

Use of blended / liquidised 'table food' diets via gastrostomy: Questions and Answers

Introduction

The number of people receiving home enteral tube feeding continues to increase, particularly amongst children with neurodisability and an unsafe swallow. Many of these are gastrostomy fed.

The accepted standard feed for patients is still liquid, nutritionally complete, pre-prepared commercial feed which is sterile, standardised and easy to prepare and administer.

However, there is currently increasing interest in the use of liquidised food (Blended/ pureed, 'table food'), both in addition to and as a replacement for commercial feeds. There are anecdotal reports of benefit, and little evidence of harm. However, there is at present little robust research evidence to support this practice, so as yet it cannot be formally recommended.

A collaborative research project is being planned to help clarify the likely benefits and harms of such practice. Pending clearer research evidence, the British Dietetic Association have produced an excellent 'Practice Toolkit', available here <http://www.healthnation.org.uk/toolkit/>. This also includes evidence tables, an example risk assessment, and monitoring proforma. Some children's hospices and NHS trusts have also produced interim practical guidance to help support parents, carers and families as well as health care professionals, where a decision has already been made for liquidised feed to be used. Contact individual centres for further information, but examples of such guidance are listed below.

Meanwhile, we are frequently asked questions by health care professionals who are being asked to support families and carers practically with the use of liquidised food / blended diet. We therefore convened a small working party with interdisciplinary representation from British Dietetic Association, Children's Hospice Southwest, Helen and Douglas House Oxford, and including dietician representation from 2 NHS Hospital Trusts. Our aim is to put some of these questions and suggested answers on this site, and to complement and signpost to some of the guidance and resources already available. In the rest of the document we have used the term 'liquidised food' to describe blended 'table food' administered via gastrostomy, in addition to or in place of a prescribed pre-prepared commercial feed.

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Guidance documents and resources

BDA Toolkit, Policy Statement and risk assessment templates:

British Dietetic Association (2013) *Liquidised Food via gastrostomy tube (Practice Toolkit)*
<http://www.healthynation.org.uk/toolkit/>

BDA (2013) *Use of Liquidised food with enteral feeding tube* Policy Statement
https://www.bda.uk.com/improvinghealth/healthprofessionals/policystatement_liquidisedfood

PENG risk assessment templates: <http://www.peng.org.uk/pdfs/hcp-resources/intro-to-risk-assessment-template.pdf> <http://www.peng.org.uk/pdfs/hcp-resources/risk-assessment-template.pdf>

Guidance from individual teams or settings (hospital, hospice)

Children's Hospice Southwest (2016):
Staff guidance and risk management for administering blended food via gastrostomy.
Parent guidance: Your child's blended diet whilst staying at the hospice
(available on request from Suzanne.brown@chsw.org.uk)

Helen and Douglas House (2016):
Staff guidance and risk management for administering blended food via gastrostomy
(available on request from slapwood@helenanddouglas.org.uk)

Leicestershire Partnership NHS Trust (2015):
Administration of liquidised diet via gastrostomy buttons
<http://www.leicspart.nhs.uk/Library/policyforliquidiseddietviabuttons.pdf>

Guidance on portion size and food content: see resources at question 6

Books

Complete Tube Feeding: Everything you need to know about tube feeding, tube nutrition, and blended diets
21 Mar 2012 Eric Aadhaar O'Gorman (ISBN 9781470190224).
Written and self-published by a patient (note Australian context).

Homemade Blended Formula Handbook
Marsha Dunn Klein, MEd, OTR/L and Suzanne Evans Morris, PhD, CCC-SLP
Has physician and dietician input (note American context).

On line support

e.g. Facebook Blended Diet UK (2000+ members September 2017)
<https://www.facebook.com/groups/278702472183551/>

YouTube video: tube feeding via demo box <https://www.youtube.com/watch?v=fFA-AkZ4EEc>

<http://www.foodfortubies.org/> - American site with demonstration videos

<http://renacahill.wixsite.com/blended-diet-online> - UK perspective (written by a grandmother to support parents and carers)

Other recent relevant publications

Armstrong J, Buchanan E, Duncan H (2016) *Dieticians' perceptions and experience of blenderised foods for paediatric tube feeding*

Doi10.1136/ArchDisChild -2016-310971

<http://www.medicine.virginia.edu/clinical/departments/medicine/divisions/digestive-health/nutrition-support-team/nutrition-articles/Parrish%20Dec%2014.pdf>

ASPEN pediatric newsletter (May 2015): *results of USA blended diet survey*

Brown, S (2014) *Blended food for enteral feeding via gastrostomy* Nursing children and young people, Nov 2014, vol 26, No 9 p16 -20 <http://journals.rcni.com/doi/abs/10.7748/ncyp.26.9.16.e491>

Brown, S (2015) *Guidelines on blended diet*. Nursing Children and Young People **27**:6, 14-15. Online publication date: 9-Jul-2015.

Coad J, Toft A, Lapwood S et al (2016). *Blended foods for tube-fed children: a safe and realistic option? A rapid review of the evidence* doi10.1136/archdischild-2016-311030

Escuro A.A (2015) *Blenderized tube feeding: suggested guidelines to clinicians*. Nutr issues gastroent. Series #136 Practical Gastroenterology, Dec

Fessler, TA, (2015) *Blenderized Foods for Home Tube Feeding: Learn About the Benefits, Risks, and Strategies for Success*. Today's Dietitian Vol. 17 No. 1 P. 30
<http://www.todaysdietitian.com/newarchives/011315p30.shtml>

Thomas, Sian (2017) *Multi-agency practice for developing a blended diet for children fed via gastrostomy* Nursing children and young people 29(6):22-5 July 2017 DOI: 10.7748/ncyp.2017.e821

Questions and Answers

Disclaimer: These answers do not constitute recommendations for practice.

Recognising the lack of a robust evidence base, these responses are based on the best of our understanding at the time of writing, in an attempt to support safer practice and family choices. These responses are subject to change, especially pending a more robust evidence base or further clarification of benefits, harms and best practice. It is the responsibility of the practitioner to check this information against available evidence and national guidance at the time, and to undertake a risk assessment. Mention of a resource for further information or guidance does not constitute professional endorsement of its contents.

1. Are we allowed to support use of liquidised food (blended diet) via gastrostomy? If not, why not?

Seek local advice in your area. At present there is not adequate evidence to advise liquidised food as a preferred method of feeding. But there are circumstances where the clinical team, including the patient or carers / parents may wish to pursue this approach. There is a duty to support families to make informed choices, and to support them so that the feeding methods they choose to use are administered as safely as possible.

- Note BDA Toolkit (information to support safe practice, risk assessment etc, including support of informed choice by patient / carer (flowchart));
- Note example hospital and hospice guidance documents.
- Identify and support development and use of local guidance.

2. Who is allowed to train nurses, carers and parents?

Consult or develop local policy. Training and competencies need to be individualised for the patient/ family and the care setting (hospice, hospital, home etc), following local risk assessment guidance.

3. What are the risks of using liquidised food (blended diet) via gastrostomy and how can we manage them?

The BDA Toolkit has a helpful risk assessment template as well as guidance about troubleshooting. Hospice-specific guidance documents (see references above) help in relation to hospice –specific risk management. Note also comments below in relation to specific risks.

- a) *Tube blockage and damage*: the Nurses Nutrition Group (NNG) has developed useful best practice guidance: <http://www.nnng.org.uk/download-guidelines/>
See also: <https://www.nursingtimes.net/clinical-archive/gastroenterology/peg-tubes-dealing-with-complications/5076347.article>
- b) *Infection* (the **food** is non sterile): follow national food hygiene guidance
- c) *Unknown and variable nutritional content*: provide dietetic support on portion sizes: use dietary analysis to meet estimated nutritional requirements

- d) *Potential micronutrient deficiency*: clinical impact of unpredictable and possibly deficient micronutrient content is unknown. Dietetic analysis and support are helpful. Mixing prescribed feed and liquidised food should reduce variability.
- e) *Altered medication absorption* (toxicity or under dosing may occur due to altered absorption): this requires continued vigilance, especially when liquidised food via gastrostomy is commenced or the proportion of liquidised food changes.
- f) *Syringe connection issues*: note guidance has changed in relation to syringe ends since the transition to ENFit-compatible equipment. ENFit enteral feed equipment has become the UK standard. ENFit-compatible equipment may have an impact on the ease of delivery of liquidised food. Bladder/ catheter tip syringes are no longer available for enteral use.
- g) *Economic and secondary impacts*: note some community nutrition nurse support is provided by feed companies, as part of local contract agreements. This service and the delivery of ancillary equipment is funded from prescriptions for prescribed formula. Reducing use of prescribed commercial feeds could save the NHS money, but would be more costly for local services which may have to fund more support and delivery services.

Additional costs to the families of liquidised food would include food purchase, provision of equipment including a blender, and the significant additional time and organisation required for learning about nutritional content of foods, planning, hygienic preparation and storage of liquidised food.

4. How do you administer the Liquidised food / blended diet?

- This may be by gravity if the feed consistency is thin enough, but use of a syringe plunger is often needed for liquidised food. The BDA Toolkit provides useful advice.
- Dilution of the mixture can ease administration, but may be limited by volumes tolerated, and will also affect nutrient density delivered.
- Note this helpful YouTube demo and instructions to 'make a demo box'
<https://www.youtube.com/watch?v=fFA-AkZ4EEc>

5. How can we manage in different care settings?

- Risk assess for the setting and staff provision.
 - Consult existing examples of guidance documents and adapt to produce guidance for local settings in collaboration and discussion with colleagues.
 - Complement generic guidance with individualised care plans.
- a) **School**: this is still very much subject to local guidance and is looked at on an individual basis. Some schools and their staff (in particular chefs) are extremely supportive. However, this varies and is still often a stumbling block for families. If schools will accept use of liquidised diet by gastrostomy, parents tend to train the staff to give the feeds, as at present health professionals in most areas cannot give this training. Health professionals can train staff generally on how to feed via gastrostomy (but not using liquidised food)

- b) **Hospice:** note hospice example guidance (CHSW, Helen and Douglas House) and consider adapting to local setting.
- c) **Respite centres:** note hospice guidance and consider adapting to local setting.
- d) **Hospital** e.g.in Leicestershire: Administration of liquidised diet via gastrostomy buttons (Leicestershire Partnership NHS Trust, 2015)
<http://www.leicspart.nhs.uk/Library/policyforliquidiseddietviabuttons.pdf>
- e) **Generic catering advice:** <http://www.food.gov.uk/business-industry/caterers/sfbb/>

6. What shall I give and how much?

Individualise to child, in discussion with dietician. Is this replacing prescribed commercial feed, or complementary / additional to it? Consider quantity; look into recipes.

Resources to support this issue:

- BDA Toolkit page 14
- NHS Living Well: <http://www.nhs.uk/livewell/Pages/Livewellhub.aspx> Specific links below.
- CHSW guidance regarding portion sizes
- Schools guidance locally where available
- Complete Tube Feeding: Everything you need to know about tube feeding, tube nutrition, and blended diets. Eric Aadhaar O’Gorman (2012)
- Nutrition apps available but not validated e.g. ‘My Fitness Pal’;
<http://nutritiondata.self.com/> (US perspective)
- www.infantandtoddlerforum.org (information on standard portion sizes)
- <http://www.nhs.uk/Conditions/pregnancy-and-baby/Pages/vitamins-for-children.aspx>
- <http://www.nhs.uk/Livewell/Goodfood/Pages/the-eatwell-guide.aspx>
- <http://www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx>

7. Can we mix and match prescribed feed and liquidised food (blended diet)? Can we stop and start liquidised food?

- Yes in principle. This can increase risks as it exacerbates the unknowns and makes analysis difficult. However, using liquidised food in addition to prescribed feed (rather than using liquidised food alone) may also reduce some concerns (e.g. in relation to micronutrient content).
- However, if the liquidised food is being used because of poor tolerance to formula feeds, the ability to mix feed types should not be assumed.
- Individualise to the child: monitor effects and progress, and obtain dietetic support.
- In practice, many families do ‘mix and match’, to some extent due to challenges around administration of liquidised feed across different settings, particularly school.

8. What about blenders? Which can we use, and how should they be cared for? Should we use parents' blenders or provide our own in hospice etc?

- Liquidised food requires a high power blender such as Vitamix. Some families have managed to obtain funding support for these.
- Hand blenders or smaller blenders such as Nutribullet are more practical for preparing small amounts of food for smaller children (unless of course preparing in bulk and freezing)
- If less powerful or hand blenders are used, liquidised food is more likely to require sieving
- See manufacturers' guidance for each blender; remember PAT testing is required.
- Note hospice guidance documents in addition (CHSW/ HDH).

9. What are the possible benefits of using Liquidised Food (blended diet) via gastrostomy

There isn't yet a robust evidence base, but from questionnaire surveys and individual interviews with parents, families have told us...

- Commonly there are improvements in gastro-oesophageal reflux and constipation, as well as skin and hair. Some children are able to come off some of their medication, particularly for reflux and constipation.
- Some children gain significant weight.
- There are social benefits, with children being more integrated into normal family life, included in family mealtimes, able to order meals in restaurants etc.
- Families may be more likely to accept a gastrostomy if they know tube-feeding does not automatically exclude the option to still cook for their child.
- For some patients, liquidised food is initiated and then discontinued. There is little data as to whether this is mainly due to practical considerations, possible adverse effects, and/or lack of clear benefit.

10. What is the evidence base for benefits or harms from use of liquidised food (blended diet) via gastrostomy?

There isn't much rigorous evidence yet. We are looking to engage in collaborative research to produce some. Meanwhile, the BDA Toolkit has an appendix noting many of the evidence sources. Several literature reviews have now been conducted, a recent one being: Coad J, Toft A, Lapwood S et al (2016). *Blended foods for tube-fed children: a safe and realistic option? A rapid review of the evidence* doi10.1136/archdischild-2016-311030

11. Is there information about gastrostomies?

- See generic information from the NNNG (National Nutrition Nurses Group) re gastrostomy care: <http://www.nnng.org.uk/download-guidelines/>
- Also see manufacturers' websites, for example:
 - www.gbukenteral.com (Mini buttons)
 - www.vygon.co.uk (Mic-key buttons)
 - www.appliedmedical.net (Bard button)
 - www.fresenius-kabi.co.uk (Freka button)

12. How should we monitor progress on liquidised food (blended diet) via gastrostomy?

- This is particularly important with a total switch to use of blended diet (using liquidised food) via gastrostomy, rather than just using top-ups in addition to prescribed feeds.
- Think about what is feasible and appropriate in the setting.
- The BDA Toolkit includes a monitoring tool (appendix 4). It would be helpful if people standardise on using this as far as possible.
- A generic assessment and monitoring form may be developed and could be incorporated into a revision of the BDA Toolkit.

13. What are the main unanswered questions at present?

- Overall benefit of using liquidised food (blended diet) via gastrostomy is unknown (wellbeing, longer term health and nutrition, costs (time and money), psychosocial)
- Possible harms are unknown, but see BDA risk assessment and hospice risk assessments
- **Research is clearly urgently needed, but meanwhile, please enter your email and profession to register your interest in this field (this list will be held centrally by Together for Short Lives and used occasionally to keep people informed about significant developments). Keep us posted in relation to tips or problems you encounter.**

14. What should health care professionals report?

- Ideally undertake some monitoring as appropriate to the individual setting (see template monitoring form on BDA Toolkit: it would be helpful if folk could use the same form with minimal adaptation (even if only part completed). This would ease comparison and collaboration at a later date.

Responses please!

Please email slapwood@helenanddouglas.org.uk to give your feedback:

- Report tips in practice
- Report problems or potential harms and how you manage these via usual safety channels, and copy in the same email please.
- Suggest questions and answers to add or amend.
- Let us know if you are monitoring or investigating use of liquidised food in your setting
- Feed back on this document: let us know how you are using it and how to improve it.

Do also register your interest (name, email and professional group) via the Together for Short Lives website if you are interested to be kept informed about developments and are happy for your contact details to be shared with others who respond.

Please also let other groups and organisations know about this work. Thankyou.

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