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7

8 The full copy of the paper can be found directly at:

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11 **Abstract**

12

13 Current UK Department of Health guidelines recommend that infants are
14 introduced to complementary foods at around six months of age. Intake of
15 complementary foods should be gradual; incorporating a range of tastes and
16 be based around family foods. The infant should be 'developmentally ready';
17 able to sit up, grasp objects and chew. Introduction to complementary foods in
18 the UK is typically via puree and spoon feeding although an alternative
19 approach is growing in popularity. The baby-led weaning approach advocates
20 bypassing purees and allowing infants to self feed foods in their solid form
21 from the start of weaning. Research surrounding this method is sparse and it
22 is not advocated in Department of Health literature but understanding, if not
23 advocacy of the method is needed for health professionals faced with
24 questions from parents. Here, 36 mothers of an infant aged 12 – 18 months
25 who followed baby-led weaning completed a semi-structured interview
26 examining their attitudes, beliefs and behaviours towards the approach. Key
27 themes included following infant cues of readiness, hunger and satiety,
28 exposure to textures and tastes and experiences, both positive and negative
29 of following the method. The findings are considered in relation to Department
30 of Health weaning guidelines and literature pertaining to the development of
31 eating styles and weight gain in young children. Overall, the study offers an
32 insight into this emerging method for child health practitioners raising
33 questions as to the use or potential adaptation of key principles of the
34 methods.

35

36 Key words; Baby-led weaning; Developmental readiness; Complementary
37 foods; Appetite; Neophobia

38

39

40 **Introduction**

41

42 Current Department of Health recommendations in the UK advise that infants
43 are introduced to complementary foods at around six months of age when
44 signs of readiness for complementary foods are present (DoH, 2009). Advice
45 states that infants may be ready to move onto complementary foods when
46 they can sit up, put objects in their mouth to chew and grab objects with
47 accuracy (DoH, 2009). Signs such as perceived hunger or night wakings
48 which are often given as a reason for introducing complementary foods
49 (Arden, 2010) are omitted as signs of readiness.

50

51 In the UK first complementary foods are typically pureed fruits or vegetables
52 or baby rice which are primarily spoon fed (Seaman, D'Alessandro & Swannie,
53 1996). Department of Health guidelines do recommend giving infants cereals
54 or mashed vegetables or fruits in this traditional form but also emphasise the
55 suitability of fingers foods such as soft fruit or vegetables or toast that the
56 infant can pick up and self feed. Ideally infants should be given family foods
57 and emphasis should be placed on introducing the infant to tastes and
58 textures rather than encouraging consumption of large amounts (DoH, 2009).

59

60 An alternative to current guidelines, known as baby-led weaning advocates
61 offering infant foods only in their whole rather than puréed form and only
62 allowing the infant to self-feed rather than being spoon fed (Rapley & Murkett,
63 2008). Emphasis is placed on the developmental readiness of the infant for
64 introduction to complementary foods, suggesting that when the infant is
65 physically able to self feed then they are ready. This typically occurs at around
66 six months of age (Rapley, 2006). The method thus encourages similar
67 concepts as current Department of Health Advice, but places a much greater
68 emphasis on self feeding and non mashed or pureed foods (Sachs, 2011).

69

70 Based on the number of internet hits, the number of mothers choosing to
71 follow a baby-led weaning approach appears to be growing, particularly in the
72 form of online websites, message boards and Internet forums (Google:
73 314,000 hits as of 07/04/11). Research on baby-led weaning to date is

74 however sparse with little empirically documented or understood in terms of
75 maternal and infant behaviour surrounding the method (Reeves, 2008).
76 Inspection of the method suggests that despite its apparent alternative
77 approach, the method may encourage mothers to follow recommended
78 principles of a delayed and gradual introduction to complementary foods,
79 developmental readiness, and offering family foods.

80

81 In an initial quantitative study we explored the behaviours associated with use
82 of a baby-led weaning approach, contrasting maternal attitudes and
83 experiences with those following a traditional approach (Brown & Lee, 2011a).
84 Despite avoiding giving puréed or mashed foods, mothers choosing this
85 method appeared to be following a weaning style closely tied to Department of
86 Health principles of developmental readiness for complementary foods and
87 guidance of introducing first foods. Mothers reported giving family foods,
88 allowing the infant to self feed and placed an emphasis on variety of tastes
89 rather than amount consumed. The current study explores these behaviours
90 in more depth, examining the attitudes and reasoning of mothers following the
91 baby-led method including decisions to introduce complementary foods,
92 progress through this period and balancing solid meals with milk feeds. It
93 examines maternal experiences, both positive and negative of using the
94 method and considers how the method may potentially have longer term
95 outcomes for infant health.

96

97

98

99 **Materials and Methods**

100

101 ***Participants***

102 Approval for this study was granted by a Department of Psychology Research
103 Ethics Committee. All applicable institutional and governmental regulations
104 concerning the ethical use of human volunteers were followed during this
105 research.

106

107 As estimates of the frequency of baby-led weaning adoption in the general
108 population are not available and use of the method is not main stream,
109 participants were specifically targeted. An online advert was placed on a
110 baby-led weaning forum asking for mothers from the UK to take part in an
111 interview about their experiences. Snowball sampling was also employed
112 whereby participants informed their peers of the research. It is recognised that
113 this method may attract an elite self selecting sample and the limitations this
114 places on the analysis and this is considered within the discussion.

115

116 Thirty six mothers with an infant aged twelve to eighteen months who had
117 followed a baby-led weaning approach completed a semi structured interview.
118 This age range was used to take into consideration the key period of
119 introduction to complementary foods of 6 – 12 months postpartum where
120 infants pass from their first tastes of complementary foods to eating a varied
121 diet. Participants were identified as following a baby-led approach if they had
122 used both spoon feeding and purees 10% or less of the time as used as an
123 indicator in previous studies (Brown & Lee, 2011a; Brown & Lee, 2011b).
124 Exclusion criteria included a low birth weight (<2500g), premature birth (<37
125 weeks) or significant health conditions which may affect nutrition or weight.

126

127 ***Measures***

128 Participants completed a semi structured interview to explore their attitudes
129 and experiences of following a baby-led weaning method (Appendix 1). The
130 interview explored themes such as factors influencing decision to introduce
131 complementary foods, experience of introducing complementary foods, typical
132 diet and meal times and attitudes of others towards baby-led weaning.

133 ***Data analysis***

134 Interviews were recorded with consent by Dictaphone and transcribed. All
135 identifying information was removed. A simple qualitative descriptive approach
136 (Sandelowski, 2010) was used. A content analysis was performed for each
137 script. This entailed reading through each script to identify emerging themes.
138 Themes were grouped into key themes and sub categories. For example one
139 key theme was experience of introducing complementary foods. Data
140 saturation principles were used with data collection continuing until it was felt
141 that no new themes or ideas were emerging. These were confirmed by two
142 independent coders with agreement found in over 90% of cases. The sample
143 size exceeded recommended minimums (Bernard, 1995; Creswell, 1998).

144

145 **Results**

146

147 A wide range of participants responded. Mean age of the participants was
148 28.6 (SD: 5.62) and mean number of years in education of 14.27 (SD: 2.33).
149 Indicators of demographic background including occupation, home ownership
150 and family income can be found in Table one. A variety of themes were
151 produced describing the mother's experiences, attitudes and beliefs
152 surrounding following the method.

153

154 ***Introducing complementary foods***

155 Mean age of infant at introduction to complementary foods was 25.08 weeks
156 (range 22 to 32 weeks). 55.5% (n = 20) of mothers waited until at least 26
157 weeks to introduce complementary foods. Timing of introduction was closely
158 tied to concepts of developmental readiness for complementary foods. All
159 mothers were aware of recommendations to introduce complementary foods
160 at six months postpartum and used this as a guide. However, mothers also
161 reported looking to their infants for developmental signs such as being able to
162 sit up unsupported, grasp items and bring food to their own mouth. Indeed,
163 often the decision to start the process was led by the infant whereby the infant
164 took food from the mother and started to eat it.

165

166 'She took a piece of cucumber out of my hand and shoved it in her mouth so I took that
167 as a sign she was ready.'

168

169 Traditionally infants are introduced to complementary foods by being spoon
170 fed. Amongst this sample however, the infant was in control of selecting and
171 bringing the food to their mouth rather than being actively fed. Foods were
172 placed on the highchair tray, often in chunks which could easily be picked up
173 and the infant would choose which to eat. Foods such as yoghurt were offered
174 via a spoon loaded with the food and placed on the tray. Generally infants ate
175 the same meals as the family, sometimes cut into shapes that the infant would
176 find easier to pick up e.g. into chip form or so the food had a 'handle'.

177

178 'He's always taken an interest in what we eat so it seemed strange to give him
179 something different.'

180

181 An adult diet may not be suitable for an infant due to probable higher levels of
182 salt, fats and additives. However in this sample, mothers discussed the idea of
183 how they had adapted family meals and cooking styles to be lower in salt,
184 sugar and fat. Variety was also increased as was nutrient content to ensure
185 the infant was offered a balanced diet. This however is not necessarily the
186 case of all who follow a baby-led method and is considered in the discussion.

187

188 It has improved the quality of our family meals as I prefer him to eat healthy nutritious
189 meals which means we have to do the same

190

191 Notably this change in meal content did not apply to flavours and spices in the
192 food. Mothers freely added herbs and spices to food for flavouring seasoning
193 in an adult fashion. Moreover their infants willingly accepted these foods
194 eating meals such as curries and spices from a young age.

195

196 'Ours seem to like curries and chillies as long as they aren't too hot. There is very little
197 food that isn't suitable for smaller children.'

198

199 Related to this, a popular belief was that following a baby-led approach would
200 lead to a child who was less fussy and who would eat a wider variety of food

201 in the future. Participants believed that through offering the infant a range
202 choices at this stage combined with allowing them to self feed would foster a
203 healthy diet and approach to food later on.

204

205 'I think that is he is offered lots of tastes then that is what he will grow up expecting to
206 eat. Start as you mean to go on.'

207

208 Milk feeds also still played an important role in the infant's diet. The majority of
209 mothers were breastfeeding their infants although both breast and formula
210 feeding mothers generally gave milk feeds on infant demand. The balance
211 between solidfood and frequency and length of feeds varied from day to day.

212

213 'Some days she has lots of short milk feeds, other days she might not seem bothered
214 and only have milk before bed. I let her lead'.

215

216 Finally, as well as eating family foods, sharing mealtimes with the infant was
217 common. All mothers reported that their infant took part in family meal times
218 or, if this was not feasible one parent would sit with the infant and eat a snack
219 whilst the infant ate their meal. In some cases timing of meals was adapted to
220 suit the infants natural hunger pattern. Commonly the infant sat at the family
221 meal table in their highchair with food presented on their tray.

222

223 'She has eaten with us from around 7 months. We changed her routine so we could all
224 eat together in the evening when her dad gets home'

225

226 **Keeping track of energy and nutrient intake**

227 Related to the types of food and how the infant ate was the concept of
228 monitoring the amount the infant consumed. A common concern for parents is
229 whether their child is eating healthily (Benton, 2004). However, too great a
230 concern can impact negatively on children's eating behaviour and weight for
231 older children (for a review see Ventura & Birch, 2008). Mothers who report
232 highly controlling their child's intake of food, through restricting items or
233 pressurising the child to eat are more likely to have children who display
234 problematic eating styles and issues with weight. Although maternal concern
235 for child weight and diet can lead to her controlling her child's diet, the

236 relationship has been shown to be bi-directional with maternal control
237 impacting upon child eating style and weight (Faith & Kerns, 2005; Faith et al,
238 2004). Generally a responsive feeding style is considered positive.

239

240 Overall mothers described a feeding style low in control with regard to the
241 amount of food the infant was consuming with many reporting that they were
242 drawn to the method because they believed it would allow the infant to control
243 what they chose to eat. Many stated that their infant went through phases
244 where sometimes they ate very little but they were happy to allow the infant
245 chance to balance their appetite in this way, often because they were still
246 breastfeeding their infant and noted that at times when appetite for food was
247 low, the infant might consume more milk.

248

249 I take the view that she is capable of eating so if she hasn't eaten she isn't hungry. She
250 knows better than I do how hungry she is.

251

252 He goes through phases of eating lots and nothing at all so I have relaxed more as I've
253 noticed it evens out over the week'

254

255 Indeed, a common idea was that allowing the infant to control their own intake
256 of food at this early stage would allow them greater control and self regulation
257 as an adult, hopefully leading to a healthier diet and lower risk of overweight.

258

259 Babies are in control of the amounts they eat. I am hoping this will produce an
260 adventurous eater who knows when to stop!

261

262 Some added however that this low concern had developed over time. They
263 described how at the start of weaning they were more concerned about their
264 infant's intake of food but this lessened as the infant became more skilled and
265 they realised that the infant was healthy and gaining weight. Some even
266 accredited the method with teaching them to become more relaxed about their
267 infants intake of food, to recognise that the transition to complementary foods
268 is not simply a linear process whereby food intake will increase each and
269 every week and to allow their infant to be in control of their own appetite.

270

271 I did worry at first and tried to keep track of it all but it all got a bit much. I try not to
272 worry now. He is getting lots from breast milk anyway so I'm happy.'

273

274 Greater awareness was however discussed regarding the variety of nutrients
275 the infant consumed. Mothers were concerned that their infant ate foods that
276 were low in salt, sugar and fat, ate from a variety of food groups and were
277 offered high levels of fruits and vegetables. However there was an awareness
278 that it was the general pattern of what the infant ate that was important and
279 that over the course of a few days the infant would eat a wide variety of foods.

280

281 'I try to keep a rough tally of how much salty food and whether she has had her five
282 portions of fruit and veg but it's only an approximate idea.'

283

284 Overall the concept of allowing the infant control over what they were eating
285 and trusting them to balance and self regulate both the amount of food and
286 the type of foods the infant ate ran throughout the data. Mothers were relaxed
287 about food and the weaning process affording their infant trust to know what
288 they needed.

289

290 **Experience of following a baby-led approach**

291 Mothers discussed their experiences of following a baby-led approach and
292 their reasoning behind choosing the method. Primarily the method 'just made
293 sense' to mothers, seeing it as the most natural and enjoyable way to
294 introduce complementary foods to their infant.

295

296 If someone had a spoonful of food and was pushing it towards my mouth with me
297 having no ability to move away I would hate it even if I knew it was something lovely on
298 the spoon – why would I do that to my baby?

299

300 ***Positive experiences***

301 Overall following the method was considered to be simple, convenient and
302 fitted in easily with family lifestyle and mealtimes. Mealtimes were viewed as
303 easier and less stressful due to allowing the infant to participate rather than
304 simply being fed. This both reduced cost and time and made mealtimes more
305 pleasurable as the infant could feed themselves rather than needing to be

306 spoon fed by someone trying to eat their own meal. Mothers also viewed their
307 infant as having a better experience due to eating foods in their natural rather
308 than processed forms.

309

310 I think it saves a lot of time and money being able to feed the baby what the rest of the
311 family is enjoying and they feel included in mealtimes. You can all eat a meal while it's
312 hot rather than having to feed the baby with a spoon instead of eating your own meal'

313

314 Related to this mothers did not have to worry about following a plan to
315 introduce foods to their infant, worrying about amounts eaten or whether the
316 infant could handle lumpier foods, which overall led to a simpler experience
317 for all. The idea that the approach was more convenient and simpler to adopt
318 when out and about was also raised by a number of mothers.

319

320 I've seen puree feeding mums stress out about how many spoonfuls their little one has
321 or hasn't eaten or that they're fussy about eating lumps etc – I'm so glad I didn't go
322 through that.

323

324

325 **Challenges**

326 Although mothers were positive about the method and described a simple and
327 inclusive approach to introducing complementary foods, a number of
328 challenges or difficulties in terms of following the method were also raised.
329 Primarily these concerns centred on the idea of mess and waste of food,
330 although mothers also discussed how they dealt with these issues.

331

332 **Mess**

333 Mothers did see the mess involved in baby-led weaning as a challenge,
334 particularly in the early months when the infant was experimenting with
335 handling food and self feeding. Food would be squashed, spread about and
336 dropped on the floor with infants often needing a bath after a meal. This could
337 be particularly problematic in public or in family or friends homes when social
338 norms expected the infant to be fed 'neatly'. This aspect was often a criticism
339 from others, making meals awkward at first.

340

341 I have some brilliant photos of those first few months. He got more in his hair than in
342 his mouth which was time consuming. I couldn't just let him eat like that and run out the
343 door and sometimes I did wonder whether it would have been easier to just spoon it in
344 for him.

345

346 However, mothers also discussed how they adapted their approach to keep
347 mess to a minimum through using large, long sleeved bibs and covering the
348 floor under the highchair. Certain foods were recognised as less messy and
349 easier to eat in public. The level of mess also reduced as the infant became
350 more skilled and coordinated.

351

352 We soon learnt what he would eat up immediately and what he seemed to particularly
353 like smearing about. And what stained and what didn't. And what you would be picking
354 out of your carpet for months on end. Those foods were not given at Grandma's!

355

356 **Waste**

357 A related issue was the idea of waste when the infant dropped foods off their
358 highchair or decided not to eat items. This could be disheartening and
359 problematic financially. Some mothers described how they were reluctant to
360 give more expensive foods, despite wanting to give a range of tastes as the
361 infant would drop them on the floor and still be hungry.

362

363 He really likes raspberries but they are very expensive. When he was first starting he
364 did eat some but he also threw some, squashed some and smeared some in his hair. It
365 was very hard not to get tense and think that's £1 you just wasted...£1.50...£2.00.
366 When you are on a tight budget it is hard.

367

368 As with the concept of mess however, mothers noted how the factor of
369 waste was something that diminished over time, both as a consequence of
370 the infant becoming more skilled at feeding and secondly as the infant
371 moved to eating portions of the family meal rather than special items of
372 food. Eating a small portion of the family meal was seen as a cost effective
373 method which meant that food wasted was not viewed so negatively.

374

375 It was hard with food being wasted but now we just cook a tiny bit extra of what we eat
376 so really we weren't cooking anything different

377 **Choking**

378 A common anecdotal criticism of the baby-led weaning method is that the
379 infant is at higher risk of choking. Many had considered this as a possibility
380 and were wary at first. They worried about the infant not being able to chew
381 certain foods or swallowing them too quickly and choking. This was
382 exacerbated by others being anxious and critical to normal gagging sounds.

383

384 'When I first heard of the method I thought no way. How can a baby eat solid food and
385 not choke? He gagged on milk sometimes so solids? So I was a bit wary and would sit
386 there closely watching him and was a bit limited with what I gave him'.

387

388 'My mother was very anxious and used to hover and squeak and make things very
389 tense. She would grab foods away from her or rush and grab her if she gagged'.

390

391 However, over time, mothers became more relaxed and could distinguish
392 between the action of gagging to move food and actual choking. They did not
393 feel in hindsight that their infants were of greater risk of choking.

394

395 'She used to gag really badly at first and bring up all of her previous milk feed which
396 spooked me a bit. I made a point of going on a first aid course as even though I knew
397 gagging was normal and gagging is not choking it made me feel a bit better'.

398

399 In summary mothers in this successful baby-led weaning sample described an
400 approach towards the introduction of complementary foods that despite
401 differences in surface behaviour (exclusive self feeding, absence of pureeing)
402 appeared to be associated with recommended practices such as a delayed
403 and gradual introduction to complementary foods. Infants were allowed to
404 explore different tastes and textures with mothers following infant cues of
405 developmental readiness. Overall mothers found it a simple and
406 straightforward experience but recognised that there could be challenges to
407 overcome.

408

409

410

411 **Discussion**

412

413 This paper provides an insight to the experiences, attitudes and decisions of
414 mothers who successfully followed a baby-led weaning approach. Mothers in
415 the sample described how they introduced their infants to complementary
416 foods, how this balanced alongside milk feeds and was conducted in relation
417 to family meals. Concepts of developmental readiness for complementary
418 foods, promotion of infant self regulation of appetite and a gradual transition
419 from milk to a solid diet were raised. Overall the findings give an important
420 illustration into this approach to infant feeding which could prove useful for
421 health professionals working to support parents during this period.

422

423 Before the findings are discussed the issue of sample must be raised. Here
424 we present a self selecting sample of mothers who successfully followed a
425 baby-led weaning approach. Clearly, the method was positive for this group
426 as they both chose to start and continue using the method. Mothers who
427 struggled or decided against the method are not sampled. Therefore the
428 results are not intended to be representative of the outcomes of following such
429 a method, but an exploration into how the method can work, the choices that
430 are being made and the reasoning behind these. Mothers in the sample also
431 displayed very positive and healthful behaviours towards their infant, which
432 would be likely to vary in a population sample. A baby-led approach does not
433 necessarily involve healthy foods and positive feeding behaviours and this
434 needs to be recognised. However, the results are an important insight for
435 those working with parents during this period. Although the method is not yet
436 recognised by the Department of Health in their literature, anecdotally the
437 method is growing in popularity and is likely to be encountered in practice.
438 This paper is intended to illustrate how the method can work and to raise
439 questions about its' potential outcomes and impacts.

440

441 Mothers discussed their experiences of introducing complementary foods to
442 their infant. Although baby-led weaning is often seen as a separate and
443 alternative approach to introducing complementary foods, this research shows
444 that there are indeed a number of parallels between this method and

445 traditional approaches as has previously been discussed in the literature
446 (Sachs, 2011). Department of Health Guidance (2009) on introducing
447 complementary foods places emphasis on an introduction at around six
448 months, a gradual introduction of tastes and textures based around family
449 foods and looking for signs of readiness for complementary foods. Although
450 the key tenets of baby-led weaning of not giving pureed foods and allowing
451 the infant to self feed are not reflected in this guidance, it appears that this
452 method may naturally fit more closely than expected with recommendations,
453 encouraging a positive approach to introducing complementary foods.

454

455 A responsive feeding style was apparent in the sample echoing findings that
456 mothers following a baby-led approach use lower levels of control over their
457 infants' intake of food than mothers using traditional methods (Brown & Lee,
458 2011b). Infants were allowed to control intake of energy intake and were
459 offered a wide variety of textures and tastes which reflect key elements of
460 encouraging a responsive, healthy eating style in infants and young children
461 (Ventura & Birch, 2008). Mothers voiced the idea that allowing self feeding
462 would enable the infant to regulate their own appetite, which in turn would
463 have long term consequences for future appetite control and weight gain.
464 Although evidence for this is only anecdotal (Rapley, 2003), numerous studies
465 have shown that mothers who exert high levels of control over their child's
466 intake of food are more likely to have children who have eating and weight
467 issues, although the majority of these studies have been conducted in children
468 over the age of twelve months (for a review see Ventura & Birch, 2008).
469 Potentially this 'hands-off' approach may have positive long term
470 consequences for infant ability to self regulate appetite.

471

472 Current Department of Health guidelines recommend that complementary
473 foods are introduced from around six months (DoH, 2009), although many
474 mothers in the UK start before this date (Bolling, Grant, Hamlyn & Thornton,
475 2007). Here, mothers typically waited until close to six months to introduce
476 complementary foods, but used this as a guide in conjunction with signs that
477 their infant was developmentally ready to self feed e.g. sitting up well,
478 grasping food and bringing it to their own mouths. This is in contrast to

479 common reasons given for introducing complementary foods such as the
480 infant becoming unsettled, feeding frequently or waking at night (Arden, 2010;
481 Alder, Williams, Anderson, Forsyth, Florey & Van der Velde, 2004). In this
482 baby-led sample it was often the infant who directed the weaning process by
483 simply taking food from the mother's hand or plate, meaning that the
484 introduction of first foods was 'baby-led'. Indeed by its very nature of allowing
485 the infant to self select and feed different foods, the method does not lend
486 itself to an early introduction of complementary foods, as the infant would be
487 physically incapable of coordinating the process.

488

489 Infants typically participated in family mealtimes and were offered family foods
490 from the start of weaning which fits with previous findings (Brown & Lee,
491 2011a). This was perceived as positive as the infant could participate in
492 mealtimes as a member of the family, not needing to eat a special diet or be
493 spoon fed whilst others tried to eat their meals. Studies with older children
494 show that eating together as a family is associated with increased nutrient
495 intake (Cooke, Wardle, Gibson, Sapochnik, Sheiham & Lawson, 2004) and
496 improved psychosocial well being (Franko, Thompson, Affenito, Barton &
497 Striegel-Moore, 2008). However for many families, mealtimes can be a source
498 of frustration for parents due to issues with picky eating, food refusal and
499 disruptive behaviour (Black & Hurley, 2007). These negative interactions
500 during mealtimes can be associated with a lower nutrient intake (Menella,
501 Jagnow & Beauchamp, 2001). Moreover, parental modelling of positive eating
502 patterns (Wardle, Cooke, Gibson, Sapochnik, Sheiham & Lawson, 2003;
503 Addessi, Galloway, Visalberghi & Birch, 2005) are associated with children
504 eating a more varied diet. Here families following a baby-led weaning
505 approach are involving their infant in family mealtimes from the start, in an
506 enjoyable way, potentially setting them up for future positive eating patterns.

507

508 In terms of diet, portions of the family meal were usually offered, perhaps
509 adapted in shape for infants to grasp the item. This included foods high in
510 flavours, spices and seasoning as per the adult meal. Mothers believed that
511 this exposure would encourage the infant to develop a wider range of food
512 preferences and eat a more varied diet as an adult. Evidence shows that

513 eating habits often become established during childhood and extend into
514 adulthood (Benton, 2004). Infants who are exposed to a wide variety of tastes
515 during weaning are more likely to accept new tastes as an older toddler than
516 infants who are exposed to less (Addessi et al, 2005). Potentially this
517 approach may be associated with lower future levels of picky or fussy eating.

518

519 Mothers also recounted their experiences of following a baby-led approach
520 which offers a useful insight into both the positive events and challenges that
521 mothers might face in choosing the method. Positively, baby-led weaning was
522 seen as an enjoyable and simple method of weaning. Mothers described few
523 battles with the infant over food and perceived mealtimes to be enjoyable.
524 This is in contrast to studies exploring the experiences of mothers using
525 traditional methods who often report anxiety, confusion or other negative
526 emotions surrounding introducing complementary foods to their infant (Arden,
527 2010; Anderson et al, 2001; Alder et al, 2004). However, difficulties were also
528 faced, often exacerbated by others lack of knowledge or negative reactions.
529 Concepts such as mess and waste created challenges for finances and time.
530 Mothers also reported concerns at the start of weaning regarding whether
531 their infant was consuming sufficient energy and nutrients and the risk of
532 choking. Within this sample these issues were overcome with mothers
533 describing how they adapted to their infants and how all these factors and
534 concerns diminished over time. Examples of how mothers overcame these
535 problems were noted which may be of use in health practice.

536

537 Overall, the paper describes an interesting, insightful and useful overview into
538 the experience of mothers successfully following the method. Three key
539 questions however arise. Firstly, on the surface level, the baby-led approach
540 is described here as both incorporating positive behaviours and choices in
541 relation to introducing complementary foods and infant diet and as suggesting
542 that the method may increase the likelihood of healthy choices and outcomes
543 for the infant. This could well be true. The method may encourage mothers to
544 delay weaning until around six months, offer healthy choices to their infant
545 and allow their infant to regulate their own intake of energy and nutrients.
546 However, it is also likely that the self selecting, well educated and informed

547 nature of the sample may impact upon these findings. It is a possibility that if
548 mothers in this sample had followed traditional methods of introducing
549 complementary foods they would still have done so at around six months, still
550 looked to their infant for signs of readiness and still offered healthy choices.
551 However, mothers did explicitly state that they felt that following the method
552 had improved their choices and family diet and had encouraged them to give
553 the infant greater control. A longitudinal intervention study with a population
554 based sample of mothers directed to follow a baby-led approach may give
555 greater insight into what choices are made. Do all mothers following a baby-
556 led approach do so healthily? Are these positive behaviours seen for all
557 families? How much can outcomes be explained by maternal background,
558 attitudes and choices and how much by the method? Without the right
559 knowledge and guidance there is considerable opportunity for the method to
560 be misused e.g. giving unsuitable foods in terms of nutrients, allergens or
561 size, seeing it as an opportunity not to interact with the infant during meal
562 times or failing to monitor intake to an extent that if feeding issues occur they
563 are not noted (Wright, Cameron, Tsiaka et al, 2011).

564

565 Secondly and related to this, what are the outcomes of following a baby-led
566 approach? As described above, there is the possibility that infants following a
567 baby-led approach might become more appetite responsive, accept a wider
568 variety of tastes and textures and have healthier weight gain trajectories.
569 Firstly, any variation between baby-led and traditionally weaned infants needs
570 to be established. Potentially due to low levels of control and a wide variety of
571 foods being offered outcomes for the method could be positive. However,
572 literature pertaining to the method states that the baby-led method may
573 encourage these outcomes (Rapley, 2006; Rapley & Murkett, 2008). Have
574 mothers in the sample internalised these messages and as a consequence
575 recognise them in their infants' behaviour? Secondly, can these potential
576 outcomes be explained by the attitudes, education and beliefs of mothers
577 choosing to follow a baby-led approach rather than the method itself? And
578 finally, if differences do arise, how much is attributed to the tenets of self
579 feeding and avoidance of purees. Might elements such as low maternal
580 control and food choices have a greater impact e.g. might an infant spoon fed

581 responsively on a variety of home cooked tastes have similar outcomes?
582 Should health professionals be focussing on the method of weaning or the
583 underlying principles of responsive feeding and developmental readiness?

584

585 Finally, the current sample have clearly had a positive experience of following
586 a baby-led approach and have done so through to the second year. Further
587 research needs to explore the outcomes for those who struggle with and
588 choose to stop following a baby-led approach. Why might some mothers stop
589 using the method? Do they find it incompatible with their lifestyle (e.g. mess,
590 waste) or are they persuaded by others to follow traditional methods?
591 Conversely, do mothers who wish to have greater control over their infant's
592 intake of food or who have infant's who are fussy eaters move towards spoon
593 feeding. Without a longitudinal study this may skew any associations between
594 method and outcomes.

595

596 However, overall this paper presents an interesting illustration of mothers
597 successfully following a baby-led weaning method. It gives insight for health
598 professionals into the reasoning mothers may use for choosing the method,
599 their behaviours and experiences of doing so including ideas for overcoming
600 difficulties. Moreover, it raises a number of questions for the potential impact
601 of the method upon infant health and development and more generally, the
602 importance of responsive feeding and developmental readiness during the
603 weaning period. Further research needs to explore the method in more depth,
604 examining the occurrence of these behaviours in a wider, non self selecting
605 sample and following up their impact upon later diet, eating style and weight.

606

607

608 **Key Messages**

609

610 • Key behaviours associated with a baby-led approach included following
611 developmental signs for readiness to introduce complementary foods, a
612 gradual move from a milk to solid based diet and emphasising tastes,
613 textures and variety of foods.

614

615 • Mothers described both positive and challenging elements to the
616 method. The approach was seen as simple, straightforward and
617 common sense but could raise concerns at least initially regarding
618 mess, waste and intake of food.

619

620 • Further research is needed to examine potential outcomes of the baby-
621 led approach. Mothers in this sample believed it may encourage
622 healthy eating patterns and weight as the infant is in control of intake
623 and presented with a variety of tastes and textures.

624

625

626

627 **References**

628

629 1. Addessi, E., Galloway, A., Visalberghi, E. & Birch, L. (2005) Specific
630 social influences on the acceptance of novel foods in 2 – 5 year old
631 children. *Appetite*, 45, 264 – 71

632

633 2. Alder, E., Williams, F., Anderson, A., Forsyth, S., Florey, C. & Van der
634 Velde, P. (2004) What influences the timing of the introduction of solid food
635 to infants. *British Journal of Nutrition* 92, 527 – 531

636

637 3. Anderson, A., Guthrie, C., Alder, E., Forsyth, S., Howie, P. & Williams, F.
638 (2001) Rattling the plate – reasons and rationales for early weaning.
639 *Health Education Research*, 16, 471 – 479

640

641 4. Arden, M. (2010) Conflicting Influences on UK Mothers Decisions to
642 Introduce Solid Foods to their Infants. *Maternal and Child Nutrition*, 6,
643 159-173

644

645 5. Benton, D. (2004) Role of parents in the determination of the food
646 preferences of children and the development of obesity. *International*
647 *Journal of Obesity*, 28, 858 – 869

648

649 6. Bernard, H.R. (1995) *Research methods in anthropology*. Walnut Creek,
650 CA: AltaMira.

651

652 7. Black, M.M. & Hurley, K. (2007) Helping children develop health eating
653 habits. In: Tremblay RE, Barr RG, De Peters RV, Boivin M, editors.
654 *Encyclopedia on early childhood development* [online] Montreal, Quebec,
655 Canada: Canadian Centre of Excellence for Early Childhood Development.
656 pp. 1–10.

657

658 8. Bolling, K., Grant, C., Hamlyn, B., Thornton, A. (2007) *Infant Feeding*
659 *Survey 2005*. The Information Centre: London.

660

- 661 9. Brown, A.E., & Lee, M. D. (2011a) A descriptive study investigating the
662 use and nature of baby-led weaning in a UK sample of mothers. *Maternal*
663 *and Child Nutrition*, 7(1), 34-47
664
- 665 10. Brown, A.E., & Lee, M. D. (2011b) Maternal control during the weaning
666 period: Differences between mothers following a baby-led or standard
667 weaning approach: *Maternal and Child Health* doi: 10.1007/s10995-010-
668 0678-4.
669
- 670 11. Cooke, L., Wardle, J., Gibson, E., Sapochnik, M., Sheiham, A., & Lawson,
671 M. (2004) Demographic, familial and trait predictors of fruit and vegetable
672 consumption by preschool children. *Public Health and Nutrition*, 7, 295 –
673 302
674
- 675 12. Creswell, J. (1998) *Qualitative inquiry and research design: Choosing*
676 *among five traditions*. Thousand Oaks, CA: Sage.
- 677 13. Department of Health. *Birth to five*. COI: London UK 2007.
678
- 679 14. Department of Health. *Start4Life: No Rush to Mush*, 2009. Available at:
680 <http://www.nhs.uk/start4life/pages/no-rush-to-mush.aspx> (accessed 2
681 April, 2011).
682
- 683 15. Franko, D.L, Thompson, D., Affenito, S.G., Barton, B.A., Striegel-Moore,
684 R.H. (2008) What mediates the relationship between family meals and
685 adolescent health issues. *Health Psychology*, 27 (2), 109 – 17.
686
- 687 16. Menella, J., Jagnow, C., & Beauchamp, G. (2001) Prenatal and postnatal
688 flavour learning by human infants. *Paediatrics*, 107 – 115
689
- 690 17. Rapley G. & Murkett T. (2008) *Baby-led weaning: Helping your baby to*
691 *love good food*. Vermillon.
692
- 693 18. Rapley G. (2003) *Can babies initiate and direct the weaning process?*
694 *Unpublished MSc Interprofessional Health and Community Studies (Care*

695 of the Breastfeeding Mother and Child). Canterbury Christ Church
696 University College, Kent.

697

698 19. Rapley G. (2006) Baby – led weaning: A developmental approach to the
699 introduction of complementary foods. In: Maternal and Infant Nutrition and
700 Nurture Controversies and Challenges (Moran V & Dykes F eds)
701 Gutenberg Press Ltd, Malta.

702 20. Reeves, S. (2008) Baby-led weaning. British Nutrition Foundation
703 Nutrition Bulletin, 33, 108–110.

704

705 21. Sachs, M. (2011) Baby-led weaning and current UK recommendations –
706 are they compatible? Maternal and Child Nutrition, 7, 1 – 2

707

708 22. Sandelowski, M. (2010) What's in a name? Qualitative description
709 revisited. Research in Nursing and Health, 33, 77 – 84.

710

711 23. Seaman, C., D'Alessandro, S., Swannie, M. (1996) Choice of weaning
712 foods. British Food Journal, 98, 13–16.

713

714 24. Ventura, A. K., & Birch, L. L. (2008). Does parenting affect children's
715 eating and weight status? International Journal of Behavioral Nutrition and
716 Physical Activity, 5: e15

717

718 25. Wardle, J., Cooke, L., Gibson, E., Sapochnik, M., Sheiham, A. & Lawson,
719 M. (2003) Increasing children's acceptance of vegetables: A randomized
720 trial of guidance to parents. Appetite, 40, 155 – 162

721

722 26. Wright, C.M., Cameron, K., Tsiaka, M., et al. Is baby-led weaning
723 feasible? When do babies first reach out for and eat finger foods? Maternal
724 and Child Nutrition, 7 (1), 27 - 33.

725

726 **Table 1. Sample distribution by Demographic Factors**

727

Indicator	Group	N	%
Age	≤ 19	1	2.7
	20 – 24	5	13.8
	25 – 29	6	16.5
	30 – 34	13	35.7
	35 ≥	11	20.3
Education	No formal	1	2.7
	School	5	13.8
	College	12	33.3
	Higher	18	49.5
Marital Status	Married	24	66.6
	Cohabiting	9	25.0
	Single	3	8.3
Home	Owned	22	61.1
	Rented	12	33.3
	Council	1	2.7
	Other	1	2.7
Maternal occupation	Professional & managerial	14	38.8
	Skilled	8	22.2
	Unskilled	5	13.8
	Other	9	25.0

728

729

Appendix One: Interview schedule

730

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1. When did you first introduce solid foods to your baby? Why did you make the decision to do this?
 2. Can you describe a typical meal time for your baby? Do you ever use spoon feeding or purees?
 3. Can you describe a typical days worth of meals including milk feeds, timings, locations etc?
 4. Does your baby eat family foods? How does this work?
 5. Does your baby join in family meal times? How does this work?
 6. What do you do if you need to feed your baby when they you are out and about?
 7. Do you try and keep track of what your baby eats – in terms of amount or nutrients? Does this concern you at all?
 8. Are you following any type of weaning 'plan'?
 9. How would you describe your experience of weaning your baby? What has been positive? Difficult?
 10. How have other people reacted to your choice?
 11. How do you think BLW compares with traditional methods?
 12. How do you deal with the practical aspects – the mess, food perhaps being dropped on the floor?
 13. Do you ever worry that your baby will choke when they are feeding themselves?
 14. Overall has following BLW been a positive or negative experience?
 15. What made you decide to follow baby-led weaning?
 16. Do you think there are any short or long term benefits for your baby to follow baby – led weaning? What?
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