Enteral Feeding Guideline
Paediatric Policy

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## Glossary

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<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>aspiration</td>
<td>Taking a sample of gastric contents for pH testing</td>
</tr>
<tr>
<td>balloon</td>
<td>A water filled balloon holds some gastrostomy tubes securely in the stomach</td>
</tr>
<tr>
<td>balloon port</td>
<td>Valve in gastrostomy tube to insert water into balloon</td>
</tr>
<tr>
<td>clinical waste</td>
<td>Used medical equipment for disposal</td>
</tr>
<tr>
<td>continuous feeding</td>
<td>A volume of feed delivered by a feeding pump at a constant rate over a period of time</td>
</tr>
<tr>
<td>decanting</td>
<td>Pouring feed from the original container into the giving set container</td>
</tr>
<tr>
<td>external fixator</td>
<td>A device that holds the gastrostomy tube in place against the skin</td>
</tr>
<tr>
<td>gastric contents</td>
<td>Stomach contents</td>
</tr>
<tr>
<td>giving set</td>
<td>Plastic tubing that delivers the feed</td>
</tr>
<tr>
<td>pH indicator paper</td>
<td>Paper or strip that measures the amount of acid in stomach contents</td>
</tr>
<tr>
<td>single use</td>
<td>Use once only and then discard</td>
</tr>
<tr>
<td>single patient use</td>
<td>Can be used more than once on one patient only</td>
</tr>
<tr>
<td>stoma</td>
<td>A surgically created opening into the body from outside</td>
</tr>
</tbody>
</table>
Introduction

Good nutrition is necessary to sustain body functions, promote growth and tissue repair and provide energy for physical activity. If a child/young person has difficulty swallowing, is unable to achieve an adequate oral intake, feeding via a tube may be necessary. The number of children/young people receiving tube feeding continues to grow annually. The largest group of children receiving tube feeding in the UK are those with neurodisability. Hence many of the pupils attending additional needs school require enteral tube feeding and as such, additional support assistants are required to administer nutrition to these children by means of such tubes. It has been demonstrated that the skills required to administer such feeding is well within the scope of most staff working in main stream and additional needs schools in the community (Ref 1).

Enteral tube feeding can be administered via different types of tubes but usually a nasogastric tube or gastrostomy feeding tube is used.

Recently experiences with the placement and use of gastrostomy tube feeding have received much attention (Ref 2). Research has found that almost all parents report a significant improvement in their child/young person’s health and growth as a result of tube feeding and serious complications are rare (Ref 3&4). This method is attractive for a number of reasons. Gastrostomy tube feeding provides easy access to the gastrointestinal tract and so primary care givers, relatives and school staff can all, with appropriate training, use it to provide adequate nutrition.
Objectives of the Policy

The aim of this policy is to offer guidance on best practice to all professionals especially those in the community who provide enteral tube feeding.

It provides guidance from the Best Practice Statement on caring for children and young people in the community receiving enteral tube feeding (Ref 5) and incorporates advice on current local practice.

This policy refers to children and young people from birth until transition to adult services.

The following guidelines have been produced by the enteral feeding focus group comprising:

- Integrated Community Children’s Nursing Team
- Consultant Paediatrician

Indications for Enteral Feeding

Under nutrition associated with or due to any of the following may require tube feeding :-

1. Poor weight gain
2. Inability to swallow
3. Reflux / Vomiting
4. Distress during feeding
5. Prolonged feeding times
6. Aspiration/inhalation of food/drink
7. Neurological dysfunction
8. Special diets

This list is not all inclusive and there may be other reasons for which enteral tube feeding is recommended.
Types of Feeding Tubes

Nasogastric feeding tube

Nasogastric tubes are fine bore tubes with a small internal diameter and are commonly used for short term feeding. These tubes are available in two main types:

Short-term tubes

These tubes are made of polyvinylchloride (PVC) and can remain in place for between 3-10 days, dependant on manufacturer’s guidelines. These tubes are single use and should the tube become dislodged it should be replaced with a new tube.

Long-term tubes

These tubes are made of polyurethane and have a guide-wire to aid the passing of the tube. Once the tube has been passed, the guide-wire is removed and should be kept in a safe place as it will be required should the tube become dislodged. This tube can normally remain in situ for approximately 6 – 8 weeks dependent on manufacturer’s guidance. Within this time, the tube can be cleaned and repassed. Cleaning of the tube should also be in accordance with manufacturer’s guidance and local policy.

PEG (percutaneous endoscopic gastrostomy)

A PEG tube is inserted during a surgical procedure. The tube is passed over the throat and down into the stomach using an endoscope. The tube is then brought out through a tract between the stomach and abdominal wall which has been surgically created. There is a small disc at one end of the tube which secures the tube inside the stomach. An external fixator device, a clamp and a feeding connector are then fitted to the external part of the tube. These tubes generally last around 18 months dependent on manufacturer’s instructions.
Balloon inflated gastrostomy

There are two types of balloon device:

A balloon gastrostomy tube

This tube is held in place in the stomach by a balloon filled with water.

A button or low profile device

This is a small device which is held in place in the stomach by a balloon filled with water. It requires an extension set for the administration of medications or feeds. Nothing should be inserted directly into the button device, except the appropriate extension set, as it may damage the button.

Both devices are held in place in the stomach using a small balloon filled with water. The water in the balloon is changed on a weekly basis. These devices require to be replaced every 3-6 months depending on manufacturer’s guidance and individual patient.

Both of these devices can be replaced without a surgical procedure, by simply removing the water from the balloon, removing the tube/button then replacing it with a new tube/button and inflating the balloon with cooled boiled water.

Tube/button changes should only be carried out by someone who has been fully trained, and is competent in this procedure.

Jejunal tubes

Sometimes there is a requirement to deliver feeds directly into the small intestine (jejunum).

There are three main types of jejunal tube:

Nasojejunal tube

This is a longer length nasogastric tube, which is passed via the nose and stomach into the jejunum. It is passed in x-ray under fluoroscopic guidance.

Gastrojejunostomy

This tube is held in place in the stomach by a balloon filled with water. There is an extension to the tube which is sited in the jejunum.

PEG-J

This is a PEG (percutaneous endoscopic gastrostomy) tube with a jejunal extension. It is passed endoscopically as with a normal PEG tube however it has an extension which is sited into the jejunum.
Methods of Feeding

Gastrostomy and nasogastric feeds can be given in the form of bolus, continuous feeding or a combination of both. The method chosen will be the one that best meets the needs of the child/young person.

Gravity bolus feeding

This is normally a pre-determined volume of feed given via an open syringe. The feed should take around 15-30 minutes, depending on the volume being given and the individual child/young person.

Pump bolus feeding

This is also a pre-determined volume of feed given over a short period of time but at a slow and steady rate via a feeding pump. These are often given over a period of 1-2 hours.

Continuous pump feeding

This is where a feed is administered at a slow and steady rate over a long period of time via a feeding pump.

Jejunal feeding is always administered by continuous pump feeding over several hours.
Care and Care Planning

Daily Care for Gastrostomy Tubes

The goal of maintenance of skin care around the gastrostomy site is the prevention of infection, excoriation and breakdown. This is best achieved by keeping the area clean and dry. (Ref 6)

For the first 10 days post gastrostomy insertion:

Parents/carers will have been advised by the hospital how to care for the stoma and tube following insertion.

Ongoing care for PEG tube:

1. Clean site with cool boiled water and gently pat dry each day.
2. Rotate tube 360 degrees on a daily basis
3. Inspect the skin for signs of redness, swelling, irritation, skin breakdown and leakage. (See Appendix 2)
4. Once a week loosen the external fixator device, as advised by the manufacturer’s guidelines, and push tube in slightly & rotate, this also allows the skin around the stoma site to be cleaned thoroughly.
5. Pull the tube gently back to the original position and retighten the external fixator so that it lies approximately 2mm from the skin surface to prevent friction and over granulation.

Ongoing care for Balloon Inflated Gastrostomy Tube/button:

1. Clean site with cool boiled water, and gently pat dry each day.
2. Rotate tube 360 degrees on a daily basis.
3. Inspect the skin for signs of redness, swelling, irritation, skin breakdown and leakage. (See Appendix I)
4. Parents/carers are asked to change the water in the balloon on a weekly basis following training from appropriate person.
5. Gastrostomy tube should be changed every 3 – 6 months, according to manufacturer’s instructions.
6. Extension set should be renewed every 2 weeks.
Procedural Guideline

Positioning During Feeding

1. Where possible the child should be positioned with their head above the level of their stomach, preferably sitting or supported at an angle of approximately 30 degrees. This position should be maintained for approximately 30mins following completion of feed.

2. If the child shows any signs of shortness of breath (more then usual), sudden pallor, vomiting or coughing stop the feed immediately.

Bolus Feeding

1. Prepare feed and equipment in a clean area.

2. Check feed (including feed type and expiry date; if the feed is curdled do not use).

3. Wash hands before and after the procedure.

4. Explain to the child that they are going to have their feed.

5. Ensure the child is positioned correctly for feeding.

6. Flush the feeding tube with at least 10mls of cool boiled water before and after the administration of feed or medication (bottled water is not recommended).

7. Attach syringe without the plunger to the feeding tube.

8. Slowly pour the amount of feed required into the syringe.

9. If the feed is running too quickly or slowly alter the height of the syringe slightly, a feed should take between 15 – 30 minutes.

10. Flush the feeding tube with at least 10mls of cool boiled water.

11. When feed is finished, remove the syringe.
Pump Feeding

1. Check pump is at correct height based on manufacturer’s guidelines.
2. Check feed type and expiry date.
3. Wash hands before and after the procedure.
4. Prepare feed and equipment in a clean area.
5. Explain to the child that they are going to have their feed.
6. Ensure the child is positioned correctly for feeding.
7. Flush the feeding tube with at least 10mls of cool boiled water.
8. Ensure clamp is released (if applicable).
9. Set up feed, ensuring that air is expelled from the giving set and programme feeding pump as per manufacturer’s instructions. Ensure date and time is marked on bottle when commencing feed.
10. Where necessary decant the required volume of sterile feeds (i.e. pre packed feeds) at the beginning of a pump feed and do not top up feed containers once feeding is in progress.
11. When the feed is completed flush the feeding tube, replace the end cap.

Giving Medication via Gastrostomy Tube

Discussion should take place with a pharmacist concerning medication requirements for any child/young person who will have to receive medication via a nasogastric/gastrostomy tube.

Liquid medications should be used wherever possible. If medication is only available in tablet form, then it should be checked with a pharmacist that it is suitable to be crushed and administered via a nasogastric/gastrostomy tube. (Ref 7)

Tubes should be flushed with an appropriate amount of cool boiled water before medications, between each medication and after completion of medications.
Other Problems

1. Parents/carers should be aware of the need to report problems of vomiting, diarrhoea, constipation, abdominal cramps, nausea or dehydration, weight loss or rapid weight gain; these factors may indicate a need to alter the child’s feeding regime or diet (Ref 8).

2. Should thickeners be added to a feed, then it may be necessary, depending on tube size to deliver the feed slowly by slowly plunging the feed.

3. If any fresh or old blood (may look like ground coffee) is evident in gastric contents from tube, advise parents and seek medical advice.
Infection Control

Hand Hygiene

- It is not possible to set out absolute rules for when and how handwashing should be carried out.
- The requirement for handwashing must be assessed in each individual circumstance related to the activity.
- The need to wear disposable gloves must also be considered on an individual basis.
- Wearing disposable gloves, however, does not remove the need for handwashing.
- Follow principles of good hand hygiene before, during and after procedure.

HANDWASHING CHECKLIST

- Remove wrist watches and jewellery (wedding rings excepted)
- Remove long sleeved clothing or roll up sleeves
- Keep fingernails short and clean and do not wear artificial nails or nail polish
- Use warm running water
- Wet hands then apply liquid soap enough to produce a good lather
- Rub soap over all surfaces of hands (see handwashing technique)
- Rinse hands and wrists thoroughly
- Dry hands and wrists thoroughly using paper towel
- Use paper towel to turn off taps to prevent recontamination
- Dispose of paper towel and avoid recontamination

HANDWASHING TECHNIQUE (see Appendix 3)

- Hands should be wet before applying soap
- Wash palm to palm
- Right hand over left hand and vice versa
- Interlace fingers of right hand over left and vice versa
- Backs of fingers to opposing palms with fingers interlocked
- Rotational rubbing forwards and backwards with clasped fingers of right hand in left palm and vice versa
- Rotational rubbing of right thumb clasped in left palm and vice versa
- Grab left wrist with right hand and work cleanser into the skin
- Rub hands and wrist for 15 seconds
- Rinse and dry thoroughly
Food Hygiene

- Avoid touching any internal part of the feed container and giving set, such as the spike with your hands (non-touch technique)

- Pre-packed liquid feeds are sterile until opened so they can be used for up to 24 hours, if good hand hygiene is employed. Pour any unused feed down the sink after the container has been opened for 24 hours

- Powdered feeds and feeds that have extra ingredients added should not be used for more than 4 hours in hospital

- Feed containers should not be topped up with sterile feed once feeding has started. Instead the total volume should be decanted at the start of any 24 hour period of feeding

- Any unused feed should be discarded after the above time periods

- Rotate stock so that it does not go out of date

- Store equipment and powdered feed in a dry place as per manufacturer’s instructions

- Avoid stacking feed next to radiators or in direct sunlight

- Avoid storing feeds or equipment in garden sheds or garages during the winter when there is a risk of supplies freezing

- Discard feed that is out of date by pouring it down the sink

- Opened packages of feed can be kept covered in the fridge for 24 hours
Acknowledgements

Dr Lila Agrawal, Consultant Paediatrician and Margaret Johnston, Team Leader, Integrated Paediatric Community Nursing Service would like to take this opportunity to express our appreciation to

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The members of the Enteral Feeding Group would like to acknowledge the encouragement and support we have all received from Dr Deirdre McCormick, Service Development Manager, Children’s Service, NHS Lanarkshire
References

1 Royal College of Nursing,


Appendix 1

Competency Based Teaching Package

- Nasogastric bolus feeding
- Nasogastric pump feeding
- Gastrostomy bolus feeding
- Gastrostomy pump feeding
- Passing a nasogastric tube
- Replacement of a balloon gastrostomy device
FLOW CHART FOR GASTROSTOMY CARE

Review gastrostomy site

Skin pink and healthy
No action required

Leakage from around the tube or button
Note colour of leakage, amount and whether redness, pain, swelling or smell present and contact school nurse/community children’s nurse for advice

If leakage is of milk feed, stop feed and contact School nurse/community children’s nurse or contact parent

Red or excoriated skin.
Redness is bright and tracking away from site
Seek medical advice

Evidence of overgranulation e.g. swelling/redness/bleeding, small ‘bubble’ of skin immediately around the tube site

Contact school nurse or community children’s nurse for advice

If skin red/excoriated, inform parent, apply Vaseline/barrier as instructed.

Appendix 2

NHS Lanarkshire
How to Hand Wash - step by step images

1. Wet hands with water
2. Apply enough soap to cover all hand surfaces
3. Rub hands palm to palm
4. Right palm over the back of the other hand with interlaced fingers and vice versa
5. Palm to palm with fingers interlaced
6. Backs of fingers to opposing palms with fingers interlocked
7. Rotational rubbing of left thumb clasped in right palm and vice versa
8. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa
9. Rinse hands with water
10. Dry thoroughly with towel
11. Use elbow to turn off tap
12. Steps 2 - 8 should take at least 15 seconds

...and your hands are safe

Adapted from the World Health Organisation

Germs. Wash your hands of them.
Appendix 4

Contact Information

We recognise the emotional impact this issue has on all involved with the child and in particular the family members closest to them.

If you have any questions in relation to this policy please do not hesitate to contact the Integrated Community Children’s Nursing Team in NHS Lanarkshire.

Margaret Johnston
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Carolyn Baxter
Community Children’s Nurse
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School Nurse contact telephone numbers

<table>
<thead>
<tr>
<th>School</th>
<th>Phone</th>
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</thead>
<tbody>
<tr>
<td>Glencryan School</td>
<td>01236 724125</td>
</tr>
<tr>
<td>Redburn School</td>
<td>01236 736904</td>
</tr>
<tr>
<td>Firpark School</td>
<td>01698 251313</td>
</tr>
<tr>
<td>Bothwell Park School</td>
<td>01698 230700</td>
</tr>
<tr>
<td>Clyde View School</td>
<td>01698 264843</td>
</tr>
<tr>
<td>Mavisbank School</td>
<td>01236 755498</td>
</tr>
<tr>
<td>Greenburn School</td>
<td>01355 237278</td>
</tr>
<tr>
<td>Sanderson High School</td>
<td>01355 588625</td>
</tr>
<tr>
<td>Victoria Park School</td>
<td>01555 750591</td>
</tr>
<tr>
<td>Drumpark School</td>
<td>01236 423955</td>
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</tbody>
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         ML1 5NR

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