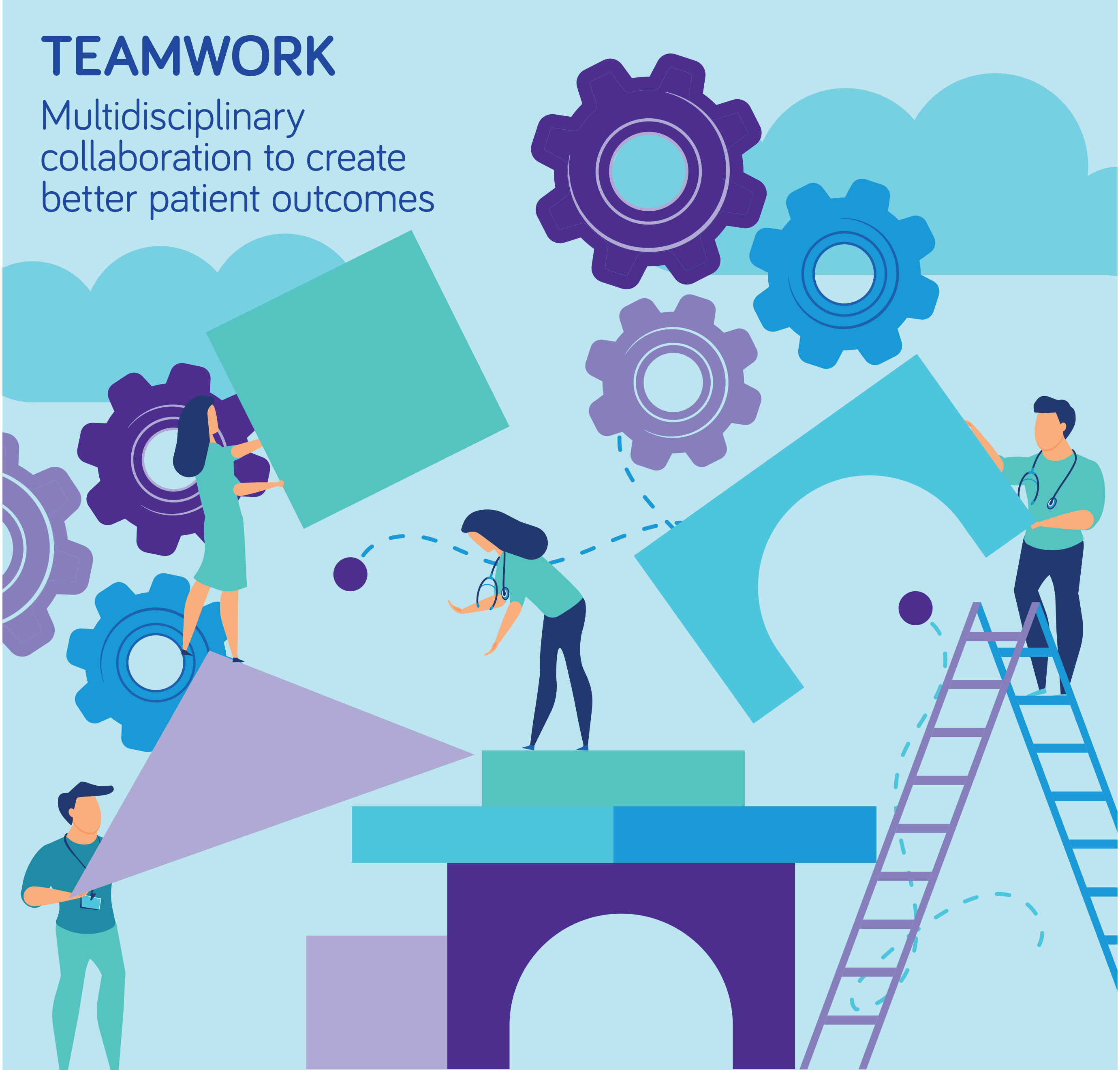
SMALLTALK

PAEDIATRIC NUTRITION MAGAZINE FOR HEALTHCARE PROFESSIONALS

TEAMWORK

Multidisciplinary collaboration to create better patient outcomes



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Autumn 2022

Meet the Editors

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The Good Crowd

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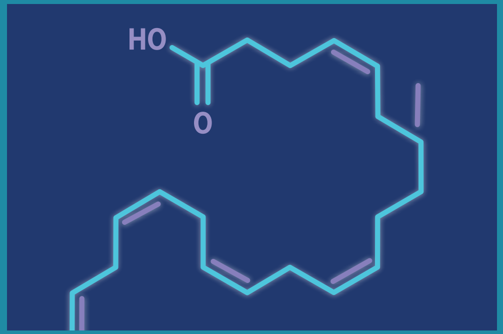
Growth



Allergy

Regulars

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Feed your mind

Welcome

Welcome to our new look Small Talk edition!

As with most jobs, teamwork is important. Working together can help to align on the vision and lead to better results. Research even shows that problem solving in teams leads to better outcomes.[1]

In this edition, we've incorporated a number of articles that show encouraging patient effects when multidisciplinary teams have collaborated.

Kathryn Ferguson and her colleagues from Yeovil have managed to create positive outcomes for paediatric patients with eating disorders despite the dramatic increase in hospital admissions since the start of the COVID-19 pandemic.

Although working as a multidisciplinary team may be challenging, **Lucy Upton's** article on how a multidisciplinary approach to food allergy management better supports allergic children and their parents, highlights how healthcare feeding specialists can collaborate on patients with complex feeding difficulties. Which seems particularly important given that parents and carers of children with food allergy may experience an impaired quality of life and anxiety. **Dr Christina Jones of Surrey University's** article details how psychological interventions can be beneficial for both patients with food allergies, and their families. After all, being part of a family involves teamwork too!

Collaboration was certainly an essential part of this edition of Small Talk! It has been a team effort to bring to life the new look Small Talk. It still has the same great educational content, now with some regular features such as an "Ask the Expert" feature, where you can have your questions answered by Jacqui Lowdon, and a "Day in the Life", which will highlight the different roles that our readers have.

We hope you'll agree that teamwork has most certainly paid off!

Best wishes,

Leanne

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1. *Laughlin P, et al. Groups Perform Better Than the Best Individuals on Letters-to-Numbers Problems: Effects of Group Size.* Journal of Personality and Social Psychology. *2006 ;90(4):644–651.*

Get in touch

If you have any feedback, any questions for our next edition, ask the expert, or would like to contribute to our next edition, we'd love to hear from you.

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DIARY DATES

7–11
OCTOBER 2022

European Association of Paediatric Societies 2022 Congress

WHERE: Hybrid, Barcelona Spain & Virtual

MORE INFO: https://eaps2022.kenes.com

13–16
OCTOBER 2022

World Allergy Congress (WAC) 2022

WHERE: Istanbul, Turkey

MORE INFO: wacistanbul.com

2–3
NOVEMBER 2022

Nutricia Annual Congress 2022

WHERE: Royal College of Physicians, London

MORE INFO: www.nutricia.co.uk/hcp/events/nutricia-annual-congress-2022.html

29–30
NOVEMBER 2022

BAPEN Conference

WHERE: Brighton

MORE INFO: www.bapen.org.uk/resources-and-education/meetings/annual-conference

29
NOVEMBER 2022

BDA – Module 5 – Neonatal Nutrition

WHERE: Virtual

MORE INFO: www.bda.uk.com/ems-event-calendar/paediatric-module-5-adv744-neonatal-nutrition.html

1–3
DECEMBER 2022

The European Academy of Allergy and Clinical Immunology (EAACI) Food Allergy and Anaphylaxis Meeting

WHERE: Eurobat Digital

MORE INFO: www.eaaci.org/eaaci-events/focused-meetings/upcoming-focused-meetings.html

7
DECEMBER 2022

British Dietetic Association – Research Symposium

WHERE: Birmingham

MORE INFO: www.bda.uk.com/events/upcoming-events/research-symposium.html

31
JANUARY 2023

BDA – Module 2 – Nutrition and Dietetics in Common Paediatric Disorders

WHERE: Virtual

MORE INFO: www.bda.uk.com/ems-event-calendar/module-2-nutrition-and-dietetics-in-common-paediatric-disorders-1.html

30–1
MARCH–APRIL 2023

Nutrition & Growth 10th International Congress

WHERE: London

MORE INFO: https://nutrition-growth.kenes.com

> A typical day includes visiting patients whose gastrostomy tubes require changing; training new patients on how to care for the tubes; completing patient reviews, and planning future visits.

Rebecca Murphy

A DAY IN THE LIFE OF

Nutricia Homeward Nurse

I have been a Nutricia Homeward Nurse for the past 2 years. I originally heard about the role from an ex-colleague who worked for Nutricia. I was living in Australia at the time, and I had started looking for a new challenge whilst still encouraging me to develop my skills as a paediatric nurse. I came across an advert on Indeed and reached out to Nutricia's HR department to get a bit more information on the role. From the very start I felt welcomed into the company, encouraged to submit my CV and shortly after got invited for an interview.

Getting a job offer from Nutricia was the reason I moved back to the UK and it was a great decision. The best thing about being a Nutricia Homeward Nurse is the support I get from my team. Despite it being quite an independent role, you never feel like you're on your own. I love having my own caseload; I have the flexibility to manage my own diary and the time to build relationships with my patients and their families. Your day can change quite dramatically depending on the needs of your patients, so you have to have a 'get up and go' attitude.

A typical day for me would be visiting patients whose gastrostomy tubes require changing; training new patients, their families or health care professionals on how to care for the tubes; completing patient reviews, and planning future visits. This could all change if a tube was to become blocked or to fall out! With the support of my team, we would rearrange our days to accommodate for any last-minute changes. When we're not out in the community, we're at home completing our clinical notes or working on projects. As well as maintaining and utilising our clinical skills we also have the opportunity to regularly build on our knowledge and learn new skills.

We work in partnership with the dietitians and nutrition nurses at our local hospitals covering the same caseload of enterally fed patients. This relationship is key to ensure that our patients have a high standard of continued care when going between hospitals and community for treatment.

I love being part of a company that nurtures its values and believes in its employees. I think what brings us all together as not just a nursing team, but as a wider team in product development, medical affairs, Homeward, and account managers, is that everyone has the same goal to improve the quality of life for our patients.

Mini-EDACS:

development of the Eating and Drinking Ability Classification System for young children with cerebral palsy

Cerebral palsy affects children and young people's lives in many different ways. Classification systems have been created to describe how cerebral palsy affects the ability to move (GMFCS)[1], to handle objects (MACS)[2], and to communicate with others (CFCS).[3] Each system classifies the full range of ability for each function using five levels, where Level I indicates few limitations, and Level V indicates most limitations to function.

Each classification system is easy to understand, and provides a common language for use across clinical practice and research.

Taking inspiration from these systems, we created the Eating and Drinking Ability Classification System (EDACS).[4] Cerebral palsy can limit the oral skills required for eating, drinking and swallowing, with risks of respiratory problems linked to direct aspiration of food and fluid into the lungs[5], and inadequate nutrition and hydration.[6,7] EDACS describes five distinct levels of ability using the key features of safety and efficiency, from 3 years of age. See Figure 1.

We set out to extend EDACS to include descriptions of very young children with cerebral palsy (18 to 36 months), whose eating and drinking skills are still developing.

What did we do?

We developed Mini-EDACS in several stages.

Using existing evidence
We worked with researchers from Australia who had already collected mealtime video data of young children with cerebral palsy.[8] They applied EDACS to 130 video recordings of young children with cerebral palsy aged between 18 to 36 months. They identified where changes were needed to show the developing eating and drinking skills of younger children. We created an initial version of Mini-EDACS using the feedback from the team in Australia.

Consulting people with expert knowledge
We used a Delphi Survey to share Mini-EDACS with an international group of 89 people with expert knowledge. The Delphi Survey is a method used to seek consensus or agreement among a large group of people who do not necessarily meet each other face to face.

> Most people found Mini-EDACS easy to us.

We collected their suggestions, and refined the Mini-EDACS, and shared it again in another round of the Delphi survey. Most participants agreed with descriptions of young children's eating and drinking abilities in the first round (more than 90%). We made some slight changes to Mini-EDACS from recommendations by participants.

Checking the reliability of Mini-EDACS
The final version of Mini-EDACS was used by pairs of speech and language therapists to classify the eating and drinking abilities of 43 young children with cerebral palsy from video recordings of usual mealtimes. Parents and carers also provided some extra information about their child's usual mealtimes. Speech and Language Therapists were chosen because they typically assess and manage the eating and drinking difficulties linked to cerebral palsy. We examined whether speech and language therapists agreed with one another about levels of ability. Finally, we asked parents and therapists what they thought about using Mini-EDACS.

What did we find?

Experts agreed that Mini-EDACS describes the eating and drinking abilities of children from the age of 18 months to 36 months in five levels; the amount of assistance someone requires to bring food and drink to the mouth is described in three levels. Key features include:

- **safety** of eating and drinking linked to the risk of choking or aspiration (entry of particles of food and fluid into the lungs)
- **efficiency** of eating and drinking linked to time taken and how much food or fluid is lost from the mouth
- each Mini-EDACS level **describes young children's developing biting, chewing and swallowing abilities**, food and fluid textures that are managed and breath changes associated with eating and drinking

We found that speech and language therapists used Mini-EDACS in similar ways to each other to describe the eating and drinking abilities of the same children. They agreed with one another 58% of the time, kappa=0.43, indicating moderate agreement.[9] Measures of consistency of use of Mini-EDACS by speech and language therapists were acceptable: Intraclass Correlation Coefficient: 0.78 (95% CI 0.63-0.87).[10]

Parents and speech and language therapists thought Mini-EDACS was a useful tool. One parent commented that Mini-EDACS was clear because each level spells out the requirements, so it was easy to identify the right level for their child. Another parent said that no-one had ever said that a rating score even existed for children with cerebral palsy and that overall they found using Mini-EDACS to be a positive experience. Most people found it easy to use.

WHERE TO FIND OUT MORE?

EDACS plus **MINI-EDACS** is free to download from **www.edacs.org**. The study findings are published in Developmental Medicine and Child Neurology.[11]

What could be done next?

The new Mini-EDACS is now part of the Eating and Drinking Ability Classification System which has been endorsed by experts in cerebral palsy, eating and drinking, and research, and also by people with cerebral palsy and parent carers. EDACS is a reliable way of classifying someone's eating and drinking abilities for use in both clinical and research contexts. The reliability of Mini-EDACS requires further study. Mini-EDACS classifications made in person with better knowledge of a young child's eating and drinking may lead to higher reliability than we found using videos.

Project Team

- **Dr Diane Sellers**, Speech and Language Therapist and Research Fellow, Sussex, UK
- **Christopher Morris**, Professor of Child Health Research, Exeter, UK
- **Lindsay Pennington**, Speech and Language Therapist and Reader, Newcastle, UK
- **Elizabeth Bryant**, Senior Research Fellow, Brighton, UK
- **Kath Benfer** Post-doctoral researcher, Queensland, Australia
- **Kelly Weir**, Speech pathologist and Allied Health Research Fellow, Southport, Australia

This independent research was funded by Nutricia, to include Diane Sellers' and Elizabeth Bryant's time, administration and costs for study participants. Other researchers offered their time pro bono. The views expressed are those of the author only.

Eating and Drinking Ability Classification System from 3 years: descriptors and illustrations[12]

Level I	Level II	Level III	Level VI	Level V
Eats and drinks safely and efficiently.	Eats and drinks safely but with some limitations to efficiency.	Eats and drinks with some limitations to safety; there may be limitations to efficiency.	Eats and drinks with significant limitations to safety.	Unable to eat or drink safely – tube feeding may be considered to provide nutrition.

Illustrations © Jane Coffey

Figure 1. Eating and Drinking Ability Classification System: descriptors and illustrations

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Psychological interventions for patients, and their parents, *with food allergy*

What are the psychological needs of individuals with food allergy and their families?

Living with food allergy (FA) is well documented to impair quality of life in childhood, adulthood and parenthood.[1] There are critical times throughout the FA life course which are likely to lead to greater psychological needs such as pre-diagnosis, during FA challenges, at time of diagnosis, throughout self-care regarding management and medication with transition periods (such as moving schools, going to university, changing hospitals and desensitisation), again leading to piqued emotional distress and subsequent need for support. These needs are observed in parents, with almost a third reporting anxiety and 17.5% depression prior to diagnosis,[2] which is unsurprising given the fact that the process for allergy diagnostics can be lengthy and challenging, often requiring multiple tests.[3] For the individuals experiencing the diagnostic journey first-hand, it can lead to distress in terms of facing fears even though this is within a secure environment, as well as the anticipation of having a reaction.[4] Furthermore a negative challenge was not always associated with reintroduction of the food showing the complexity of the experience for individuals with FA.

For some parents and individuals, this emotional distress is seen to subside after food challenges regardless of whether the outcome to the challenge was positive or negative.[5-6] We also see a greater impairment of quality of life in the adolescents who are allergic to multiple or ubiquitous foods,[7] in addition to higher levels of stress for these parents,[8-11] likely due to the increased responsibility, burden, guilt and worry in being able to competently care for their child's allergic needs.[12-13] Given the nature of allergy →

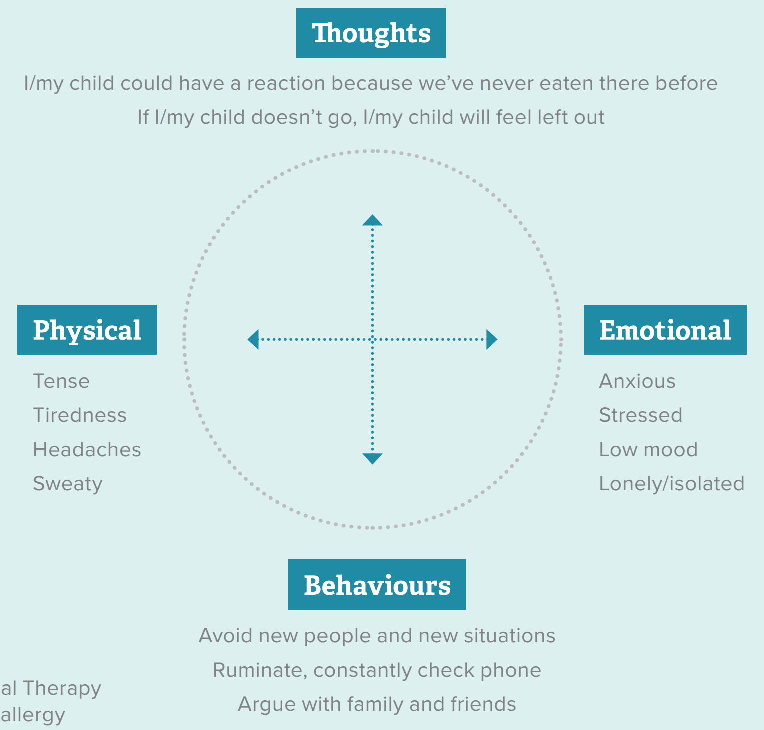


Figure 1.
Cognitive Behavioural Therapy formulation for food allergy

management and a parent's natural sense of responsibility for the wellbeing of their child, the ever present threat of anaphylaxis means that parents may feel safer managing the burden alone, with fears of "handing over" care to others further inhibiting their quality of life.[14-16] Parents who are instructed to maintain a high level of vigilance as a part of FA management may also experience anxiety and impose excessive restrictions on their child,[17] which causes concerns for parents when the child transitions towards independence as they experience a loss of control.[18] This has subsequent impacts on the child or young person leading to feelings of isolation,[19] with reports of exclusion and bullying not uncommon.[20-21]

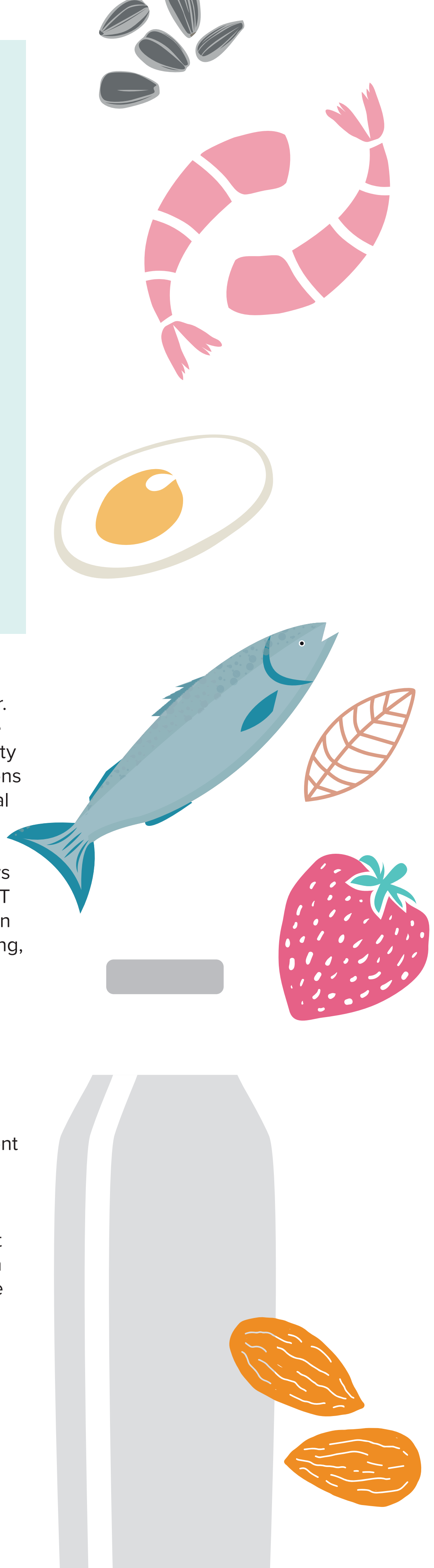
What's the current evidence-based for psychological interventions in food allergy?

Despite the above evidence, access to specialist psychological support is recognised as lacking[1], as are evidenced-based psychological interventions for FA more generally.[22] Current evidence predominantly utilises Cognitive Behavioural Therapy (CBT) approaches, which is unsurprising given CBT is the recommended treatment in the UK for people experiencing low mood or anxiety,[23-24] and anxiety being one of the most common difficulties given the uncertain and unpredictable nature of FA. CBT approaches are almost exclusively focused on parents of children with FA, particularly mothers,[17,25-26] possibly given the fact that most FA is diagnosed before the child turns five meaning FA management rests primarily with the caregiver. As parental anxiety has been identified as one of the risk factors of children developing anxiety disorders, it makes sense that recommendations have been made to address excessive parental anxiety and associated restrictive behaviours specifically for children with FAs in a bid to reduce transmission.[27] Current evidence shows some support for individualised and group CBT approaches utilising brief and intensive session contact for mothers.[17,25-26,28] At the time of writing, three further randomised controlled trials of manualised, online, group CBT for children aged 11-17 years with FA, adults and parents are currently being analysed.

Why focus on Cognitive Behavioural Therapy for food allergy?

CBT aims to help individuals look at the different situations that they find themselves in, and enable these individuals to understand how their thoughts, physical sensations, feelings and behaviours interact. In CBT, the goal is not to never experience anxiety again, but to learn to manage distressing symptoms, have a more balanced perspective and to not let anxiety impair quality of life. With FAs, as with most long-term conditions, a certain level of anxiety, vigilance, and avoidance is adaptive as attuning to these keeps individuals safe. However, as demonstrated in some of the research documented above, that level of anxiety can become excessive leading to impaired quality of life and unnecessary avoidance. People who experience anxiety are more likely to be hypervigilant meaning that they are constantly on the lookout for threat and danger. When both the psychological (such as feeling scared, worried or frightened) and the physical symptoms (such as increased heart rate, butterflies or sweating) are noticed, individuals find themselves questioning their ability to cope, and can make them feel more anxious. This is usually referred to as the vicious cycle of anxiety (Figure 1).

Whilst avoiding things (such as certain social situations), might help individuals cope in the short-term and lead to less anxiety in the moment, this doesn't improve general feelings of anxiety and may contribute to longer term feelings of isolation, regret and sadness. By not challenging those anxious thoughts, individuals are unable to disprove their negative or catastrophic predictions. Safety behaviours also serve to keep anxiety going; individuals depend on them to make themselves feel better so they do not learn that distressing emotions (such as anxiety, worry and fear) will reduce and go away on their own.



How does the current evidence meet the psychological needs of individuals with FA and their families?

In addition to the research on CBT approaches for parents of children with FA, other educational interventions were found to improve FA knowledge and management, though the impact of this on psychological wellbeing was not explored.[29] Given the lack of specialist psychological care available to those with FA or their parents, and the fact that the majority of people seek health information online, a review of freely available websites for coping with emotional distress related to food allergies has also been conducted.[22] This review identified 25 websites (less than half were aimed at children and young people or adults) and all targeted ameliorating anxiety and stress. Multiple strategies were recommended within the websites which were broadly categorised as problem focussed (e.g., managing or altering the person-environment relationship at the source of stress such as reading food labels, carrying adrenaline auto-injectors and making an emergency management plan) and emotion-focussed coping (e.g., regulating the stressful emotion such as normalising, thought challenging, positive self-talk). Possession of a written anaphylaxis management plan has been associated with a reduced number of reactions[30] and better self-care behaviours in adolescents[31], but given the cross-sectional nature of these studies, causation cannot be determined. Despite most of the problem solving suggestions making sense from a FA management perspective and unlikely to lead to harm, there is little evidence to support their impact on psychological well-being.

There is more evidence for the benefits of the recommended emotion-focussed coping approaches on well-being. Research suggests that nurturing helpful thinking, positive self-talk, and talking about food allergy as "manageable" rather than "deathly allergic" is associated with better emotional well-being.[32] Again, none of these approaches have been explored using experimental methods. Other websites promoted elements from CBT, which we see from the above have some benefit in reducing anxiety in mothers of children with food allergy; however, there remains a current lack of evidence in adult patients or fathers.[17] Other emotion-focussed suggestions included membership of patient support groups, for which there is some encouraging evidence in both young people[31] and parents[17], but again results are associative. Whilst these websites are freely available to access and could be a starting point in which to signpost individuals or their families who may be struggling with distress related to their FA, a recent trial of a self-help website for improving parent outcomes showed no benefit though subgroup analysis showed some evidence of effect for those with highest levels of depression at baseline.[33]

What needs to change to better support the psychological needs of individuals affected by food allergy?

As demonstrated, evidenced-based psychological interventions do exist for parents of children with FA and show some benefit; however, services are under-resourced to deliver these. Research has shown that therapists with no previous experience of delivering CBT can be trained in specific interventions and reach acceptable levels of competence quickly.[34] Models of service provision should be evaluated where allied health professionals working with individuals with allergy are trained in these interventions before subsequent pragmatic evaluation of effectiveness on both psychological wellbeing and cost are carried out.

Whilst CBT is the predominant approach for anxiety and provides the greatest evidence-based treatment related to those with FA, the original assumptions of CBT might not →

fit the needs of all clients and so alternative psychological approaches should be considered. At the time of writing, a randomised controlled trial of mindfulness for parents of children with FA is currently in preparation for publication. Diverse interventions are likely to be required to ensure suitability for specific subgroups of individuals with FA and their families. Whilst there are a number of freely available online resources which individuals who are struggling with the emotional aspect of FA may find useful, and could be signposted to, there is no robust evidence to support their effectiveness on psychological well-being. These resources may prove normalising to some, reduce feelings of isolation and improve self-care behaviours, and are unlikely to cause harm in the absence of more intensive support.

In conclusion, the detrimental impact of FA on various aspects of daily living and subsequent psychological well-being is well recognised. However, there is a paucity of access to specialist psychological care and high-quality research evaluating interventions to support all individuals affected by FA and their families. Although limited, the evidence provides an indication that further support in the form of CBT could offer parents, especially mothers, some benefits. The reviewed research suffers from methodologic constraints, which limit the validity of reported outcomes. Future research needs to develop and evaluate a range of accessible, psychologically-informed resources which utilise existing staff within allergy care teams. Research should be holistic in nature, whereby educational and practical information together with psychological awareness of FA is assessed in order to determine the overall impact on well-being.

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Continued Professional Development

- What resources are you aware of that might support the psychological needs of patients and their parents with food allergy?
- How can you ensure better signposting to psychological support in your day-to-day practice?
- What simple strategies might you be able to put in place to ensure the psychological needs of patients and their parents with food allergy are acknowledged?

Supporting human milk feeding in preterm infants:

A new Human Milk Fortifier with lipids

Preterm birth is a global concern. The World Health Organisation (WHO) estimates that 15 million infants are born prematurely every year – equating to 1 preterm birth every 2 seconds.[1] Infants born prematurely may face significant health challenges, which are usually more pronounced the earlier they are born. The quality of care and nutrition received at birth, and the period that follows, can have a significant impact on preterm health outcomes.

Preterm infants have increased nutrient requirements to achieve the growth velocity of a child growing in utero.[2,3] Whilst breastfeeding is the best source of nutrition for all babies (WHO), as the desired rate of growth in preterm babies may be up to five times higher than term born infants, the composition of breastmilk alone may not meet the unique requirements to support preterm growth and development.[3,4]

The European Society for Gastroenterology, Hepatology, and Nutrition (ESPGHAN) address these requirements by giving specific recommendations for preterm infants and advocates the use of human milk as the preferred nutrition for preterm infants <1800g “provided it is fortified with added nutrients where necessary to meet requirements”.[2,5] The use of Human Milk Fortifier (HMF) is associated with improved growth and brain development.[6]

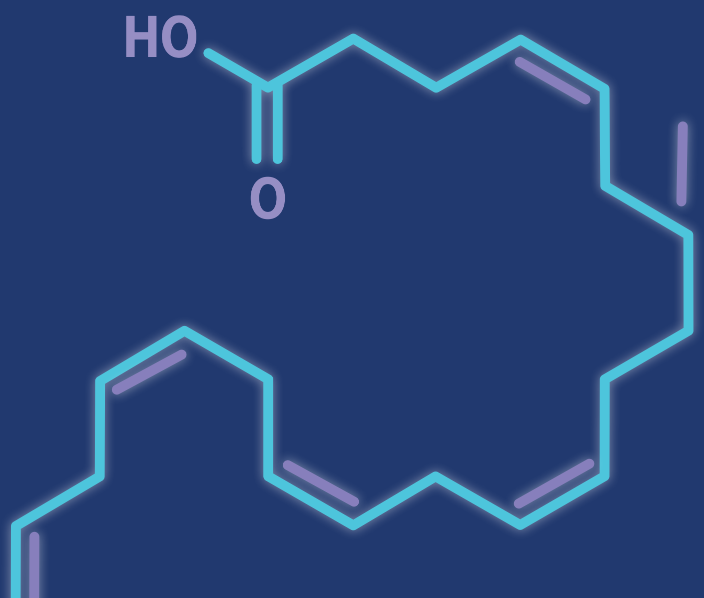
Most commercially available fortifiers contain varying amounts of protein, carbohydrates, calcium, phosphate and other vitamins and minerals with the primary source of energy coming from the carbohydrate content.[7] In this randomised, double-blind, controlled study, the aim was to compare and assess the growth, tolerance and safety of a new nutriprem HMF with added lipids (including docosahexaenoic acid (DHA) and arachidonic acid (ARA), medium chain fatty acids, and anhydrous milk fats), more protein and less carbohydrate compared to a conventional HMF in very low birth weight (VLBW) preterm infants receiving human milk.[8]

The study was conducted across 9 neonatal intensive care units (NICU) and 4 European countries including the UK, with VLBW infants (gestational age <32 weeks, birth weight <1500 g) randomised to receive HM fortified with either Nutricia’s current commercially available HMF (Control HMF: 15 kcal, no lipids, 1.1 g protein, and 2.7 g carbohydrates per 100 ml fortified HM) or the new nutriprem HMF with lipids (Test HMF: 17 kcal, 0.7 g lipids, 1.3 g protein, and 1.7 g carbohydrates per 100ml fortified HM). Fortification of human milk was started according to the local feeding protocol in each NICU and continued for a minimum of 21 days whilst infant characteristics and data on anthropometrics, digestive tolerance, and safety were collected between birth and the end of intervention. The primary outcome parameter assessed was weight growth velocity between baseline and day 21 of intervention to ensure adequate growth, with an adequate growth considered as weight growth velocity between 15-20 g/kg/day. The aim of this study was to demonstrate that weight growth velocity would be non-inferior with the new nutriprem HMF in comparison to the Control group.

A total of 205 VLBW infants were included in the study from March 2018 to July 2020, with 102 VLBW infants in the Test group and 103 in the Control group. These infants were born at a mean gestational age of 27.8 weeks (SD: 2.2) and had a mean birth weight of 967g (SD: 261) with just over one infant in ten (12.7%) being growth restricted at birth. On average, the infants in the study started the intervention at 10.6 days (SD: 5.6) after birth.

Both groups of infants demonstrated an appropriate growth of between 15-20 g/kg/day – with those receiving the new nutriprem HMF with lipids and the conventional HMF having a mean weight growth velocity of 18.4 g/kg/day and 18.5 g/kg/day respectively during the 21 days of intervention. With a predefined non-inferiority margin of -1.6 g/kg/day, this demonstrates the non-inferior and appropriate growth of the new nutriprem HMF compared to the conventional, commercially available HMF in line with the aims of the study. In addition to the primary study parameter for growth, there were no significant differences observed in length, head circumference, or anthropometric Z-scores gains during the 21 days of intervention, demonstrating appropriate growth.

Importantly the new, nutriprem HMF with lipids was demonstrated to be safe for use in these vulnerable infants, with the percentage of infants with episodes of digestive intolerance (vomiting, regurgitation, clinically significant gastric residuals), as well as stool frequency and consistency being not significantly different between the 2 study groups. Neonatal morbidities including necrotising enterocolitis (Test: 2.9%, Control: 6.9%), serious neonatal infections (Test: 12.6%, Control: 13.9%) and metabolic acidosis (Test: 1.0%, Control: 2.0%) were also not significantly different between groups.



Overall this study demonstrates the safety and tolerance of nutriprem’s new HMF with lipids, whilst showing it supports appropriate growth in vulnerable VLBW preterm infants.

As such its use in clinical practice can support human milk feeding, whilst promoting growth and development by meeting the nutritional needs of VLBW preterm infants.

IMPORTANT NOTICE: Breastfeeding is best. nutriprem human milk fortifier is a food for special medical purposes for the dietary management of preterm and low birthweight infants. It should only be used under medical supervision, after full consideration of the feeding options available including breastfeeding. It is not suitable for use as the sole source of nutrition. Refer to the label for details.

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Creating positive outcomes for patients with eating disorders

in a paediatric inpatient setting

It's a Friday afternoon and the phone rings. The call is to tell you that a young person with an eating disorder has just been admitted to the ward and needs a meal plan. This was a typical occurrence at our hospital in South Somerset.

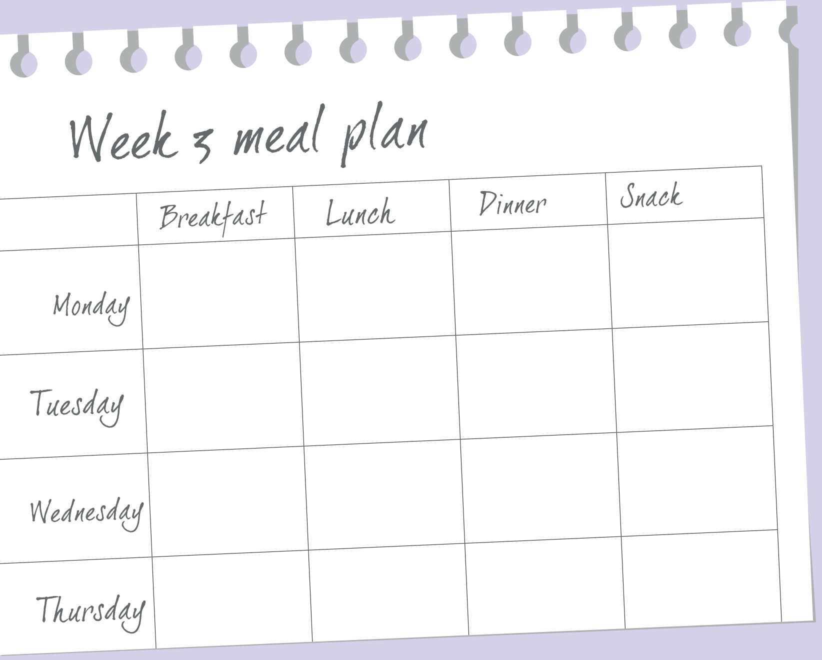
Previously, the dietitian would create an individualised meal plan for each young person admitted with a diagnosis of an eating disorder. As well as being time consuming and requiring multiple consultations each week, it was confusing for ward staff and would result in additional requests for dietitian review or advice on meal plans. Patients would want to negotiate their meal plan down to the last detail. It was impractical for dietitians trying to manage a busy caseload.

Parents remained involved throughout the admission and would supervise meals from the offset, often leading to collusion and resulting in reduced portion sizes, incomplete meals, and compromised nutritional intake. Patients would usually stay in hospital for between 8-11 weeks, gaining on average 500g per week.

Although below the national average hospital stay of 18 weeks[1], this was a lengthy admission for a young person and not conducive to their recovering journey. To overcome this, we developed a structured eating disorder admission, which, alongside the introduction of a Community Eating Disorder (CEDs) Paediatric service in 2017, changed the way we delivered our service.

Developing the service

With the introduction of the CEDs team, young people would arrive on the ward as a planned admission. The length of admission was agreed to be 3 weeks, in line with other services locally in the South West and proven to be effective.[2] From analysis of the hospital menu, a colour coded meal plan was created based on the macronutrient content of each item. This allowed lower energy meals to be safely introduced during the initial days of admission, reducing risk of refeeding syndrome. Higher energy meals and snacks would then gradually be introduced during the weight restoration phase of admission. →



Week 3 meal plan

	Breakfast	Lunch	Dinner	Snack
Monday				
Tuesday				
Wednesday				
Thursday				

Expectations of admission would be clearly explained to patients and parents, including physical activity and bed rest, behaviour and compliance to meal plans. Young people would be expected to complete all meals and snacks given. Meals that were refused or not completed within the allocated time frame would be replaced with a set volume of 1.5kcal/ml oral nutritional supplement (ONS). If they were unable to take the full ONS volume orally, it would be administered via a nasogastric tube (NG). This would be agreed on admission with parents, providing they consent for nasogastric usage. In our trust a new nasogastric tube is placed each time one is required. We have found that this encourages oral intake and reduces usage of a nasogastric tube.

Initially, the ward Health Care Assistants (HCAs) would choose meals for a young person, however we then trialled selection of meals by the patient's parents. This proved extremely successful and supports a Family Therapy for Anorexia Nervosa (FT-AN) approach, with parents being supported in their role of helping the young person and simultaneously strengthening their relationship.[3,4] It also reduced the need to identify 'fear' foods versus genuine food preferences, as parents, who knew their child's likes and dislikes, were the ones choosing the meals. Further benefits included parents being able to choose a typical meal pattern that would be seen in the family home e.g. if the young person would have a cold meal at lunch and a cooked meal in the evening.[3]

For the initial 1-2 weeks of admission, meal times would be supervised by ward staff. This was to ensure that boundaries for mealtimes were maintained, such as completing meals within allocated time and avoiding deliberate wasting of food. It also allowed patients to be treated with compassion and be supported through meal times. Supervising staff would employ distraction techniques to help reduce meal time anxiety, such as gentle conversation, playing card games and completing puzzles. In the second half of admission, parents would be supported in supervising meal times and the patient would have periods of home leave to include eating in the home environment.

Having a standardised care plan significantly reduced the need for multiple dietetic reviews and enabled ward staff to safely implement care plans at weekends when dietetic cover was not available. It also allowed dietitians more time to empower parents to continue care at home. Towards the end of the admission, parents would be advised on appropriate foods and portion sizes and provided with a guidance meal plan. This would enable a return to typical family foods, whilst ensuring that the diet is nutritionally balanced and allowed for continued weight restoration or weight maintenance. In the year following introduction of structured admissions, patient length of stay had only exceeded the 3-week admission period twice, once by only 3 days and once by an extra week. We saw an average weekly weight gain of 600g and more patients being discharged home rather than to a Tier 4 unit.

Evolving Practice

The role of the dietitian in training, developing guidelines and addressing catering issues is highlighted in Medical Emergencies in Eating Disorders (MEED).[4] Since the implementation of structured admissions we have continued to seek feedback from ward staff as to how to improve patient and staff experience. In a review of eating disorder admissions, staff reported that gradually increasing portion sizes in the initial week of admission was often susceptible to error. There was also a desire to have more training in communicating with patients and supporting meal times, especially for new members of staff.

To simplify meal provision, particularly in the refeeding phase of admission, meal plans were adapted to gradually increase the number of meal times, rather than increasing portion size. On the first day of their meal plan, a young person is given three meals, plus an evening supper, which gradually increases to also include 2 desserts and a mid-morning and mid-afternoon snack by day 6 of admission. Both ward staff and our catering team have found this to be a more practical approach. The refeeding admission continues to follow a three week structure involving a refeeding phase, consolidation of the meal plan and preparation for discharge. MEED[4] suggests 1400-2000kcals. Both MEED and its predecessor Junior MARSIPAN, suggest increases of 200kcal every 1-2 days with a final average figure of 2400kcal being acknowledged. Furthermore, the ONS used to replace refused food was changed to 2.4kcal/ml to decrease replacement volumes and time taken to administer, benefiting both the patient and staff time.

In response to feedback from ward staff regarding communicating with young people with eating disorders, we worked alongside our Mental Health Liaison Nurses to produce guidance for new ward staff, explaining the 3-week admission and how to best support the young person on their journey. Prior to the COVID-19 pandemic this was also provided as regular training on ward.

> “Since the start of the COVID-19 Pandemic we have experienced an increase in the number of eating disorder admissions.”

Over the past four years, a patient experience book has been created on the ward. Young people are able to write to future patients, including their experiences and messages of support. Our patients have found it helpful to read entries from peers who have gone through a similar journey and how they had felt during their stay. Following the success of this, we are hoping to also create a parent experience book.

Effect of COVID-19 on eating disorder admissions

Since the start of the COVID-19 pandemic we have experienced an increase in the number of eating disorder admissions (yearly average was 13 during 2018-2019 vs 33 in 2021) to our Children's unit. Young people are also admitted at a lower median %BMI; in 2018, only two patients had a median %BMI <80% vs 58% in 2021. Within this group, 9% of patients had a median %BMI <70%. We continue to discharge the majority of our young people home after a planned admission. However, we have seen an increase in patients requiring re-admission, who also often require an increased length of stay.

What's next?

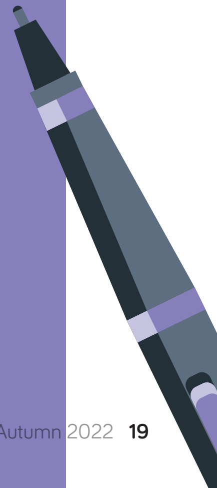
Alongside an increase in eating disorder admissions, we have also seen an increase in the number of young people admitted with Avoidant Restrictive Food Intake Disorder (ARFID) over the last 12 months. We hope to develop further care plans for patients with diagnosis of ARFID, taking into account sensory aspects of the diet, which may be part of the reason for food refusal. Cases of eating disorders are also more complex, often in combination with other mental health conditions or diagnosis of autism. For these patients we recognise that care plans may need adapting and will require collaboration with multidisciplinary teams. →

TAKE-HOME POINTS

1. Structured starter plans can be easily implemented and bring benefits to patients and staff.

2. Since the COVID-19 pandemic eating disorder admissions have increased by 250%.

3. As eating disorder presentations become more complex, our practice must evolve in order to best support these patients.



We have also noticed a reduction in average age of patients admitted for refeeding admission. In 2018, the average age was 16.5 years, vs 14.3 years in 2021. According to Petkova et al.,[5] the average age of children with a diagnosed eating disorder in 2015 was 14.6 years and diagnosis in children under the age of 12 had increased over the past 10 years. In response to this we have decided to introduce an adapted meal plan with portion sizes appropriate for patients under 12 years.

Additionally, the increasing popularity in following a vegan diet means it is likely that more young people will present having adopted a vegan lifestyle before becoming unwell with an eating disorder. For these patients we endeavour to develop our menu plans to provide more choice and variety, whilst ensuring nutritional requirements are met.

Summary points

As diagnosis of eating disorders among young people increases, and more require hospital admission for refeeding, the need for dietetic care as part of their treatment plan remains fundamental and continues to be advocated for.

Eating disorder treatment is far from being ‘one-size-fits-all’. However, we have found structured starter plans to be paramount in enabling staff to commence meal plans out of hours and in providing consistent high-quality care. By also maximising available dietetic time, dietitians are more able to provide support, education and resources to patients and families so that they can continue to work towards positive outcomes.

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Continued Professional Development

1. Promoting starter plans that can be easily implemented can benefit both patients and staff. What other plans could be required when considering changes in culture, different dietary requirements and the influence social media has on what we choose to eat?
2. When deciding on which oral nutritional supplements to give, which factors need to be considered?
3. Consider the benefits and risks of bolus versus continuous NG feeding, and keeping an NG tube in situ versus frequent repassing in this patient group.

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Case study on the use of a human milk fortifier in preterm infants during hospitalisation and in the community

Neonatal Dietitian

BACKGROUND

B was born extremely premature at 28+1 weeks gestational age with twin-to-twin transfusion syndrome. B was diagnosed with symptomatic patent ductus arteriosus (PDA) with significant shunting and chronic lung disease (respiratory insufficiency) requiring oxygen. B was born at very low birth weight (VLBW) at 1kg (25th weight centile). B dropped to the 9th centile at 31 weeks gestational age and to the 2nd centile at 32 weeks, tracking on this centile for the next 6 weeks.

B commenced parenteral nutrition (PN) on Day 1 and expressed breast milk (EBM) fed via nasogastric tube (NGT) on Day 3 and 4. B was nil by mouth on Day 5 due to necrotising enterocolitis (NEC). EBM was re-established on Day 21 via NGT reaching 150ml/kg and PN was stopped. B started on 14g/day current formulation of nutriprem Human Milk Fortifier (HMF) on Day 21 which increased to 25g/day on Day 23, for 25 days. The volume of EBM was increased to 180ml/kg/day and on Day 46, 25% feeds of nutriprem 2 were started via NGT due to poor EBM supply and growth (45ml/kg/day, 13ml feed x 8/day).

Table 1. Dietetic History

Age	Weight	Length	Phase
28w + 1d	1 kg (25th centile)	N/A	**Birth:** Born VLBW, with twin-to-twin transfusion syndrome, symptomatic patent ductus arteriosus (PDA) and chronic lung disease (respiratory insufficiency) requiring oxygen
38w + 4d	2.43kg (2nd centile)	43.75cm (9th Centile)	**Initiated on Updated nutriprem HMF:** Started upgraded nutriprem HMF (6g/day) in EBM (135ml/kg/day, 266ml/day in total) via NGT (2g in 50ml)
41w + 3d	3.09kg (9th centile)	46.5 cm (2nd Centile)	**Hospital Discharge:** B was discharged home, breastfeeding with 2 top up bottles of fortified EBM feeds (45ml per bottle, 6g/d nutriprem HMF).
42w + 3d	3.36kg (25th Centile)	48cm (2nd Centile)	**Community follow up (1 Week):** B’s growth was steady and has settled to a good feeding pattern.
47w + 1d	4.46kg (25th centile)	54.8cm (25th Centile)	**HMF Discontinuation:** B is growing well. HMF discontinued.

HOSPITAL

On Day 74 in hospital (38+4 weeks) the feeding regimen and fortification decreased reflecting B’s needs. B received 6g/day of the formulation of HMF in EBM (135ml/kg/day, 266ml/day in total) via NGT (2g in 50ml). When 50% breast feeding was established, an updated nutriprem HMF was given as 5ml shots, with the mother advised to mix 6g of the updated nutriprem HMF with 30ml of EBM alongside 25% nutriprem 2 (45ml/kg/day, 85ml in total). Mean compliance was described as excellent with B receiving 100% of the recommended amount. When starting the updated nutriprem HMF B was on the 2nd weight centile (2.43kg) which moved up to the 9th centile before discharge (3.09kg).→

COMMUNITY

B was discharged home on a feeding regime of breastfeeding with 2 top up bottles of fortified EBM feeds (45ml per bottle, 6g/d nutriprem HMF). The updated nutriprem HMF was received for 43 days in the community. Mum reported that the updated nutriprem HMF was easy to mix, and was very happy with B's growth and the reduced need for additional formula feed. Following discharge, weight improved (3.36kg) and remained stable on the 25th centile (4.46kg). Overall both the dietitian and the parents reported that tolerance was good on the updated nutriprem HMF. It was reported that B experienced some mild constipation, abdominal discomfort, and some moderate bloating and flatulence whilst in hospital. Once at home the parents reported some mild diarrhoea, abdominal discomfort, bloating and flatulence, although the parents were not concerned and believed the symptoms were unrelated to the updated nutriprem HMF. Overall, the dietitian was very satisfied with the infant's tolerance and no adverse effects were reported.

DISCUSSION

This case study demonstrates the use of the updated nutriprem HMF in this preterm infant which supported good growth in hospital and upon discharge and helped reduce additional formula use. B was assessed at 1 week and 4 weeks after hospital discharge, and it was felt B was feeding and growing well. The dietitian was satisfied with B's tolerance and compliance with the updated nutriprem HMF and the parents were pleased with her growth.

Food allergies and feeding difficulties

Supporting allergic paediatric patients in a complex feeding difficulties clinic – a multidisciplinary approach to food allergy management

'Feeding difficulties' is a term cited within paediatric literature regularly, and something paediatric dietitians will be familiar with managing. In practice, it is recognised that this broad term can encompass a wide range of challenges or differences with a child's feeding, with multiple, possible contributory factors. One notable prerequisite for feeding difficulties or differences in children, is a diagnosis of food allergy.

Prevalence of feeding difficulties in children with food allergy

Data suggests between 25-50% of typically developing children are affected by feeding difficulties,[1] however, this figure increases to as high as 94% in children with certain allergic manifestations including Eosinophilic Gastrointestinal Diseases (EGIDS).[2] Within a specialised feeding clinic (The Feeding Trust), a service evaluation found up to 60% of children being managed for complex feeding difficulties had a current or prior diagnosis of food allergy.

Studies to date have highlighted notable associations between food allergy diagnosis and feeding challenges. Common themes across these papers include:

- Increased mealtime behaviour concerns[3] and dysfunctional eating behaviours[4]
- Avoidance of tolerated foods and food aversion[4]
- Increased likelihood of feeding challenges correlated to the number of foods requiring avoidance[5]
- Feeding problems closely related to symptoms of food allergy, particularly gastroesophageal reflux, vomiting, and constipation[6]

A recent paper has also highlighted that feeding challenges can persist, even when a child has been able to reintroduce an allergen into their diet. Children diagnosed with Cow's Milk Protein Allergy between 0-2 years were found to have altered nutritional habits and eating behaviours, →

Table 1. Common Themes and Considerations in Children with Food Allergies

Common Themes	Considerations
Aversive feeding experiences	• Disruption to normal feeding development • Learnt avoidance • Trauma
Food exposure	• Restricted nature of diet • Delayed progression through weaning • Pressure with early allergen exposure • Limited food range to 'safe' food only • Separate meals and/or eating environments • Fear of the unknown • Treated differently around food occasions
Parent-child dyad at mealtimes	• Trauma (parents and/or child) • Attachment and attunement disruption • Difficulty establishing responsive feeding • Maladaptive parents feeding strategies (often reinforced repeatedly over time)
Symptoms (past and current)	• Functional gastrointestinal complaints e.g. constipation • Abdominal pain • Reflux • Eczema • Limited appetite • Dysphagia • IgE reactions to food e.g. mouth, lip swelling
Skill deficits or sensory factors	• Hyperarousal and hypervigilance • Delay in skill acquisition at mealtimes • Sensory factors • Interoceptive challenges associated with symptoms e.g. constipation
Food and/or mealtime safety	• Lack of certainty • Conflicting food/mealtime messages • Anxiety and nervous system dysregulation • Language differences around food

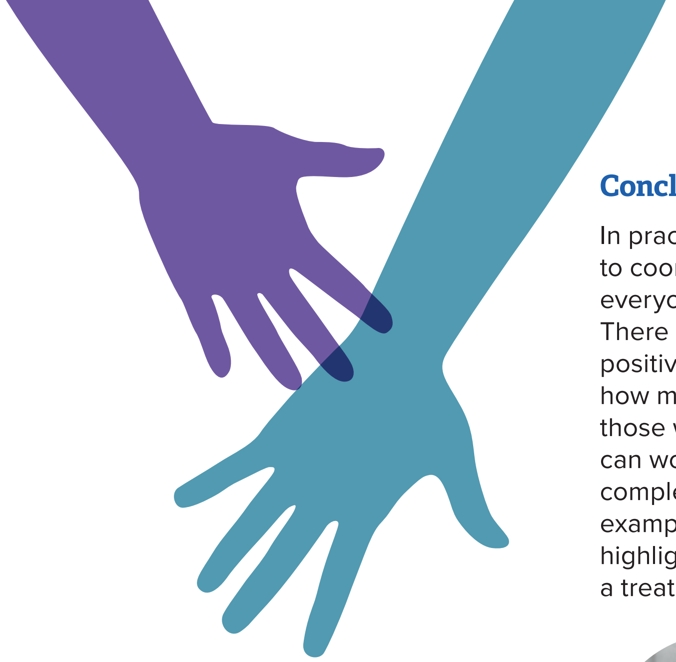

Figure 1. An Example of How a MDT Work Together to Provide Support for Allergic Patients Allergies

Dietitian	**Speech and Language Therapy**	**Psychology**	**Occupational Therapy**
E.G.	E.G.	E.G.	E.G.
• Manage growth concerns • Optimise micronutrient status • Guide on suitable foods for exposure and support dietary liberalisation • Education and reassurance on portion sizes, routines, food groups	• Address any feeding skill deficits, and provide activities around experience building with food/textures • Guide on communication strategies for mealtimes • Support routines and structure	• Interventions to support anxiety management or background e.g. trauma • Support around identity, confidence, integration • Family based interventions • Parenting support • Work to manage concerns around allergen reintroductions	• Bespoke sensory diet (if needed) • Support strategies for regulation and co-regulation • Optimise postural and seating requirements • Support body self awareness and interception

* MDT assessment process – inclusive on input from all professionals

* Standardised outcome measures e.g. Feeding Difficulties Impact Scale

* Individualised treatment approach and goals

* Collaborative working to ensure consistent support and messages from all team on general factors such as; family mealtimes, routines, language food exposure, creating learned safety at mealtimes, goal setting, reviewing mealtimes videos, parental feeding style, liaison with Allergy Team/Paediatricians

* Clinician specific support, whilst maintaining joint working and goals

resulting in growth restriction and insufficient intake of micro and macronutrients between the ages of 2-6 years.[7]

How and why do feeding challenges present in children with food allergies?

Given the increased risk of feeding difficulties for children with food allergies, it's helpful to reflect on the factors that may be contributing to the spectrum of challenges that can be observed. In practice, gaining an understanding of these and being able to relate this back to a child's history is fundamental in the assessment process. Within a complex feeding clinic, the common themes evident in children with food allergies, and their corresponding considerations are shown in Table 1.

As with any aetiology, children may present within a spectrum of feeding difficulties. Identification of when to refer on, especially for an assessment by multiple professionals can be a beneficial process,[5] and worth consideration for dietitians working within allergy clinics who may be resource-limited.

Following a thorough assessment process, by a multidisciplinary team, a formalised diagnostic term may be used to describe a child's feeding difficulties. These may include:

- Paediatric Feeding Disorder (PFD) – the diagnostic criteria recognise medical factors, such as allergy, that have contributed to a child's eating challenges[8]
- Avoidant Restrictive Food Intake Disorder (ARFID) – in some centres up to 30% of children receiving intensive feeding therapy for ARFID also have food allergies[9]

A helpful comparison of these two diagnoses, which do present with some overlaps, can be found from 'Feeding Matters'.[10]

Multidisciplinary management of complex feeding difficulties in food allergy children

It is well recognised that optimal and successful management of children with feeding difficulties is best achieved with an MDT approach.[5] A model for an integrated treatment approach for feeding difficulties can be demonstrated within centres, such as The Feeding Trust.[11] Figure 1 above outlines an example of how multiple professionals can work together to provide support for allergic patients within a specialist feeding clinic. This provides an overview of the input and roles of clinicians involved.

Conclusion

In practice, it may be challenging to coordinate the input and roles everyone plays within a MDT. There is scope however, to support positive outcomes by considering how members of a MDT, including those with feeding experience, can work jointly with children with complex feeding difficulties. For example, identifying specific clinics, highlighting referral criteria, or finding a treatment pathway.

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TAKE-HOME POINTS

- Food allergies and feeding difficulties present a double-edged sword for children; both are associated with reduced dietary range, increased risk of nutritional deficiencies, and growth and developmental concerns.
- Awareness of the impact of food allergies on the risk of feeding difficulties can support early and proactive intervention in children.
- Consider asking about feeding in more detail when reviewing children in a dietetic allergy clinic.
- Liaise closely with your paediatrician to optimise allergy management and symptom control as early as possible.
- Work towards collaborative or integrated assessment and/or intervention with psychology, speech and language therapy (SLT) and occupational therapy (OT) for children presenting with more complex feeding difficulties.
- Consider parental resources such as webinars or short videos to support children and their families.

Continued Professional Development

1. Outline 5 reasons why children with food allergies present a higher risk of developing feeding difficulties.
2. Consider 3 questions that could be included within a dietetic allergy consultation to explore whether there are any early signs or symptoms of feeding difficulties.
3. Within your area of practice e.g. hospital, community, explore which professionals may be suitable for onward referral for children presenting with more complex feeding difficulties.

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The management of a cow's milk allergic infant with an amino-acid based formula containing synbiotics

BACKGROUND

B was born by vaginal delivery at 36 weeks. He was referred to the dietetic service at 7 months of age due to poor feed tolerance and inability to move onto solids. Due to COVID-19 restrictions all assessments were carried out over the phone or by video consultation.

GROWTH AND FAMILY HISTORY

B was born at 2.1kg, 7th centile, and prior to referral he had improved up to the 15th centile and length of 32nd centile. Due to the lockdown there were few growth measurements available to compare.

B had an atopic family history, with father having cow's milk protein allergy (CMPA) as an infant which he grew out of before 1 year of age, and mother had hay fever as a child and had developed an allergy to wheat about 8 years ago. She had been diagnosed with asthma and irritable bowel syndrome.

HISTORY

B was initially breast fed, however, due to poor feeding he moved onto a bottle with standard infant formula after a few weeks. As volumes increased, he developed breathing issues and a paediatrician diagnosed reflux.

B was trialled with a "comfort" specialist formula milk, then Gaviscon which did not seem to help, followed by Omeprazole which improved the symptoms slightly. At 3 months of age, he was changed to an extensively hydrolysed formula (EHF) that contained probiotics, which settled his symptoms. Shortly after, the Omeprazole was discontinued and B experienced no increase in symptoms. He was not rechallenged with standard infant formula to confirm CMPA diagnosis.

Weaning commenced at 6 months with baby rice and EHF which he tolerated. When B consumed banana he displayed discomfort and "grunting" for the entire duration of the day after ingestion. Weetabix with almond milk, and potato with EHF caused constipation with vomiting several hours after ingestion. Avocado was given and B required medical assessment at Accident and Emergency due to profuse vomiting. It was recommended to revert back to just EHF for 2 weeks before starting solids again and his symptoms settled. During this time there was no further vomiting and normal paste-like green stools returned.

After two weeks, B was given a shop-bought apple puree which he tolerated. Pureed carrot was given and B developed sickness and diarrhoea, with severe nappy rash, requiring steroid cream prescribed from GP.

DIETETIC MANAGEMENT

The progression of solid foods was needed. It was agreed that the family would try to introduce well cooked foods with low allergenic risk, starting with lipstick swipes and increasing to small amounts to ingest to ensure no severe reactions. Oral stimulation was discussed to ensure he did not become aversive.

At review 1 week later, apple had been tolerated, however, courgette caused severe diarrhoea 4-5 hours later. B was consuming predominantly EHF, he was now opening his bowels up to 13 times a day and experienced nappy rash.

An amino acid-based formula containing synbiotics (Neocate Syneo) was trialled exclusively for 7 days. B switched directly over to this with no issues with taste, and within 2 days his bowel motions had reduced to 6-7 per day and the nappy rash was healing. By day 7, B was passing normal stools once a day. His weight had been measured and he was tracking centiles.

An amino acid based, spoonable supplementary feed (Neocate Spoon) was introduced, and over the following month B was consuming a basic diet containing foods from the main food groups with no oral aversion. Over the next month other allergens were introduced (wheat, soya, egg, nuts, fish), as well as foods he had reacted to except cow's milk and avocado. Neocate Spoon was discontinued and B's weight had increased to 25th centile.

At 1 year of age B started the milk ladder which has been well tolerated, however, B is now aged 20 months and not fully on cow's milk. B has been able to transition from Neocate Syneo onto a fortified age appropriate cow's milk alternative.

> ❝ We should consider the effect of our feeding choices on an infant's microbiome. ❞

DISCUSSION AND SUMMARY

The multidisciplinary care team hypothesised that B was an atopic child with CMPA with an "immature gut" and had had an intercurrent infection at a very critical time of food exposure. There is a building body of evidence that suggests that in this type of case, synbiotics rather than just probiotics may be beneficial.[1,2] For B it was interesting that an amino acid formula with synbiotics was required for full symptom resolution.

This case required intensive dietetic input. B had a family who could follow very specific advice. The reason we did not see faltering growth was that the child was hungry and willing to eat and drink despite his symptoms. The case was made much more challenging by COVID-19 and the inability to physically see the child, and limited access to medical or growth assessments.

One key learning from this case is that sometimes you need to go back to basics to move forward; we should consider the effect of our feed choices on an infant's microbiome.

IMPORTANT NOTICE:
Breastfeeding is best. Neocate Syneo and Neocate Spoon are foods for special medical purposes for the dietary management of Cow's Milk Allergy, Multiple Food Protein Allergies and other conditions where an amino acid based formula is recommended. Comfort is a food for special medical purposes for the dietary management of colic and constipation. They should only be used under medical supervision, after full consideration of the feeding options available including breastfeeding. Neocate Syneo and Comfort are suitable for use as the sole source of nutrition for infants under one year of age. Neocate Spoon is suitable for infants and children over 6 months of age. Not suitable as a sole source of nutrition. Infant milk is suitable from birth, when babies are not breastfed and should only be used on the advice of a doctor, dietitian, pharmacist, or other professional responsible for maternal and child care. Refer to the label for details.

References:

1. *Navarro-Tapia E, et al. Probiotic Supplementation during the Perinatal and Infant Period: Effects on gut Dysbiosis and Disease. Nutrients. 2020;12(8): 2243.*

2. *Islek A, et al. The role of Bifidobacterium lactis B94 plus inulin in the treatment of acute infectious diarrhea in children. Turk J Gastroenterol. 2014;25(6):628-33.*

Ask The Expert

Jacqui Lowdon

Are plant-based diets suitable for children?

The British Dietetic Association defines a plant-based diet as being "based on foods derived from plants, including vegetables, wholegrains, legumes, nuts, seeds and fruits, with few or no animal products".

The Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO) have recently made a recommendation to prioritise plant foods: "[healthy sustainable diets] include wholegrains, legumes, nuts and an abundance and variety of fruits and vegetables... and can include moderate amounts of eggs, dairy, poultry and fish; and small amounts of red meat".

Even when animal products are completely omitted, it is still possible to provide a nutritionally adequate diet.

Protein – so long as energy needs are met, protein requirements can be met, in both quantity and quality.

Fats – as well as providing energy, adequate ALA (alphalinolenic acid) and optimising the balance of ALA to LA (linoleic acid) is essential, especially where oily fish is limited or omitted.

Iron – iron deficiency is especially important for teenage girls, so ensure iron-rich plant foods at all meals and plenty of vitamin C.

Zinc – adolescence is also an important time for zinc, so look to optimise intake.

Calcium – as well as plant-based sources, nowadays there is wide range of calcium and vitamin D-fortified plant-based drinks and other products, which are great replacements.

Vitamin B12 – this is only a concern when no animal sources are in the diet, so it will depend on the amount and frequency of animal sources eaten. If worried, a source of vitamin B12 can be given, such as fortified foods and/or preferably, a daily supplement.

Vitamin D – with very little from our diet, recommendations exist for year-round supplementation for all children age 1-4 years. From 5 years, supplementation is recommended for at-risk groups, and from September to April for the general population.

What is the biggest change you have seen in dietetic practice following the pandemic?

It is in no doubt, the ability of working from home. No one would have envisaged this as a viable option before! As well as more flexible working and an improved work life balance, for many busy, working families, it has allowed those who struggle to attend frequent healthcare appointments to remain in touch with their healthcare teams. This is even more relevant with the increased cost of living, with allowing less time off work and reduced fuel/transport costs. What started out as a temporary solution has become a permanent way of working for many.

Obviously, there are a number of things to consider, especially when carrying out remote consultations. Using secure video call platforms and emails to ensure patient data confidentiality and being GDPR (General Data Protection Regulation) compliant. It is still essential to be able to complete a full nutritional assessment and this should include anthropometrics, a review of biochemistry, a clinical assessment, dietary review with an evaluation and a plan.

A number of electronic resources are available to help with this:

WHO Growth and BMI charts

British Dietetic Association Paediatric Specialist Group COVID-19 – Guidelines for Remote Dietetic Consultations

Remote working can also have negative consequences, both in health and emotionally. With the persistent situation necessitating remote working or a hybrid form, highlighting the long-term impact on behaviour and identifying effective strategies to support people working remotely is important.

A useful resource produced by the MIND charity can be found on their website: **mind.org.uk/coronavirus-we-are-here-for-you**

Do you have a question for our expert? Ask your question to Jacqui **resourcecentre@nutricia.com** and your question might be answered in our next edition!

Up2Date

by **Dr Leanne Olivier**

Feeding children with neurodisability: challenges and practicalities

Batra AJ, et al.

Arch Dis Child 2022; doi:10.1136/archdischild-2021-322102. Online ahead of print.

Feeding children with neurodisabilities can be challenging and there is an increased risk of both over- and under-feeding. Malnutrition negatively impacts cerebral function, the immune system and quality of life (QOL), whilst increasing the reliance on health care provision.

Difficulties in feeding children with neurodisabilities include physical causes, such as poor oromotor coordination, gastro-oesophageal reflux disease (GORD), constipation, and uncontrolled vomiting and retching; and non-physical causes, such as parent and health care professional views on methods and types of feed, extreme sensitivity towards textures and perceived perception of pain.

The most appropriate feed type and method should be given to best suit each patient. This includes considering the nutrient and fluid requirements of the child and whether the child has any symptoms of feeding difficulties or tolerance. Factors to consider where there is feed intolerance include the energy density of the feed, the type of protein, the degree of hydrolysation, the carbohydrate and fat blend as well as the overall osmolality and viscosity.

A blended diet (either solely blended foods or in combination with commercial formula) has been shown to alleviate symptoms and improve tolerance in children with gastrointestinal dysmotility. However, regular assessment of growth and micronutrient status is required.

It can be difficult to define measures of overall health and wellbeing in children with severe and complex neurodisabilities. Regular assessments of nutritional status and QOL should be made, and feeding choices and methods carefully considered by a multidisciplinary clinical team and the child's carers.

The nutritional needs of moderate-late preterm infants

Johnson MJ, et al.

Br J Hosp Med (Lond) 2022;83(4):1-9

The third trimester is an important period of development and preterm infants are known to have increased rates of mortality, morbidity and hospital readmission compared to full-term infants. In the last 10 years, preterm births in the UK account for approximately 7-8% of all live births, with most of these occurring at 32-36 weeks gestation. Nutritional recommendations for very preterm (<32 weeks gestation) infants exist, however, there is no evidence-based guidance for moderate to late preterm infants. Moderate to late preterm born infants often experience jaundice, and may struggle to attach to the breast and feed adequately causing faltering growth. The below highlights best practice for moderate to late preterm infants whilst in hospital and when they are discharged in the community to ensure their growth and developmental needs are met:

1) Monitor infant growth in hospital, and consider routinely referring all moderate to late preterm born infants for an assessment by a neonatologist or paediatric dietitian before discharge

2) Regularly observe growth after discharge and refer to local policies regarding weight loss and failure to retain birth weight

3) Review feeding choice and refer breastfeeding mothers to a local infant feeding team for early support to establish breastfeeding. Ongoing expert feeding advice might be useful and may include expressing additional milk to keep up maternal milk supply, tube feeding or top up donor milk

4) Breast milk is the best source of nutrition for all infants. However, moderate to late preterm infants can have higher requirements than can be provided by breast milk alone, and may struggle to obtain adequate volumes of breast milk to meet their needs. Theoretically, moderate to late preterm infants may need more calories, protein, and calcium and phosphorus than full term infants to make up the deficits associated with early birth. Follow the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN), National Institute for Health and Care Excellence and/or local guidelines concerning the introduction of a breast milk fortifier

5) If a mother has chosen to formula feed, she should ensure that the infant can safely and effectively feed from a bottle. When a mother is exclusively bottle feeding, or using it for top ups, there may be some advantages to using a specialised formula such as preterm or post discharge formula instead of a term formula. Follow ESPGHANs weight-based guidelines to select the type and intake of formula

6) Consider prescribing iron and vitamin D supplements for all infants born at or before 35 weeks gestation.

Additional research is needed in moderate to late preterm infants to better understand their specific nutritional needs, patterns of growth and understand what potential interventions can help to improve outcomes.