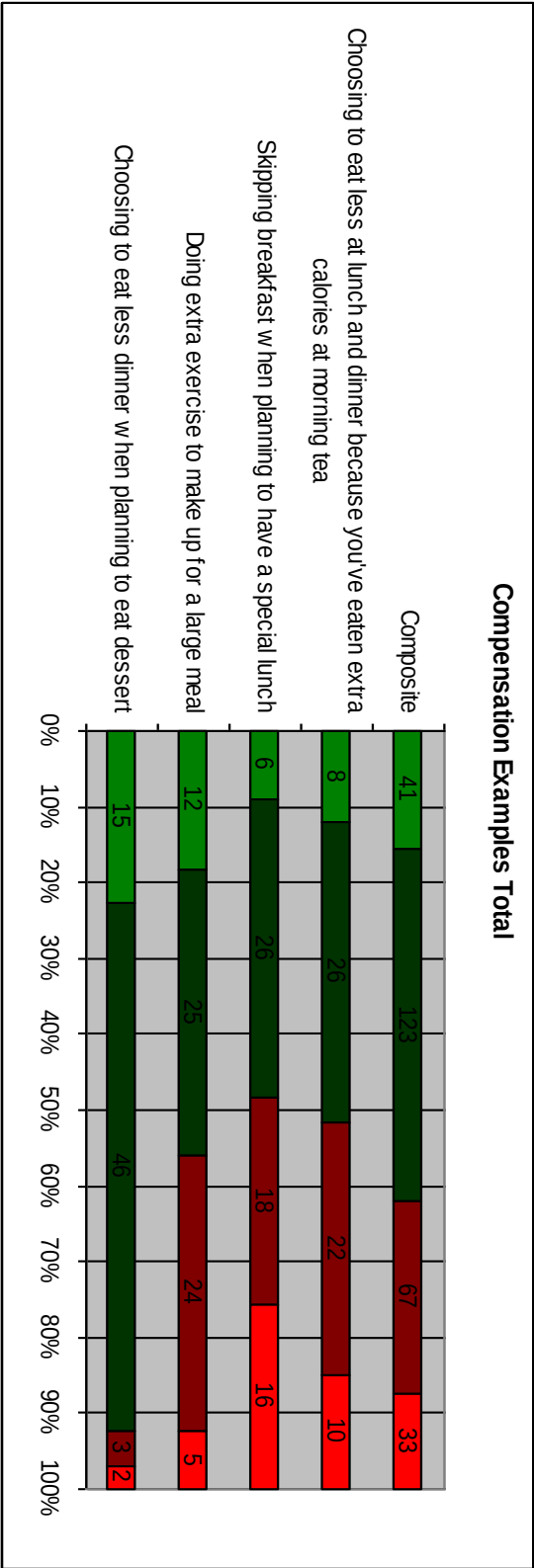


Figure 5.18



could be a reflection of the common use of diet plans in society. Although diet plans are often used by dietitians, they are likely to be used as part of treatment and not intended to be used once the goal of normalised eating has been attained.

According to comments, following some type of plan could be considered normalised, depending on the rigidity with which a plan is used. , e.g. “Following a plan in itself might be seen to be lightly abnormal. In that it is not intuitive eating. However if the plan is related to having some structure, and its just a guide then that might be seen as normal / fair. Rigidly following plan for eating is probably on a whole not so normal.”(dietitian participant)

Comments for the examples using meal plans highlighted possible reasons for using a plan, such as health or exercise goals. For example, one participant wrote “Number 3 would be normal if you were trying to lose weight or make changes towards a healthy diet” (control participant), “normal is very circumstantial. If I was to train for a marathon, having a diet plan, set calories for the day and a defined training regime would be totally appropriate and normal”(dietitian participant).

Examples depicting using appetite to govern eating decisions were rated as normal by the majority of participants (88%). There were no significant differences between groups.

Only a couple of comments were written alongside the examples depicting eating according to appetite. , e.g. “these are complex questions it depends on how much you put on your plate; whether you always do it & whether you do it to control your weight” (dietitian participant), “all totally normal, your body knows best. listen to it!”(dietitian participant) At the same time, several comments throughout other portions of the survey also supported eating in response to appetite, particularly in regards to snacking and speed of eating, e.g. “If hungry after dinner will have a piece of fruit”(control participant), “half a meal in less than 2 minutes of video...how will she know if she is full?” (dietitian participant).

There were mixed responses to the compensation examples (see figure 5.18). Interestingly, all of the examples were rated as normal by less than 60% of participants except “Choosing to eat less dinner when planning to eat dessert”, which was rated as normal by 92% of participants. It is possible that this was perceived to be less extreme than the other examples which depicted skipping a meal, implied calorie counting or using exercise as compensation. Also of interest, more than two-thirds of the recovered group rated every compensation example as probably or definitely normal. Possibly those who have recovered

perceive compensation as more normal than other groups of people, but this was not statistically significant due to small numbers.

Some comments from dietitian participants for the compensation examples stated situations when it may be normalised to compensate, but it was unclear whether it referred to the decision being cognitive or appetite driven. , e.g. “eating less dinner to leave room for dessert is normal”, “Depends on the level of extra calories eaten and in what context, eg: some time when you have a heavy / fatty morning tea you might delay lunch till later or have a lighter lunch but then have a normal portioned dinner”. One dietitian participant commented the societal normality of compensation being unhealthy “women do this all the time! and men as a matter of fact. I hear this from clients all the time. its not really a healthy way of thinking i don’t think but it is definitely the norm.” Another dietitian participant mentioned psychological triggers to eating decisions , e.g. “once again about the rigidity/compulsivity with which this is applied & the associated guilt & the lines between normative, common and eating disordered behaviours”.

5.5 Correlations between EDE-Q and NES

A moderately and statistically significant positive correlation was found between the NES score and the EDE-Q global score ($r=-0.49, p=0.0044$), the shape concern sub-score ($r=0.40, p=0.0233$) and weight concern sub-score ($r=-0.49, p=0.0044$).

No statistically significant correlations were found between the NES score and participant BMI.

Table 5.8: EDE-Q/NES and characteristic correlations		
NES score correlation with	r value	p value
EDE-Q global score	-0.49	0.0044
EDE-Q subscale shape concern	-0.40	0.0233
EDE-Q subscale weight concern	-0.49	0.0044
EDE-Q subscale eating concern	-0.23	0.2050
EDE-Q subscale dietary restraint	-0.14	0.4447

Correlations determined using Pearson’s coefficient

5.6 Comments from online survey

Aside from those written within normalised diets, no recovered participants provided comments throughout the online survey. Dietitians generally provided more comments than any other group. Analysis of these comments identified six themes: flexibility, nutrition knowledge, pleasure, societal norms, physiological feedback and individual considerations.

5.6.1 Flexibility

Flexibility was described throughout the normalised diets in regards to snacking, portion size and timing of eating , e.g. “biscuits (smallish 1-2 not every day)” (clinician participant), “Lunch: may be breakfast if up late” (dietitian participant). Additional comments also alluded to flexibility tempered by some level of cognitive planning, e.g. “It would be somewhat structured: relaxed with a measure of planning, and a measure of flexibility/impromptu.” (recovered participant) “Following a plan in itself might be seen to be lightly abnormal. In that it is not intuitive eating. However if the plan is related to having some structure, and its just a guide then that might be seen as normal / fair. Rigidly following plan for eating is probably on a whole not so normal.” (dietitian participant)

5.6.2 Nutrition knowledge

Some dietitian participants made specific reference to using nutrition knowledge to guide eating decisions , e.g. “I have rated all of these (compensation examples) as abnormal for the individual concerned if it differs from previous “free” eating which the individual engaged in using their own hunger/fullness senses to prompt when to eat and how much to eat and their own nutritional knowledge on what to eat”, “If thinking about ‘normal’ eating. not needing to lose weight or gain weight. should just eat regularly and to appetite and general knowledge, not necessarily to a written plan”

5.6.3 Pleasure

Several participants referred to making eating choices for the purpose of pleasure, e.g. “depends on context:...whether the person is actually enjoying the food” (dietitian participant), “Roast pumpkin and kumara, about ½ cup – don’t like them” (control participant)

5.6.4 Societal norms

Several participants' comments implied or specified using societal norms to guide eating decisions , e.g. "i don't like people eating with fingers from a plate, it is rude" (recovered participant) Several participants pointed out the difference between societal norms and health recommendations. A control participant commented "'Normal' as in average, as in usual=unhealthy eating in western culture!" A dietitian participant commented "Abnormal v normal in society in general interesting question – if the person wants to cut up their sandwich in to thousands of bits and eat it that way and they have always done it like this but it isn't a result of anxiety about the food or effect of the food or avoidance then it may look abnormal to others but for them be normal and OK just different to how many other people eat but who are we to say its abnormal"

5.6.5 Physiological feedback

Some participants' comments implied using physiological feedback to guide eating decisions , e.g. "speed of eating has different factors involved:...how your digestion is" (control participant) Others referred to health goals , e.g. "If you were doing this it would be a for a reason rather than day to day (i.e. you wanted to lose weight)..." (control participant)

5.6.6 Individual considerations

Some participants' comments focused on individual considerations , e.g. "I hate to say it but defining normal eating is a task that cannot be done, what's normal to me is not normal to you. Normal cannot be defined! What is normal in one country/family is not normal in another." (dietitian participant), "...whether the person is actually enjoying the food & then what their personal reasons for eating this way are" (dietitian participant).

5.7 Summary

Throughout the survey, participants qualified their survey answers by explaining reasons for eating which could influence when a particular action might be seen as normalised. They emphasised that a specific action cannot be considered normal, or abnormal, in every situation for every person.

Chapter 6: Results and Discussion of In-depth Interviews

6.1 Participants

Twenty-four survey participants indicated that they were interested in participating in a focus group. The study protocol was later altered to replace focus groups with in-depth interviews. All 24 were invited to participate. Two declined and 13 did not respond.

Nine participants were interviewed individually. Two were interviewed via telephone and seven interviews were held in-person. Demographic characteristics of the in-depth interview participants are described in Table 6.1. Unfortunately, no recovered participants responded to the in-depth interview invitation.

The purpose of the interviews was to clarify results from the survey that were unclear. For instance, results were quite mixed in regards to inclusion of compensation as part of normalised eating. The interviews also served to gain more insight into what influenced participants' responses to the online survey. The in-depth interview guide was developed after results from the online survey were received, and is available in Appendix J. Unfortunately, the quality of the audio recordings were not sufficient to use for analysis. Instead, handwritten notes from the interviews were used.

6.2 Themes

Overall, several main themes emerged from the interviews to characterize normalised eating. These were stated both overtly when asked, and woven throughout the conversations. These are: eating in response to physiological hunger, eating for pleasure, eating regularly, eating flexibly, eating in a socially acceptable manner, meeting nutrition needs, and including all food groups. Although the interview was conducted in such a way as to elicit inclusive descriptions, participants also provided exclusive descriptions to normalised eating (i.e. What it is not). The main exclusive themes are: not experiencing psychological distress (i.e. guilt, worry, fear, anxiety, preoccupation) around food or eating, not having restrictions or rules and not necessarily "healthy", as described by New Zealand Healthy Eating guidelines. Each of these themes is discussed under their respective headings in the following sections.

Table 6.1: Demographics of interview participants					
		Control	Dietitians	Clinicians	Total
Participants meeting inclusion criteria		2	2	5	9
Gender					
	Female	2	2	5	9
	Male	0	0	0	0
Age					
	Mean	46	46	42	38
	Range	41-51	38-54	22-40	22-54

6.2.1 Not necessarily “healthy”

Interviewees agreed that following the New Zealand Healthy Eating Guidelines (“healthy”) was not the same thing as normalised eating. Several participants framed “healthy eating” as an idealized goal, which may overlap with normalised eating but not necessarily. Interviewees also generally felt that most people should eat sweets or high energy foods as part of normalised eating. Exceptions to this related to eating in line with an individual’s culture and when no psychological distress was associated with those foods.

Interviewees tended to favour the term “adequate nutrition” rather than “healthy” to describe normalised eating. Within the interview, a definition of “healthy” was provided as meeting the minimum recommended food group servings in the New Zealand Healthy Eating guidelines. It is possible that participants associated “healthy” with rigidity and that was the reason for choosing other terms.

6.2.2 Meeting nutrition needs and including all food groups

Interviewees tended to favour the term “adequate nutrition” rather than “healthy” to describe normalised eating. Within the interview, a definition of “healthy” was provided by the researcher as meeting the minimum recommended food group servings in the New Zealand Healthy Eating guidelines. Rather than agreeing with the guidelines, interviewees often mentioned “including a balance of all food groups” (regularly eating meat or alternatives, dairy or alternatives, breads and cereals, and fruits and vegetables). When use of the word “balance” was inquired of some participants, they said it meant that an individual may meet the minimum serving recommendations over the course of a week but not necessarily every day.

When interviewees were asked to talk about compensation within normalised eating, responses focused on using compensation to keep intake within energy requirements. Some level of dietary or activity compensation was described as normalised as a method to control energy intake. Some participants

described normalised compensation as once a week or less and an energy amount that was roughly equal to the energy amount being compensated for. Several participants gave examples of appropriate compensation: eating less breakfast or having a late lunch when having a big morning tea, going for a run after a “big” weekend, eating less during the day prior to going out for dinner, eating less the day after Christmas and Boxing Day, going for a walk after a big meal, or eating lots before going into surgery when you know you won’t be able to eat afterwards. One interviewee (control) gave an example of going on a “soup fast” for a few weeks, which was a more extreme example than those of the other participants.

Interviewees were asked if butter and margarine is a necessary part of normalised eating. Most interviewees referred to the necessity of fat in the diet, and indicated that an appropriate alternative, such as peanut butter or avocado, should be eaten if an individual did not have butter or margarine due to food preference or culture. This consistent response seems to indicate that normalised eating can tolerate flexibility in fat sources as long as fat as a nutrient is included in the diet. It was not clarified as to whether using a spread itself was an important part of normalised eating or whether adequate fat could come from any source.

Only one interviewee (clinician) made specific mention to high fat dairy products, saying that high fat milk products are recommended for teenagers. In contrast, the New Zealand FANG (2003) state that reduced or low-fat milk products are preferred.

The role of food as a source of nutrients was seen as important with speed and eating behaviours supporting that role. Interviewees were asked what a normalised eating speed looked like. In response, several participants said or implied that most eating behaviours should contribute to ingestion of the food, as opposed to simply changing the size, shape or position of the food. When interviewees were asked what factors were involved in the choice of normalised utensils, some spoke about the purpose for which an individual uses a utensil (e.g. using a small spoon to decrease consumption compared to using a small spoon due to practicality).

Although snacking was not considered strictly necessary, it was seen as part of normalised eating most of the time. Some of the reasons to snack mentioned were: to avoid low blood glucose and maintain metabolism. One dietitian interviewee also mentioned that it may be difficult to meet nutrition needs if eating too infrequently (e.g. less than twice a day). There was acknowledgement that sometimes individuals may choose to not snack in order to manage weight or compensate after eating a large meal. All these reasons point towards eating in a way that meets nutrition needs.

Many participants implied or overtly communicated a definition of meeting nutrition needs (e.g. eating from all the food groups, meeting healthy eating recommendations across a week, as determined by a dietitian). Several participants specified meeting nutrient needs as maintaining a healthy height, weight and regular menstruation.

6.2.3 Eating regularly

Eating regularly (as an action independent of simply meeting nutrient needs) was identified as an important part of normalised eating. It was defined or described by several people both in the interviews and in the qualitative data in the online survey as 3 meals and 2-3 snacks. General consensus regarding snacking was that most of the time it was a part of normalised eating, but was not strictly necessary.

6.2.4 Eating flexibly (or not having rules or restrictions)

Flexibility was repeatedly identified as key to normalised eating, both in the interviews and from comments in the online survey. Interviewees generally indicated that having food restrictions or rules didn't fit well with overall concepts of normalised eating for those recovering from an eating disorder. Some interviewees mentioned that individuals with medical conditions such as celiac or diabetes may require specific restrictions to maintain health. Considerations interviewees thought should be taken into account were how an individual ate prior to the eating disorder, personal preferences, family cuisine, budget and subjective body feedback. Interviewees indicated that normalised eating involved being *able* to eat foods without anxiety, regardless of how often those foods were actually consumed.

Although many actions were regarded as likely to be part of normalised eating, there were almost always exceptions. General consensus regarding snacking was that it was not strictly necessary but most of the time was a part of normalised eating. There was acknowledgement that sometimes individuals may choose to not snack for a number of reasons. Interviewees felt this could be part of normalised eating as long as it was not a rigid restriction or rule. This points to flexibility in normalised eating, with the result of meeting nutrition and cultural needs being more important than the specific action itself.

When discussing factors involved in the choice of normalised utensils, several interviewees mentioned the importance of maintaining flexibility in choice of utensils; for example, based on what is available.

Discussion of how a meal plan is used also supported the idea that normalised eating is characterized by flexibility. There was general consensus that a meal plan was only useful for transition from treatment to

recovery. An analogy was provided by a clinician interviewee. In cognitive behavioural therapy, clients initially need to keep thought records. Over time, the process becomes automatic so that writing it down is no longer necessary. In this way, normalised eating involves following general guidelines but no longer requires the structure that a meal plan provides. It also illustrates the concept that abnormal eating practices which are helpful during treatment may not necessarily be part of normalised eating in full recovery. Some interviewees also made a point that meal plans interfere with flexibility.

When interviewees were asked to talk about compensation within normalised eating, the responses focused on the flexibility with which compensation was practiced (in addition to meeting nutrition needs). Some level of dietary or activity compensation was described as normalised, and was partly based on the frequency of compensatory behaviour. When some participants were queried, they described normalised compensation as once a week or less. There were several comments that excessive compensation may contribute to excessive hunger or cravings, which may lead to out of control eating or bingeing. It may also interfere with other areas of life; for instance, by restricting social activities.

Several participants specifically mentioned that counting calories was not part of normalised eating. This issue was not specifically addressed with every participant, however, so it is unclear if there may be exceptions.

6.2.5 Eating in response to physiological appetite

Throughout discussions and when asked directly, interviewees indicated primarily using appetite to make decisions of how much and when to eat. One of the exceptions acknowledged was eating when you won't be able to eat later and you know you'll be hungry from experience. Participants also acknowledged eating for pleasure or enjoyment as a normalised exception to eating in response to appetite.

Interviewees agreed that following the New Zealand Healthy Eating Guidelines was not the same thing as normalised eating. One of the reasons provided was that eating in response to appetite may mean eating more or less than that recommended in the guidelines.

Although eating regularly was described as 3 meals and 2-3 snacks, general consensus was that snacking was not strictly necessary but most of the time was a part of normalised eating. One of the reasons mentioned was that it helped to avoid excessive hunger, which interviewees thought may trigger restriction or bingeing. On the other hand, interviewees also said that one may choose to not snack if they were not hungry.

When talking about what normalised compensation looks like, several interviewees qualified their answer by saying a decision to compensate should be made based on appetite rather than cognitive reasons.

6.2.6 Eating in a socially acceptable manner

When asked directly, all interviewees affirmed that eating in social situations was part of normalised eating. Some interviewees said that individuals may sometimes choose to not eat when others are eating when they have plans to eat later or are not hungry.

Factors involved in choice of normalised utensils were culture (e.g. Indians use bread and fingers to eat, while Europeans use knife and fork) and social etiquette (e.g. using knife and fork to eat off a plate, cutting muffin in half). When discussing normalised use of utensils, some participants mentioned that others should feel comfortable being around someone who is eating in a normalised manner.

Interviewees described a normalised speed would likely be in part similar to others also eating around them.

Eating regularly was defined or described by several people in both the interviews and in the qualitative data in the online survey as 3 meals and 2-3 snacks. However, snacking was described as not necessarily normal in all cultures (e.g. the United States).

Interviewees agreed that following the New Zealand Healthy Eating Guidelines was not the same thing as normalised eating. One of the reasons provided was that people in general society do not eat this way. Interviewees also generally felt that most people should eat sweets or high energy foods as part of normalised eating, in part, due to their commonplace in society and their use to show hospitality in many cultures. One exception was if the individual had never eaten sweets or other specific high energy foods in their life (i.e. were not part of their culture).

Several interviewees mentioned taking into consideration how an individual ate prior to developing an eating disorder. This is likely to be influenced by cultural or social norms.

6.2.7 Eating for pleasure

In addition to cultural norms, how an individual ate prior to developing an eating disorder is also likely influenced by personal preferences. Throughout the interview, participants mentioned using hedonic reasons, such as pleasure or preference, as justifying choices within normalised eating.

Although interviewees indicated using appetite to make decisions of how much and when to eat, they acknowledged exceptions: not eating if only disliked food is available, or eating when not hungry for pleasure or enjoyment.

Eating for pleasure was one of the reasons mentioned why following the New Zealand Healthy Eating Guidelines was not the same thing as normalised eating. Interviewees also mentioned pleasurable taste as one of the reasons individuals would likely eat sweets or high energy foods as part of normalised eating.

Interviewees spoke about subjective comfort mainly in relation to discussion of what normalised eating was. Several interviewees said that individuals should be able to subjectively determine normalised speed. A normalised speed was partly described as subjectively comfortable, allow talking during the meal and be a steady pattern

6.2.8 Not experiencing psychological distress around food or eating

When asked to provide their personal overall definition of normalised eating, most participants included some description of not experiencing distress. Specifically, participants said that normalised eating is at least partially characterized by the absence of fear, anxiety, worry, guilt and distress.

The presence or absence of distress was the main point made as to why including sweets is an important part of normalised eating. Interviewees generally felt that most people should eat sweets or high energy foods. However, an individual may choose to not eat those foods within normalised eating, if they do not experience anxiety when presented with those foods.

When talking about what normalised compensation looks like, several interviewees qualified their answer by saying the decisions of what and how much to eat should not be made based on anxiety (about weight gain).

Although this is an exclusive definition (i.e. It does not tell you what normalised eating is), it does give rise to the reasoning that normalised eating must be more associated with positive rather than negative affect.

6.2.9 Positive psychological effects

Throughout discussions and when asked directly, interviewees indicated using appetite to make decisions of how much and when to eat. Some of the exceptions considered normalised were eating to improve concentration and eating for comfort.

6.3 Summary

Themes discussed in in-depth interviews reflected and added in-depth to content in the survey. Interviewees generally felt that normalised eating involved flexibility in eating behaviours based on eating for a variety of reasons.

Chapter 7: Conceptualising a description of normalised eating

This study specifically sought to describe normalised eating as a treatment goal for eating disorders. While “normal eating” (i.e. eating practices common in the general population) may influence normalised eating (i.e. the treatment goal for eating disorders), it was assumed that these two concepts were fundamentally different. A description of normalised eating, therefore, refers to the benchmark standard used as a treatment goal for eating disorders.

The study was able to identify some inclusive parameters around normalised eating, which is discussed as specific actions below. However, it also found that flexibility (within the confines of providing some level of nutritional adequacy) was a central theme. Flexibility is a reflection of eating for a variety of reasons, as discussed further below.

7.1 Specific actions and reasons

No one pattern can be applied to everyone recovering from an eating disorder, as indicated by the wide range of normal indicated in many of the specific actions throughout the study. This being said, it is likely that a normalised eating pattern in New Zealand and Australia will contain some specific eating actions most of the time (see Table 7.1). The specific actions listed in the table are the actions most consistently indicated as normal within the online survey.

Table 7.1: Specific actions likely to be present in normalised eating

- 3 meals and 2-3 snacks daily
- Inclusion of protein or dairy, starch, and fruit or vegetable at lunch and dinner meal
- Inclusion of starch at the breakfast meal
- Inclusion of all main food groups, specifically, meat, dairy, starches, fruits, vegetables
- Daily inclusion of a fat source
- Inclusion of “treat” foods daily
- Eating a dinner meal in 15-30 minutes
- Eating sandwiches and muffins in no more than four pieces
- Using a regular spoon to eat cereal, and knife and fork or hands to eat fish and chips
- Using daily food group servings to guide eating
- Some dietary compensation, particularly choosing to eat less dinner when planning to eat dessert

It is important to emphasise that following any of the above actions all of the time was not considered normalised by participants in the current study. The pattern is and should be broken to accommodate eating for a variety of reasons.

In participant descriptions, reasons for eating could be grouped into categories (see Table 7.2). These reasons, more than the specific actions, underpinned participant definitions of normalised eating.

Table 7.2: Reasons for eating in normalised eating
○ Hedonic, such as pleasure, taste preference or comfort ○ Social, including that associated with culture ○ Cognitive, such as decisions based on health or nutrition knowledge ○ Positive psychological effects ○ Physiological appetite

7.2 Flexibility and nutritional adequacy

Normalised eating is a manifestation of eating for a variety of reasons at different times. Eating for this variety of reasons gives rise to flexibility. That flexibility is indicated by a wide range of nutrient intakes and eating patterns, dependent on the reasons for eating. Without this flexibility present, eating for the full variety of reasons would not be possible.

While eating for a variety of reasons was considered necessary, doing so and not meeting nutrition needs was not considered acceptable. In addition to the normalised diets depicting generally nutritionally adequate intakes, meeting nutrition needs was repeatedly mentioned throughout comments and interviews as an expected result of normalised eating. This was subjective and could be thought of on either a clinical plane (i.e. maintaining a specific weight and no functional nutrient deficiencies) or on a nutritional intake plane (i.e. dietary intake meeting all micro and macronutrients).

Flexibility in food choices and eating behaviours within the confines of a nutritionally adequate diet was the central theme of normalised eating which emerged from this study.

7.3 Description of normalised eating compared to previous literature

7.3.1 Specific actions

Some of the specific actions identified as part of normalised eating in the current research are supported by the literature.

Including baked items and sweets as part of normalised eating is supported by Schebendach (2011), who reported food variety and inclusion of added fats and sugars was associated with recovery.

However, Lobera and Rios (2009) reported their control group eating sweet foods 3.4 times per week and their patient group 2 times per week. This is much less often than the 0.95 serves of baked goods and sweets per day suggested as part of a normalised day in the current study. The difference may be due to methodology. Participants in the study by Lobera and Rios (2009) were asked about their diet over a week, whereas the participants in the current study were asked to give an example of an isolated day.

Like the current study, the recovered participants in Bjork and Ahlstrom (2008) described regular eating as usually eating breakfast, lunch, dinner and snacks. Rigaud, et al. (2011) described 3-4 meals as normalised, whereas the current study supported 5 eating episodes on average. It could be that Rigaud was not taking snacks into account. Similarly, the control group in Masheb (2011) ate on average 2.4 meals and 1.2 snacks per day, possibly indicating that eating frequency commonly done in the general population is less than that in normalised eating for eating disorders.. McIntosh, et al (2006) described “3 adequate meals and 2-3 snacks” as normalised, which is more in line with the current study.

Although too vague to be compared directly with the current study results, the brief description found in the Dietitians Association of Australia (DAA) publication (See table 8.3; Wakefield & Williams, 2009) places emphasis on some of the specific actions (balance, variety, regular) found in the current study.

It is possible and likely that the specifics of normalised eating are fluid and actually change with time and across culture. For example, eating sweets regularly would not have been normalised prior to sugar becoming widely available to make affordable commercial products. Thinking about it in this way means that the scale developed by Wilson (1989), which relied on subjective assessment of normalised eating by eating disorder clinicians, could be a valid way to assess normalised eating so long as clinicians and patients share the same culture.

Table 7.3: Normal eating overall descriptions from literature	
DAA (Wakefield & Williams, 2009)	Patients should be encouraged to eat a balanced, wide variety of foods within regular meals and snacks, appropriate for their home and social environment.
Rigaud (2011)	Energy intake at the level of physiological energy needs Regular three or four meals per day Ability to eat face to face with other people and to eat out (restaurant, friends) No fear of fatty food or added fat No weighing oneself every day No obsession concerning body weight or food
Hart, Williams, Wakefield, Russell (Hart, et al., 2012)	'good enough' Eating for enjoyment as well as health Developing spontaneous and flexible eating behaviours Developing sensitivity to cues for eating that most people follow, such as appetite, time of day, social situation and visual appeal
Ellyn Satter (2011)	In short, normal eating is flexible. It varies in response to your emotions, your schedule, your hunger, and your proximity to food.
McIntosh, et al (2006)	3 adequate meals and 2-3 snacks Eating from the full range of food groups to provide adequate nutrition Eating sufficient food to prevent symptoms of starvation Not eliminating food groups or food types to control weight or shape Not avoiding eating preferred foods Knowing when to stop eating or when one has eaten enough
Tylka (2006)	Unconditional permission to eat when hungry and what food is desired Eating for physical rather than emotional reasons Reliance on internal hunger and satiety

In this study, the majority of participants consistently did not support using meal plans as part of normalised eating. This contrasts somewhat with the Malson, et al. (2008) assertion of the commonality of using eating plans in the general public that coincides with dieting. This may be an indication of the difference between eating common in the population and normalised eating as a treatment goal for eating disorders. Utility of meal plans was implied by Cockell (2004), where participants described the process of using a meal plan to develop an intuitive sense of a normal amount of food. Eating plans do, indeed, appear to be only part of treatment during the transition from disordered to normalised eating. This transition process can also be seen

with other aspects of eating. The current study found that videos depicting a meal eaten over 15-30 minutes were most rated as normal in the context of normalised eating. In contrast, Long, et al. (2012) found that most eating disorder wards imposed a longer time limit of 30-60 minutes. Perhaps a slightly longer (and less normalised) amount of time is expected during treatment, whereas a shorter amount of time is considered normalised during recovery.

In the list of abnormal eating behaviours found in the DAA (Wakefield & Williams, 2009) publication, eating diet foods was listed as abnormal. This assertion was not supported by the current research where more than half the participants, spread across all groups, specified diet, lite or reduced fat products or cooking methods in the normalised diets. It is likely, then, that normalisation more accurately refers to lack of fear around, rather than eating, diet or non-diet foods per se.

7.3.2 Relationship between actions and reasons

Previous literature and overall descriptions of normal eating have also recognized that the reasons for eating play a part in governing specific actions, although no one else has overtly said that the reasons are more important.

Rigaud (2011) mentioned the ability to eat out or in social situations and the absence of a fear of fat. Ruggiero, et al. (1988) characterised normalised eating with lack of fear. The recovered participants in Bjork and Ahlstrom (2008) said it was normal to be able to eat in social settings and also to decline if one was not hungry or did not want to eat. These comments seem to indicate that the reasons one might eat is the measure of normality more than the specific actions.

The importance of the underlying reasons was highlighted by Long, et al. (2012) who interviewed current in-patients with anorexia nervosa (n=12) in the United Kingdom. The aim was to investigate mealtimes from the perspective of the patient. One observation was that patients wanted staff to understand the underlying aspects of eating. Patients expressed a need for recognition of the cognitive and emotive elements of eating, rather than treatment relying solely on weight gain or certain symptomatic behaviours as indicators of recovery.

Intuitive eating, (Tylka, 2006) and the descriptions of normal eating by Hart, et al (2012) and Satter (2011) do not focus on specific actions but instead point out the variety of reasons that may influence eating and,

thereby, lead to flexibility. These descriptions are consistent with the findings of the current research where flexibility emerged as a central theme to the reasons for eating.

This study focused on the eating disorder literature. It was however noted that appetite focused literature, in particular, does acknowledge and provide larger context for similar concepts as those discussed in the current study. Appetite as a concept is sometimes referred to, not only as physiological appetite, but as any influence of dietary intake. One review pointed out how integration of sensory, somatic and social signals contribute to oral intake (Booth, 2008).

“...each individual has a large set of learnt normal levels of sensed, cultured and embodied facilitators or inhibitors of eating or drinking. The remembered ‘norm’ may be the most familiar situation or the most preferred or appetizing (or aversive or sating) version. These differences between habituated stimuli, conditioned stimuli, discriminative stimuli, personal habits and sub-cultural norms are theoretically important but empirically very difficult to pin down – partly because these differently acquired set points often coincide in value. Such a norm is the nearest to a reference value that exists in the control of exchanges of energy, nitrogen, salt and water.”

7.3.3 Variety of reasons

Results from this study show that eating for a variety of reasons underpins the specific actions that make up normalised eating.

The descriptions of normal eating in the literature have not recognised the variety of reasons for eating found in the current study. Rigaud (2011) implies eating for cognitive reasons (ie. To maintain nutrition) and lack of negative emotion. McIntosh, et al (2006) implies eating for cognitive reasons (ie. To prevent starvation) and appetite (ie. Knowing when to stop eating or when one has eaten enough). The descriptions by Satter (2011) and Hart, et al. (2012) both refer to eating for positive psychological reasons, physiological appetite and in response to environment. Intuitive eating places a strong emphasis on physiological hunger, stating eating for physical reasons and reliance on internal hunger and satiety cues as core components of intuitive eating (Tylka, 2006).

The current study only supported eating for a variety of reasons as the methodology did not allow the researcher to identify whether eating for one specific reason was more important than the others. To the

author's knowledge, other research has not determined this either. However some research has looked specifically at the role of physiological appetite in recovery.

Cockell, et al. (2004) comment that as the residential program prepares clients for discharge and the maintenance of change, the challenge is to help them shift away from relying on the structures of the treatment to trusting resources that exist within themselves (e.g. hunger and fullness cues, emotional message, self-knowledge).

In the qualitative study by Bjork and Ahlstrom (2008), one participant specifically mentioned becoming aware of hunger signals as an indicator of normalised eating as part of recovery.

However, the study by Sysko, et al. (2005) did not find any significant differences between patients just after weight restoration and controls in regards to hunger and fullness ratings after a test meal. In the study by Andersen, admission pre-meal hunger scores were significantly lower than controls for all patient groups and this difference did not change at discharge. This may indicate that the weight restored group was not fully recovered. They would not have met criteria for recovery in the current study.

Some authors have argued that there is a limit to how much eating in response to physiological appetite occurs in the general population. Herman and Polivy explain that hunger and satiety are physiological extremes which govern intake, with satiety being a more acutely effective regulator of intake (Herman & Polivy, 2005). Between those is the “zone of biological indifference”, where other factors regulate eating. In the Western world, most eating occurs in this zone and is thus influenced by factors other than hunger and satiety. The current study only supports eating for a variety of reasons and did not look specifically at whether one of those reasons was more important than the others.

7.3.4 Flexibility and nutritional adequacy

Flexibility, arising from eating for a variety of reasons, was the central theme of normalised eating, and was the reason a wide range of behaviours was viewed as normalised. The descriptions by both Hart, et al. (2012) and Satter (2011) emphasise flexibility arising from eating for a variety of reasons.

While McIntosh, et al (2006) does not specifically mention flexibility, not avoiding preferred foods and including a full range of food groups are mentioned. Both of these could be thought of as aspects of flexible eating and both were referred to in the current study. Intuitive eating describes an aspect of flexibility, namely, unconditional permission to eat when hungry and what food is desired (Tylka, 2006).

One unique study, entitled “When does it cross the line? College women’s perceptions of the threshold between normal eating and eating disorders”, asked college age women to determine if an eating disorder was present in vignettes (Yost & Smith, 2012). The vignette relating specifically to eating presented a meal of various sizes. Unfortunately, the study did not specify the size of the different meals size vignettes. The study did report that participants were not very accurate. Of the 122 participants, only 45 participants chose the “correct diagnosis”; 35 were early and 42 were late. Of all the vignettes (which included weight, exercise, meal size and purging), participants were the least accurate with the meal size vignette. Taken in the light of the current study results, the variation in perceived “normal” meal size, points to the idea that there is acceptably wide variation, or flexibility, in normalised eating.

The description by Rigaud, et al. (2011) does include consuming a nutritionally adequate diet in terms of meeting energy needs along with acknowledging several reasons for eating. The description from the DAA (Wakefield & Williams, 2009) alludes to meeting nutrition needs through a balanced, wide variety of foods while acknowledging eating in response to environment. The description by McIntosh, et al (2006) also includes a nutritionally adequate intake, mentioning eating to provide adequate nutrition and eating sufficient food to prevent symptoms of starvation.

While other descriptions (see Table 7.3) have listed actions alluding to nutritional adequacy along with reasons for eating which allude to flexibility (see Table 7.3) previous literature as not specifically made the point that flexibility must be within the confines of nutritional adequacy.

7.4 Summary

Previous literature has been mixed in its support of the specific actions purported as being normalised in the current study. Some literature has alluded to or specifically discussed reasons for eating as contributors to normal eating, as well as flexibility being one aspect of normal eating. This is the first study to make a specific distinction that eating for a variety of reasons gives rise to flexibility, which is the central theme to normalised eating.

Chapter 8: Conclusions and Implications

8.1 Description of normalised eating as a treatment goal for eating disorders

The primary aim of the study was to describe normalised eating as a treatment goal for eating disorders among women aged 18 to 60 years. Mixed methods were used to elicit perspectives of normalised eating from dietitians and other clinicians working in eating disorders, women who have recovered from an eating disorder and a healthy group of women with no eating disorder history. Throughout the study, it was apparent that defining the specifics of normalised eating was not a simple task. There are many factors that determine an individual's eating pattern. Within the normalised diets depicted in this study, specific actions varied widely (e.g. 2-7 eating episodes per day).

Normalised eating is likely to encompass a set of specific actions (see Table 7.1). However the reasons for eating (see Table 7.2) seem to underpin normalised eating more than the specific actions. Flexibility in food choices and eating behaviours within the confines of a nutritionally adequate diet was the central theme of normalised eating which emerged from this study.

8.1.1 Normalised eating compared with the New Zealand diet and the Food and Nutrition Guidelines

One objective of the study was to compare perceptions of normalised eating with the diet of the general New Zealand population (ANS08/09; University of Otago and Ministry of Health, 2011) and established definitions of healthy eating (FANG 2003; Ministry of Health, 2003).

Fruit and vegetable content in normalised eating appears to be more similar to the general population than to healthy eating guidelines, while fibre content in the normalised diet is higher than the average New Zealand population intake and meets nutrition recommendations.

Contribution of sugar to total energy in normalised eating, as described in this study, is higher than recommendations (FANG 2003). In contrast to healthy eating recommendations to limit sweets, the majority of participants included these foods at least once in their normalised diets.

8.1.2 Perceptions of normalised eating compared between eating disorder clinicians, dietitians, those recovered from an eating disorder and controls

Another objective of the study was to compare perceptions of normalised eating between participant groups. Generally, there was overall agreement in most areas between groups, with few exceptions. However, the small sample size, particularly in the recovered group, may have meant that some differences were not identified.

Those who have recovered from an eating disorder may (n=6) perceive a lower calcium diet as more normal than eating disorder dietitians (n=20).

Those who have never experienced or worked with eating disorders (n=26) may perceive structured meal planning (particularly counting kilocalories) as more normal than eating disorder dietitians (n=20).

8.2 Strengths and Limitations

Use of the internet allowed participants from a wide geographical range to participate in the study. It did limit the level of information available as to why respondents did not complete the survey (35% response rate) and why many participants skipped survey questions (n=17 or 25% of study participants). A few participants commented on the difficulty of completing the survey, both in locating the videos clips and in giving an example of a normalised diet. This was likely a significant factor in the low completion rate.

The study included participants who were very likely to have a good understanding of normalised eating in the context of eating disorder recovery. Clinicians and dietitians had a fairly high level of clinical eating disorder experience.

Data from thirty-six respondents (about half of which reported an eating disorder history) were excluded from analysis, based on not meeting the study's set criteria for not having a current eating disorder. The criteria in this study was set strictly and it is possible that relaxing the criteria would have significantly impacted the results.

Recovered participants reported a long time since diagnosis, which also may indicate time in recovery. However, the sample of participants who had recovered from an eating disorder was very small and no recovered participants were interviewed. It is possible that a larger representation from this group would have provided a different picture.

All participants in the healthy control group and those who had recovered from an eating disorder were women (gender was not reported by the dietitians or clinicians). Therefore, the interpretation of results should be limited to the application to women only.

Participants, particularly those in the healthy control group, may have been more interested in food and health than the average population, as evidenced by volunteering to participate in a food-related study. This may have created an overall bias towards healthy eating.

The clinician group was predominated by nurses (46% of those who reported their profession). A larger representation from professions more typically involved in delivering therapies (i.e. Psychologists, psychotherapists, family therapists, etc) may have provided a different picture.

Descriptions of normalised diets from the ONE questionnaire is limited by the inconsistency in level of detail provided by participants and the resulting assumptions. In order to include some examples in analyses, assumptions had to be made. For instance, when fruit or vegetable quantities were not specified in the normalised diets, one serving was assumed. This analysis method may have under- or over-estimated vegetable servings. In addition, the researcher was not blinded to which group each entry was part of during nutrient analysis. This may have biased use of assumptions when there was lack of detail in entries. It is possible that participants were thinking about very different scenarios when imagining normalised eating, resulting in high intra-individual variability between participant groups. Participants often did not specifically mention added fats in cooked foods and additional fat was not assumed. It is possible, therefore, that total fat was underestimated. Altogether, this means that nutrient analysis may not represent true views of normalised eating and the interpretation of comparison with New Zealand National Nutrition Survey is , therefore, highly subjective. The quality of data could have been improved if the questioning had been guided either by an interviewer or by an automated computer program.

Comparison of the eating style and behaviour questions in the ONE questionnaire were limited by the inconsistent questioning style. Some of the eating style and behaviour questions were organized along a range (e.g. eating speed was depicted on a range from very slow to very fast) while others provided different examples intending to be equal (e.g. compensation examples). Questions organized along a range were, therefore, able to determine a “threshold” for normalised eating, whereas questions which provided equal examples were not.

The use of videos to depict a range of eating behaviours was a strength that allowed quantification that would not have been possible through questioning only.

Interviews broadened the depth of the data significantly. However, only a small number of participants opted to complete the interview (n=9, 13% of participants). Using only interviewer notes without a transcript of the interviews limited the extent to which the interview data could be analysed. It is possible that the interview results reported contain interviewer/researcher bias.

8.3 Implications to clinical practice

When guiding patients towards normalised eating, clinicians must take into consideration the full range of influences on an individual's eating. Clinicians should explore the reasons why patients eat as they are more accurate indicators of recovery than purely assessing the specific actions.

The core characteristics identified in this study (flexibility in food choices and eating behaviours and a nutritionally adequate intake) may also be used to guide clinicians in determining an individualised normalised eating for each patient. These characteristics could be used as a teaching point that normalised eating can exist as a dialectic between flexibility and nutritional adequacy.

8.4 Recommendations for future research

There are a number of unanswered questions that emerged from the current research.

A description of normalised eating is irrelevant unless it is actually associated with better recovery outcomes. Future research could investigate if any particular aspects of normalised eating are predictive of recovery.

This study did not find significant differences between any of the groups, but there were some suggestions of possible differences between groups. Repeating the study with a larger sample size may elicit significant differences. A larger sample might be obtained by shortening the questionnaire or increasing compensation.

There were no differences found between the control and recovered groups in their perspectives of what normalised eating looks like. Looking at actual dietary intake and eating behaviours would provide a better indication as to whether normalised eating is simply an ideal or whether it is an attainable goal which patients do achieve.

This study excluded the data from individuals with active eating disorders. It would be interesting to see if those with active eating disorders identify normalised eating similarly or differently to those who have recovered.

Understanding clinicians' perspectives of normalised eating has significance if their perspective affects patient eating choices. Future research could explore the relationship between clinician views of what normalised is and how their patients progress towards normalised eating in practice.

Eating for a variety of reasons leads to flexibility within the confines of a nutritionally adequate intake. While many participants implied or overtly communicated a definition of normalised eating that included meeting nutrition needs, this was not specifically explored in the current study. It may be that individual beliefs about what constitutes "adequate nutrition" or "healthy" would vary between disciplines and individuals.

If consideration is not given to objectively healthy eating based on nutrition science, there is a possibility that the individual may retain some restrictive eating practices in order to avoid becoming overweight in similar ways to the general overweight population. On the other hand, if adequate consideration is not given to hedonic, situational, convenience, cultural or social aspects of eating, the recovering individual may simply adopt healthier food rules and retain rigidity of eating. More research is needed to ascertain what this means for recovery.

Lack of psychological distress was mentioned repeatedly throughout the study. As this is an exclusive definition, it was not incorporated directly into an inclusive definition of normalised eating. However, it may be an important and distinct indicator of normalised eating. Future research could explore whether normalised eating can include ever feeling any psychological distress around food or eating.

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Appendix A: Online survey questions

The first page of the online survey was the information sheet.

Demographics

What is your gender?

What is your current age?

In what country were you born?

What is the highest level of education you have completed?

What is your yearly income?

Opinions on Normal Eating (ONE)

All questions (except 1 and 6) use a likert scale with four options: definitely normal, probably normal, probably abnormal, definitely abnormal.

The next part of the survey asks questions about what you think normalised eating looks like.

If you have NEVER had an eating disorder and never worked in the field of eating disorders, try to think about normal eating as in how you see the AVERAGE YOUNG WOMAN. This won't necessarily be what you think is correct or healthy. It may be similar to how you personally eat, but not necessarily.

If you HAVE worked in the field of eating disorders or have suffered from an eating disorder yourself, think about normal eating as in how it should look for SOMEONE WHO HAS RECOVERED. Remember, the aim of the study is to describe normalised eating as a treatment goal for eating disorders.

Last of all, go with your gut instinct or your first response.

Remember, you can skip any question. If you skip a question, please go ahead and answer as many questions as you can right until the end.

1. Please write down an EXAMPLE of what you think a normal WEEKDAY'S eating and drinking would look like. Don't worry - there are no right or wrong answers. We're looking for what you think is normal.
 - Specify what time of day
 - Be as specific as you can (e.g. white bread vs. wholemeal bread, boiled vs. fried)

- Include spreads, condiments and sugar in drinks
- Include drinks for the WHOLE day
- Specify amounts for everything 1 cup is about the size of a man's fist or a tennis ball 2 tablespoons is about the size of a golf ball 1 teaspoon is about the size of your thumb tip or a dice 90 grams is about the size of a woman's palm or a deck of cards (usually grams are used for meat and cheese)

You can make the text box larger by dragging the bottom right corner.

2. Please copy and paste the following links (e.g. www.youtube.com/watch...) into your browser and watch the videos. Specifically watch the way the food is being eaten. As you watch each video, rate it on the scale. Note: If you are unable to view You Tube from your organisation's computer, you may need to forward the survey to your home to complete.

- MCH-----www.youtube.com/watch?v=NGuA8tez9zs
- MC2-----www.youtube.com/watch?v=hh9f0X9Y3Xs
- MC8-----www.youtube.com/watch?v=81dYLWSKH3E
- MC4-----www.youtube.com/watch?v=CP2ZR_jPW-U
- MC16-----www.youtube.com/watch?v=XtngRH4o2rs
- MC1-----www.youtube.com/watch?v=xloesdEWVww

3. Please rate each of the following on the scale.

- Following a plan that tells you what time to eat
- Following a plan that tells you exactly how much, and what types of, foods to eat every day
- Counting calories throughout the day to make sure you're eating the right amount
- Following a plan that tells you how many food group servings to eat every day

4. Please copy and paste the following links (e.g. www.youtube.com/watch...) into your browser and watch the videos. Specifically watch the way the food is being eaten. As you watch each video, rate it on the scale. Note: If you are unable to view You Tube from your organisation's computer, you may need to forward the survey to your home to complete.

- SC2-----www.youtube.com/watch?v=N6wjWqVdHqs
- SC1-----www.youtube.com/watch?v=kawddi-IEmM
- SC16----www.youtube.com/watch?v=HC2I7dKNY-
- SC8-----www.youtube.com/watch?v=6J4XBxvlaHM
- SC4-----www.youtube.com/watch?v=9DH-LXTQhug

5. Please rate each of the following on the scale.

- Eating something extra an hour after you've had lunch because you were still hungry
- Declining a dessert you like because you are too full after dinner
- Only eating half of the food you put on your plate because you are no longer hungry
- Having an unplanned snack before you go to bed after noticing you're feeling a little hungry
- Having just one favourite biscuit because you're not hungry

6. Please write down an EXAMPLE of what you think a normal WEEKEND DAY'S eating and drinking would look like. Don't worry - there are no right or wrong answers. We're looking for what you think is normal.

- Specify what time of day
- Be as specific as you can (e.g. white bread vs. wholemeal bread, boiled vs. fried)
- Include spreads, condiments and sugar in drinks
- Include drinks for the WHOLE day

- Specify amounts for everything 1 cup is about the size of a man's fist or a tennis ball 2 tablespoons is about the size of a golf ball 1 teaspoon is about the size of your thumb tip or a dice 90 grams is about the size of a woman's palm or a deck of cards (usually grams are used for meat and cheese)

You can make the text box larger by dragging the bottom right corner.

7. Please copy and paste the following links (e.g. www.youtube.com/watch...) into your browser and watch the videos. Specifically watch the way the food is being eaten. As you watch each video, rate it on the scale. Note: If you are unable to view You Tube from your organisation's computer, you may need to forward the survey to your home to complete.

- S30-----www.youtube.com/watch?v=nMCzzmRseag
- S15-----www.youtube.com/watch?v=x_TmOTgoJD8
- S45-----www.youtube.com/watch?v=F7vcJsrtlys
- S5-----www.youtube.com/watch?v=IE15-pDeX2E
- S60-----www.youtube.com/watch?v=nKcSdFUx71Q

8. Please rate each of the following on the scale.

- Choosing to eat less dinner when planning to eat dessert
- Doing extra exercise to make up for a large meal
- Skipping breakfast when planning to have a special lunch
- Choosing to eat less at lunch and dinner because you've eaten extra calories at morning tea

9. Please copy and paste the following links (e.g. www.youtube.com/watch...) into your browser and watch the videos. Specifically watch the way the food is being eaten. As you watch each video, rate it on the scale. Note: If you are unable to view You Tube from your organisation's computer, you may need to forward the survey to your home to complete.

- UTp-----www.youtube.com/watch?v=vrejFd2Uh0M
- UFK-----www.youtube.com/watch?v=iqMLEa_bHFk
- UHa-----www.youtube.com/watch?v=vhuZU1ppj4I
- UCh-----www.youtube.com/watch?v=T-XSWjhZfRM
- USp-----www.youtube.com/watch?v=s4YCTb2afW0

Additional questions

Are you a clinician who currently works with patients with eating disorders? *(If participants answered yes to this question, the survey automatically skipped the EDE-Q and NES. If participants answered no, they automatically skipped the next two questions and were directed to the EDE-Q and NES)*

How many years have you been working with patients with eating disorders? (If you have been working with patients with eating disorders for less than 1 year, please enter 0) Please answer this question.

What is your profession?

Are you interested in coming to a one-off focus group in Auckland in the next 6-12 months? If you answer yes, please provide your contact details at the end of the survey.

When are you available to come for a focus group in the next six months?

Would you like to receive a summary of the project findings? If you answer yes, please provide your contact details at the bottom of the page.

You are eligible for a prize drawing of \$100 value. Would you like to be entered? If you answer yes, please provide your contact details at the bottom of the page.

If you answered YES to any of the questions on this or the previous page, please provide the best way to contact you.

Appendix B: Speed, crumbling, cutting and utensil videos

Hyperlinks can only be accessed in the electronic version of this document. Videos are also available on a compact disc in a pocket in the paper copy of the thesis.

Speed

[Speed x 15min.wmv](#)

[Speed x 30min.wmv](#)

[Speed x 45min.wmv](#)

[Speed x 5min.wmv](#)

[Speed x 60min.wmv](#)

Cutting

[Sandwich cut x 1.mvw](#)

[Sandwich cut x 16.mvw](#)

[Sandwich cut x 2.mvw](#)

[Sandwich cut x 4.mvw](#)

[Sandwich cut x 8.mvw](#)

Crumbling

[Muffin crumble in hand.mvw](#)

[Muffin crumble x 1.mvw](#)

[Muffin crumble x 16.mvw](#)

[Muffin crumble x 2.mvw](#)

[Muffin crumble x 4.mvw](#)

[Muffin crumble x 8.mvw](#)

Utensils

[Utensils spoon.wmv](#)

[Utensils teaspoon.wmv](#)

[Utensils chopsticks.wmv](#)

[Utensils fork knife.wmv](#)

[Utensils hands.wmv](#)

Appendix C: Eating behaviours data

Table C1: Eating behaviours from survey: crumbling						
		Control	Recovered	Dietitians	Clinicians	Total
Muffin eaten by picking at						
	N	17 ^c	6	16 ^c	10 ^c	50
	Normal ^b	70%	50%	50%	80%	62%
	Median	3	2.5	2.5	3	3
	Range	1-4	2-4	1-3	1-4	1-4
Muffin eaten in 1 piece						
	N	18 ^c	6	16 ^c	9 ^c	50
	Normal ^b	100%	83%	100%	100%	98%
	Median	4	3.5 ^x	4	4 ^y	4
	Range	3-4	2-4	3-4	4	2-4
Muffin eaten in 2 pieces						
	N	18 ^c	6	16 ^c	10 ^c	51
	Normal ^b	95%	99%	94%	90%	94%
	Median	4	4	4	4	4
	Range	2-4	3-4	2-4	2-4	2-4
Muffin eaten in 4 pieces						
	N	18 ^c	6	15 ^c	11 ^c	51
	Normal ^b	78%	83%	80%	63%	76%
	Median	3	3	3	3	3
	Range	2-4	2-4	2-4	1-4	1-4
Muffin eaten in 8 pieces						
	N	18 ^c	6	16 ^c	11 ^c	52
	Normal ^b	6%	0%	0%	10%	4%
	Median	1	1	1	2	2
	Range	1-3	1-2	1-2	1-3	1-3
Muffin eaten in 16 pieces						
	N	17 ^c	6	17 ^c	10 ^c	51
	Normal ^b	0%	0%	0%	10%	2%
	Median	1	1	1	2	1
	Range	1-2	1	1-2	1-3	1-3

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

Table C2: Eating behaviours from survey: cutting						
		Control	Recovered	Dietitians	Clinicians	Total
Sandwich eaten in 1 piece						
	N	16 ^c	6	15 ^c	9 ^c	47
	Normal ^b	94%	83%	93%	100%	94%
	Median	4	3.5	4	4	3
	Range	2-4	1-4	2-4	3-4	1-4
Sandwich eaten in 2 pieces						
	N	16 ^c	6	14 ^c	9 ^c	46
	Normal	94%	100%	100%	100%	97%
	Median	4	4	4	4	4
	Range	2-4	4	4	3-4	2-4
Sandwich eaten in 4 pieces						
	N	16 ^c	6	15 ^c	9 ^c	46
	Normal	82%	80%	80%	100%	84%
	Median	3	3	3	4	3.5
	Range	2-4	2-4	1-4	3-4	1-4
Sandwich eaten in 8 pieces						
	N	16 ^c	6	14 ^c	9 ^c	46
	Normal	6%	0%	7%	22%	9%
	Median	2	1	1	2	1
	Range	1-3	1-2	1-3	1-3	1-3
Sandwich eaten in 16 pieces						
	N	16 ^c	6	15 ^c	9 ^c	47
	Normal	6%	0%	0%	11%	4%
	Median	1	1	1	1	1
	Range	1-4	1	1	1-3	1-4

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

Table C3: Eating behaviours from survey: speed						
		Control	Recovered	Dietitians	Clinicians	Total
Meal eaten in 5 minutes						
	N	13 ^c	6	15 ^c	8 ^c	43
	Normal ^b	53%	17%	73%	63%	56%
	Median	3	2	3	3	2
	Range	1-4	1-4	1-4	2-4	1-4
Meal eaten in 15 minutes						
	N	13 ^c	6	15 ^c	8 ^c	43
	Normal	100%	100%	60%	100%	86%
	Median	3	4	3	3	3
	Range	3-4	3-4	1-4	3-4	1-4
Meal eaten in 30 minutes						
	N	13 ^c	6	15 ^c	8 ^c	43
	Normal	85%	83%	67%	88%	80%
	Median	3	3	3	3	3
	Range	2-4	1-4	1-4	2-4	1-4
Meal eaten in 45 minutes						
	N	13 ^c	6	15 ^c	8 ^c	43
	Normal	38%	50%	20%	38%	35%
	Median	2	2.5	2	2	3
	Range	1-4	1-3	1-3	1-4	1-4
Meal eaten in 60 minutes						
	N	13 ^c	6	15 ^c	8 ^c	43
	Normal	0%	0%	0%	13%	2%
	Median	1	1	1	1.5	2
	Range	1-2	1-2	1-2	1-3	1-3

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

Table C4: Eating behaviours from survey: utensils						
		Control	Recovered	Dietitians	Clinicians	Total
Cereal eaten with a spoon						
	N	14 ^c	6	14 ^c	7 ^c	41
	Normal ^b	100%	83%	100%	85%	95%
	Median	4	4	4	4	3
	Range	3-4	1-4	3-4	2-4	1-4
Cereal eaten with a teaspoon						
	N	14 ^c	6	15 ^c	7 ^c	42
	Normal	85%	66%	47%	28%	60%
	Median	3	3	2	2	2
	Range	1-4	2-4	1-4	1-4	1-4
Fish and chips eaten with hands						
	N	14 ^c	6	15 ^c	7 ^c	42
	Normal	100%	83%	100%	100%	97%
	Median	4	3	4	4	3
	Range	3-4	1-4	3-4	3-4	1-4
Fish and chips eaten with a fork and knife						
	N	14 ^c	6	14 ^c	7 ^c	40
	Normal	100%	53%	85%	100%	91%
	Median	3	3	4	3	3
	Range	3-4	1-4	1-4	3-4	1-4
Fish and chips eaten with chopsticks						
	N	14 ^c	6	15 ^c	6 ^c	41
	Normal	16%	33%	47%	0%	27%
	Median	2	1.5	2	1.5	3
	Range	1-4	1-3	1-4	1-2	1-4

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

Table C5: Eating styles from survey: meal plan examples						
		Control	Recovered	Dietitians	Clinicians	Total
Composite						
	N	25 ^c	6	20	15	66
	Normal ^b	46%	50%	26%	40%	39%
	Median	2 ^x	2	2 ^y	2	2
	Range	1-4	1-4	1-4	1-4	1-4
Following a plan that tells you how many food group servings to eat every day						
	N	25 ^c	6	20	15	66
	Normal	76%	100%	65%	87%	78%
	Median	3	3.5 ^x	3 ^y	3	3
	Range	2-4	3-4	1-4	1-4	1-4
Counting calories throughout the day to make sure you're eating the right amount						
	N	25 ^c	6	20	15	66
	Normal	36%	34%	5%	20%	22%
	Median	2	2 ^x	2 ^y	2	2
	Range	1-4	1-4	1-3	1-4	1-4
Following a plan that tells you exactly how much, and what types of, food to eat every day						
	N	25 ^c	6	20	15	66
	Normal	32%	50%	15%	20%	26%
	Median	2	2	1	2	2
	Range	1-4	1-3	1-3	1-4	1-4
Following a plan that tells you what time to eat						
	N	25 ^c	6	20	15	66
	Normal	40%	17%	20%	33%	29%
	Median	2	2	2	2	2
	Range	1-4	1-3	1-4	1-4	1-4

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

^{xy} Results with different letters are statistically significantly different from each other (p=<0.05)

Kruskal-Wallis and post-hoc Mann-Whitney used to determine significance

Table C6: Eating styles from survey: appetite examples						
		Control	Recovered	Dietitians	Clinicians	Total
Composite						
	N	26	6	20	14 ^c	67
	Normal ^b	83%	87%	95%	93%	88%
	Median	4	4	4	4	4
	Range	2-4	1-4	1-4	1-4	1-4
Having just one favourite biscuit because you're not hungry						
	N	26	6	20	14 ^c	66
	Normal	77%	83%	95%	86%	85%
	Median	3	3	3.5	3	3
	Range	2-4	1-4	2-4	1-4	1-4
Having an unplanned snack before you go to bed after noticing you're feeling a little hungry						
	N	26	6	20	14 ^c	66
	Normal	92%	50%	95%	100%	91%
	Median	3	2.5 ^x	48 ^y	4	3
	Range	2-4	2-4	2-4	3-4	2-4
Only eating half of the food you put on your plate because you are no longer hungry						
	N	26	6	20	14 ^c	66
	Normal	73%	100%	90%	79%	82%
	Median	3	4	3.5	3	4
	Range	2-4	3-4	2-4	2-4	2-4
Declining a dessert you like because you are too full after dinner						
	N	26	6	20	14 ^c	66
	Normal	89%	100%	95%	100%	94%
	Median	4	4	4	4	4
	Range	2-4	3-4	1-4	3-4	1-4
Eating something extra an hour after you've had lunch because you were still hungry						
	N	26	6	20	14 ^c	66
	Normal	77%	100%	100%	100%	91%
	Median	3 ^x	4	4 ^y	4	3
	Range	2-4	3-4	3-4	3-4	2-4

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

^c N value variation is due to skipping questions

^{xyz} Results with different letters are statistically significantly different from each other (p=<0.05)
Kruskal-Wallis test and post-hoc Mann-Whitney used to determine significance

Table C7: Eating styles from survey: compensation examples						
		Control	Recovered	Dietitians	Clinicians	Total
Composite						
	N	26	6	20	14	67
	Normal ^b	63%	83%	54%	64%	63%
	Median	3	3	3	3	3
	Range	1-4	1-4	1-4	1-4	1-4
Choosing to eat less at lunch and dinner because you've eaten extra calories at morning tea						
	N	26	6	20	14	67
	Normal	66%	83%	30%	42%	52%
	Median	3	3	2	2	3
	Range	1-4	1-4	1-4	1-4	1-4
Skipping breakfast when planning to have a special lunch						
	N	26	6	20	14	67
	Normal	46%	66%	40%	57%	49%
	Median	2	3	2	3	2
	Range	1-4	1-4	1-4	1-4	1-4
Doing extra exercise to make up for a large meal						
	N	26	6	20	14	67
	Normal	50%	83%	55%	57%	57%
	Median	2.5	3	3	3	3
	Range	1-4	2-4	1-4	1-4	1-4
Choosing to eat less dinner when planning to eat dessert						
	N	26	6	20	14	67
	Normal	89%	100%	90%	100%	92%
	Median	3	3	3	3	3
	Range	1-4	3-4	1-4	3-4	1-4

^b Descriptive statistics determined using 1 = definitely abnormal; 2 = probably abnormal ; 3 = probably normal ; 4 = definitely normal

Appendix D: Rationale for inclusion criteria of recovered and control groups

A range of criteria are used in the literature to identify people as “recovered” (see Table E1). In a review, Bardone-Cone (2010) stated that full recovery is achieved when individuals with a history of eating disorder appear indistinguishable from healthy controls (defined as having no history of an eating disorder) on indices reflecting behavioural and psychological aspects of eating disorders. This contrasts with findings that quality of life in recovered individuals remains poorer than in a healthy control group (de la Rie, Noordenbos, & van Furth, 2005), which may simply indicate that behaviourally recovered individuals take longer to recover psychologically. Bardone-Cone defined recovery as 1) no longer meeting diagnostic criteria for an eating disorder; 2) no binge eating, purging or fasting in the past three months; 3) a BMI of at least 18.5; and 4) scores within 1 SD of age-matched community norms on all the subscales of the Eating Disorder Examination Questionnaire: Restraint, Eating Concern, Weight Concern, and Shape Concern.

Although a BMI of 18.5 is considered healthy by the World Health Organisation (World Health Organization, 2010), and hence indicative of recovery, a higher weight may be required by some women in order to resume menstruation after being malnourished. Swenne (2004) found a mean BMI of 19.2 at return of menstruation, but no range was provided so it is unclear what the lower BMI limit is to resume menstruation. However, Rigaud, et al. found in a cohort of 484 patients with anorexia nervosa, that 87% of those who reached a BMI over 18.5 resumed menstruation (Rigaud, et al., 2011). A further 7% who reached a BMI over 18.5 resumed menstruation once fat and energy intake was normalised. The study found four factors linked to resuming menstruation: BMI over 18.5, no excessive exercising, energy intake exceeding estimated energy needs, and fat intake over 1.1 g/kg ideal weight/day.

The suggested DSM-IV (1994) weight criteria for diagnosing anorexia nervosa is 85% IBW. A BMI of 20 is equivalent to 85-94% IBW, depending on height, while a BMI of 18.5 is equivalent to 78-87% IBW, depending on height (Shah, Sucher, & Hollenbeck, 2006). In contrast, Crisp (2006) reported last menstrual period in a group of 218 patients with anorexia nervosa at mean BMI 18.2. Swenne (2004) reported last menstrual period in a group of 127 patients with anorexia nervosa at mean BMI 18.9, however mean age was 15 so the BMI in this case may not be generalisable to adults.

Eight recent studies have defined recovery for the purpose of recruiting individuals who have recovered from an eating disorder (see Table E1). No studies set the minimum BMI criteria at higher than 18.5, although one study used 90% ideal body weight (IBW; Metropolitan Life Insurance Company, 1959), which may be a BMI higher than 18.5. Only one study set the time criteria for absence of symptoms at 3 years, while all the other studies required less time. Four of the studies ruled out a current eating disorder diagnosis through a clinical interview. Due to the online nature of the current study, it was not possible to carry out a clinical interview. Two studies used a score on the EDE-Q within 1 SD of the norm as a criteria for recovery. One of those did so without the use of a clinical diagnostic interview. The current study criteria for recovery from an eating disorder are, therefore, conservative compared to all reviewed studies.

Table D1: Recovery criteria in eating disorder studies

Study	BMI/IBW/ABW criteria	Menstruation criteria	Binging / compensation criteria	Eating criteria
(Ratnasuriya, et al., 1991)	100± 15% average body weight (ABW)	Normal	Overeating/vomiting less than weekly	None
(Bardone-Cone, et al., 2010)	> 18.5	None	No binging/purging for the last 3 months	No fasting for the last 3 months
(Dellava, et al., 2011)	> 17.5 for the last 3 years	None	No binging/purging for the last 3 years	None
(Cowdrey, et al., 2011)	18.5-25 for the last 12 months	Regular cycles for the last 12 months	None	None
(Rigaud, et al., 2011)	18.5-25 ("normal and stable")	None	None	"Normal eating behaviour" ^a
(Lindner, et al., 2012)	18.5-26 for at least 1 year	Regular cycles for at least 1 year	No binging/purging for at least 1 year	None
(Pruis, et al., 2012)	"stable healthy body weight for the past 2 years" (18-30)	Regular cycles (at least 10 in the last year) if not postmenopausal	None	None
(Strigo, et al., 2012)	>90% ideal body weight (IBW) for at least 1 year	Regular cycles for at least 1 year	No binging/purging for at least 1 year	Not engaged in "significant restrictive eating patterns" for at least 1 year

Table D1: Recovery criteria in eating disorder studies (cont)

Study	Exercise criteria	Cognitions criteria	Diagnosis criteria	Other criteria	Mean BMI	Range BMI
(Ratnasuriya, et al., 1991)	None	None	None	None	Not reported	Not reported
(Bardone-Cone, et al., 2010)	None	Within 1 SD of norms on all subscales of EDE-Q	Not meeting diagnostic criteria for an eating disorder	None	Not reported	Not reported
(Dellava, et al., 2011)	None	None	Not meeting diagnostic criteria for an eating disorder	None	21.4	Not reported
(Cowdrey, et al., 2011)	None	Within 1 SD of the norms on global score of EDE-Q	None	No psychoactive medication for the last 12 months	21.33	Not reported
(Rigaud, et al., 2011)	No "excessive physical exercising"	None	None	None	Not reported	Not reported
(Lindner, et al., 2012)	None	No specific "eating disorder cognitions" ^b for at least 1 year	Not meeting diagnostic criteria for an eating disorder	None	20.9	Not reported
(Pruis, et al., 2012)	None	<22 on the Eating Attitudes Test-26	Not meeting diagnostic criteria for an eating disorder	None	21.5	19-25
(Strigo, et al., 2012)	None	None	None	No psychoactive medication for at least 1 year	21.9	None

^a "Normal eating behaviour" was defined by Rigaud as energy intake at physiological needs, regular three or four meals per day, ability to eat face to face and eat out, no fear of fat, no weighing oneself every day and no obsession concerning body weight or food.

^b "Eating disorder cognitions" was defined by Lindner as fear of gaining weight, body distortion, self-esteem dependent on body/shape – no or only slight manifestations

Of the eating disorder studies discussed in the literature review, six specified inclusion criteria for controls which included weight (see Table E2). Two of the studies allowed a BMI of less than 18.5, lower than the World Health Organisation recommendation of 18.5-24.99 as the healthy weight range (World Health Organization, 2010). Four of the studies screened for eating disorders through a clinical interview. The one study that relied on self-report to determine BMI also used the Eating Attitudes Test to screen for eating disorder cognitions.

In studies where weight criteria have not been specified for control groups, BMI has tended to have an average over 20. Mean BMIs were reported as 21.1 (Aschenbrenner, et al., 2008), 20.2 (Wilson, et al., 1989), 20.2 (Ruggiero, et al., 1988), 20.7 (Vaz, et al., 1998), 21.6 (Rozenstein, et al., 2011), 24.52 (Mond, et al., 2006), 21.2-21.4 (Sunday & Halmi, 1996), 23.3 (Clausen, et al., 2011), 19-21 (Schebendach, et al., 2012). In all the studies, mean BMIs are much lower than the average BMI of 27.6 in New Zealand women (University of Otago and Ministry of Health, 2011).

Some studies did not account for weight or BMI at all in the control group (Hansson, et al., 2011; Tappe, et al., 1998). In the studies reviewed that did not have set criteria for weight or BMI, many of the participants of the control group were assessed for the presence of an eating disorder. It is likely, then, that those with a weight below the suggested DSM-IV (1994) weight criteria (85% IBW) would have been excluded. However, there is little agreement as to the correct definition of IBW (Shah, et al., 2006).

The control group inclusion criteria of females aged 18-60 years was in order to increase the likelihood of similarity to the recovered group. Schebendach (2012) matched normal control participants to weight-restored anorexia nervosa participants on age, ethnicity and race. As lifetime risk of having an eating disorder is much higher for females than males in New Zealand (Browne, et al., 2006), it was anticipated that most, if not all, recovered participants would be female.

Acculturation and social factors have a great effect on diet composition (Soh et al., 2008), which may also translate to perception of normalised eating. Therefore, information about country of origin, education, age and yearly income were collected from participants, but not used in selection. Likewise, experience working in the eating disorder field or as a dietitian was obtained.

Table D2: Inclusion criteria for controls in eating disorder studies									
Study	BMI/IBW criteria	Menstruation criteria	Binging / compensation criteria	Eating criteria	Exercise criteria	Cognitions criteria	Diagnosis criteria	Mean BMI	Range BMI
(Sysko, et al., 2005)	90-120% IBW	None	None	None	None	None	No current psychiatric disorder or significant medical disorder	22.2	Not reported
(Dellava, et al., 2011)	>17.5 for the last 3 years	None	None	None	None	None	Never met diagnostic criteria for an eating disorder	23.6	Not reported
(Cowdrey , et al., 2011)	18.5-25 and maintenance since menarche	None	None	None	None	None	Never met diagnostic criteria for any Axis 1 psychiatric disorder	21.19	Not reported
(Lindner, et al., 2012)	>18.5 since adolescence	Never absent for more than 3 months in relation with a low body weight	None	None	None	Never had any "substantial eating disorder specific cognitions"	None	21.8	Not reported
(Pruis, et al., 2012)	18-30	None	None	None	None	>21 on the Eating Attitudes Test-26	No depression or self-report of current or past eating disorder	23.7	20-28
(Strigo, et al., 2012)	Comparable to recovered group (>90% IBW)	Regular menstrual cycles since menarche	None	None	None	None	Never met diagnostic criteria for any psychiatric disorder	21.9	Not reported

Appendix E: Advertising sources for participant recruitment

Organisation	Country	Type of contact	Duration
Eating Disorders Education Network	New Zealand	Newsletter	One issue
		Website	3-6 months
Eating Disorders Association of New Zealand	New Zealand	Newsletter	One issue
		Website	3-6 months
		Word of mouth	
Butterfly Foundation	Australia	Website	3-6 months
Centre of Excellence in Eating Disorders	Australia	Website	3-6 months
Centre for Eating and Dieting Disorders	Australia	Website	3-6 months
Eating Disorders Association of South Australia	Australia	Website	3-6 months
Centre for Clinical Interventions in Australia	Australia	Website	3-6 months
University of Auckland	New Zealand	Facebook page	One post
		Posters	10 posters for two weeks
Auckland University	New Zealand	Facebook page	One post
Massey University	New Zealand	Facebook page	One post
Avondale College	Australia	Newsletter	One issue
Auckland District Health Board	New Zealand	Newsletter	Weekly issues for three months

Organisation	Country	Type of contact	Duration
Australia and New Zealand Academy for Eating Disorders	New Zealand and Australia	Website	Three months
Facebook	New Zealand and Australia	Campaign targeting females over 18 in New Zealand and Australia (advertised to people recovered from an eating disorder)	Three months
Dietitians New Zealand	New Zealand	Email newsletter	One issue
Dietitians Association of Australia	New Zealand	Email newsletter	One issue
Eating disorder dietitian forum hosted by the Werry Centre	New Zealand	Web forum	Two posts
New Zealand Psychological Society	New Zealand	Newsletter	One issue
New Zealand Association of Counselors	New Zealand	Newsletter	One issue
New Zealand Association of Psychotherapists	New Zealand	Newsletter	One issue
Eating disorder liaison staff in the Auckland metropolitan area	New Zealand	Email invitation	One invitation and one reminder
Regional Eating Disorders Service	New Zealand	Email invitation	One invitation and one reminder
		Verbal promotion at team meetings	Fortnightly reminders for three months
Thrive	New Zealand	Email invitation	One invitation and one reminder

Organisation	Country	Type of contact	Duration
Specialist Eating Disorders Service	New Zealand	Email invitation	One invitation and one reminder
Central Regional Eating Disorders Service	New Zealand	Email invitation	One invitation and one reminder
South Island Eating Disorders Service	New Zealand	Email invitation	One invitation and one reminder
Perth Clinic	Australia	Letter invitation	One invitation
Nepean Hospital Eating Disorders Clinic	Australia	Letter invitation	One invitation
Westmead Hospital	Australia	Letter invitation	One invitation
Sydney Children's Hospital	Australia	Letter invitation	One invitation
Royal Prince Albert Hospital	Australia	Letter invitation	One invitation
Bathurst Paediatric Clinic	Australia	Letter invitation	One invitation
John Hunter Hospital	Australia	Letter invitation	One invitation
Central Coast Eating Disorder Service	Australia	Letter invitation	One invitation
Illawarra Eating Disorder Service	Australia	Letter invitation	One invitation
Lismore & District Women's Health Centre	Australia	Letter invitation	One invitation
Centre for Psychotherapy – Eating Disorders Service	Australia	Letter invitation	One invitation
Shoalhaven Body Image and Eating Behaviour Service	Australia	Letter invitation	One invitation
ACT Eating Disorders Program in Australia	Australia	Letter invitation	One invitation

Appendix F: Advertisements examples

Advertisement for control and recovered



Institute of Food Nutrition and Human Health

Eating disorders affect over 26,000 women in New Zealand.* Normalising eating is a core part of treatment for people with eating disorders. However, there is no consensus on what actually makes up normal eating. I'm interested in finding out what key groups of people see as normalised eating.

Are you a woman 18-60 years old? I'd love to hear from you.

Have you recovered from an eating disorder? I'd love to hear from you.

If you'd like to participate, please visit www.surveymonkey.com/normalisedeating.

If you have any questions, feel free to contact Garalynne Binford at 09 623 4650 or garalynneb@adhb.govt.nz



Institute of Food Nutrition and Human Health

Normalising eating is a core part of treatment for people with eating disorders. However, there is no consensus on what actually makes up normal eating and little evidence to which aspects are important for recovery. I'm interested in describing normalised eating as a treatment goal for eating disorders. In order to do this, I need to find out what key groups of people consider normal eating.

Are you a clinician who has worked in the eating disorders field for a year or more? I'd love to hear from you.

If you'd like to participate, please visit www.surveymonkey.com/normalisedeating.

If you have any questions, feel free to contact Garalynne Binford at 09 623 4650 or garalynneb@adhb.govt.nz



Institute of Food Nutrition and Human Health

13 April 2012

Dear Team Leader

My name is Garalynne Binford. I am undertaking a Masters in Human Nutrition from Massey University in Auckland, New Zealand. As part of my schooling, I am conducting a research study to describe normalised eating as a treatment goal for eating disorders.

I'd like to invite current eating disorder clinicians with at least one year of experience to participate. This group is very important to the final study results.

I've attached the Information Sheet and two posters. If you're able to, I'd appreciate these being distributed to your staff.

Thanks so much for your consideration. If you have any questions, or would rather receive this electronically, please let me know.

Garalynne Binford

Lead Researcher

garalynneb@adhb.govt.nz



Institute of Food Nutrition and Human Health

Normalising eating is a core part of treatment for people with eating disorders. However, there is no consensus on what actually makes up normal eating and little evidence to which aspects are important for recovery. I'm interested in finding out what key groups of people see as normalised eating.



Are you a woman aged 18-60 years?

I'd love to hear from you!

Have you recovered from an eating disorder?

I'd love to hear from you!

If you'd like to participate, please visit www.surveymonkey.com/normalisedeating.

If you have any questions, feel free to contact Garalynne Binford at 09 623 4650 or garalynneb@adhb.govt.nz



Institute of Food Nutrition and Human Health

Normalised Eating

INFORMATION SHEET

You are invited to take part in the Normalised Eating study.

What is the study about?

Eating disorders are becoming increasingly recognized as a serious illness in New Zealand. Lifetime prevalence of all eating disorders in New Zealand is 1.7%, rising to 2.9% for females (RANZCP, 2006). Normalising eating behaviour is one of the primary goals for recovery from eating disorders. However, there is no consensus or working definition of what “normal eating” is and only limited research as to what actually encompasses normalised eating.

I would like to get people’s opinions on what is considered normalised eating. I am hoping that this research will help eating disorder clinicians and patients set relevant and helpful eating goals when working towards recovery.

Who can participate?

I am inviting various groups of people to participate in this research study:

- Clinicians, including dietitians, in New Zealand and Australia *with over one year experience working in the field of eating disorders and still working in the field*
- People who have recovered from an eating disorder
- Women aged 18-60 *who are not dietitians currently not working in the field of eating disorders or clinicians with previous (not current) eating disorder experience*

What is involved?

As a participant, you will fill out a series of online surveys. You may complete them in any internet accessible location you choose. In total, they should take you no more than ninety minutes to complete.

A small number of people who have filled out the survey will be asked to participate in one-to-one interview. These will be held in-person or on the telephone. The location, date and time will be decided based on participants' availability. Interviews will take about one hour to discuss the research topic in a little more in-depth. Informed consent will be completed at the start of each interview.

Data Management

Once completed, online survey data will be separated from your contact information (if you choose to provide it) Data only identifiable by a participant code. The information with your name and participant code, along with the interview transcripts (if you choose to participate in an interview), will be kept in a locked cabinet at Greenlane Clinical Centre for the duration of the study.

No material that could personally identify you will be used in any reports on this study.

Participant Rights

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study, for any reason;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the recorder to be turned off at any time during the interview.

The results of this study may be published in a peer-reviewed journal and presented at conferences.

If you are a health professional and have any queries or concerns regarding your rights as a participant in this study, you may wish to contact your professional organisation.

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: advocacy@hdc.org.nz

Compensation

Upon completion of the online survey, all participants will be entered into a prize drawing of \$100 value. All interview participants will receive a \$10 petrol voucher and be reimbursed any parking expenses. You will also be given the option to receive a summary of the project findings.

Committee Approval Statement

This study has received ethical approval from the Health and Disability Northern X Regional Ethics Committee, ethics reference number NTX/12/EXP/025.

Get Involved

If you would like to be participate, please visit

www.surveymonkey.com/normalisedeating

If you have any questions about the project, please feel free to contact myself Garalynne Binford at 09 623 4650 or garalynneb@adhb.govt.nz. or my supervisor Janet Weber at 06 356 9099 ext. 4403 or j.l.weber@massey.ac.nz.

Thanks so much for your consideration.

Garalynne Binford

Lead Researcher

Appendix H: Assumptions used for nutrient analyses

Entry	=	Analysed	Entry	=	Analysed
Bowl	=	1.5 cup	Bread	=	White, unless spec
Milk added to hot drink	=	2 tb	Rice	=	White, unless spec
Handful	=	0.5 cup	Piece fruit	=	Apple or banana
Glass	=	200ml	Vegetables	=	1 cup mixed frozen, unless spec
Cheese	=	Processed or cheddar	Potato, cooking	=	Mashed
Spread on	=	Margarine	Chicken, cooking	=	Grilled
Meat	=	90g	Fish	=	Crumbed, baked
Starch	=	1 cup	Beans	=	Kidney beans
Mayonnaise on sandwiches	=	1 tb	Plate	=	2 cups
Muesli	=	Toasted, unless spec	Cereal	=	Cornflakes with 200 ml standard milk
Cracker	=	6.5 g per cracker	Cheese on	=	1 tb cheese/cracker
Sandwich meat	=	50g chicken or ham	Tinned tuna	=	95g in oil
Yoghurt	=	150g low fat sweetened	Dessert	=	½ cup ice cream or apple crumble
Bowl ice cream	=	½ cup	Scoop ice cream	=	¼ cup
Dressing	=	Kraft salad	Tomato on	=	½ tomato
Lettuce on sandwich	=	2 leaves	Square chocolate	=	15g milk chocolate
Custard sauce	=	2 tb	Sushi hand roll	=	6 sushi rolls
Overall rules					
Stayed with same type unless specified					
When there were two options given, took the average or put equal amount of both options in the analysis					
If >50% of foods required assumptions, then that day was excluded from nutrient analysis					
If the word “vegetables” was used without being specified starchy or non-starchy vegetables, then that day was excluded from nutrient analysis					

Appendix I: Nutrient analysis second assessor results

A registered dietitian acted as a second assessor to check for accuracy of the nutrient analysis data. Normalised diets of 31 of the participants (30% of the total participants included and excluded from participation) were reassessed. The second assessor included the normalised diets of 28 (90%) of the participants, whereas the primary researcher included the normalised diets of 17 (54%) of those same participants. When determining whether a normalised diet met criteria for inclusion in nutrient analysis, the primary researcher and second assessor agreed on including 16 out of the 31 (52%) normalised diets. Correlation analysis was performed for all 16 normalised diets (28% of the total number analysed by the primary researcher).

Correlation analysis was completed using Pearson's equation in Windows Excel. Statistical significance was determined from the R value using GraphPad Software (GraphPad Software Inc., 2012b). All items were at least moderately positively correlated and all correlations were statistically significant.

Mean and standard deviation were calculated and statistically significant differences between the two sets of data were determined using an unpaired T-test with 95% confidence interval on GraphPad Software (GraphPad Software Inc., 2012c). No statistically significant differences were found on any items.

Comparison of primary data and second nutrient analysis			
	R value (Pearson's)	P value (Pearson's)	P value (T-test)
Energy (kcal)	0.8911	0.0001	0.4823
Protein (% of kcal)	0.8694	0.0001	0.4254
Fat (% of kcal)	0.7554	0.0007	1.0000
Carbohydrate (% of kcal)	0.5540	0.0026	0.3533
Sugar (% of kcal)	0.7636	0.0006	0.1733
Calcium (mg)	0.9307	0.0001	0.4255
Fibre (g)	0.7869	0.0003	0.1118

Appendix J: In-depth interview guide

Normalising eating behaviour is a primary goal of nutritional rehabilitation and a key part of most therapies designed for people with eating disorders. Although some groups have described normalised eating, there has been very little formal research regarding what characterizes the progress made towards normalising eating, once weight has been restored and bingeing and purging have stopped.

Control group only: When you think about what's normal, try to think about what you see most people doing, rather than what you think is healthy or right.

Control group only: Imagine you were visited by an alien. This alien had never encountered food or eating and it was up to you to explain normal eating. What would be the first three things you'd explain about normal eating?

All other groups: Remember, the goal of the study is to describe normalised eating as a treatment goal for eating disorders.

All other groups: Imagine you were speaking to someone suffering from an eating disorder. This person asks you what normalised eating is. What would be the first three things you'd explain about normalised eating?

The Australian and New Zealand governments have defined healthy eating for the general population. *(Sometimes referred to a pictorial illustration)* For New Zealand, healthy eating for the populations is defined as at least 6 servings breads/cereals, 1 serving protein, 2-3 servings dairy, 5 servings fruits and veggies and limited sweets and fatty foods. In the online survey, you were asked to give an example of a normalised diet. When the examples were averaged out, only about half included the recommended servings of fruits and vegetables. *(53% fruit, 49% veges incl kumara/potatoes)* Also, most people who filled out the survey mentioned sweet foods, such as muffins, cakes, pancakes, biscuits, ice cream, chocolate, lollies or dessert in at least one of their normal day examples *(80%)*

Do you think healthy eating is the same thing as normalised eating? If not, how so?

Is eating sweet foods a necessary part of normalised eating? Why or why not?

Almost all the people who filled out the online survey mentioned meat *(98%)* and dairy *(91%)*, while only a little more than half mentioned butter or margarine *(42%)*.

In your opinion, is it part of normalised eating to have food restrictions or rules about what you can't eat? Why or why not?

Is using margarine or butter as a spread a necessary part of normalised eating? Why or why not?

Most people described a normalised diet as **3 meals and 2-3 snacks**.

Is snacking a necessary part of normalised eating? Why or why not?

You were asked in the survey to rate the examples of compensatory eating as normal to abnormal. Two of those were

- Choosing to eat less dinner when planning to eat dessert
- Doing extra exercise to make up for a large meal

Compensation has to do with thinking and planning what you are going to eat as a way to control how much and what you eat.

Do you think compensation is part of normalised eating? Can you explain a bit more? Are there situations in which your answer might be different?

PROBES: The online survey showed mixed results. The only example participants consistently indicated as normal was the first example “choosing to eat less dinner when planning to eat dessert”. For the other examples, more than two thirds indicated probably normal or abnormal, instead of definitely.

- *Choosing to eat less at lunch and dinner because you’ve eaten extra calories at morning tea*
- *Walking to an event where you know you’ll be eating more than usual in order to make up for it*
- *Skipping breakfast when planning to have special lunch*

You were asked in the survey to rate examples of eating in response to appetite signals from normal to abnormal. Two of those were

- Having an unplanned snack before you go to bed after noticing you’re feeling a little hungry
- Having just one favourite biscuit because you’re not hungry

Do you think eating in response to appetite is part of normalised eating? Can you explain a bit more? Are there situations in which your answer might be different?

PROBES: Most people rated all the situations as probably or definitely normal.

- *Eating something extra an hour after you’ve had lunch because you were still hungry*
- *Declining a dessert you like because you are too full after dinner*
- *Only eating half of the food you put on your plate because you are no longer hungry*

People with active eating disorders often use strict eating plans, which may not meet their nutrition needs. As part of treatment then, healthier eating plans are often used to help people improve their nutrition intake and regain confidence in eating.

Do you think using a meal plan is part of normalised eating? Can you explain a bit more? Are there situations in which your answer might be different?

PROBE: Overall, people indicated meal plans as abnormal. The one exception was “following a plan that tells you how many food group servings to eat every day”. Reminder of normalised eating as a treatment goal.

In the survey, you watched videos of a woman eating a meal at different speeds.

What makes the speed of eating normal or abnormal? If you were watching someone eating, what would indicate to you that they were eating at a normalised speed?

In the online survey, you were shown videos with different utensils used to eat the same food.

What makes the choice of utensils normal or abnormal? If you were watching someone eating, what would indicate to you that their utensil choice was normalised?

PROBE: Cereal was eaten with a regular spoon and teaspoon and fish and chips were eaten with chopsticks, hands and fork and knife. You were also shown another set of videos of eating a meal at different speeds. A large number of participants commented that eating without a knife in the video was abnormal.

When writing down examples of a normalised diet, a number of people mentioned eating in social settings.

Is it part of normalised eating to eat in social settings? What about **not** eating in social settings?

We've nearly reached the end of the interview. In conclusion, I'd like to ask one final question.

Control group only: In your opinion, what defines normal eating for the average young woman?

All other groups: In your opinion, what defines normalised eating?

All other groups: How do you know that normalised eating **as a treatment goal** has been achieved?