Sheffield Children's NHS
NHS Foundation Trust

Administration of Blended Diet via Gastrostomy Buttons

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Purpose

These guidelines have been developed to provide health with advice in relation to the safe risk assessed process for preparation, storage and administration of blended diet via a Gastrostomy button.

Intended Audience

This document provides guidance for staff involved with patients/parents/carers wishing to receive or administer blended diet via enteral feeding devices, in combination with, or in preference to the use of prescribed enteral feeds. Guidance is required in connection with decision-making around potential for this feeding method to meet nutritional requirements, hygiene and infection control, patient safety requirements, and practical considerations on an individual basis.

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1. Introduction

The use of sterile ready to hang feeds or specialist powder formula are considered to be the gold standard treatment for patients requiring enteral nutrition.

However, there has been increasing interest in parents/carers requesting advice and support on administering blended food to their child via their gastrostomy, with reported benefits including: reduced vomiting and retching, improved bowel function, reduced dependence on medication, improved general wellbeing and mood and normalisation of family meals (Coad et al 2016).

There is little published evidence to inform and support safe practice in this method of feeding, but shared experiences via support groups and social media is raising the profile of this method of feeding, leading to an increased number of requests and enquires relating to this.

The Enteral Plastic Safety Group does not endorse this method of enteral feeding practice, but any patient/carer wishing to make an informed choice to administer blended diet 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 (appendix 1).

Most manufacturers of enteral feeding devices do not endorse their devices for the administration of blended diet. However, Mic-key (Vygon) and Mini (GBUK) ranges of enteral feeding tubes are suitable for use with blended diet, but only under supervision.

The British Dietetic Association (BDA) does not recommend the administration of blended food via enteral feeding tubes . However, due to the increasing interest in this area, the BDA advise Dietitian's should continue to fulfil their duty of care to the patient or carer, supporting them to ensure adequate nutrition is provided.

2. Intended Audience

This document provides guidance for staff involved with patients/parents/carers wishing to receive or administer blended diet via enteral feeding devices, in combination with, or in preference to the use of prescribed enteral feeds. Guidance is required in connection with decision-making around potential for this feeding method to meet nutritional requirements, hygiene and infection control, patient safety requirements, and practical considerations on an individual basis.

3. Guideline Content

These guidelines are intended for use by all staff involved with the informed decision making when deciding to use the mode of feeding.

Duties:

Dietitian's role:

- Undertake risk assessments for individuals or families wishing to change to blended diet via gastrostomy
- Advise on maintaining adequate nutrition and hydration
- Provide ongoing monitoring for individuals receiving blended diet, as for those receiving prescribed feeds
- Advise on safe practice relating to blended food preparation, storage and administration

Nursing staff / Carers/ School staff role:

- Related to the setting and the role of the nursing staff/carer within the setting

- Encourage to complete risk assessment before preparing/administrating blended diet (appendix 1)
- Nursing staff to advise on button device care

3.1 Risk Assessment

The clinical team must discuss and record the reasons for the patient wanting to commence blended diet via enteral feeding tube and ensure all alternative commercial formulations and feeding strategies. The parents/carers should be fully informed of the risks and limitations involved if they do choose to give blended diet.

3.2 Equipment

Nasogastric

It is **not recommended** practice to use blended diet with nasogastric tubes. There is a higher risk of blockage due to lumen size (6 -10Fr generally used in the UK), length of tube and negative pressure therefore blended are not recommended. Volume tolerance is more likely to be an issue and administration more time consuming.

Jejunostomy

There is no evidence supporting the use of blended diet via a jejunal feeding tube or jejunal extension and it is **not recommended**. Feeding into the jejunum bypasses the digestive mechanisms increasing the potential for infection and depending on where the device is positioned within the jejunum this will affect absorption of nutrients. Furthermore the jejunum has no capacity to store volumes of food (and therefore tolerate bolus feeds) so overloading is a potential risk which can result in dumping syndrome.

The tube lumen of jejunal tubes is very small and therefore at high risk of blocking.

Gastrostomy

Most manufacturers of enteral feeding devices do not endorse their devices for the administration of blended diet. However, Vygon MIC-KEY and GB UK MINI ranges of enteral feeding tubes are suitable for use with blended diet, but only under supervision.

Ensure the patient has been adequately trained in administration of bolus feeds and has demonstrated competency in managing the enteral feeding tube and stoma site

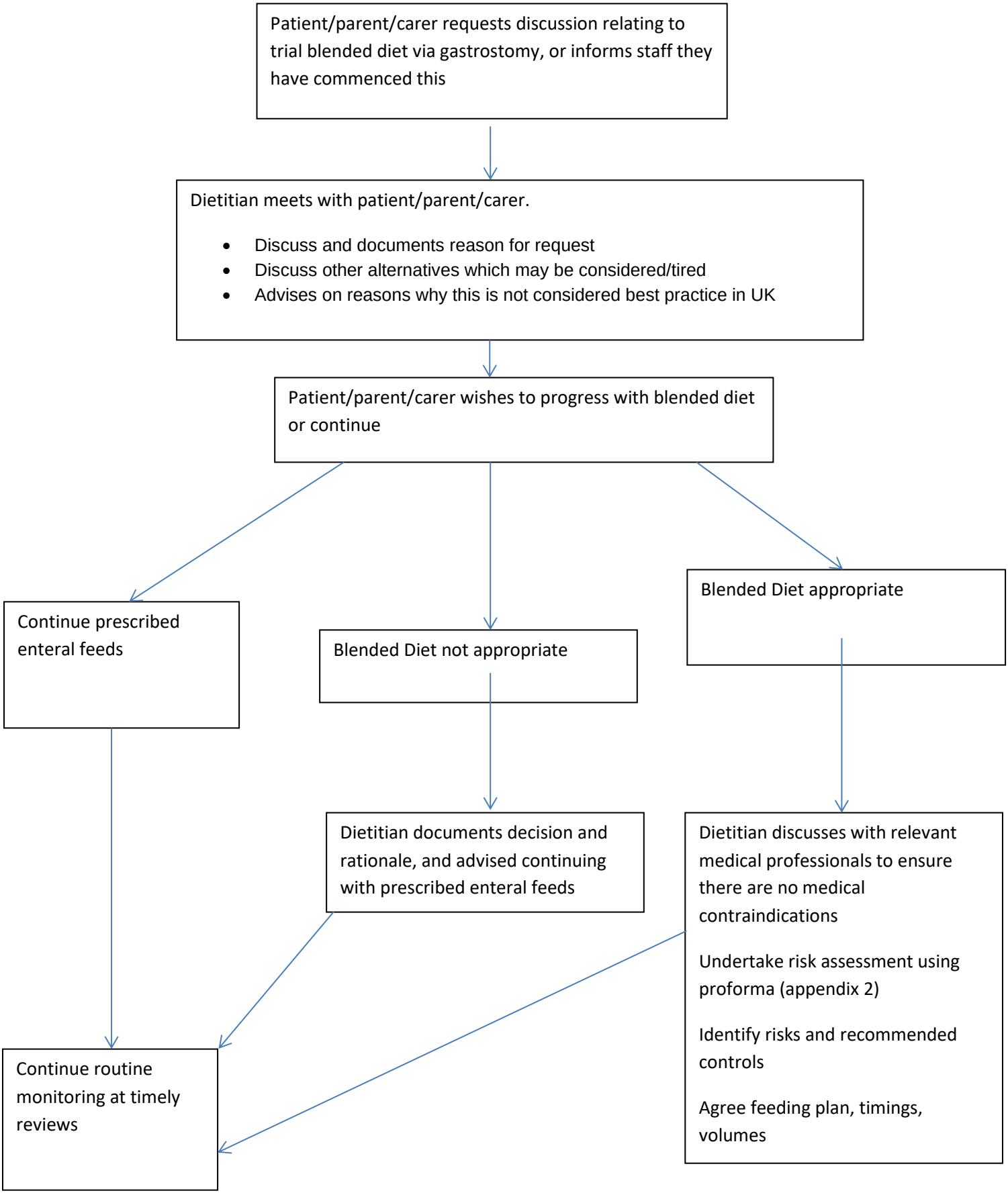
Pump Feeding

Enteral feed pumps are designed to be used with commercial food formulations not blended diet. No pump manufacturer supports the administration of blended diet via a pump. Pump feeding of blended diet is also not recommended due to the risk of microbial contamination with prolonged hang times and the potential nutritional inadequacy of more dilute blends.

Bolus Feeding

Blended diet should be administered with a syringe using small slow pushes if it does not flow by gravity. The bolus size will vary with age, volume tolerance and symptoms. The duration of a feed should normally take a similar length of time as a meal, together with what is acceptable for the individual in terms of tolerance.

3.3 Flowchart to describe the process on receipt of request to use blended diet via enteral feeding device



3.4 Guidelines for preparation, storage and reheating blended diet feeds

It is recommended that patients/parents/carers complete on-line food hygiene training

Preparation

- Good hand washing techniques must be adopted, and hands washed prior to handling food or equipment.
- Cooking and blending equipment should be of a design which can be
- thoroughly cleaned.
- Surfaces on which food is prepared must be clean
- Food must be stored appropriately to avoid deterioration prior to cooking or
- use
- Avoid undercooking food prior to blending
- Prepare blended diet food as close as possible to the time of administration

Storage

- If it is necessary to store food in the fridge for later administration, the following guidelines should be adopted:
- Store the food in a clean container with a lid
- Blended food should not remain at room temperature for more than 90
- minutes before refrigerating
- Blended food not used within 90 minutes may be refrigerated (below 5 °C)
- and used within 24 hours of preparation
- Blended food may be frozen (below -18 °C) for up to 1 month

Reheating

- **Feeds containing meat, poultry or previously cooked foods**
- Remove feed from fridge, transfer to a suitable container, and microwave until 'steaming hot' or 'piping hot' throughout (or if using a thermometer, a
- minimum of 70 ° C for at least 2 minutes). Allow to cool to body temperature
- (37 °C) or below before feeding

Feeds not containing meat, poultry or previously cooked foods

- Option 1 – remove feed from fridge and stand on work surface for 30 minutes to allow this to come to room temperature (WHO 2007)
- Option 2 – remove feed from fridge and place the container in a jug of hot water for no more than 10 minutes. Shake or stir before feeding

Defrosting

- Frozen food should be thawed in the fridge below 5 °C, and heated (in accordance with information above) and used within 24 hours of removing from the freezer

3.5 Nutritional Adequacy

The initial aim is to match the energy intake of the commercial formulation that was appropriate for the patient.

Ensure that the fat, carbohydrate and protein profile of the blended diet aims to meet current government recommendations and that the blended diet includes all essential nutrients (not all from one source)

Fibre should meet the patients previous intake and then be adjusted accordingly

Detailed food diary analysis should be undertaken if there is concern regarding intake of a nutrient or significant changes occur within the diet

A micronutrient supplement should be considered if low levels or no commercial formulation is used or there are low levels of micronutrients on dietary analysis. This will help ensure that the patient meets the RNI's for vitamins and minerals

3.6 Hospital Admission

- Nursing staff will inform the dietitian when a patient is admitted who is receiving a blended diet via a feeding gastrostomy.
- The patient/carer should bring their individualised blended diet plan with them. If no plan is provided to nursing staff, the Dietitian covering the ward needs to be informed.
- Suitable meals can be ordered for the patient from the kitchen

3.7 Emergency admission

- Blended diet may not be deemed suitable if patients are acutely unwell for instance, requiring additional oxygen to normal, ventilated or admitted to PICU.
- Blended diets are not to be given on PICU.

3.8 Monitoring

- A dietitian will review both the macro and micro nutritional content of the blended diet at regular intervals to ensure a patient's requirements are being met and to make recommendations on how this can be achieved.
- Periodic analysis of dietary intake may be required alongside anthropometric measurements.
- Nutritional blood tests may be requested by the Dietitian if there are specific concerns regarding a patient's nutritional intake.

References

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Appendix 1. Individual Risk Assessment

Sheffield Children's Hospital Dietetic Department

Blended Diet (BD) via gastrostomy button –personalised parent/carer risk assessment

Name…….NHS number……DOB……

Prior to completing the risk assessment it should be discussed and explained the full implications and requirements of this method of feeding to the patient/parent/carer

Risk	Details	Actions	Discussed
Nutritional Risk	Nutritional risk relates to: - The need to dilute blended food in order to achieve a suitable solution for administration. -This will result in the need for larger volumes of feed in order to provide sufficient nutrition - Blended diet feeds may have a lower energy content than commercial formula - The nutritional content of blended diet meals is not accurately known	-Liaison is required on an individual basis. It may be beneficial to use a combination of commercial formula and blended food, at least initially. -Tolerance of volume should be closely monitored. Close monitoring of growth should be undertaken dependent on age 1-3 monthly weight check -Information regarding suitable energy dense supplementation should be provided as appropriate to the individual -Analysis of food diaries to enable assessment of nutrient intake may be needed, to identify any potential deficiencies or excesses of vitamins, minerals or macro or micronutrients (3-6 monthly analysis) -Supplementation may be required. This should be assessed on an individual basis	
Infection	Risk could arise from: - Inappropriately or undercooked foods - inappropriate storage of feeds - poor hand hygiene - particles of food remaining in the tube after feeds - poor cleanliness of equipment used	-Explanation of the guidelines for preparation, storage and reheating of blended diet -Recommend parents/carers complete on-line food hygiene training	

Feed Administration	Risk relates to: - thicker consistency of blended diet -It is unlikely that gravity bolus feeding will be practical -Pump feeding is not recommended Pumps are not calibrated for this consistency of feed. Blended diet meals may not remain in suspension for a prolonged period of time Increased infection risk from prolonged 'hanging' time - Potential uneven or over-heating of feed, if parents prefer to give warmed feeds	-Administration using syringe with plunger will be needed (caution relating to the pressure applied) -Avoid warming feeds if possible. If refrigerated, remove from the fridge 20 minutes before administration to allow to come to room temperature If feed is warmed, ensure the temperature does not exceed Room temperature, and the food is re-mixed after warming	
Tube Blockage	Risk could arise from: - Food being incompletely blended - Attempts to administer a solution which is too thick	-Ensure feed completely smooth -Flush tube immediately after all feeds -Ensure feed is adequately diluted to a suitable consistency -review the tube type if necessary	
Tube/device condition	Devices other than buttons (e.g. gastrostomy tubes) are not approved by the manufacturers for the administration of blended diet feeds. Earlier deterioration of devices or associated equipment could result	The patient or family member should be made aware of this The condition of the tube should be reviewed regularly by dietitian, nurse or doctor	
Specific risk identified **Actions identified to reduce risk**			
Recommendations/summary			

Dietitian……

Date:……

Patient/parent/carer……

Date:……