



DIETETICS

Enteral Nutrition Support – The Basics

By Dietitian, Alice Meroni

What is Enteral Nutrition Support?

Nutrition and hydration are essential to life. When an Aged Care resident is not safe to eat and drink or when oral intake is no longer sufficient to meet their nutrition and fluid requirements, they may need enteral nutrition support (tube feeding).

In tube feeding, a nutritionally complete 'formula' (liquid food) is provided to the resident directly into the stomach or small intestine via a narrow tube. An Accredited Practising Dietitian (APD) is responsible for undertaking a thorough assessment of residents commencing and undergoing enteral nutrition support.

The dietitian will recommend the kind, daily volume and administration frequency of formula required to meet the resident's nutrition and hydration requirements, taking into consideration the resident's quality of life.

What are the different types of Feeding Tubes?

There are different types of tubes used for enteral nutrition support. The choice of the tube will depend on various factors including the length of time tube feeding is required for, the resident's condition and any limitations to access, such as obstructions and traumas.



The most common feeding tubes include:

- **Naso-gastric tube** – this is a soft flexible tube which goes into the nose, through the back of the throat and into the stomach. It is used for short-term feeding periods (usually no longer than 6 weeks)
- **Naso-jejunal tube** – this is similar to the nasogastric tube but slightly longer to be able to reach the small intestine
- **Percutaneous Endoscopic Gastrostomy (PEG) tube** – this is a short tube which goes directly into the stomach through the abdomen. This type of tube is placed using an endoscopic technique and is utilised for longer-term feeding periods. PEG tubes are the most commonly seen in Aged Care.
- **Percutaneous Endoscopic Jejunostomy (PEJ) tube** – this is a short tube which goes directly into the small intestine, bypassing the stomach when the stomach cannot be used for feeding. Like the PEG tube, it needs an endoscopic technique to be placed and is utilised for longer-term feeding periods.



How is the feeding formula administered?

Feeding formulas usually come in ready-to-hang bags or in ready-to-use cans or bottles. For good hygiene practices, it is critical to store them in a cool environment and to regularly check their use by date.

Feeding formulas can be delivered using one of the following administration methods:

- **Electronic feeding pump** – the formula is precisely delivered at an even hourly rate
- **Gravity drip feeding** – the formula is delivered by gravity at a set number of drops of formula per minute. This method is not very precise and requires to be checked regularly
- **Bolus feeding syringe** – the formula is administered by a large syringe (usually 60ml volume). Smaller syringes are not indicated as they may split the feeding tube by creating greater pressure.



What are the different regimens for tube feeding?

Feeding formulas can be administered by continuous, intermittent or bolus 'regimen' (systematic plan).

- **Continuous regimen** – small amounts of formula are given continuously over a 24-hour period via gravity drip or a feeding pump. The resident must be positioned upright during the night & closely monitored
- **Intermittent (or cyclic) regimen** – tube feeding is stopped for 4–16 hours either at night or through the day, which means that, to meet the resident's nutrition requirements, the volume of feed provided per hour during the feeding period will be higher compared to that of a continuous regimen
- **Bolus regimen** – a 'bolus' (prescribed volume of formula) is provided to the resident at defined intervals (e.g. 250ml, 6 times per day = 1500ml per day). Aspiration, which can be recognised by frequent coughing or spluttering during the feeding period, is more likely to occur in bolus feeding due to the larger volume of formula delivered at one time. Chilled formula can cause cramping and intolerance. For these reasons, when bolus feeding, it is important that the formula is delivered at room temperature. Water flushes should also be completed before and after each bolus feed to prevent blockages in the tube and provide further hydration to the resident.

What can go wrong with a feeding tube?

Serious complications with tube feeding are rare. However, residents may experience some problems with the tube such as tube blockages and infections at the tube site. Additionally, residents may become intolerant to the feeding formula.

To avoid these issues, it is crucial to take good care of the feeding tube and equipment, clean around the area of the skin where the tube enters the body and regularly monitor signs of intolerance, including nausea, vomiting and diarrhoea. Please refer to the table 'Trouble-Shooting Guide for Tube Feeding' below for a list of potential tube feeding problems and suggested recommendations on how to overcome them.



Monitoring

The nutritional and hydration needs and disease state of residents undergoing tube feeding may vary over time. Hence, it is essential for care staff to regularly monitor residents' weight, ability to swallow (if they are still receiving some food and fluids by mouth) and any signs of intolerance to the feeding formula (e.g. nausea, vomiting and diarrhoea).

Residents commencing tube feeding should be weighed weekly until their weight becomes stable. Any weight loss of more than 1kg week may indicate that the resident is not receiving sufficient energy from the formula or may be dehydrated. An APD is required to determine any changes in feeding plan and a Speech Pathologist should assess a resident's risk of aspiration before re-introducing any oral food or oral fluids.



Trouble-shooting Guide for Tube Feeding

What is the problem?	How can I fix the problem?
Nausea and/or vomiting	<ul style="list-style-type: none"> Review the formula feeding rate and regimen (consult a dietitian) If it is a bolus feed, provide the formula more slowly Ensure the formula is at room temperature before feeding Consider and discuss with a doctor the need for anti-emetic medications Ensure the resident is positioned at an angle of at least 30° when feeding and ½ hour before and after feeding If the problem persists, cease formula and discuss with a doctor
Diarrhoea	<ul style="list-style-type: none"> Ask a doctor to review the resident's medications which may contribute to aggravate the diarrhoea (e.g. Antibiotics) If it is a bolus feed, provide the formula more slowly to allow more time for absorption Consider to change feeding regimen to continuous (consult a dietitian)
Constipation	<ul style="list-style-type: none"> Consider to use a fibre-containing formula (consult a dietitian) Increase the water flushes. Ensure to spread the additional water evenly over the total number of feeds. DO NOT dilute the formula Consider and discuss with a doctor the need for aperients/laxatives/enemas Ask a doctor to review the medications which may contribute to aggravate constipation Increase physical activity (if appropriate for resident)
Aspiration	<ul style="list-style-type: none"> Ensure the resident is positioned at an angle of at least 30° when feeding and ½ hour before and after feeding Consider to change feeding regimen to continuous and/or to provide a more concentrated formula (consult a dietitian)
Hyperglycaemia	<ul style="list-style-type: none"> Discuss with a doctor the need for oral hypoglycaemic agents and/or insulin A dietitian will need to review the resident's carbohydrate load, feeding rate and feeding regimen
Dehydration	<ul style="list-style-type: none"> Provide additional 500-1000mls of water per day. Ensure to spread them evenly through flushes (e.g. 6 x 150mls per day)
Blocked feeding tube	<ul style="list-style-type: none"> Flush the tube with warm water before and after the feed and medication(s) Flush tube regularly to prevent blockages Consider to remove and replace feeding tube Ensure medications are adequately crushed and dissolved in warm water

How can a Dietitian help?

A Dietitian can help with the management of nutrition support through providing advice regarding enteral feeding. They can also assist in suggesting modifications to decrease any side effects.

It is important to remember that achieving nutritional adequacy is essential for the health of the Aged Care resident who is receiving enteral feeding.



Need help with nutrition support through enteral feeding?

This article was written by Dietitian, Alice Meroni.

Please call or email **OSCAR** Care Group Dietitians via our contact details below.

References

Central Coast Local Health District. Best Practice Food and Nutrition Manual For Aged Care

Dietitians Australia (DA). Enteral Nutrition Manual for Adults in Health Care Facilities

Christiane Druml et al. ESPEN Guideline on Ethical Aspects of Artificial Nutrition and Hydration

Promoting Excellence in Nutrition Support (PENG). Enteral Tube Feeding: Your Questions Answered

