

SMALLTALK

PAEDIATRIC NUTRITION MAGAZINE FOR HEALTHCARE PROFESSIONALS



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What was I made for?

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Autumn/Winter
2024

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Welcome

to the Autumn/Winter edition of Small Talk

From the Editor

Finally, **Liliana Nigrinis Velandia** walks us through a complex multiple food allergy case with a late diagnosis, highlighting the importance of education for primary care health professionals to ensure these children are detected and managed promptly.

In line with this year's anniversary theme, we also celebrate several other milestones, including over 40 years of clinical experience with Neocate and a decade of Fortini Creamy Fruit. As 2024 further marks 100 years since the first UK dietetic department was established, it is only fitting that this edition is dedicated to celebrating dietetics. We hope you enjoy reading and learning from these experts and join us in celebrating these significant anniversaries!

Best wishes,

Megan

Megan Holland

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

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Published by Nutricia Ltd,
White Horse Business Park,
Trowbridge, Wiltshire BA14 0XQ

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“I am hoping that my story will inspire others.”



A DAY IN THE LIFE OF

a Clinical Academic & Dietetic Researcher

I am just entering what is likely to be the final decade of my career and can honestly say I have really enjoyed the variety it has brought me. Before undertaking a Master's in Clinical Research at the University of Plymouth in 2016, I had been working for 20+ years in clinical paediatric dietetics at the Bristol Royal Hospital for Children, where I participated in commercial nutrition trials, whetting my appetite for a research role. Since then, my role has grown and developed, enhanced by a secondment in academia, and I am hoping that my story will inspire others to get more involved, particularly if a full research career is not on their agenda.

I don't call myself a 'Research Dietitian as my role is very broad! As the research lead and Trust research link for my department, I support other dietitians to develop research skills. I work with a wonderful, research-interested team where we are building a strong platform to encourage more clinical academic dietitians. We meet monthly for our dietetic 'research club,' focusing on advancing our evidence-based practice skills, discussing and critiquing methodologies, and evaluation. We ensure that all our dietetic staff are trained in 'Good Clinical Practice' and everyone, regardless of grade, is encouraged

to participate in research activities, to help develop their career to span the 'Four Pillars' of practice.

I have also been working on my own research project, exploring remote growth monitoring, which developed from a survey I carried out in 2021. At the moment, I am navigating the ethics application and fine tuning the protocol, including the patient facing information sheets, consent forms and data collection (where lots of patience and attention to detail is required!). I am grateful for the protected time I have for this, which has been funded by a British Dietetic Association grant.

I also manage the clinical parts of our commercial research trials and acceptability studies, working with our Trust research and development team who manage the complexities of agreements and finance. For example, I can be screening patients for recruitment one day, or supporting others to do so, while documenting and transferring research information another day. Commercial research involvement has expanded my opportunities, enabling me to present data, and be involved in reviewing and writing articles for publication: a lot of which I have managed alongside my clinical role.

Although it is not research, in a similar manner, I work with the dietetic team

to embed a knowledge of quality improvement (QI). Our current projects involve our student induction and Band 5 preceptorship, giving more opportunities for publications and presentations, and importantly, job satisfaction as well as personal development for those involved. My involvement in QI and evaluation was cultivated during a 2 year 0.4WTE university secondment as a clinical academic lecturer. Along with nutrition and research methodologies, I teach and use skills that I learnt on how QI, using skills that I learnt on how to make teaching as engaging as possible. When I finish the academic secondment in September of this year I will resume my position as a dietetic team lead, bringing lots of learning back to my department. Although it was a fantastic opportunity, admittedly I will not miss the juggling of work in two very different organisations, something a clinical academic will need to navigate.

So, this article began by me reflecting on my gratitude for the varied work opportunities I've had; where my days are never repetitive or dull, but they are very busy, and as we all know, learning is lifelong. Being involved in research gives a blend of science, patient care, and ongoing education. Rather than going down a purely academic route, there are lots of opportunities to support Allied Health Professionals to combine their clinical careers with research^{1,2} and indeed lots of networking possibilities. If you are completely new to embedding research and improvements into your department, my advice would be to just make a start with something small, such as a regular department journal club or a team QI project and enjoy the satisfaction that a completed project brings. 🍷

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NOVEMBER 2024

BDA – Starting out in Paediatric Dietetics

Paediatric Dietetics
WHERE: Birmingham, classroom course
MORE INFO: *British Dietetic Association (BDA)*
bda.uk.com/practice-and-education/cpd/bda-classroom-education/courses/starting-out-in-paediatric-dietetics.html

BSPGHAN

WHERE: Newcastle, UK
MORE INFO: *The British Society of Paediatric Gastroenterology, Hepatology and Nutrition*
bspghan.org.uk

2

NOVEMBER 2024

BDA – Advancing Dietetics in Avoidant Restrictive Food Intake Disorder (ARFID)

WHERE: Birmingham, classroom course
MORE INFO: *British Dietetic Association (BDA)*
bda.uk.com/events/calendar/advancing-dietetics-in-avoidant-restrictive-food-intake-disorder-afri-dnov.htm

DECEMBER 2024

BDA – Diagnosis and Management of Cow's Milks Allergy in Infants and Children

WHERE: Virtual
MORE INFO: *British Dietetic Association (BDA)*
bda.uk.com/practice-and-education/education/cpd/bda-classroom-courses/cow-s-milks-allergy-in-infants-and-children.html

NOVEMBER 2024

BDA Module 5
Neonatal Nutrition

WHERE: Virtual and Birmingham
MORE INFO: *British Dietetic Association (BDA)*
bda.uk.com/events/calendar/module-5-neonatal-nutrition-1.html

INTERNATIONAL
EVENTS

21-23

NOVEMBER 2024

FAAM-EUROBAT 2024

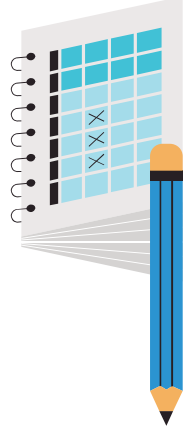
WHERE: Athens, Greece
MORE INFO: eaaci.org/events-meetings/faam-2024

20-22

FEBRUARY 2025

International Conference on Nutrition and Growth

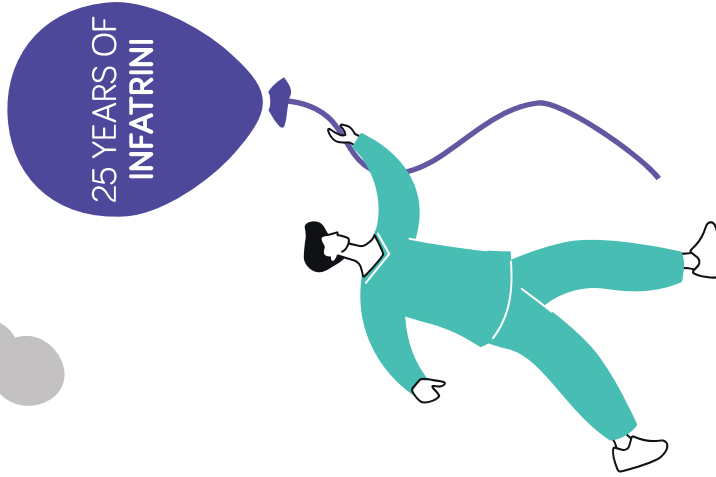
WHERE: Athens, Greece
MORE INFO: nutrition-growth.com





SIMEON RAMET
Head of Paediatric Medical Affairs
BSc (Hons) PgDip

Infatrini at 25 years – What was I made for?



The past 25 years have seen remarkable advancements in science and dietetic practice, which has greatly benefited patients as well as practitioners. Many of the products (and services) we take for granted today were not available 25 years ago, so our dietetic world has come a long way. In recent years, we have witnessed a seismic shift, not only in packaging design and services but especially in the variety of feeding options available. This progress is the result of a collaborative effort between industry and Dietitians, who have worked together to design feeds that best meet the needs of patients. Today we have many more ready-to-feed (RTF) options and a whole host of specialist feeds that have, in many cases, become the standard first line option for patients.

So let's rewind... as a Dietitian back in the early noughties not only was there a plethora of powder products (that some readers will remember being advertised around the BDA wall planner) to make up in varying concentrations, but frequently you'd be using products in glass bottles (hanging precariously over patients' beds) or offering oral nutritional supplements (ONS) in metal cans. At that time the 1kcal and 1.5kcal feed options were the standard for ONS and enteral tube feeding, often without added fibre and with limited flavours. The feeding options for infants with faltering growth consisted of either a combination of modular ingredients, concentrating standard infant formula (SIF), fortifying SIF, or using a specialist product designed for a specific disease area. Rewind further back to the late 90s when Nutricia brought to market its first RTF 1kcal/ml energy-nutrient-dense infant formula (ENDF).



A clear example of how Paediatric Dietitians can work with industry to address patient needs.

It was 1999 when Infatrini was launched; Martine McCutcheon sang about her 'Perfect Moment' and Christina Aguilera saw the promise of what was to come for Dietitians, as she belted out 'Genie in a Bottle'. For Paediatric Dietitians the number one on the enteral feeding chart became Infatrini!

It is one of the clearest examples of how Paediatric Dietitians, working with industry, truly addressed a need for infants and came up with a perfect solution. Before the advent of the RTF ENDF, Dietitians would concentrate a SIF or add fortifiers to it. This was a time-consuming task for Dietitians, as well as for parents/carers, not to mention the risks associated with preparation/mixing errors, contamination and the dilution of nutrients. Also, it took time to explain this procedure to parents/carers and had an impact on resource use with the need for the feeding kitchens in hospitals.



For patients with Congenital Heart Defects (CHD), Cystic Fibrosis or Cerebral Palsy having a product that was high in energy, protein and other nutrients, in a reduced volume, was a priceless addition to the armoury that a Dietitian needed to optimise the growth in the early months and years.

Originally Infatrini was designed as a powdered feed but, following discussions with Dietitians, we came with a RTF option which was considered the most optimal. The primary reason being the need for a sterile feed on the hospital ward and to reduce the risk of contamination, as well as preparation errors, that occurred when mixing powdered feeds. The original formulation contained 10.4% energy from protein, 1kcal/ml and was nutritionally complete, with the full range of micronutrients. The reason for choosing 1kcal/ml was to achieve 50% more energy than that of a SIF, and let's not forget that it's much easier to calculate a regimen with a whole number! Meanwhile the protein:energy % (PE%) was aligned with the EU directive at that time, which recommended between 7.2% to 12PE% for infant formula.¹

Whilst protein levels in infant formula have been a topic debated for many years now, for infants showing faltering growth, extra protein

alongside the extra energy has always been recommended to achieve catch-up growth. In some of the older studies they proposed from 10.5 to 14.9PE% for catch-up growth (gaining 10-20g/kg/day respectively).² While others reported that using 10.6PE% induced better growth and lean tissue gain than 8.8PE%³, a reason for the levels chosen in Infatrini. Indeed, this was later confirmed by the WHO when they published their manuscript on protein and amino acid requirements in human nutrition.⁴ In this manuscript, they suggested that a PE% of between 8.9-11.5% was needed for optimal catch-up growth in infants, depending on the level of weight gain needed (from 1g/kg/day up to 10g/kg/day) (see Table 1). This was confirmed in a second report by the WHO⁵, suggesting that 10PE% was adequate for 5g/kg/day catch-up growth [in those <5years].⁵ For this reason, the PE% of Infatrini has remained the same. In a study at Birmingham Children's hospital, 49 infants with various conditions and faltering growth were recruited.⁶ They were fed either Infatrini (10.4PE%) or an energy-fortified SIF (to the same energy density 100kcal/100ml) for a period of 6 weeks. They found improvements in weight in both groups; both groups having the same energy density but, interestingly, the Infatrini-fed boys had significantly better length growth with higher Blood Urea Nitrogen

levels detected (linked to the higher protein content in Infatrini [10.4PE%] vs the fortified SIF [5.5PE%]).⁶

Time has been kind to Infatrini. Over the years there have been a number of small modifications to the recipe, but key nutrients like the protein and energy content (and PE%) have remained the same. Ingredients we now take for granted, and which were initially showcased in SIF, have slowly been added. In 2006 for example, we added the long chain polyunsaturated fatty acids (LCPUFAs), arachidonic acid (ARA) and docosahexaenoic acid (DHA). Today we understand much more about the benefits of these LCPUFAs, including for brain and retinal health, and the fact that breastmilk has high concentrations of these LCPUFAs.

Then, in 2007, The Fray sang 'How to save a life' giving the perfect backing track to the launch of Infatrini! 500ml (originally in a pack but now in a bottle) which again was requested by Dietitians wanting to have a ready-to-hang option for tube feeding. When it rains it pours, and Rihanna knew only too well how to reach for the 'Umbrella'; alongside the launch of the 500ml, all Infatrini variants also received the patented blend of short-chain galacto-oligosaccharides and long-chain

fructo-oligosaccharides (scGOS & lcFOS). This was later cemented into the regulations of the European Directive (2016/127) who proposed that there was enough evidence to allow infant products to add scGOS and lcFOS at a level of 0.8g/100ml at a ratio of 9:1.⁷

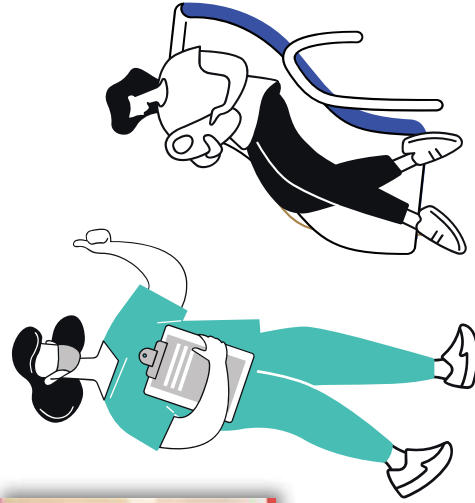
Prior to the addition of scGOS/lcFOS to feeds, it was common for parents and healthcare professionals to report that their infants' stool was pale and appeared harder. Despite the preparation by the Nutricia teams, the helpline lit up on the launch of Infatrini with scGOS and lcFOS, as parents started to notice that their child's stool became somewhat softer. For the teams involved, this confirmed that the addition of scGOS/lcFOS was working as intended, so we continued to reassure parents/carers....although we couldn't clean up the odd accident.

Dietitians wanted to have a ready-to-hang option for Infants on tube feeds.

Table 1: WHO guidance on protein and energy needs for catch-up growth at different rates of weight gain⁴

Dietary requirements					
Rate of gain (g/kg per day)	Protein ^e (g/kg/day)	Energy ^f (kcal/kg/day)	Protein/ ^g Energy (%)	Protein/ ^h Energy (kcal/kg/day)	Protein/ ^g Energy (%)
1	1.02	89	4.6	1.0	91
2	1.22	93	5.2	1.1	97
5	1.82	105	6.9	1.5	115
10	2.82	126	8.9	2.2	145
20	4.82	167	11.5	3.6	205

e. 14% deposited tissue adjusted for a 70% efficiency of utilisation plus the safe level of maintenance at 1.24±0.66 g/kg per day = 0.82.
f. Maintenance energy at 85 kcal/g (which includes maintenance protein energy) + gross energy costs at 4.10 kcal/g weight gain.
g. 9.7% deposited tissue adjusted for a 70% efficiency of utilisation plus the safe level of maintenance at 1.24±0.66 g/kg per day = 0.82 g/kg per day; 1.27±0.58 g/kg per day = 0.737.
h. as in footnote ^f except that gross energy costs are 5.99 kcal/g weight gain.



As 2007 rolled on, Take That told us to have 'Patience', and Phil Collins re-entered the charts knowing something was 'In the Air Tonight'. It was time to again bring a group of eminent Paediatric Dietitians together, to see what we were missing in terms of products that could enhance their day-to-day practices when managing infants and children with faltering growth. A District General Hospital Dietitian remarked that it would be amazing if we could make an Infatrini that contained extensively hydrolysed proteins, medium chain triglycerides (MCTs) and was lactose free for those infants with tolerance issues e.g., some of the infants on the intensive care unit, the Congenital Heart Defects group and some of the neurologically impaired. The Dietitians requested a RTF product with the same energy and protein content (as Infatrini) but the adaptation of other macronutrients. With this a new Infatrini was conceived!

From conception to delivery is a long process in the product development trajectory, finding the right ingredients, the right processes, the necessary quality checks and the right packaging, not to mention undertaking clinical trials, is needed to bring such a product to market. Add to this the complexities in launching products across global geographies, and the gestation of a product can, and does

in many cases, take far longer than that of an elephant. A 'Roar' from Katy Perry heralded in the launch of Infatrini Peptisorb in 2013; a fitting sister to Infatrini which was quickly taken under the wings of the Paediatric Dietetic teams across the UK, and beyond in later years.

So 'happy birthday Infatrini'! 25 years of making a positive impact on infant growth; providing peace of mind to parents/carers and healthcare professionals alike and leading the way for a range of products to expand the Infatrini family. We wish all those who have grown up with Infatrini the very best, as well as their parents/carers, the Dietitians and other healthcare professionals involved in their care. We (Nutricia) will continue to advance Infatrini with your expert inputs, to ensure it meets the needs of your patients which you've come to expect over the years.

Finally, it's 2024 and now you know what Billie Eilish meant when she sang 'What was I made for?' Many happy returns to the Infatrini family! 🎵



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A 'Roar' from Katy Perry heralded in the launch of Infatrini Peptisorb in 2013.



PRODUCT NEWS

The prebiotic blend (GOS/FOS*) in Infatrini has recently been updated, and now includes an additional oligosaccharide, 2'-FL (20mg/100kcal). Infatrini with 2'-FL has been shown to support growth, with good compliance, acceptability and tolerance in infants with faltering growth.¹ The addition of 2'-FL complements the GOS/FOS prebiotic blend to provide immune support.²⁻⁵

*GOS/FOS: galacto-oligosaccharides / fructo-oligosaccharides

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IMPORTANT NOTICE:

Infatrini and Infatrini Peptisorb are Foods for Special Medical Purposes. Infatrini is used for the dietary management of disease related malnutrition and growth failure in infants and young children. It is suitable as a sole source of nutrition for infants from birth and young children up to 18 months of age (or 9kg). Infatrini Peptisorb is used for the dietary management of disease related malnutrition and growth failure in infants and young children with malabsorption and/or maldigestion. It is suitable as a sole source of nutrition under 1 year of age and as a supplement for young children. They must be used under medical supervision. Refer to labels for details.



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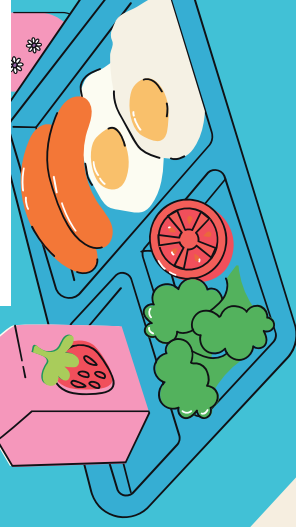


School Meals

In 2008 Small Talk included an article on the School Food Trust Guide WHAT'S NEW? – Nutrient Based Standards for School Lunches. This article talked about the Government's food and nutrient-based standards for school lunches, which was to become mandatory for primary schools from September 2008, and for secondary schools from September 2009. Since then, policies such as the Requirements for School Food Regulations in 2014 (for England) and a Practical Guide to the school food standards have been introduced.

In Scotland, the 2020 Nutritional Requirements for Food and Drink in Schools Regulations aligned with the Scottish Dietary Goals. Objectives include reducing sugar, increasing access to fruit and vegetables, and reducing processed meat intake. In Wales, according to the Nutritional Standards and Requirements, food and drink provided in all maintained schools must meet The Healthy Eating in Schools (Nutritional Standards and Requirements (Wales), Regulations of 2013). While in Northern Ireland the Food in Schools Policy of 2013 sets out how schools can work with key partners to continuously improve the quality of food provided in the school setting.

To understand the impact of these policies it is essential to look at behavioural as well as academic outcomes. For example, a growing body of evidence indicates that children eating school lunches have better overall diets¹, and where school food standards are more rigorously adhered to, lower rates of obesity are seen.² In addition, data suggests that improving food quality at schools promotes better academic outcomes.³



Introduction

Small Talk was launched 20 years ago as a clinical nutrition education tool for Dietitians and other Healthcare Professionals (HCPs), designed to enhance practice sharing. In our first few editions we focused on 1 key topic, Spotlight, and earlier editions were significantly shorter. Additional sections were added following feedback from Dietitians, such as a Case Study section. Some aspects have continued however, including Diary Dates and our Ask the Expert section.

In this article, I highlighted how a few of these areas have evolved over the past 20 years.



JACQUI LOWDOWN
Clinical Specialist Paediatric Dietitian,
Cystic Fibrosis

Growth Charts

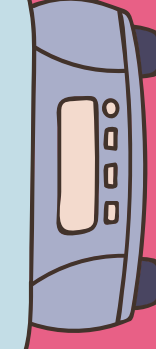
In 2007 Small Talk included an article from a joint report by the Scientific Advisory Committee on Nutrition (SACN) and the Royal College of Paediatrics and Child Health (RCPCH), recommending the WHO Child Growth Standards be used to assess growth of infants and young children up to 2 years of age. The growth charts that were used in the UK were based on the growth of predominantly formula fed infants, whereas the WHO Standards were developed based entirely on the growth of breast-fed infants.

It was hoped that the adoption of the WHO standards would better reflect optimal growth in infants and young children, and support the Department of Health (DoH) recommendation that babies be exclusively breast-fed for the first 6 months of life. The UK–WHO 0–4-year growth charts were fully introduced for all new births from May 2009. In 2012 additional UK–WHO growth charts were introduced from 2-18 years. These new charts were based on data from the UK 1990 growth reference data for children from birth and from 4-18 years⁴, along with the WHO growth standards for children aged 2 years to 4 years. Today these UK-WHO growth charts are incorporated into our daily practice and include charts for preterm as well as term infants and young as well as older children, up to 18 years of age.

Faltering Growth (FG) or Failure to Thrive (FTT)

In the same 2007 edition, there was a small synopsis on FTT. Olsen et al (2006) examined seven different anthropometric criteria utilised in the diagnosis of FTT, to identify the parameters most sensitive and likely to positively detect children with this condition.¹⁴ They found very low concurrence between the criteria, and therefore concluded that “no single measure alone was adequate for identifying nutritional growth delay.”¹⁴

Leap forward to 2023 when an expert opinion paper by Cooke and colleagues was published on Catch-Up Growth in Infants and Young Children With Faltering Growth¹⁵ (also referred to as FTT). In this review an agreed definition for FG/FTT was presented and advice on detection and optimal management was set out. They considered growth faltering as a fall in a weight-for-age (WFA) z score of ≥ 1.0 SD that occurs over a period of 1 month or more,¹⁵ not including the first 2 weeks after birth.¹⁵ Cooke and colleagues also included a time frame to ensure that acute weight loss, for example following an episode of diarrhoea and/or vomiting, was not falsely classified as growth faltering. In addition, a definition for catch-up growth and accelerated or rapid growth was included.¹⁵



Tube Feeding

In another article of the same year (2007), Small Talk discussed tube feeding in children with cerebral palsy (CP), where the risk of overfeeding was highlighted. It was suggested that the optimal composition for an enteral tube feed (ETF) for this group should be low in fat and calories, high in fibre and micronutrient complete.

The biggest area of change since then has been the use of the blended diet (BD) for ETF children with neurodisabilities. In November 2019, the British Dietetic Association (BDA) published their first public Policy Statement on the use of BD for ETF children (mainly for children with CP).¹⁷ This policy advised that the BD be offered to these children as part of a patient centred approach and personalised care. An update was published in 2021.¹²

Furthermore, a recent joint position paper was published from the Committees of Allied Health Professionals (CAHP) and Nutrition (CON) of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN).¹³ This paper provides a comprehensive guide for healthcare professionals on how to manage the BD in children fed via a gastrostomy tube.¹³ Twenty recommendations for practice were made, providing guidelines for safe and appropriate use of a BD.

The benefits reported from using a BD included a reduction in gastro-oesophageal disease and infections, improved defecation, improved level of alertness and attention span, improvements in skin conditions, and in appearance of hair and nails. Furthermore, families have reported a greater sense of normality.

Gastroenterology

In 2007 Small Talk included an article on childhood Crohn's disease (CD), where the need for exclusive enteral nutrition (EEN) and a Cochrane review were highlighted.⁸ It was stated that for paediatric patients, EEN was the agreed primary treatment. Since then, nutritional guidelines in Inflammatory Bowel Disease (IBD) have been reviewed twice, with the most recent ones published in 2023 by the European Society for Clinical Nutrition and Metabolism (ESPEN).⁹ The primary goal is to achieve remission, where EEN using a polymeric formula, fed orally, is now accepted as the first line treatment for mild cases. However, an alternative that is now included in the guidelines, is partial enteral nutrition (PEN) using polymeric feeds along with the Crohn's Disease Exclusion Diet in mild to moderate disease. Two further studies have demonstrated effectiveness of PEN. Nardone et al. (2024) showed in a pilot study that the use of PEN, along with biologics, was effective for inducing clinical remission and transmural response.¹⁰

Another change is that these guidelines now focus on the longer-term health outcomes, with recommendations given on overall diet.

Preterm

Small Talk featured an article on a new neonatal text published in 2007.⁵ Since then, the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) have published 2 guidelines on Enteral Nutrition for preterm infants – in 2010⁶ and 2023.⁷ The key differences between the previous data and the newer guidelines include a slight increase in the energy, from 110–135 to 115–140 kcal/kg/day to support better growth of preterm infants. A slight reduction in the upper protein from 4.5 to 4.0 g/kg/day, which they linked to the levels of protein found in human milk. An increase in the upper fat content from 6.6 g/kg/day to 8.1 g/kg/day which was also considered safe. A significant increase in the Docosahexaenoic acid (DHA) content from a range of 12–30 mg/kg/day up to 30–65 mg/kg/day, linked to its impact on neurodevelopment and to mimic intrauterine accretion rates, while Arachidonic acid (ARA) was increased from 18–42 mg/kg/day up to 30–100 mg/kg/day to ensure an optimal balance between DHA and ARA.

The latest guidelines highlight the lack of strong evidence in several areas, especially the assessment of long-term functional outcomes.

Since 2007 ESPGHAN has published 2 guidelines on Enteral Nutrition for preterm infants (2010, 2023).

Food allergy and Food Intolerance

The topic of food allergy and intolerance has always formed a major part of Small Talk. Over the years, there has been greater recognition of food allergies and how they differ to intolerances, with stricter labelling laws and more allergy-friendly products available in the last 20 years. The recent advances in this area include the availability of plant-based products and clearer indications on the use of formulas. Today extensively hydrolysed formulas (eHF) are considered first line for the majority of milk allergy cases, while amino acid-based formulas are reserved primarily for more severe cases such as anaphylaxis to milk or due to eHF failure. In a recent international guideline presented by an ESPGHAN expert panel (2024)¹⁶ on the diagnosis, treatment, and prevention of cow's milk allergy, they recommend that the cost and availability of the therapeutic formula should also be considered.

Probiotics, Prebiotics and/or Synbiotics

In the Autumn edition of 2007, we ran an article on probiotics, supporting the infant's natural immunity. Probiotics were being shown to be capable of positively influencing the growth of beneficial gut bacteria, conferring many positive health benefits, both short and longer term.

However, in a relatively recent systematic review by de Silva and colleagues (2020)¹⁷ they reported that providing prebiotics, probiotics or synbiotics during pregnancy, breastfeeding and/or in infancy, had no influence on food allergy development either in infancy or in early childhood, although they suggested that the evidence was limited.¹⁷

Meanwhile two earlier meta-analyses had suggested that probiotics (as a group) may help to prevent eczema, especially if given pre- and postnatally.^{18,19} Although a subsequent meta-analysis focusing on a single probiotic, *Lactobacillus* (formerly known as *Lactobacillus*) *rhamnosus* GG, concluded that there was no evidence that this specific probiotic reduced atopic eczema.²⁰

Summary

Paediatric Dietetics in the UK has seen significant changes over the past 20 years, influenced by evolving public health guidelines, scientific research, and societal trends. An increasing understanding of the importance of nutrition in early development and long-term health has contributed towards these advances.

There is increased awareness of the benefits of plant-based diets, influenced by concerns around health, animal welfare, and environmental sustainability. In 2020, the Vegan Eatwell Guide was produced by The Vegan Society and published by Public Health England. In the same year the BDA set up a Sustainable Diets specialist group, with some great resources (highlighted in a previous Small Talk edition).

Meanwhile we cannot ignore the impact of technology and social media, which have both positive and negative impacts. On the one hand there is increased awareness of healthy eating; the flip side of this is the potential exposure to misleading dietary advice. We have also seen the growth of digital tools and apps, which help parents track their children's nutritional status and make healthier choices.

Evidence based practice demands that we continually review the most recent scientific and medical literature, to support our clinical practice. We hope that Small Talk has helped towards keeping the busy clinical Paediatric Dietitian up to date in a variety of areas and will continue to do so for the next 20 years! 🍀

We've seen stricter labelling laws and more allergy-friendly products made available in the last 20 years.

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Accurate at time of publication: November 2023. 23-027.



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Specialist Community Paediatric Dietitian

A case of an infant with multiple food protein allergies causing a stressful weaning process for parents



Case presentation

Baby X was born term and initially exclusively breastfed. He started showing allergic symptoms around 4 weeks of age. On the introduction of solids Baby X appeared to react to several different foods and started to falter in growth. Consequently, mum became stressed and wanted to stop breastfeeding.

History

Baby X was born 2.82kg (5th centile). At around 4 weeks of age, he developed loose stools, vomiting, eczema on the torso and neck and

a persistent runny nose. He later developed a rash and became more unsettled. His parents arranged for a GP appointment at 13 weeks of age, as the rash continued to spread over his torso. He was prescribed antihistamines by his GP.

At 17 weeks of age, his symptoms worsened and he developed a cough and had reduced feed intake. He was seen again by his GP who commenced him on erythromycin due to a suspected Upper Respiratory Tract Infection and referred him to a Paediatric Dietitian. The Dietitian advised mum to try to

exclude dairy and soya from her diet while she continued to breastfeed, and provided advice on the introduction of solids. Baby X was also referred to a dermatologist.

At 23 weeks of age, he was challenged with soya, but developed diarrhoea, vomiting and a rash. He continued breastfeeding (maternal dairy and soya free) although mum found it stressful, therefore Aptamil Pepti 2 was introduced as a top-up.

His Dietetic care was then transferred to me, and I reviewed him for the first time when he was 31 weeks of age.

Diagnosis

Multiple Food Protein Allergy (MFPA) including both cow's milk and soya.

Management and outcomes

On assessment, he was 7.57kg (17th centile) and his length was 69cm (39th centile). At this appointment, Baby X was already accepting some solids but appeared to be reacting to several foods (see Table 1).

However, he tolerated most fruits and vegetables including potato, as well as fish, meat and coconut milk, and continued to have these regularly in his diet. I advised his parents to continue with his current diet which included some breastmilk, topped up with Aptamil Pepti 2.

Follow-up

I reviewed him again in clinic at 44 weeks. At this point he was 8.04kg (10th centile) and 72.5cm (31st centile) indicating a drop of 1 centile. His bowel movements were variable, sometimes opening twice daily and sometimes every 2 days. His parents noted that his formula intake had reduced a little. It was therefore decided to trial him on Aptamil Pepti Synco, with the aim of targeting his additional gut-related symptoms and to potentially support tolerance acquisition. Within 3 days of starting Aptamil Pepti Synco his parents reported that he was improving and consuming larger volumes of his formula.

He had also been challenged with wheat, soya, peanuts and almonds. He was successfully able to introduce almond and could tolerate some soya in the maternal diet (he was still getting some breastmilk) but continued to react to wheat and peanuts.

Ongoing follow up/management plan

By 12 months, Baby X remained on Aptamil Pepti Synco alongside breastmilk. He was now able to tolerate some Weetabix and bread as part of the wheat introduction, along with prawns and peanut butter. His parents noted that following the introduction of Aptamil Pepti Synco, no new symptoms developed, and he started tolerating a broader range of foods. He continued to react to soya and dairy, however, with vomiting noted following accidental exposure to dairy. I advised that he continue breastmilk with top ups of Aptamil Pepti Synco while avoiding dairy and soya foods.

Introduction of solids in infants with food allergy can be stressful for parents.

Discussion

This is a complex case of a child with MFPA who struggled to maintain his weight and had not been seen by a specialist Dietitian until he was 31 weeks old, despite presenting with allergic symptoms from an early age. He had several GP visits as a result. Upon introducing solid foods, the child's growth began to falter although he was breastfed, which caused a lot of stress for mum as she persevered with feeding. The introduction of solids in infants with a food allergy diagnosis can be stressful for parents and carers. Providing breastfeeding advice and informing mothers about complementary feeding is therefore crucial for both maternal wellbeing and the child's nutritional status. This case highlights that appropriate training of healthcare professionals in primary care is essential. This will enable them to be better able to detect early signs of allergy, take appropriate actions and initiate an early referral to an allergy clinic. Referral to a specialist Dietitian is essential so that the most appropriate feeding is achieved alongside proper allergy management, ensuring the child achieves optimal growth.

Summary

Baby X was born term and initially exclusively breastfed. At an early stage he developed signs of allergic symptoms which became more intense as he expanded his solid food intake. He was allergic to multiple foods and started to growth falter over time with a late referral to a specialist Dietitian. Following specialist advice and introducing a hypoallergenic formula (with synbiotics), Baby X was able to tolerate a broader range of foods, which eventually achieved improvements in growth and other outcomes.

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Table 1: Reactions and symptoms reported during the introduction of solids

Suspected Allergen	Symptoms
Soya	Diarrhoea + vomiting
Eggs	Loose stools + vomiting + rash
Peanuts	Vomiting + rash
Almonds	Vomiting
Sesame oil	Vomiting + rash
Green lentils	Vomiting + rash
Oats	Red skin + rash
Wheat	Vomiting + rash
Prawns	Red skin + rash
Beetroot	Vomiting



DR JAMES EVANS
Research Dietitian

Tube feeding in children

– some important considerations for parents and healthcare professions



Introduction

Tube feeding enables exclusive or supplemental enteral nutrition to be provided to children who are unable to consume adequate nutrition orally to sustain normal growth and development. This can be due to anorexia associated with malignancy, increased nutritional requirements in congenital heart disease, or an unsafe swallow in children with neurological impairment, to name a few.

Nasogastric tube (NGT) feeding is one of the most common routes used to provide enteral nutrition in children and placement is common.¹ Gastrostomies provide an alternative feeding route and placement is also common in children.² Pros and cons of these different routes of feeding are shown in Table 1.

Tube feeding during bone marrow transplant (BMT)

In some clinical conditions the feeding method chosen may be obvious. Meanwhile, for children having a BMT to treat a malignant or immunodeficiency disease, the decision can be complex and nuanced. Tube feeding becomes inevitable as these children suffer treatment side-effects including vomiting, diarrhoea and mucositis.

One approach is to offer families the choice between NGT or gastrostomy, prior to BMT. This allows families to collaboratively navigate the decision-making process during the pre-admission consultations with the multidisciplinary team. However, this approach is only used in around 40% of UK centres due to concerns around the surgical procedure needed for gastrostomy placement, as well as infection risk.⁴

Table 1: Pros and cons of using NGT versus gastrostomy routes of feeding

	NGT	Gastrostomy
Placement	Bedside procedure	Surgical
Dislodgement	Can be pulled/vomited out	Unlikely as fixed in place
Infection risk	Rare	Constant risk at stoma site
Cosmetics	Visible on face Teenagers can be sensitive about body image ³	Hidden under clothes Discreetness may be preferred by some families
Length of time	<3-4 weeks	>3-4 weeks
Daily use and maintenance	pH must be tested before use to check correct positioning	Stoma site must be cleaned daily

A delicate balance

To explore why parents might choose one tube over another, 33 parents were interviewed.⁵ We found that parents consider many competing factors when deciding on which tube their child should have. These factors included risks associated with the gastrostomy surgical procedure versus dislodgement of the NGT, anticipating the length of time needed for either tube (often easier for those with previous tube feeding experience), and consideration for their child's age; for children under one year they usually preferred a NGT, meanwhile for toddlers they preferred a gastrostomy.⁵ Teenagers usually preferred gastrostomies over NGTs due to their lack of visibility, which was considered more desirable in social situations.

"The NG on her face was drawing attention which bothered me. I don't want to have to explain to strangers what's wrong with my child. I don't want everyone's pity."
(Parent of a child with Acute Myeloid Leukaemia)

Parents showed great resilience in handling the demands required of them when using either tube, whether to give feeds or medicines, or fixing problems that arose. They balance advice from clinicians, along with advice from other families who have experience with tube feeding as well as their own opinion, which can be challenging for them. We found that both feeding tube types reassured parents that their child would receive sufficient nutrients. However, feeding tubes were needed more frequently and for longer periods than they had anticipated.⁵

"At the beginning I didn't give tube feeding much thought. Didn't consider it a big part of her treatment, and it is, it's huge."
(Parent of a child with severe combined immunodeficiency)

Complications and outcomes

Despite the risks associated with gastrostomy tubes in those receiving a BMT, complications were mostly minor, with mechanical, rather than infectious complications occurring most often.⁶ In terms of nutritional outcomes, the feeding tube options (NGT or gastrostomy) were comparable in supporting children's calorie intake and weight gain.⁷ Gastrostomy feeding has also been associated with reducing the need for parenteral nutrition when compared to NGT feeding, possibly due to the fact that they are fixed in place, avoiding dislodgements.⁸



Parents consider many competing factors when deciding on which tube for their child



Some important considerations

Use of feeding tubes extends beyond nutrition. For many paediatric conditions, children require Herculean amounts of medications and often have strict fluid targets during treatment. Feeding tubes are commonly used for medications as well as for fluids, ensuring that children adhere to these targets.

It has been reported that children can feel reluctance, fear and uncertainty around using a feeding tube.⁹ A multidisciplinary, child-centred approach is therefore important to ensure the success of tube feeding.⁸ Through education and support we can alleviate some of the anxiety and prepare children for tube placement. Conversations may initially sow the seed for tube feeding which will be continued

over days/weeks until acceptance is achieved. Dietitians and play specialists have key roles here. Dietitians can explore a child's concerns around tube feeding and explain the pros and cons of either tube. Play specialists can use dolls/puppets with feeding tubes in situ to help younger children understand where the tube goes in their body. Meanwhile for older children, picture books including characters with feeding tubes, can also be helpful. ➡

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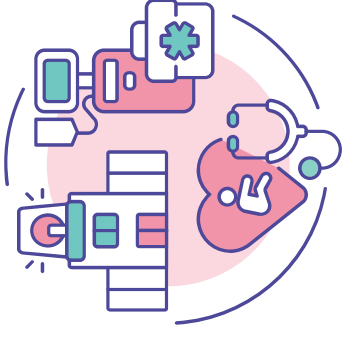
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RUTH HORNBY
Specialist Paediatric Dietitian



Nutritional Support for infants in the critical care setting



The nutritional support of critically unwell infants warrants an individualised nutrition support plan that takes into consideration a multitude of factors. This article aims to introduce the subject and provide an overview of the current guidelines with a specific focus on under 1's.

Admissions to the Paediatric Intensive Care Unit (PICU)

The latest Paediatric Intensive Care Audit Network (PICANET) report cites an increase of 3% in case admissions between 2021 to 2022, from 18,307 to 18,774 (respectively), with 40% being <1 year of age.¹ In infants, respiratory illnesses such as Bronchiolitis are the leading cause of admissions, followed by cardiovascular disease. However, the PICU population remains very heterogeneous as illustrated in Figure 1.

“
Infants admitted
to the PICU are a
very heterogeneous
population.
”

Figure 1. Primary diagnosis (%) of PICU admissions across the UK and Republic of Ireland (ROI)¹

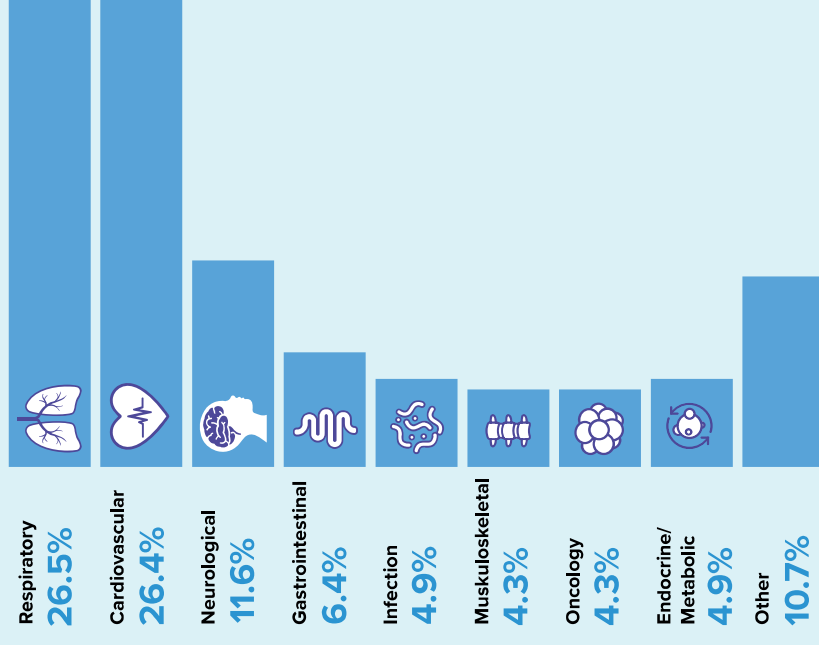


Table 1: Summary of the European Society of Paediatric and Neonatal Intensive Care Guidelines: infant focus

Consideration	Recommendation	Outcome
Adequate dietetic funding	All units to have access to a PICU-trained Dietitian 5 days a week. ⁹	- Improved nutritional screening. - Improved identification of refeeding risk. - Timely targeted feeding plans to ensure energy and protein intakes are appropriate to the phase of critical illness. - Troubleshooting of feed intolerance. - Supports parental conversations around feeding regimens.
Feeding protocol	All units have a feeding protocol to include: Early EN within 24hrs of admission (when not contraindicated) with stepwise increase in rate. Can be continuous or bolus feeding. Refeeding management (use ASPEN 2020 ³ guidelines in absence of local policy). Parenteral Nutrition (PN) Withholding for up to one week can be considered in critically ill term neonates independent of nutritional status, while providing micronutrients.	- Improved initiation of EN and time to achieve target volumes. - Reduced malnutrition. - Safe management of feeding.
Anthropometry	On admission check weight, length, head circumference (HC). Regular weight checks according to clinical need. Monthly HC and length for longer stay infants. <i>NOTE: ensure growth plotted on appropriate growth charts & corrected for prematurity if indicated.</i> <i>NOTE: in those with hydrocephalous or conditions affecting brain growth – consider interpretation of HC measurements.</i>	- Supports nutritional screening and identification of malnutrition risk. - Identifies if nutritional plan needs modification to support growth.
Energy targets	Acute phase: do not exceed basal metabolic rate (BMR). After acute phase: energy intake should account for energy debt, physical activity, rehabilitation, and growth. Close monitoring is essential to ensure nutritional targets are met and liberalised according to the clinical journey.	In the absence of IC use the Schofield equation: <3-year male: 59.512 x weight – 30.1 <3-year female: 58.317 x weight -31.1
Protein targets	In critically ill and enterally fed: aim for a minimum of 1.5g/kg/day to avoid negative protein balance in all phases.	Prevent negative protein balance.
Feed choice	Expressed breast milk when available. One of the standard infant formulas. Pre-term formula if it is their standard feed at home. Energy-nutrient dense formula (ENDF) (1kcal/ml). Semi-elemental formula – Infatrim Peptisorb (1kcal/ml).	- Supports breastfeeding and ensures supply when regular expressing and access to hospital grade pump. - Degree and duration of fluid restriction will determine if ENDF is required. - Consider when suspected feed intolerance.
Micronutrients	RNI* for vitamins and minerals should be considered in light of nutritional status and current fluid restrictions. Age-appropriate supplementation to be commenced if indicated.	Basic micronutrient needs met to support critical illness journey and rehabilitation.

*RNI, Recommended Nutrient Intake

What is the goal of nutrition support in critically ill children?

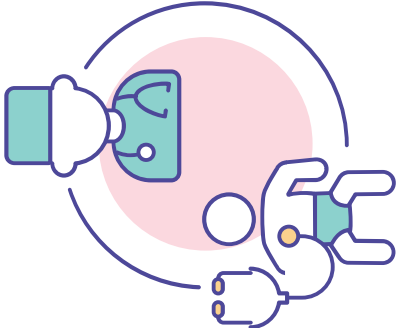
The goal of nutrition support is to maintain organs and prevent dysfunction of the cardiovascular, respiratory, and immune systems until the acute-phase inflammatory response has resolved.²

One of the biggest challenges is getting the balance right between undernutrition and overfeeding.

Undernutrition can increase the length of hospital stay (Los), mortality and morbidity, with a marked effect on muscle mass depletion. Kyle et al (2012) in a study with 240 critically ill children, found that only 75% of the estimated energy and 40% of estimated protein requirements were met in the first 8 days of the PICU stay.³ It's well known that nutritional status is a major factor determining outcomes and Los in the PICU, hence why identifying the most nutritionally vulnerable is of utmost importance early in the critical care journey.²

Overfeeding can also have negative effects on outcome. For example, it can lead to increased carbon dioxide production, resulting in delayed weaning off mechanical ventilation, hyperglycaemia, fatty liver and other well documented metabolic and physiological complications.⁵

“The goal of nutrition support is to prevent dysfunction of organs and systems.”



IMPORTANT NOTICE:
Breastfeeding is best. Infant milk is suitable from birth, when babies are not breastfed. We advise that all formula milks be used on the advice of a doctor, dietitian, pharmacist or other professional responsible for maternal and child care. Foods for special medical purposes should only be used under medical supervision. May be suitable for use as the sole source of nutrition for infants from birth, and/or as part of a balanced diet from 6-12 months. Refer to label for details.

Estimating energy requirements

Indirect calorimetry (IC) has gained much interest, offering a more reliable and targeted method of identifying energy needs. However, studies have shown that up to a third of patients did not meet the technical criteria needed to perform IC during the PICU stay.⁶ In light of this and the expense of using IC, most PICU's rely initially on predictive equations.

Guidelines

The European Society of Paediatric and Neonatal Intensive Care (ESPNIC)⁷ guidelines came as a welcome addition to the American Society of Parenteral and Enteral Nutrition (ASPEN) guidelines.^{4,7} These are summarised in Table 1, with a focus on critically ill infants. ➡

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ANNE CUSHEN
Registered Dietitian

Myths in Cows' Milk Allergy (CMA)

Introduction

Cows' Milk Allergy (CMA) is thought to affect approximately 2-3% of children in the UK.¹ Consequently, healthcare professionals working with children are likely to come across those affected by CMA. Parents often receive conflicting advice from the different sources which can include several myths around CMA management. In the following sections, I aim to dispel some of the common myths that I am presented with in my clinical practice.

MYTH 1

Breast-feeding mums should remove all milk/dairy from their diet.

Firstly, it is rare for cow's milk allergy (CMA) to present itself in exclusively breast-fed infants. When CMA is suspected, and the infant has had chronic symptoms, I advise the mother to remove cow's milk (CM) from her diet for 2-4 weeks, whilst continuing to breastfeed. This is the diagnostic elimination period and, during this time, I advise mum to monitor her infant's symptoms. To confirm the diagnosis, I advise mum to reintroduce CM back into her diet, again whilst monitoring symptoms. **If** the maternal exclusion is prolonged, then I consider vitamin and/or mineral supplementation for the mother until maternal exclusion ceases.



MYTH 2

Children with a diagnosis of CMA should avoid other allergenic foods when starting complementary feeding (weaning).

Children with a diagnosis of CMA do not need to avoid other allergenic foods (other than cow's milk/dairy) when starting the introduction of complementary foods. In fact, the BSACI Guidance (2020)² recommended that higher risk infants, such as those with eczema or food allergy e.g., CMA, may benefit from early introduction of egg and then peanut alongside other weaning foods from around 4 months of age (not before 4 months).² In breast-fed infants, the advice is to continue breastfeeding alongside the introduction of complementary foods.



MYTH 3

Children with a diagnosis of Cow's Milk Allergy (CMA) should avoid soya-based foods/drink.

Most international guidelines recommend the avoidance of soya-based formula as first choice in infants <6 months of age.^{3,4}

In the UK, soya-based infant formula is not recommended for infants < 6 months of age due to concerns around the phytoestrogen content and also potential risk of soya allergy.⁵ Some guidelines do, however, recognise the role of soya-based formulas, recommending them as a third choice, with consideration of risk when managing infants with specific non-IgE mediated conditions including Food Protein Induced Allergic Proctocolitis.⁶

Furthermore, it has been reported that the prevalence of soya allergy in infants with IgE-mediated CMA ranges from 10-14% and to 50% in non-IgE-mediated CMA.⁵ In this instance, I do not recommend soya as one of the first complementary foods, but advise parents to wait until their infant is established on a variety of solids. This ensures the infant's first solid food experiences are enjoyable, and may prevent food aversions.

Beyond 6 months of age, a soya-based formula (although not my first choice) may be used and soya-based milk alternatives as well as other foods containing soya may be used.

MYTH 4

Eczema development is not linked to the development of Cow's Milk Allergy (CMA).

In my clinical experience when I remove cows' milk (CM) from the diet of infants with eczema for around 6-8 weeks, I have seen an improvement in skin symptoms in some infants but not in all. Meanwhile, it is estimated that around 50-70% of children with eczema are sensitised to one or more food allergen, while CM has been associated in 20-80% of cases.⁷ However, being sensitised to a food allergen does not mean food allergic, and many individuals can still tolerate the food they are sensitised to. In addition, there is some concern that long-term removal of CM from the diet of a CM sensitised child may lead to full blown CMA. Finally, for children with eczema NICE recommends considering a referral to an immunologist, paediatrician or dermatologist with expertise in the diagnosis and management of food allergy.⁸



Cows' Milk Allergy (CMA) is thought to affect approximately 2-3% of children in the UK.¹



When CMA is suspected in a breast-fed infant, I advise maternal exclusion of cow's milk for 2-4 weeks.



Formulas with added oils (such as coconut) pose a risk for children with CMA.

There can be confusion around whether other common allergens should be avoided when a child has CMA. Because of this, some parents have concerns around using formulas that contain coconut oil for their CMA infant. There is also a misconception that coconut is part of the nut family. However, despite its name, it is not considered to be a nut, but a fruit. Coconut allergy is also very rare in the UK.⁹⁻¹⁰ Therefore, in my clinical practice, I reassure parents and unless otherwise indicated, do not advise that coconut is actively avoided. Coconut based products can also be useful alternatives to dairy when introducing solids. However, in the rare case of a child being allergic to coconut, I advise that they do exclude coconut oil from their child's diet depending on severity. Although, it is important to note that the oils added to formulas are highly refined and purified, so pose little if any risk. As always, individual assessment is important.¹¹



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AD: atopic dermatitis; CI: confidence interval; CMA: Cow's Milk Allergy; EHF: Extensively Hydrolysed Formula; GI: gastrointestinal; RCT: randomised controlled trial; SCORAD: SCORing of AD; PO-SCORAD: Patient-Oriented SCORAD

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Do you have a question for our expert?

Email resourcecentre@nutricia.com and your question might be answered in our next edition!



Dr James Evans

Tube feeding in children – some important considerations for parents and healthcare professions

Q. Are there specific conditions that tend to favour one tube option over another?

Many factors need to be examined when considering which tube option to select for children. Nasogastric tubes (NGT) are typically considered for short term enteral tube feeding. These tubes are therefore most suitable when the child's oral intake is expected to be insufficient to meet their nutritional requirements for a few days but can be up to a couple of weeks. For example, a child on the intensive care unit with a respiratory tract infection or a child with a specific type of cancer requiring intermittent chemotherapy, might be considered for a NGT. Meanwhile gastrostomies tend to be the preferred option when longer term enteral tube feeding is required. This could be to provide life-long nutrition support in children with irreversible feeding difficulties or in those with an unsafe swallow due to a neurological impairment. Gastrostomies are also commonly chosen for those with immunodeficiency diseases e.g., those requiring a bone marrow transplant, when the child's oral intake can take many months to return to normal.



Ruth Hornby

Nutritional Support in infants in the critical care setting

Q. What are the indications for using an Energy and Nutrient Dense Formula (ENDF) in your Paediatric Intensive care Unit (PICU)?

The use of ENDF largely depends on the fluid allowance of the infant and/or clinical priorities of the patient. At our PICU, fluid allowance in the acute phase is usually 66% of 'normal' which according to the age of the infant can vary from 66ml/kg to 100ml/kg. Those infants with significant respiratory and/or cardiac issues will have a tighter fluid restriction.

Indications for using ENDF (partially or as sole source of nutrition) include:

- Fluid restriction of <100ml/kg (so cannot meet their Basal Metabolic Rate [BMR] and protein needs)
- Increased nutritional requirements (e.g. child is highly catabolic)
- Drug infusions taking up a significant proportion of the fluid allowance

Indications for using a hydrolysed ENDF (partially or as sole source of nutrition) include:

- Feeding intolerance (such as delayed gastric emptying) – for example, a trial of a hydrolysed feed can be a useful first step before exploring post-pyloric feeding
- Child requires a higher % medium chain fats – for example those struggling with digestion and absorption of long-chain fats.



Jacqui Lowdon

Small Talk is 20 years

Q. What, in your view, has been the biggest change in dietetic practice over the last 20 years ago?

In my view, one of the greatest changes in dietetic practice over the last 20 years has been the development of Patient Reported Experience Measures (PREM), Patient Reported Outcome Measures (PROs) and Patient Reported Outcome Measures (PROM). Although dietetic outcomes were recorded, we have not always assessed the quality of care delivered from the patient perspective or measured how the patient perceived the dietetic experience to have impacted on their health. The national Patient Reported Outcome Measures (PROMs) programme began in 2009 and there are now various guidance documents to help you collect dietetic outcome data.

The BDA Outcomes Working Group (OWG) was formed in 2018 to support a standardised approach to outcome collection across the profession. This has since been updated in 2021 to the BDA Model and Process document, helping to ensure a consistent approach to outcome data recording and collection across the profession.



Anne Cushen

Myths in CMA

Q. Given the link between the microbiome and allergy, is this something you consider in your clinical practice?

The old friends hypothesis¹ proposes that because human beings have both evolved from, and within, a world dominated by microorganisms, when our environment and diet are less diverse, this leads to a poor microbial diversity. This in turn is linked to a poorly developed immune system and hence can be related increased risk of allergic disease.

Because a less varied diet has been associated with poor/low microbial diversity¹, I advise parents of children with allergies that one of the most important things they can do, is to increase the dietary diversity of their infants diet, especially during weaning. For example, offering their infant as many different types of fruit and vegetables (within their budget) as they can, will greatly increase the diversity of their diet. This also has the benefit of increasing fibre, which has many important functions, one of which is production of short-chain fatty acids (when fermented by gut microbes), which have immunoregulatory properties and appear to suppress certain cells involved in allergic reactions.

Reference

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Up2Date

Weaning your premature baby

Introduction

Bliss is the UK's leading charity for babies born premature or sick and was founded over 40 years ago by parents who wanted to give babies on neonatal units "the very best care".

In conjunction with neonatal experts, it has provided independent weaning advice for parents of sick and preterm babies for over 20 years. The latest update was carried out in 2023 by a group of neonatal allied health professionals and reviewed by other experts within the field, also by a Bliss parent group.

These guidelines are available on the Bliss website at www.bliss.org.uk/parents/about-your-baby/feeding/weaning-your-premature-baby, and includes a link to a pdf version. The update is supported by a literature review published in 2024.¹

They cross refer to the NHS weaning advice for term babies, www.nhs.uk/start-for-life/baby/weaning, and refer to the independent charity *First Steps Nutrition Trust* for additional information www.firststepsnutrition.org.

The Bliss weaning guide provides simple advice for parents on how, when and what to feed their premature baby. In the sections below we highlight some of the key messages.

Is weaning different for a premature baby?

The guidance emphasised that parents may find it difficult to know when to start weaning their preterm baby, so it's important to let them know that their baby may develop more slowly than babies born full term. For example, they usually sit at a later age, which the Bliss guide takes into account, as it is an important skill to aid weaning.

Cues suggesting a baby is ready to wean:

1. the baby can sit up by themselves, needing only a little support
2. they can hold their head up easily and keep it upright when sitting
3. they explore objects with their fingers, hands, and mouth
4. they are beginning to bite and chew on toys
5. they reach and grasp for food and/or open their mouth when food is offered.

The baby should show 3 or 4 of these cues before starting.

Cues mistaken for weaning readiness:

- the baby is **drinking more milk** – this may be a sign that they are going through a growth spurt and need more milk, rather than needing solids
- the baby **wakes up more at night** – this may also be a sign of a growth spurt or moving to a new developmental stage. While there is evidence that weaning doesn't help babies sleep longer at night
- the baby reaches a **certain weight** – there is no evidence that a baby needs to reach a specific weight before weaning
- the baby has **teeth** – there is huge variation in the age at which babies' teeth come through, but this is not connected to their readiness for solid food.

Important timings:

- start weaning when the baby is showing cues – usually at **around six months** corrected age
- avoid starting **before five months** corrected age

Bliss

for babies born premature or sick

bliss.org.uk

- introduce some mashed or textured foods **by around seven months** corrected age

Which foods to choose when weaning the preterm baby?

- offer a variety of flavours, textures and tastes
- offer as many homecooked family meals as possible
- ask a Health Visitor for support and advice if choosing a vegetarian or vegan diet
- avoid adding salt, sugar, or honey when preparing meals.

Do's and Don'ts advice for parents

Do add garlic, onion, herbs and spices if they are used in home cooking.

Do use baby's usual milk for mashing food.

Don't put baby cereal into a bottle (cereal in the bottle doesn't help babies learn how to eat).

Don't feed the baby food directly from food pouches – empty the food into a bowl and let the baby feed themselves or use a spoon (to reduce risk of tooth decay and helps babies learn how to eat).

Don't add salt, sugar, or honey to the baby's food.

Don't force the baby if they are refusing food or drinks.

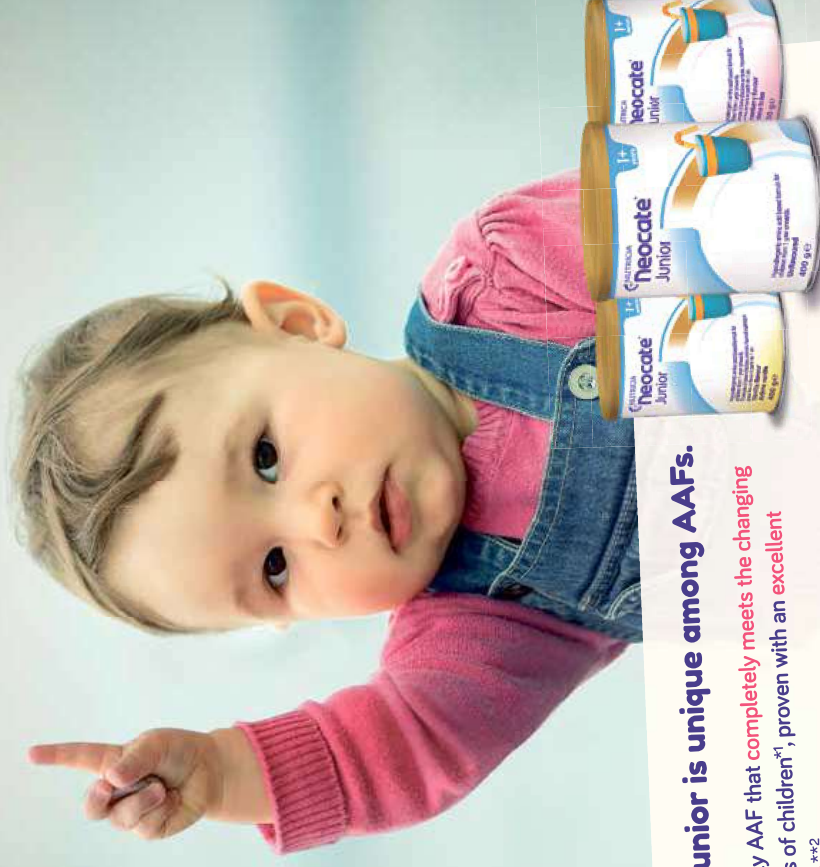
Don't give drinks such as tea, coffee, juices, sweetened or fizzy drinks or sugary drinks.

Tips are provided for parents on how to start weaning, how often to offer food, food textures, and on suitable equipment. ➡

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References:

1. Data on file. Clinical study of tolerance, compliance and acceptability of Neocate Junior including comparison to previous formula. May 2016, Jan 2017.
2. Accurate at time of publication: July 2021, 21/04/23.

AAF: Amino Acid-based Formula, CMA: Cow's Milk Allergy

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24-008 Date of publication: August 2024

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