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Feeding goals sought by mothers of 3–5-year-old children

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Objectives. One means through which children learn eating behaviours is the feeding strategies used by parents. Although research has studied the effects of parental feeding strategies on consumption, choice, and liking, little is known about the goals parents themselves seek. The study aimed to explore the feeding goals sought by parents of preschool children.

Design. An exploratory qualitative study using in-depth, semi-structured interviews was undertaken. Data were analysed using thematic and interpretative techniques.

Methods. A snowballing sample of 12 mothers of children aged 3–5 years was used. Mothers were asked to recall and talk through their feeding experiences with this child. Probe questions were used to explore the reasoning behind the actions described. Data were transcribed and subjected to concurrent coding and interpretation.

Results. Mothers spontaneously classified their child as a 'good' or a 'bad' eater. Consumption emerged as the dominant feeding goal. For 'bad' eaters, a short-term goal of consuming any food, rather than no food, was adopted. For 'good' eaters, a long-term goal of consuming a varied, well-balanced diet was favoured. Liking as a feeding goal was not mentioned.

Conclusions. Although the literature suggests that liking is the most appropriate feeding goal for the establishment of long-term healthy eating behaviours, parents do not knowingly, repeatedly and consistently target food likes as a direct outcome of their feeding strategies. Interventions that focus on 'how' parents feed their children, as well as 'what', are recommended.

Chronic, and often fatal, illnesses such as cancer (Cancer Research UK, 2008), cardiovascular disease (British Heart Foundation, 2007) and diabetes (Diabetes UK, 2008) are prevalent in the UK and government targets aim to reduce the associated mortality rates by 2010 (Department of Health, 2004). Diet has implications in reducing the incidence of these diseases. For example, a diet high in fruit and vegetables can serve

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as a protective factor, particularly if commenced in childhood (Department of Health, 2000) and obesity is a known risk factor (Department of Health, 2004; Kim & Popkin, 2005). Adult obesity is strongly predicted by childhood obesity (e.g. Deshmukh-Taskar *et al.*, 2006; Whitaker, Wright, Pepe, & Seidel, 1997) which has been referred to as one of the greatest challenges to child health in the twenty-first century (Wardle, 2005; though see also Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006a; Saguy & Riley, 2005). Links between health and life-style choices such as diet (Campos, Saguy, Ernsberger, Oliver, & Gaesser, 2006b) suggest the importance of preventive health measures, possibly achieved through interventions targeted at parents which aim to establish healthy feeding behaviours whilst the child is young.

Food acquisition and consumption is influenced by a multiplicity of physiological, psychological, ecological, economic, political, social, and cultural processes (Beardsworth & Keil, 1997), for example, cultural values and beliefs (Bruss *et al.*, 2005); the economics of household income versus food costs (Attree, 2005; Caraher, Dixon, Lang, & Carr-Hill, 1998); food accessibility and time constraints (Dowler, 1998); household roles and family structure (Attree, 2005; Dowler, 1998; Park, Smith, & Correll, 2008); social class (Hupkens, Knibbe, Van Otterloo, & Drop, 1998; Lang & Caraher, 1998; Lawrence, 2008); and, in the case of children, parental characteristics such as knowledge and beliefs (Gibson, Wardle, & Watts, 1998) or weight status (Francis, Ventura, Marini, & Birch, 2007). In particular, previous research has shown that parents influence their child's feeding through their use of feeding strategies (e.g. Casey & Rozin, 1989; Kaiser, Martinez, Harwood, & Garcia, 1999; Moore, Tapper, & Murphy, 2007; Sherry *et al.*, 2004). These strategies include rewards (e.g. Birch, Marlin, & Rotter, 1984; Horne *et al.*, 2004); repeated taste exposure (e.g. Birch, McPhee, Shoba, Pirok, & Steinberg, 1987); modelling (e.g. Jansen & Tenney, 2001); pressure to eat (e.g. Galloway, Fiorito, Francis, & Birch, 2006); and restricting access to food (e.g. Fisher & Birch, 1999). In the main, the extensive literature base on these feeding strategies has studied their influence on three main outcomes – food liking, food choice, and food consumption.

The sensory properties of food (e.g. taste, look) play a major role in what a child will eat (Rozin, 1990; Hamilton-Ekeke, & Thomas, 2007). They help to define what foods a child 'likes' which is considered critical to the establishment of long term dietary improvements (Cooke, 2007) since, for 3–4-year-old children in self-selection settings, liking strongly and positively correlates with consumption (Birch, 1979). A liking for sweet tastes and a dislike of sour and bitter tastes are the only tastes which are innate (Cowart, 1981). The acquisition of other food likes/dislikes is predominantly influenced by social factors (Rozin, 1989). For example, repeatedly exposing a child to a novel food, and encouraging them to taste it, has been shown to increase children's liking for a food (Sullivan & Birch, 1990; Wardle, Herrera, Cooke, & Gibson, 2003). The principles underpinning this originate from the 'mere exposure hypothesis' which states that repeatedly making a stimulus available is sufficient to enhance liking for that stimulus (Zajonc, 1968). With food stimuli, tasting the food, rather than just looking at it, is required for exposure effects to occur (Birch *et al.*, 1987). However, in some social situations a child's liking for a food can be reduced, for example, where food is used instrumentally in a reward scenario (e.g. Birch *et al.* (1984) where movie tickets were awarded for drinking a fruit shake).

Food likes/dislikes strongly influence food choices, defined as the selection of one food item over another (Rozin, 1989). Although mothers' choices of what foods to serve their children have been associated with concerns for the child's health (Gibson *et al.*, 1998), children's food choices are often for foods not associated with healthy diets, such

as those high in fat and carbohydrates (Birch & Fisher, 1995). Even though food choices are modifiable, changes observed in social settings may be indicative of transient acts of social conformity rather than long-term behavioural enhancements. Indeed, children have been shown to alter their food choices whilst their parents were watching, selecting less food of low-nutritional value (Klesges, Stein, Eck, Isbell, & Klesges, 1991).

Some feeding strategies used by parents have been shown to increase food consumption, for example, silently eating the same food as the child (Addessi, Galloway, Visalberghi, & Birch, 2005). However, food consumption can be adversely affected by some feeding practices, albeit unintentionally. For example, where access to foods considered 'undesirable' is restricted, the desire to eat such food can increase (Fisher & Birch, 1999), such that the child may learn to eat in response to external cues (e.g. availability) rather than internal cues (e.g. hunger and satiety), (Savage, Fisher, & Birch, 2007). Also, where verbal pressure is used in an attempt to increase consumption, the opposite can occur (Galloway *et al.*, 2006) which can lead to long-term aversions to the food concerned (Batsell, Brown, Ansfield, & Paschall, 2002).

In summary, research into parental strategies has primarily examined their influence on food liking, food choice, and food consumption. However, little is known about the feeding goals that parents seek to achieve through their feeding strategies. It is recognized that 'how' parents feed their children is under-represented in obesity policy in the UK (Clark, Goyder, Bissell, Blank, & Peters, 2007). Consequently, the objective of the present study was to explore the feeding goals sought by parents of preschool children.

Method

Due to the exploratory nature of the study, a qualitative methodology was adopted. Ethical approval was obtained from Cardiff University School of Social Sciences Ethical Committee and informed consent was obtained from all participants. Recruitment used a snowballing technique (Bryman, 2001) originating from contacts of the main author. Although the participant information sheets stressed that mothers, fathers, or main caregivers could take part in the study, no female caregivers other than mothers responded, and all fathers that were approached preferred that their partners be interviewed. The sample consisted of 12 mothers aged between 31 and 42 years (mean = 36), all were white, 11 being of British origin and 1 from Brazil. None of the participants were known to the authors prior to recruitment. Each interview commenced with a fixed set of questions designed to elicit some characteristics of the participant. All were homeowners who had access to a car for their household shopping, nine were working mothers and one was a single parent. All but one had a support network they used for advice on feeding matters consisting variously of mothers ($N = 11$), fathers ($N = 1$), sisters ($N = 7$), husband ($N = 2$), brothers ($N = 2$), and friends ($N = 9$). Each had a child aged between 3 and 5 years who was the principle target of the interview and whose characteristics are shown in Table 1.

A semi-structured interview contained questions designed to prompt the mothers to recall and talk through occasions when they had tried to influence the target child's eating when the child was: (a) reluctant to eat familiar foods; (b) presented with novel foods; and (c) discouraged from eating undesirable foods. In each scenario, probe questions were used to explore the reasoning behind the actions the mothers described, paying particular attention to what the mothers were hoping to achieve and why.

Table 1. Characteristics and family position of target children

Gender	Mean age (range)	Only child[a]	Oldest child[b]	Youngest child[c]	Middle child[d]	Total
Male	53 months (38–71 months)	3	1	2	2	8
Female	46 months (36–62 months)	1	0	3	0	4
Total	51 months (36–71 months)	4	1	5	2	12

[a] Number of target children with no siblings.
[b] Number of target children with younger siblings only.
[c] Number of target children with older siblings only.
[d] Number of target children with both older and younger siblings.

This reasoning was freely recalled, on no occasion were specific prompts used and specific 'why?' questions were avoided to moderate against the interviewee feeling judged (Cronin, 2001).

The interviews lasted, on average, 40 min and were recorded, transcribed verbatim and then subjected to concurrent coding and interpretation (Coffey & Atkinson, 1996). Codes were assigned at the 'manifest' level of what the interviewee said and at the 'latent' level where meaning was inferred from the words spoken (Mason, 2002).

Results

The initial question posed to each mother asked them to talk through a scenario when the target child had been reluctant to eat something. Table 2 illustrates how the initial utterances of 11 of the 12 mothers began with an unprompted assessment of how the target child's eating status was perceived. The mothers classified the child somewhere on a sliding scale ranging from a 'good' eater to a 'bad' eater, all, or some of, the time. A narrative analysis of the transcripts showed that this classification was made by considering the amount of mealtime conflict experienced, as well as the extent to which the child complied with her attitudes towards feeding (e.g. that a child should eat a well-balanced diet or should neither be over- or under-weight). The child's eating was something that concerned the mothers greatly, evoking many emotions and uncertainties as this extract from a mother whose child often refused their food shows:

> 'I try to sort of keep her mind off it . . . .she loses interest. I don't know whether it's because she's not hungry . . . I've assumed she probably needs feeding . . . The other day, I managed to get her to eat a whole weetabix and I was nearly singing from the mountain tops.' (Mother 5)

The following extract from the mother of a 'good' eater also displays emotion and uncertainty and shows how, where siblings existed, their eating status could be different to the target child. Indeed, the mothers' feeding experiences, techniques, and objectives were often child, or meal, specific.

> 'He's your dream child from an eating point of view. He's too easy. The only thing now is, he's starting to try some of his brother's techniques . . . [which he knows] winds Mum up big time and she really gets cross . . . He's just a joy, he really is . . . I've never been able to work out why his brother is different.' (Mother 9)

The perception of eating status influenced the mothers' feeding goals such that those with 'good' eaters spoke of long-term goals – see Table 3, whereas those with 'bad'

Table 2. Mothers' unprompted assessment of their child's eating status

Interviewer's initial question: 'Can you remember an occasion when X was reluctant to eat something that you put in front of her/him and talk me through that situation?'	
'He wouldn't drink milk from the time has was 6 months old so from a baby he had problems eating, being finicky, not wanting certain foods and that' (Mother 01)[a]	'Bad' eaters
'All the time. He always does it. With his food, he is a nightmare'. (Mother 07)[a]	
'It happens quite regularly which is not good' (Mother 05)	
'It frequently happens. Emma eats when she likes to eat, she's not very good' (Mother 06)	
'Well there's more than one occasion ' (Mother 08)	
'Oh yes, it quite often happens' (Mother 12)	
'. . .Generally she's a good eater' (Mother 11)	
'She's pretty good with most food' (Mother 02)	
'He's very good at eating, he'll eat everything now' (Mother 03)[b]	
'Well, actually he is the one that eats better of my kids.' (Mother 04)	
'. . .he is excellent. There are very few things that Ryan won't eat' (Mother 09)	'Good' eaters

[a] Mothers had sought advice from nutritionists.
[b] This mother had successfully overcome her child's previous eating issues.

eaters spoke of short-term goals that applied on a meal by meal basis, most commonly to allow the child to consume anything they were willing to eat. When asked about the reasoning behind this, Mother 1 replied:

> 'I don't know (*long, silent pause*). You just don't know, you just try anything. You try and get anything down their throat . . . I'd say he's made me ill. What shall I do this time, shall I try, just try different things with him? . . . I used to see the television and maybe get ideas from there but mostly I'd talk to my sister and just ask for some sympathy really, just to try and get food down him.'

Consumption of food was also the dominant concern amongst mothers who perceived their children as 'good' eaters. However, it was framed differently as a long-term feeding goal to establish a varied, well-balanced, healthy diet:

> 'To be sure that they are eating a variety of food and not to stay always with the same things . . . For their health, but I'm very intuitive in this. I like colourful food so they have that. I look at the variety, the colours . . . I don't check books or anything' (Mother 4)

Mothers described a number of factors that reflected the long term nature of their goals. They were aware that it could take time for the child to accept a new food and that moderation was an important factor in their approach to feeding and in the expectation of the level of compliance exhibited by the child such that 'trying a little bit' of the food was a mutually acceptable outcome ($N = 9$).

> 'I felt it was easier just to say 'taste it', doing it nicely, just saying try a little bit. If you get angry and say 'TRY IT!' you'll put them off it even more so I just say 'just try a little tiny bit'

Table 3. Mothers' long-term feeding goals

Goal	Mothers[a]
To establish a varied, well-balanced, healthy diet	10[b]
To avoid the child becoming a fussy eater	3
To avoid eating becoming an issue	1
To help the child make wise food choices	1
To avoid the concept of dieting[c]	1
To avoid weight gain[c]	1
To teach the child to chew adult food	1
To prepare the child for school	1
To socialize the child's eating behaviour	2

[a] Number of mothers mentioning the feeding goal.
[b] The two mothers who did not mention this goal were those with problem eaters who had been referred to nutritionists.
[c] Either the mother or a member of the immediate family had attended a slimming club.

> and if she say's 'no', I'll say 'just a little tiny bit and if you don't like it you don't have to have it'. If she knows that if she's tried it and doesn't like it she doesn't have to have it and then once she's tried it if it's nice then she'll eat it' (Mother 2)

The most popular criteria for the mothers' food choices were their concepts of the foods required for a balanced diet ($N = 10$), and the child's likes/dislikes ($N = 10$). Perceptions of what constituted a balanced diet were informed by the '5-a-day' message ($N = 5$) and the mothers' childhood diets ($N = 5$). Mothers would not feed their child foods that they consistently and repeatedly refused, classifying them as 'disliked'. This was exemplified by one mother whose child would not eat meat:

> 'I don't think she does like meat. Now myself, I only eat chicken, I don't like the taste of red meat or anything like that, although I will eat them in front of both girls. I will eat them to try and set an example, but I think with Grace it's been so consistent. I mean there's been other things that maybe she's not tried before and initially she says she doesn't like and she will watch particularly the older children and she will have a go of it and she will like it, but she is consistent with meat' (Mother 11)

How long the mother would persist before she classified the food as 'disliked' depended on the level of conflict at mealtimes, and the extent to which the child generally accepted either the food group (e.g. vegetables), or a balanced diet in general. Verbal refusals expressed as 'I don't like it' were often not perceived as indicative of a genuine dislike since they could mean that the child was tired, not hungry, or that the food was novel ($N = 9$).

To achieve their feeding goals mothers would use feeding strategies involving modelling ($N = 12$); pressure to eat ($N = 11$); rewards ($N = 9$); restriction ($N = 8$); and repeated taste exposure ($N = 6$) – see Moore *et al.* (2007). In terms of what was actually being achieved, mothers talked about how their feeding goals influenced the behavioural norms that the child displayed whilst she was present. For example, that any reward would be contingent upon eating the main course ($N = 3$); that their mother expected them to at least try their food ($N = 2$); or that they should ask before having a snack or treat food ($N = 2$).

> 'She can be very greedy with sweets and chocolate and crisps. She can have one a day – like yesterday morning she said 'can I have a packet of crisps, it's 11 o'clock in the

Table 4. Sources of information

Self	Mothers[a]	*Family*	Mothers[a]
Childhood experience	5	Husband	3
Experience with target child	9	Mother	2
Experience with older child	5	Sister/sister-in-law	3
Intuition	6	*Friends*	2
Television		*Professional*	
Child behaviour programmes	5	Doctor	2
Children's TV	4	Dietician	2
Other TV	4	Health visitor	4
School	5	Nursery staff	1
Internet	1	*'They' say*	1
Books[b]	3	*Mother's work*	3

[a] Number of mothers mentioning the information source.
[b] Mainly for recipe ideas or to learn about child rearing before the child was born.

> morning'. So I said, if you have one, you're not having another packet so she knows – ONE' (Mother 2)

On the other hand, some mothers reported that if the child were left to make their own food choices, these would not be desirable ($N = 4$):

> 'If I left him to his own devices, he probably wouldn't eat things.' (Mother 3)

The information sources that the mothers utilized are summarized in Table 4 which shows that they mostly relied on intuition or experience, including their own childhood experiences:

> 'As far as I am concerned, if she wants to eat sweetcorn with every meal, I'm not going to force her to eat peas rather than sweetcorn if that's what she likes. I think it comes back to me not eating a lot of vegetables when I was younger and being forced to eat stuff that I didn't want to eat, I just think I'm no less fussy now than I was before and I don't see that as being particularly productive' (Mother 6)

The only examples of formalized advice being sought or received was in the case of mothers of problem eaters who would often turn to doctors, health visitors, or nursery staff for advice. This advice was commonly to leave the child alone since they would eat if they were hungry. However, the prospect of a hungry child, or the distress and conflict that ensued from persistent and protracted food refusal led three of the four mothers who had faced the situation to allow the child consume anything they were willing to eat on those occasions.

Discussion

Although parents frequently employ a range of feeding strategies (see Moore *et al.*, 2007) whose effect on consumption, choice, and liking have been studied (see Savage *et al.*, 2007), little was previously known about the feeding goals parents sought to achieve with their strategies.

Although consumption emerged as the feeding goal sought by all mothers, supporting previous findings by Sherry *et al.* (2004), not all were concerned with *long-term* consumption patterns. If the mother regarded her child as a problem eater, her

concern would be to get the child to eat anything they were willing to eat. This would be her dominant short-term goal and she would be more inclined to acquiesce to the child's food demands believing the avoidance of hunger and distress to be in the best interest of the child. In contrast, mothers of 'good' eaters strived to ensure their child consumed a varied, well-balanced, healthy diet. Although Casey and Rozin (1989) previously found no association between eating status and the *selection* of feeding strategies, the current study suggests an association between eating status and the intensity, duration, and desired outcome of the strategies as well as the foods targeted. The direction of this association (i.e. did the eating status originate from the strategy, or vice versa) cannot be reliably inferred from the qualitative data obtained.

Liking was frequently mentioned by the mothers in a number of contexts. For example, 11 mothers reported that the child's use of the phrase 'I don't like it' was a common manifestation of food refusal which was often perceived as an indicator of a transient state unrelated to liking, e.g. satiety or tiredness. In addition, consistent refusal of a food would result in the mother categorizing it as 'disliked' and no longer offering it to the child. However, during analysis, establishing liking was not categorized as a feeding goal, even though many of the goals specifically mentioned could be construed as attempts to do so (e.g. to establish a varied diet or to influence food choices). This was a considered decision as there was no evidence that liking was knowingly, repeatedly, and consistently targeted as a direct outcome of a feeding strategy as the literature describes (e.g. Sullivan & Birch, 1990) and, indeed, recommends (Cooke, 2007).

Liking is a common outcome used in experimental studies into the effects of feeding strategies (e.g. Sullivan & Birch, 1990). Therefore, some of the strategies that previous studies showed mothers use (e.g. Kaiser *et al.*, 1999; Sherry *et al.*, 2004), although capable of increasing their chosen goal of food consumption over the short term, could potentially reduce liking and, ultimately, consumption over the longer term (e.g. offering rewards for eating – see Birch *et al.*, 1984). One important aspect of this finding relates to the fact that the children were of the age at which they begin to acquire more independence regarding food consumption, for example, as they begin to attend school. In self-selection settings, liking is positively correlated with consumption by 3 to 4-year-old children (Birch, 1979). This suggests that if mothers do not appreciate the role played by liking in the acquisition of eating behaviours, preschool children may not be adequately prepared to self-select healthy foods by the time parental influence begins to diminish.

Choice was only mentioned as a feeding goal once and, as predicted by Klesges *et al.* (1991), many mothers noted that, even if the child would eat a balanced diet during supervised meal times, their unsupervised food choices would be less balanced. Therefore, the food choices of the preschooler were made by the mother. As noted by Gibson *et al.* (1998), these choices were related to concerns for the child's health in that the mother either needed to ensure that a problem eater ate something, or aimed to give a good eater a healthy diet. However, mothers' concepts of a healthy diet varied suggesting the need for ongoing, practical nutritional advice to mothers.

The health of a child is often regarded as symbolic of child rearing practices (McKeever & Miller, 2004). Furthermore, mothers are often regarded as blameworthy should their child be overweight or obese and can perceive themselves as being so (Edmunds, 2005; Jackson, Wilkes, & McDonald, 2007). Blame, is arguably suggestive of *informed* wrongdoing. However, the findings of this study illustrated the extent to which the mothers were learning 'on the job,' using their own initiative and

resourcefulness, rarely having access to informed advice. Given the amount of research that exists in the area of feeding strategies, this suggests that adequate support is not reaching those who would benefit from it, and raises further questions for debates surrounding blameworthiness and responsibility.

The sample exhibited a high degree of homogeneity across a number of characteristics, most notably, gender. Even if the initial contact was with the father, it was the mother who elected to participate and there was also a strong feminine gender bias in the descriptions of their feeding support network. Gender has long been a prominent determinant in household roles (Dowler, 1998) and an expectation remains that females perform the child care roles, even if they continue working (e.g. Park *et al.*, 2008) which the nature of this sample tends to support. The participants were also homeowners who used a car to access shops where food was obtained. Car ownership or household tenure are often viewed as proxies for income or social class (see Macintyre, McKay, Der, & Hiscock, 2003) and it is likely that this aspect of homogeneity within the sample reflected the snowballing recruitment strategy used. Access to a car decreases with decreasing social class and also has a direct bearing on the ability to purchase cheap and healthy foods (Lang & Caraher, 1998). Thus, there is evidence for a link between social class and 'what' parents feed their children, but a limitation of this study is that it has not been able to address whether social class also affects 'how' the child is fed (see Clark *et al.*, 2007). Further research is suggested within other socio-economic groupings as well as with fathers, younger mothers, and other carers.

In conclusion, this exploratory study suggests a relationship between mothers' perceptions of their child's eating status and their feeding goals, which predominantly focus on the child's consumption. Findings suggest that mothers do not knowingly, repeatedly, and consistently target food likes as a direct outcome of their feeding strategies as the literature describes and recommends, and may not be aware that some feeding strategies they use may adversely influence liking. Since obesity represents a major challenge to child health, further research into the design and evaluation of public health interventions that focus on 'how' parents feed their children, as well as 'what' is recommended.

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References

Addessi, E., Galloway, A. T., Visalberghi, E., & Birch, L. L. (2005). Specific social influences on the acceptance of novel food in 2–5-year-old children. *Appetite*, *45*, 264–271.

Attree, P. (2005). Low-income mothers, nutrition and health: A systematic review of qualitative evidence. *Maternal and Child Nutrition*, *1*, 227–240.

Batsell, W. R., Jr., Brown, A. S., Ansfield, M. E., & Paschall, G. Y. (2002). 'You will eat all of that!'. A retrospective analysis of forced consumption episodes. *Appetite*, *38*, 211–219.

Beardsworth, A., & Keil, T. (1997). *Sociology on the menu. An invitation to the study of food and society.* London: Routledge.

Birch, L. L. (1979). Preschool children's food preferences and consumption patterns. *Journal of Nutrition Education*, *11*, 189–192.

Birch, L. L., & Fisher, J. A. (1995). Appetite and eating behaviour in children. *Pediatric Nutrition*, *42*, 931–953.

Birch, L. L., Marlin, D. W., & Rotter, J. (1984). Eating as the 'means' activity in a contingency: Effects on young children's food preference. *Child Development*, *55*, 431–439.

Birch, L. L., McPhee, L., Shoba, B. C., Pirok, E., & Steinberg, L. (1987). What kind of exposure reduces children's food neophobia? Looking vs tasting. *Appetite*, *9*, 171–178.

British Heart Foundation (2007). *CHD statistics 2007: Morbidity*, Retrieved August 18, 2008 from http://www.heartstats.org/uploads/documents%5C2007.chapter2.pdf. Oxford: University of Oxford.

Bruss, M. B., Morris, J. R., Dannison, L. L., Orbe, M. P., Quituga, J. A., & Palacios, R. T. (2005). Food, culture and family: Exploring the coordinated management of meaning regarding childhood obesity. *Health Communication*, *18*, 155–175.

Bryman, A. (2001). *Social research methods*. Oxford: Oxford University Press.

Campos, P., Saguy, A., Ernsberger, P., Oliver, E., & Gaesser, G. (2006a). The epidemiology of overweight and obesity: Public health crisis or moral panic. *International Journal of epidemiology*, *35*, 55–60.

Campos, P., Saguy, A., Ernsberger, P., Oliver, E., & Gaesser, G. (2006b). Response: Lifestyle not weight should be the primary target. *International Journal of epidemiology*, *35*, 81–82.

Cancer Research UK (2008). *CancerStats – incidence UK*, Retrieved August 18, 2008 from http://publications.cancerresearchuk.org/WebRoot/crukstoredb/CRUK_PDFs/CSINC08.pdf. London: Cancer Research UK.

Caraher, M., Dixon, P., Lang, T., & Carr-Hill, R. (1998). Access to healthy foods: Part 1. Barriers to accessing healthy foods: Differentials by gender, social class, income and mode of transport. *Health Education Journal*, *57*, 191–201.

Casey, R., & Rozin, P. (1989). Changing children's food preferences: Parent opinions. *Appetite*, *12*(3), 171–182.

Clark, H. R., Goyder, E., Bissell, P., Blank, L., & Peters, J. (2007). How do parents' child-feeding behaviours influence child weight? Implications for childhood obesity policy. *Journal of Public Health*, *29*, 132–141.

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data*. London: Sage.

Cooke, L. (2007). The importance of exposure for healthy eating in childhood: A review. *Journal of Human Nutrition and Dietetics*, *20*, 294–301.

Cowart, B. (1981). Development of taste perception in humans: Sensitivity and preference throughout the lifespan. *Psychological Bulletin*, *90*, 43–73.

Cronin, A. (2001). Focus groups. In N. Gilbert (Ed.), *Researching social life* (2nd ed.). London: Sage.

Department of Health (2000). *The national school fruit scheme*. London: Department of Health.

Department of Health (2004). *National standards, local action: Health and social care standards and planning framework 2005/6 and 2007/8*. London: Department of Health.

Deshmukh-Taskar, P., Nicklas, T. A., Morales, M., Yang, S. J., Zakeri, I., & Berenson, G. S. (2006). Tracking of overweight status from childhood to young adulthood: The Bogalusa Heart Study. *European Journal of Clinical Nutrition*, *60*, 48–57.

Diabetes UK (2008). *Shocking new statistics*, Retrieved August 18, 2008 from http://www.diabetes.org.uk/About_us/News_Landing_Page/Shocking-new-statistics/. London: Diabetes UK.

Dowler, E. (1998). Food poverty and food policy. *IDS Bulletin*, *29*, 58–65.

Edmunds, L. D. (2005). Parents' perceptions of health professionals' responses when seeking help for their overweight children. *Family Practice*, *22*, 287–292.

Fisher, J. O., & Birch, L. L. (1999). Restricting access to palatable foods affects children's behavioural response, food selection and intake. *American Journal of Clinical Nutrition*, *69*, 1264–1272.

Francis, L. A., Ventura, A. K., Marini, M., & Birch, L. L. (2007). Parents overweight predicts daughters' increase in BMI and disinhibited overeating from 5 to 13 years. *Obesity*, *15*, 1544–1553.

Galloway, A. T., Fiorito, L. M., Francis, L. A., & Birch, L. L. (2006). 'Finish your soup': Counterproductive effects of pressuring children to eat on intake and effect. *Appetite*, *46*, 318–323.

Gibson, E. L., Wardle, J., & Watts, C. J. (1998). Fruit and vegetable consumption, nutritional knowledge and beliefs in mothers and children. *Appetite*, *31*, 205–228.

Hamilton-Ekeke, J., & Thomas, M. (2007). Primary children's choice of food and their knowledge of balanced diet and healthy eating. *British Food Journal*, *109*, 457–468.

Horne, P. J., Tapper, K., Lowe, C. F., Hardman, C. A., Jackson, M. C., & Woolner, J. (2004). Increasing children's fruit and vegetable consumption: A peer modelling and rewards-based intervention. *European Journal of Clinical Nutrition*, *58*, 1649–1660.

Hupkens, C. L. H., Knibbe, R. A., Van Otterloo, A. H., & Drop, M. J. (1998). Class differences in the food rules mothers impose on their children: A cross-national study. *Social Science and Medicine*, *47*, 1331–1339.

Jackson, D., Wilkes, L., & McDonald, G. (2007). 'If I was in my daughter's body I'd be feeling devastated': Women's experiences of mothering an overweight or obese child. *Journal of Child Health Care*, *11*, 29–39.

Jansen, A., & Tenney, N. (2001). Seeing mum drinking a light product: Is social learning a stronger determinant of taste preference acquisition than caloric conditioning? *European Journal of Clinical Nutrition*, *55*, 418–422.

Kaiser, L. L., Martinez, N. A., Harwood, J. O., & Garcia, L. C. (1999). Child feeding strategies in low-income Latino households: Focus group observations. *Journal of the American Dietetic Association*, *99*, 601–603.

Kim, S., & Popkin, B. M. (2005). Commentary: Understanding the epidemiology of overweight and obesity – a real global public health concern. *International Journal of Epidemiology*, *35*, 869–921.

Klesges, R. C., Stein, J. S., Eck, L. H., Isbell, T. R., & Klesges, L. M. (1991). Parental influence on food selection in young children and its relationships to childhood obesity. *American Journal of Clinical Nutrition*, *53*, 859–864.

Lang, T., & Caraher, M. (1998). Access to healthy foods: Part II: Food poverty and shopping deserts: What are the implications for health promotion policy and practice? *Health Education Journal*, *57*, 202–211.

Lawrence, F. (2008). *Britain on a plate*, Retrieved January 8, 2009, from http://www.guardian.co.uk/lifeandstyle/2008/oct/01/foodanddrink.oliver. London: Guardian News and Media Limited.

Macintyre, S., McKay, L., Der, G., & Hiscock, R. (2003). Socio-economic position and health: What you observe depends on how you measure it. *Journal of Public Health Medicine*, *25*, 288–294.

Mason, J. (2002). *Qualitative researching* (2nd ed.). London: Sage.

McKeever, P., & Miller, K. (2004). Mothering children who have disabilities: A Bourdieusian interpretation of maternal practices. *Social Science and Medicine*, *59*, 1177–1191.

Moore, S. N., Tapper, K., & Murphy, S. (2007). Feeding strategies used by mothers of 3–5-year-old children. *Appetite*, *49*, 704–707.

Park, B., Smith, J. A., & Correll, J. (2008). 'Having it all' or 'doing it all'? Perceived trait attributes and behavioural obligations as a function of workload, parenthood, and gender. *European Journal of Social Psychology*, *38*, 1156–1164.

Rozin, P. (1989). The role of learning in the acquisition of food preferences by humans. In R. Shepherd (Ed.), *Handbook of the psychophysiology of human eating*. Chichester: Wiley.

Rozin, P. (1990). Development in the food domain. *Developmental Psychology*, *26*, 555–562.

Saguy, A. C., & Riley, K. W. (2005). Weighing both sides: Morality, mortality, and framing contests over obesity. *Journal of Health Politics, Policy and Law*, *30*, 869–921.

Savage, J. S., Fisher, J. O., & Birch, L. L. (2007). Parental influence on eating behaviour: Conception to adolescence. *Journal of Law, Medicine and Ethics*, *35*, 21–34 Spr 2007.

Sherry, B., McDivitt, J., Birch, L. L., Cook, F. H., Sanders, S., Prish, J. L., *et al.* (2004). Attitudes, practices, and concerns about child feeding and child weight status among socioeconomically

diverse white, hispanic, and African-American mothers. *Journal of the American Dietetic Association*, *104*, 215–221.

Sullivan, S. A., & Birch, L. L. (1990). Pass the sugar, pass the salt: Experience dictates preference. *Developmental Psychology*, *26*, 546–551.

Wardle, J. (2005). Understanding the aetiology of childhood obesity: Implications for treatment. *Proceedings of the Nutrition Society*, *64*, 73–79.

Wardle, J., Herrera, M. -L., Cooke, L., & Gibson, E. L. (2003). Modifying children's food preferences: The effects of exposure and reward on acceptance of an unfamiliar vegetable. *European Journal of Clinical Nutrition*, *57*, 341–348.

Whitaker, R. C., Wright, J. A., Pepe, M. S., & Seidel, K. D. (1997). Predicting obesity in young adulthood from childhood and parental obesity. *The New England Journal of Medicine*, *337*, 869–873.

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology Monograph Supplement*, *9* (2 pt 2), 1–27.

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