Swansea Bay University Health Board

Clinical Guidance for the Administration of Blended Diet via Gastrostomy to Children and Adults in the Community Setting

Paediatric Nutrition Steering Group
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Contents:

Executive Summary

The aim of enteral tube feeding is to optimise a patient's nutritional status and to deliver their estimated nutritional requirements safely. Children and adults receiving enteral tube feeding are usually provided with a ready to use enteral tube feed. These ready to use enteral tube feeds are sterile, nutritionally complete food formulations and designed to be used with enteral tubes.

In recent years there has been a growing interest from patients and/ or carers in the UK, regarding the use of a blended diet via a gastrostomy as an alternative to commercially prepared feeds. Reported physiological benefits include improvements in gastroesophageal reflux, retching, vomiting symptoms and bowel habits. Research has suggested blended diet can have physiological benefits such as improvement in symptoms of vomiting, reflux and abnormal bowel habit [10-14]. In addition to physical benefits, social and emotional benefits have been reported by the parents and carers of tube-fed children and young [10-14]. This mode of enteral tube-feeding has been met with some caution, as professionals have raised concern that blended diet could be unsafe in comparison to commercially prepared enteral formulas [9] .

Professional consensus indicates use of blended diet has increased in the UK. Despite the perceived increase in use, blended diet has been under-researched. It is unclear if the perceived increase in risk (nutritional deficiency, feeding tube blockage and infection) is occurring or with significant frequency compared to those using commercial enteral formula alone.

It is acknowledged that commercial formulas, irrespective of type or brand, are not tolerated by a small group of long-term tube-fed individuals. The reasons for this are not understood; the use of blended diet may provide clinical benefit in this patient group.

There is little published evidence to inform and support safe practice in this field and until recently, health services did not recommend the use of blended foods via enteral feeding tubes due to the associated risk. However, the sharing of experiences via support groups and social media is raising the profile of this method of feeding, leading to increasing numbers of requests and enquiries relating to this feeding approach.

In 2019 the BDA updated its policy statement on The Use of Blended Diet with Enteral Feeding Tubes to support this treatment approach. The purpose of this statement is to:

- Create a culture where tube-fed individuals and their families and/or carers feel able to openly and honestly discuss the feeding plan they follow or plan to follow with the dietitians involved in their care.
- Create a culture where dietitians feel supported professionally, to raise the topic of blended diet with their patients and other healthcare professionals and offer blended diet as an option to tube-fed individuals where they deem it appropriate.

A Practice toolkit (BDA, 2021) has been developed to enable dietitians to support patients to make an informed choice and provide recommendations in relation to practice, thereby minimising variation and risk.

It is the responsibility of the clinical team to discuss and record the reason for the patients/carers wanting to commence a blended diet via a gastrostomy tube and ensure all alternative feeding strategies have been considered. The patient/carer should be fully informed of the risks and limitations involved if they choose to give blended diet.

Scope of guidance

This protocol is intended to support patients, carers and staff involved with administering blended food via gastrostomy feeding devices. Throughout this document the reference to patient will cover parent/carer/family. This document does not consider the use of blended diet for enteral feeding devices other than a gastrostomy feeding tube.

As a relatively new area of clinical practice there is an absence of clinical standards for using blended diets with enteral feeding devices. This protocol has been developed along evidenced informed principles and will highlight suggested good practice from the British Dietetic Associations Practice Toolkit 'The Use of Blended Diets with Enteral Feeding Tubes' November 2021.

Aim

For patients wishing to consider blended diets the aims are to support them to understand how to achieve optimal nutrition whilst minimising complications that could arise such as food borne illness and tube blockage.

Objectives

To support health board staff in responding to individual requests from patients to use blended food via an enteral feeding tube by implementing a shared decision-making approach.

For staff to be aware of the risks and limitations of this practice and how to minimise these risks and to ensure that patients fully understand how to minimise risks and limitations of the practice.

To provide patients/parent/carers with advice in relation to the safe processes for preparation, storage and administration of blended diet via a gastrostomy.

To promote best practice and optimise patient safety in relation to this practice.

Definitions

Child	For the purpose of these guidelines the term “child” will refer to any infant, child or young adult up to the age of 18 years or while still attending special school.
Patient	Throughout this document any reference to the patient will also cover parent/carer.
Blended food	The term blended food has been used in these guidelines; alternative descriptions that are used include pureed food, liquidised food, table food, blenderised foods, liquidised diet, and blended diet. General food and fluids that are liquidised to a consistency whereby it can be administered via enteral feeding tube.
Individuals who do not have capacity	Young people and adults (including those with Learning disabilities) who do not have capacity to decide on the use of blended diet, will require a best interest decision making meeting to support appropriate care.
Adults	Individuals over the age of 18, with capacity

Process on receiving a request to receive a Blended diet (BD)

1. Decision to start a blended diet: A shared decision.
Patient with capacity requests to trial blended diet or informs you that they have started a BD.
Adult/family/ carer without capacity requests to trial BD - To arrange best interest meeting.

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2. Consider if blended diet is appropriate for individual.
The dietitian should arrange and lead a multi-professional meeting (if possible) to facilitate the relevant discussions in relation to the appropriateness of a BD, in the best interest of the individual under their care.

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3. MDT to meet with Patient: Aim of meeting to work together to reach a joint decision & agree a care plan.
a) Record reason for wanting to commence blended diet and current symptoms experienced with commercial tube feed.
b) Provide individual with best practice advice and guidance around this feeding approach. Explore benefits and consequences.
c) Discuss alternative feed strategies for consideration. Consider appropriateness of tube size (>12fr), additional equipment that may be required, healthy eating knowledge, portion sizes, food safety and hygiene.
d) Obtain agreement from patient/carer/family to monitoring plan.

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4. Shared decision to commence BD

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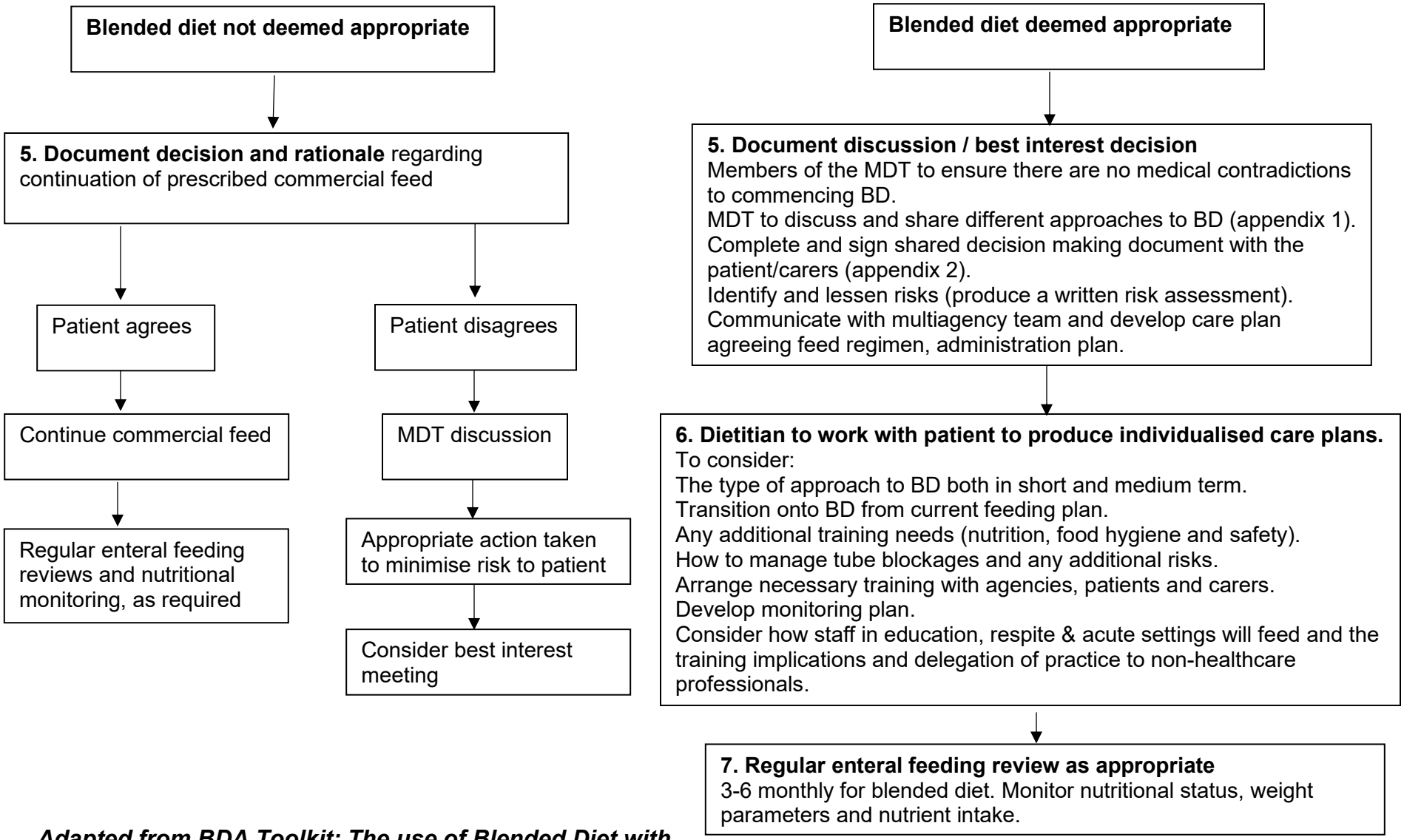

Adapted from BDA Toolkit: The use of Blended Diet with Enteral Feeding Tubes (2021)

Shared Decision Making

A shared decision-making approach to care should be followed. The health team should ensure patients receives the individualised information they need to enable them to make an informed decision. Consideration should be given to patients with complex medical conditions and those who may be immunocompromised. Planning and preparing blended diet requires a significant commitment and patients and carers should have realistic expectations of the labour and financial cost involved. The shared decision should be justified and clearly documented. The shared decision should be justified and clearly documented in the individual's records by the dietitian, and Multi-disciplinary team (MDT).

The Paediatric Nutrition MDT or Adult MDT must discuss and record the reasons for the patient wanting to commence blended diet via gastrostomy tube and alternative strategies for managing symptoms should be explored fully. This will ensure any feed related problems are optimally managed. The patient will be fully informed of the different approaches to blended diets, potential benefits and risks of the blended diet along with approaches to mitigating any risks. Appendix 1 provides patient information on different approach options to blended diet.

The clinical team must decide whether a blended diet represents an unacceptable risk and is likely to lead to significant harm. If this option is still pursued by the patient, then the team need will need to follow the local safeguarding procedures.

The shared decision-making form should be completed by members of the MDT in consultation with patient. The level of risk identified should form a written agreement by the patient and clinicians in line with this guidance. A document of discussion and a copy of the shared decision-making document and care plan should be signed and kept in medical/dietetic/nursing notes and copies provided to the patient as well as other professionals/agencies with patient's consent (Appendix 1, 2 and 3).

The shared decision-making document should be shared with anyone giving the blended diet and an individualised care plan needs to be prepared. The dietitian and members of the health team will work with other professionals and agencies to facilitate the implementation of blended diet in all care settings attended by the tube-fed individual. For example, respite care, school or college. Ultimately, the decision to provide blended diet rests with the individual care provider.

The BDA provides the following suggested good practice

SUGGESTED GOOD PRACTICE – Starting Blended Diet

1. The way in which blended diet is started will depend on the feeding and medical history of the tube-fed individual.
2. Blended diet can be introduced from about six months of age in line with public health complementary feeding guidance.
3. Dietitians who are new to blended diet should seek supervision or advice from someone more experienced in order to gain more knowledge and confidence in supporting individuals and their families using a patient-centred approach.

Types of Enteral Feeding Tubes

The majority of manufacturers for enteral feeding tubes guidance states that only enteral feeding products described as 'foods for special medical purposes and water' should be administered via the enteral tube. Therefore, the healthcare team should consider individual IFU (Instructions for use) guidance as part of the decision making.

The BDA provides the following expert opinion and considerations relating the gastrostomy tube.

SUGGESTED GOOD PRACTICE – Type of Enteral Feeding Tube

1. The type of tube the individual has will help form decisions about the suitability of blended diet and the dietitian should check the manufacturer's instructions for use (IFU) with respect to the use of blended diet, however, this is not the only factor in the final decision.
2. A gastrostomy tube is preferable for use with blended diet.
3. The diameter of the tube should ideally be ≥12Fr. It is possible to use blended diet with a narrower tube but a thinner consistency of blend is likely to be required.
4. A balloon retained gastrostomy tube is preferable as patient/parent(s)/carer(s) can be trained to change these themselves in the community.
5. If a disc retained device is used with blended diet, a plan should be made with the MDT as to how the individual will receive nutrition, fluid and medication if the tube were to be blocked and how it will be replaced.
6. It is possible to provide blended diet via the gastric port of a gastro-jejunal tube although the jejunal extension means the lumen is narrower. A plan should be made with the MDT as to how nutrition, fluid and medication would be provided if the tube were to be blocked and how it will be replaced.
7. It is not common practice to use blended diet with nasogastric or post pyloric tubes and is likely to be less safe than gastrostomy feeding. Alternative tubes should be considered if the family wish to use blended diet.
8. Parents/carers should be advised to flush the feeding tube with water to minimise risk of tube occlusion.
9. A mature gastrostomy stoma, generally 8 – 12 weeks after insertion, is advised due to the risks of changing a blocked gastrostomy tube in an unformed tract.

Starting a Blended Diet - Safe preparation and administration of blended food via the gastrostomy enteral tube

Hygiene and infection prevention

There is a risk of microbial infection as contamination may occur from the utensils used in preparation, storage and administration of liquidised food. Steps should be taken to educate the patients, carers and families to ensure blended diet is used as safely as possible. This should include advice on food hygiene and storage, enteral feeding tube care and education on a healthy balanced diet. The level of education and dietetic input needed should be tailored to the individual needs of the family. Staff will advise patients on the steps that should be taken to minimise the risk of infection as follows:

Information regarding good hand hygiene / washing, food safety and kitchen hygiene techniques. The following resources may be useful:

http://www.nhs.uk/Livewell/Homehygiene/Pages/Homehygienehub.aspx

http://www.nhs.uk/Conditions/pregnancy-and-baby/Pages/food-safety-hygiene.aspx

https://www.food.gov.uk/business-guidance/food-hygiene

http://www.food.gov.uk/business-industry/caterers/sfbb/

- Effective hand washing must be carried out before starting food preparation and a risk assessment of the food preparation area should be considered. This may necessitate a home/school visit.
- Blended food should be prepared as close to the time of administration as possible.
- Hot/ blended foods must be effectively cooled before administration.
- Blended food should not remain at room temperature for longer than 2 hours.
- Blended food may be stored on the top shelf of the fridge (below 5^{o}C) for up to 24 hours.
- Blended food may be frozen (below -18^{o}C). We would not recommend keeping for longer than 1 month. Food safety guidance on defrosting should be followed. Food needs to be labelled clearly with date of preparation, food description and date and time removed from the freezer.
- If food is to be administered away from home, consideration needs to be given regarding safe transport and storage.
- Food prepared at home for use outside the home should be prepared as close to the time of use as possible and then chilled, stored and transported as detailed above.

The BDA Practice Toolkit provides the following suggested practice: -

SUGGESTED GOOD PRACTICE – Food Safety and Hygiene

1. Effective and frequent handwashing before and during food preparation is important.
2. Raw and cooked food ingredients should be separated during storage and preparation.
3. Food ingredients to be used in blends should be stored appropriately and used within their use by date.
4. Food ingredients should be cooked as if they were to be eaten orally prior to blending.
5. Equipment used to prepare and administer blends should be cleaned in warm soapy water, rinsed and left to air dry.
6. Blends should only be kept at room temperature for a maximum of 2 hours.
7. Blends can be stored in the refrigerator (below 5°C) for up to 24-48 hours.
8. Blends can be stored in the freezer (below -18°C) for 1-3 months.
9. Frozen blends should be defrosted thoroughly in the refrigerator (below 5°C).
10. Blends that contain meat, chicken and previously cooked foods require reheating to 70°C for 2 minutes ('piping hot' or 'steaming hot').
11. Blends are often easier to administer if given warm as the viscosity is reduced.
12. Blends should not be dehydrated at home.
13. Defrosted foods should be discarded after 24-48hrs if not used.

Administration of Blended Diet

To support a safe approach to administering the blended diet via the gastrostomy feeding tube the following steps should be taken: -

- Adequate flushing of the feeding tube should be carried out pre and post feeding. Freshly drawn tap water can be used.
- Pump feeding is not recommended due to length of hanging times and risk of microbial contamination. There are no feeding pumps licenced for use with blended foods in the UK.
- Blended food should be given by gravity or slow plunge method.
- Blended food should be smooth and thin enough to administer without the need for pressure or force on the feeding device.
- Consideration should be given to the possibility of an increased supply of ancillary equipment (extension sets, syringes etc.) to help reduce the risk of contamination
- Blended food should only be administered by carers or by care setting staff if an agreement is place by the relevant authorities.

The BDA suggested good practice outlines: -

SUGGESTED GOOD PRACTICE – Administration of Blended Diet

1. A gravity bolus method can only be used with a thinner blend.
2. A slow plunge method, using a 60ml enteral syringe, is the method of choice with a thicker blend.
3. The rate of administration will depend on individual tolerance. It is a good idea to start slowly and increase the rate gradually.
4. It should be agreed within your enteral feeding contract as to whether if automated feeding pumps can be used to administer blends (if delivered in less than two hours).

SUGGESTED GOOD PRACTICE – Ancillaries

1. Tube fed individuals who are fed using blended diet should be provided with ancillaries as per local policy for bolus fed HETF. Additional syringes or a change to O-ring syringes may be required.

Patency of enteral feed device

Steps that should be taken to minimise the risk of tube blockage:

- There are many different types and brands of blenders available to purchase. The choice depends on the size and power of the motor and cost.

  Examples of blenders available on the UK market and their advantages and disadvantages are included in the table below:

Type/Style of Blender	Advantages	Disadvantages
Stick Blender	Inexpensive. Easy to use. Easy to clean.	Typically, low power. Some foods are less easy to blend (e.g. seeds, nuts). Mainly small volumes. May be messy. A good container required to blend in. It may be necessary to use a sieve in addition.
Mid-Range e.g. NutriBullet®, Nutri Ninja®	Mid-price range. Easy to use. Easy to clean. Best for blending meal by meal. Best with small volumes.	Likely not large enough for batch blending. Durability.
Commercial blenders e.g. Vitamix®, Omniblend®, BlendTec®, Oster®	Powerful – will blend most foods. Good for batch blending and large quantities. Many have self-clean settings. Long product guarantees. Durable.	Can be very noisy. High initial cost.

- Foods blended to a smooth consistency can then be sieved using a fine metal sieve with holes of 1mm, without diluting with excessive water.
- Tubes should be flushed with adequate volumes of water pre and post feeds.
- Ideally the bore of the low-profile gastrostomy device should be at minimum 12Fr. If current gastrostomy tube is smaller, the clinician will explore changing the gastrostomy tube to a larger gauge.
- Blended food should only be used via tubes that can be replaced easily in the event of a blockage (without the need for anaesthetic). Staff in other settings (school, respite) will be given training in the management and replacing of a gastrostomy tube.
- Blended food should not be used with a nasogastric tube.
- Blended food should not be given to immunocompromised patients.
- Blended foods should not be introduced before weaning age (around 6 months). Small amounts of blended food may be introduced alongside breast milk and/or infant formula in line with current recommendations for oral complementary feeding.

- The jejunum does not have the same food storage capacity or gastric acids, which protect against infection, in comparison to the stomach. Therefore, it is likely to be safer to administer blended diet into a gastrostomy rather than a jejunostomy.
- Patients will be made aware that enteral feeding tubes and associated equipment is not endorsed by the manufacturer for use with blended food. Individual manufacturers 'information for use' should be clarified when a decision is made to administer blended diet.

SUGGESED GOOD PRACTICE – Equipment

1. Blended diet can be trialled first without buying a blender by the use of commercial baby food purees or with an inexpensive stick blender.
2. The purchase of a more powerful blender will increase the variety of foods which can be incorporated in the diet and enable batch blending.
3. The length of time blending is more important to achieve the correct consistency than the wattage (power) and many families manage with a mid-range blender.
4. Sieving gives confidence when starting blended diet, when a finer bore tube is used, or with difficult to blend foods such as foods with pips, seeds and grains. If required a metal, easy to clean fine (holes <1mm) mesh sieve should be used. However, use of a sieve in the longer term is usually not needed with experience of blending and can reduce overall nutritional value of the blends.
5. Additional equipment is not essential but may make the experience easier.

Nutritional Considerations

- Patients should have a full nutritional assessment completed every 3-6 months by a Dietitian
- For patients having no commercial formula nutritional bloods should be reviewed after 3 months. (Appendix 4)
- Additional information on nutritional assessment and monitoring, and additional considerations including the use of vitamin and mineral supplements is shown in Appendix 4
- Evaluation of outcomes should be collected during the initial assessment and on an ongoing basis (Appendix 5)

SUGGESTED GOOD PRACTICE– Nutritional Adequacy

1. The dietitian should estimate the individual's energy and protein requirements and provide a daily guide, taking into consideration the individual's age, medical condition and energy expenditure.
2. Delivery of the total energy requirement can be split and may be met using a combination of commercial enteral formula and blends. If meeting full requirements using blended diet the daily guide can be split over 3-7 blends (breakfast, lunch, dinner, (supper) and 2 to 3 snacks, depending on the individual's volume tolerance per feed and at different times of day.
3. Blended diet does not have a uniform energy density unlike commercial enteral formula. Rather than prescribe a volume of blended diet it is more helpful to advise on a daily energy and protein guide and advise on blend consistency (IDDSI can be used).
4. Care should be taken to ensure hydration needs are met. Teach parent(s)/carer(s) about fluid requirements, how to meet this need and how to monitor for adequate hydration.
5. Dietitians should educate parents/carers on healthy eating and age-appropriate portion sizes using government recommendations for the general public.
6. Families should be advised to include a wide variety of foods from each of the four person/parent(s)/carer(s) main food groups.
7. Sudden changes to fibre intake can have an adverse effect on bowel habit. Increase fibre slowly to tolerance and ensure sufficient fluid is given alongside.
8. Routine micronutrient supplementation is not required with the exception of vitamin D. Follow national public health guidance unless there is reason determined by the individual's diagnosis, treatment, blood biochemistry or dietary analysis which indicates supplementation is needed. If parents wish to give vitamin and/or mineral supplements suggest a product with a balanced nutrient profile to avoid giving high dose supplements of any one particular micronutrient.

SUGGESTED GOOD PRACTICE – Monitoring

1. A detailed monitoring plan should be established before starting blended diet.
2. Anthropometric measures should be taken regularly, as required by the age and nutritional status of the individual. These may include weight, height/length (using actual or proxy measures), BMI, mid-arm circumference, triceps skinfold.
3. Monitor clinical symptoms of gut tolerance including nausea, reflux, vomiting, gagging, diarrhoea, constipation, abdominal discomfort or distention.
4. The tube and stoma site should be monitored to ensure patency and health of the site.
5. Biochemical monitoring should be undertaken if there is a reason to believe that there is a likely deficiency based on assessment of nutritional intake and/or clinical condition. Following a blended diet is not in itself an indication that more biochemical monitoring is required than on other forms of HETF.

Inpatient hospital admissions

The use of commercially prepared formula, designed specifically for enteral tube-feeding remains the first line choice. The decision to provided blended food during an inpatient stay will depend on the reason for the acute admission and the guidance of the medical team.

Whilst as an inpatient within SBUHB, patients will receive commercially prepared enteral feed delivered by Health Board staff, freshly prepared blended foods will require administration by the patient or carer. Provision of blended diet in the inpatient setting is dependent on the food preparation facilities and reason for admission. Blended diet is less likely to be permitted in the ICU/HDU setting.

Patients who are fed blended diet in the community will have an admission plan in the case an inpatient admission is required.

SUGGESTED GOOD PRACTICE – Blended Diet in Other Settings

1. Multiagency working can lead to the successful development of local guidance tailored to Education and Respite care facilities available and the individual's needs.
2. Clear trust guidelines or protocols should be in place to support the provision of blended diet in the hospital setting. Infection prevention and control teams and catering departments should be consulted.
3. Dietitians in the acute setting should ensure the blended diet continues to meet the needs of the individual during their acute admission. The use of blended diet should be reviewed and discussed with medical team, patient and their parent(s)/carer(s).

Care Settings – schools, colleges, respite services

The healthcare team should work with other professionals and agencies to facilitate the implementation of blended diet in all care settings attended by the tube-fed individual. For example, respite care, day centres, school or college. Ultimately, the decision to provide blended diet rests with the individual care provider.

Responsibilities within the Organisation

The Multi-disciplinary Team involved in advising patients, parents and carers on the administration of blended diet via a gastrostomy will ensure they are familiar with the content of the protocol and work in accordance with this guidance.

Safeguarding may need to be considered if patient's wishes are in conflict with clinical advice:

- Risk assess any child /adult LD requesting a blended diet via a gastrostomy
- Ensure patients / carers and multidisciplinary team are aware of the risks and how to minimise them
- Ensure an alternative feeding plan is in place for when a child/adult needs to be admitted to hospital

The MDT are responsible for ensuring all relevant staff (Paediatric/Adult Dietitians, Paediatric Nurses/Nutrition Nurses, and Paediatricians) are aware of this protocol and how to implement it.

Training- Members of the multidisciplinary team are ONLY responsible for the provision of training within the areas of their competency.

Reporting Adverse Events- adverse events should be reported via the health board incident reporting process (DATIX). Adverse incidents relating to medicinal devices should be reported to the Medicines and Healthcare Products Regulatory Agency (MHRA).

Dietitians are responsible for updating and providing the relevant settings with up to date Dietetic care plans a minimum of annually.

Home/respite/day centre managers will be responsible for ensuring staff are kept updated with care plans. They are also responsible for ensuring staff are trained regularly and that non-qualified staff have an adequate understanding of the training. Staff will not be permitted to administer blended diet without undergoing the health board training.

Monitoring and Effectiveness

The use of this guidance will be reviewed on a 12-monthly basis in light of the changing understanding and emerging evidence base of blended diets.

Equality Statement

This guidance takes into account the provisions of the Equality Act 2010 and has been assessed to ensure that no one receives less favourable treatment on the protected characteristics of their age, disability, sex (gender), gender reassignment, sexual orientation, marriage and civil partnership, race, religion or belief, pregnancy and maternity. It also takes account of the requirements of the Welsh Language Measure and Human Rights Act.

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APPENDICES

Appendix 1 – Different Approaches to Blended diets, including advantages and disadvantages

Approaches to Blended diets - patie

Appendix 2; Blended Diet Documentation of Professional Discussion with Patient – Shared Decision Making

SB UHB Discussion RE Advantages and di

Appendix 3: Sample Multi- agency Care Plan for child in receipt of blended diet via gastrostomy

care plan 2.dotx

Appendix 4; Nutritional Monitoring Guide

Nutritional monitoring.doc

Appendix 5: Paediatric outcomes

Outcomes of Tube Feeding Liquidised Fo

Outcomes of Tube Feeding Liquidised Fo

Appendix 6: Training plan

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Appendix 7: Patient information on blended diet

SB UHB Blended diet Information for Patier