Supporting parents who choose a blended diet for gastrostomy tube feeding.
For families they report:
An improvement in reflux:

Pentiuk et al (2011) introduced 33 children who were showing signs of gagging, retching and reflux post operatively following fundoplication and introduced them to a blended diet. 73% showed an improvement of 50% decrease in symptoms with some reporting 100% decrease. None of the children who participated had any increase in symptoms.

Conclusion was a pureed diet for gastrostomy tube feeding was an effective way of providing nutrition for children with eating disorders and may reduce gagging and retching behaviours.

Regaining control of a basic need for their child:

Sleigh G (2005) Mothers’ voice: a qualitative study on feeding children with cerebral palsy, mothers described how gastrostomy tube feeding lacked emotional content and they mourned the loss of nurturing if their child no longer ate.

Anedotal evidence: improvements in bowels, skin, mood and sleeping at night especially if able to move away from overnight feeds.
Online Blended diet survey 2014/2015 generated 218 responses of those

88.27% said their child had vomiting and reflux with formula.

Once started on blended diet 68.72% said there had been an improvement in reflux

88.83% said there had been an improvement in health/wellbeing.

In response to the question “what made you start doing blended diet” 141 responded seeking alternative to increase wellbeing.
Policy Statement
Use of Liquidised Food with Enteral Feeding Tubes

Summary

Purpose
The purpose of this statement is to:

- Provide a professional guidance overview for Dietitians who are working with patients/carers wishing to use liquidised food with enteral feeding tubes
- Help patients/carers to understand the concerns of their dietetic practitioner

The use of liquidised food via the enteral feeding route appears to be increasing in the UK but it is not supported by best practice guidance. Because of the difference between the wishes of the patient/carer and the professional guidance directing the Dietitian, there is the potential to cause some professional conflict.

The Dietitian has an over-riding duty of care to their patient. When working with patients and their carers they must be sensitive to the emotional needs and preferences of the carer, and these should be taken into account alongside the clinical needs of the patient.
Current BDA position: British Dietetic Association (2013) *Use of Liquidised food with Enteral Feeding Tube*

**Points to consider:**

The BDA does not recommend liquidised food via enteral feeding tube due:

* to risk of nutritional inadequacy,
* increased likelihood of feeding tube blocking
* risk of gastric infection. It particularly poses a risk to infants less than six months, jejunal fed patients or patients who are immuno-compromised.

However current recommendation for all infants is not to wean before six months.

There needs to be a functioning gastrointestinal tract. Generally children who have experienced difficulties such as volume tolerance, severe reflux and retching are moved to jejunal feeding. This bypasses many of the digestive processes of the stomach increasing the potential for infection and the way nutrients are absorbed. Therefore blended diet into the jejunum would not be recommended.

Dieticians would also not recommend blended diet via a nasogastric tube, because of the risk of blockage as tubes are general fine bore 6-10fr.
The BDA endorses best practice, the use of licensed, evidence based, sterile food formulations which are specifically designed for enteral tube feeding and are safer to use.

The BDA policy statement, states the dietician has a duty of care to provide individualised information for parents, making them aware of the potential risks to health and viability of tubes, to enable carers to make an informed choice.

The BDA recognize that families, having considered all the information, may choose to blend food for tube feeding. The expectation is that Dietician will continue to fulfil their duty of care towards the patient and will support the patient and carer in the decision they have made.

Under these circumstances they must work within their employer clinical governance and risk management frameworks. The dietician is responsible for carrying a full risk assessment to highlight potential risks to the individual patient. Consideration must be given to the environment in which the feed will be prepared and mode of delivery. (Possible home visit and other settings where the child will be feed.)
Practice Toolkit
Liquidised Food via Gastrostomy Tube
Infection

Evidence Update September 2014

A summary of selected new evidence relevant to NICE clinical guideline 139 ‘Prevention and control of healthcare-associated infections in primary and community care’ (2012)
NICE CG139 recommends wherever possible, pre-packaged, ready to use feeds should be used in preference to feeds requiring decanting, reconstitution or dilution.

- It recommends that families are provided training management of enteral feeding before leaving hospital.
- Training should be given in hand decontamination.
- There should be follow up and ongoing support.

NICE Evidence Update September 2014, a summary of selected new evidence relevant to Nice Clinical Guideline CG139 “prevention and control of healthcare-associated infections in primary and community care” 2012.

This was a before and after study in 2011 carried out in Poland. Participants had been using homemade blends for 12 months or more were started on a commercial enteral formula and received regular follow up support from clinical professionals from a nutrition support team. The rates of hospital admissions and complications were assessed 12 months after introduction to formula. They showed that the number of hospital admissions dropped along with duration of hospitalisation and length of stay in ITU, with a lower prevalence of pneumonia, anaemia, urinary infection and respiratory failure. HOWEVER it was not clear whether the beneficial effects of the programme were due to the formula or the nutritional support or the combination of both.
Enteral Plastic Safety Group (EPSG)* Statement

Following a full consultation in November 2013 regarding the practice of administering liquidised food via enteral feeding tubes, the group has reached a consensus to not endorse this method of enteral feeding practice. In general, the manufacturer’s guidance states that only enteral feeding products defined as Foods for Special Medical Purposes and water are administered via enteral feeding tubes, giving/extension sets and feeding pumps in the UK.

Any patient/carer wishing to make an informed choice to administer liquidised food via their enteral feeding tube should have an individualised enteral feeding risk assessment carried out in line with their Trust or Clinical Commissioning Group risk assessment policy. The level of risk identified should form a written agreement by the relevant patient/carer/ clinician in line with local guidance.

* The EPSG (Enteral Plastic Safety Group) represents all UK enteral feeding devices suppliers, with clinical representation from the PENG of the BDA and the NNNG. The aim of this forum is to discuss enteral feeding device safety from both a clinical and manufacturing perspective. The term enteral feeding device’ refers to any type of feeding tube that is placed into the gastro-intestinal tract i.e. naso-gastric (NG), naso-jejunal (NJ), gastrostomy (Button, PEG/RIG) or jejunostomy (JEJ), as well as giving/extension sets and enteral feeding pumps. In this statement we have used the term liquidised food; alternative descriptions that are used include blenderised feeds, blenderised food, liquidised diet, blended diet and pureed table food.
PENG introduction to the Risk Assessment Template for Enteral Tube Administration of Liquidised Diet

Generally, the promotion of liquidised meals for all patients would be considered a retrograde step and not a practice advocated by the Parenteral and Enteral Nutrition Group (PENG) of the BDA. This mode of feeding is not considered a routine alternative to available prescribed formula.

As a representative group of specialist nutrition support dietitians we would endorse best practice and advocate the use of licensed, evidence-based prescribed formulations for tube fed patients.

These products allow the estimation of nutritional requirements to translate to a prescribed volume of ACBS formulation deemed safe to utilise as a sole source of nutrition.

PENG appreciate that members have been requested to provide dietetic expertise to develop feeding regimens to guide patients and carers who wish to administer liquidised diet or fluids out with of best practice guidance.

The risk assessment tool has been developed to provide members safe practice guidance and points of risk to consider when providing a duty of care to a patient or carer who wish to pursue this mode of feed delivery.

Consideration has been given to the stance of UK device manufacturers, as outlined in the enteral plastic safety group statement.
Risk 1: Nutritional deficiency and decline in nutritional status. The concern is that in order to achieve a consistency to give BD more fluid is required increasing the volume meaning those who have difficulty tolerating volume on formula may not get sufficient nutrition.

However families often report improvement in volume tolerance on BD in comparison to formula.

- Water half an hour before feeds can help with volume tolerance, a warm up exercise for the stomach pre feed.
- The patient could have supplements. Dietician may ask for detailed food diaries for dietary analysis.

At Little Bridge House we encourage parents to liaise with their dietician to ensure that the child's nutritional needs are being met. There are pros and cons to enteral formulas: they are sterile, easy to use and safe both nutritionally and microbiologically. However formula does not contain natural components of food such as antioxidants which are considered important to long term health. Sterile preparations do not contain bacteria consumed in normal diet which help maintain normal function of the gut. The importance of your Microbiome is now being realised. Parents are well researched and want to cash in on super foods like coconut oil and nut butters.

It should be noted that the recommendation is that an under 5 year olds have Vitamin D supplement. Don’t forget Salt and Iodine if cutting out milk.
PENG Risk 2: Patency of the enteral feeding device.
Blocking a device may require A&E visit or hospital admission with the cost implication of additional tubes.
There has been some suggestion that tubes should be at least 14fr which would rule out the majority of children who have 12fr. The actual difference in the inner bore of a 14fr and 12fr Mic Key button is 0.2mm (14fr=2.5mm, 12fr=2.3mm) The inner bore of a 9fr Fredka peg is 1.9mm. Recommend blending well and sieve through a metal sieve with 1mm holes. If blocked push/pull with warm water and patience. There are more problems with blocking from medications such as omeprazole.
Another stumbling block is syringing and differing opinions often due to local policies. However there are local polices that describe bolus feeding as syringing or by gravity.

Guidelines for enteral feeding in adults (Stoud et al) describes bolus feeding as being performed using a 50ml syringe with or without a plunger.
* There are concerns that the effort required to syringe a thickened feed would result in increased force on the stomach lining.
* Syringing blended diet is a bit like sucking a thick shake up a straw, you have to suck very hard to be rewarded with a small mouthful, very different to drinking water through a straw.

Corpak MedSystems conducted a study to determine the pressure inside its feeding tubes at varying force when using different size syringes and their effect on the strength of the feeding tubes. None of the tubes burst, each tube withstood an internal pressure of 80psi or higher. Therefore it seems unlikely in normal clinical use the feeding tubes would burst or collapse because typically a person would not be able to exert enough force on a syringe to burst them.
I have made observations using a demo box which showed that although more effort maybe required to push the plunger, provided a feed is given at a slow and steady rate the feed will simple trickle over the balloon. A recommended bolus rate would be 200mls in 20mins = 60mls in 4mins.
Risk 3: Food borne infection; Bacterial load of the liquidised feed. Potential contamination from the utensils used in preparation and the re-using of enteral feeding equipment such as syringes and extension tubes.

Previous research carried out in hospital settings in the Philippines and Iran showed Blended feeds prepared in hospital kitchens were contaminated with micro-organisms as well as being nutritionally unreliable.
At Little Bridge House (CHSW) all members of staff have completed a food hygiene course and our kitchens are regularly inspected.

- We recommend families familiarise themselves with food hygiene from NHS guidance online or online food hygiene courses.
- Our parent guidance asks that any food prepared at home arrives at LBH frozen and is stored in our freezer. It is then defrosted in the fridge and used within 24 hours.
- Freshly prepared food is blended at the time of serving and either used straightaway or stored in a clean container and stored in the fridge for 24 hours.

We have three methods of reheating;
1) Low risk food: remove from fridge and stand on the work surface for 30mins.
2) Low risk food: Place container in hot water for no longer than 10 mins, shake well and serve.
3) Recommended for meat, poultry or previously cooked food. Removed from fridge, transfer in to a jug and heat in the microwave until steaming hot throughout, stirring to ensure evenly heated, hold for two minutes before allowing to cool (we have an ice machine so we can stand jug in bowl of ice to cool quickly for waiting child.)
Storage:
If blended food is to be stored in fridge or freezer cool quickly, it should not stand at room temperature for any longer than 90mins to avoid microbial growth.

Store in the fridge at below 5°C for no more than 24 hours.
Store in freezer at below -18°C for no longer than 1 month.
During transportation cool bags with cool packs are ideal.

http://www.nhs.uk/Livewell/homehygiene/Pages/how-to-store-food-safely.aspx
http://www.nhs.uk/Conditions/Food-poisoning/Pages/Prevention.aspx
Risk 4: Legal action of the health professional

Recommendations include considering the patient care package and impact of this mode of feeding on their professional practice. Complete a detailed risk assessment at the onset to ensure a fully informed choice. Consider a MDT or GP led best interest meeting to ensure responsibility is defined. Document to demonstrate process and ensure an “agreement of care document is signed.

As there is no current NICE guidelines on the practice of blended diet, there appears to be no current guidance on syringing. Provided there has been a process of risk assessment, development of local guidance and clinical governance how will this impact negatively on nursing practice and insurance?
Risk 5: Cost implication and unplanned financial impact.
Increased cost of dietary input, nutritional analysis. Potential increased cost to family, local health care economy, management of complications and service impact on GP, Nurse, A&E.

There is a suggestion that you need an expensive blender such as a Vitamix, however it is possible to blend well with a hand blender and sieve to ensure lump free. Parents don’t react well to being told that formula is free and they will have the added cost of buying food, it’s a member of their family, of course they buy food to feed the whole family. No mention of the savings to the local health budget on formula, giving sets and any other equipment no longer required.
Risk 6: Infectious complications - potential life threatening. Localised gut/stoma infection, Peritonitis which may require surgical intervention and may require ITU admission.

It should be noted in 2010 a National Patient Safety Agency released an alert in relation to gastrostomies particularly in relation to post operative care. As a result all Hospitals have issued guidance to staff on the care of patients with gastrostomies, regardless of the method of feeding.

Like any interventional procedure, there is potential for complications (including chemical peritonitis, infection, bowel perforation, haemorrhage) however prompt recognition of these complications with early action reduces the risk of serious harm or death.

Practice recommends checking the position of a tube after insertion by aspirating and checking the PH. In some parts of the country in response to” a situation” they check the PH each time they use the tube. It is possible for a gastrostomy tract to break down or a fistula occur resulting in a tube being positioned outside the stomach. The question is; Is the risk of a potentially life threatening condition such as peritonitis any greater for a person who is tube feed food even if its syringed than being feed formula, gravity or pump, or having large amounts of medicines syringed in?
Administration of Liquidised diet via gastrostomy buttons
Families, Young People and Children’s division

The policy refers to the use of liquidised family food for children and young people with gastrostomy buttons

<table>
<thead>
<tr>
<th>Key Words:</th>
<th>Gastrostomy, button, liquidised diet, enteral nutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version:</td>
<td>1</td>
</tr>
<tr>
<td>Adopted by:</td>
<td>Quality Assurance Committee</td>
</tr>
<tr>
<td>Date Adopted:</td>
<td>April 2015</td>
</tr>
<tr>
<td>Name of author:</td>
<td>Anne Mensforth</td>
</tr>
<tr>
<td>Name of responsible committee:</td>
<td>LPT Clinical Effectiveness Group</td>
</tr>
<tr>
<td>Date issued for publication:</td>
<td>May 2015</td>
</tr>
<tr>
<td>Review date:</td>
<td>January 2017</td>
</tr>
<tr>
<td>Expiry date:</td>
<td>May 2017</td>
</tr>
<tr>
<td>Target audience:</td>
<td>Registered Dietitians, Children's community Nursing staff and school nurses</td>
</tr>
<tr>
<td>Type of Policy (tick appropriate box)</td>
<td>Clinical ✓</td>
</tr>
</tbody>
</table>
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.

Dr Susie Lapwood (Chair), Suzanne Brown, Rachel Griffith, Ailsa Kennedy, Jayne Lewis
When it becomes a revolutionary act to eat real food, we are in trouble.

Mark Hyman

BLENDED DIET FOR TUBE FED CHILDREN IN THE UK

FEEDING TUBE AWARENESS FOUNDATION

Blended Diets

There is a growing movement to including foods in the tube feeding diet. A blenderized diet, also called a blended diet or BD, is one that includes real food, not just formula. There is quite a range, from mixing jars of baby food purees

Eric Aadhaar O’Gorman
Guidelines on blended diet

Suzanne Brown reviews the evidence and urges nurses to give blended diet careful consideration

Since the publication of an article on blended food for enteral feeding via gastrostomy in Nursing Children and Young People (Brown 2014), there has been an increase in the number of families requesting that their child be given blended food as an alternative to formula milk. This is often due to food allergies or intolerance, or a preference for softer food textures. However, blended food can be a valuable part of a child's diet, providing nutritional benefits and creating positive feeding experiences.

**Aims**

The aim of this article is two-fold. First, it provides an overview of the evidence supporting the use of blended food for enteral feeding. Second, it offers practical guidance for nurses working with families who are considering this option.

**Guidelines**

A blended diet for enteral nutrition is defined as a mixture of pureed food and water or a food diluent to form a smooth, single food consistency. The blended food should be selected based on the child's nutritional needs and preferences, taking into account any allergies or intolerances. It is important to ensure that the blended food contains sufficient vitamins and minerals to meet the child's nutritional requirements.

Blended food can be administered using a nasogastric tube, a gastrostomy tube, or a nasoenteric feeding tube. The technique for administration will depend on the child's age and physical condition. The feeding rate and volume should be adjusted according to the child's individual needs.

**Common concerns**

Some families may be concerned about the cost and availability of blended food. However, many hospitals and community services offer support to families, and there are resources available online and in local libraries. It is important to communicate openly with healthcare professionals to ensure that the family's concerns are addressed.

**Conclusion**

Blended food can be a valuable addition to a child's diet, providing nutritional benefits and creating positive feeding experiences. It is important to work closely with families to find the best approach for their child, taking into account the child's individual needs and preferences.
Integrated working to meet the holistic needs of a children to receive a blended diet in the community

Sian Thomas
Nurse Consultant Child Health
Sian.thomas14@wales.nhs.uk
Research question 2

Bristol Stool Chart

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>Type 3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>Type 6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>Type 7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>
Thank you for listening, any questions ??

suzanne.brown@chsw.org.uk