American Gastroenterological Association Medical Position Statement: Guidelines for the Use of Enteral Nutrition

This document presents the official recommendations of the American Gastroenterological Association (AGA) on the use of enteral nutrition. It was approved by the AGA Patient Care Committee on September 17, 1994, and by the AGA Governing Board on November 11, 1994.

The need to avoid prolonged starvation in patients is well recognized. More recently, it has been realized that without intraluminal fuels, intestinal integrity may deteriorate and allow translocation of gut bacteria. One means to combat nutrient deprivation and simultaneously to keep the local defense barrier of the intestine intact is tube feeding, i.e., enteral nutrition. This technique has been practiced in varying forms for hundreds of years. Today, technical innovations have made it a more acceptable procedure to patients and a less costly alternative to parenteral nutrition. It is important for physicians to understand the indications for enteral nutrition, its contraindications, its risks, sites for nutrient delivery, and alternative tube placement techniques.

This document provides gastroenterologists with recommendations for providing safe and effective enteral nutrition to adult patients. It is based on the American Gastroenterological Association Technical Review on Tube Feeding for Enteral Nutrition, which should be consulted for additional information.

**Indications for Tube Feeding**

Tube feeding should be considered for patients who cannot or will not eat, for patients who have a functional gut, and for whom a safe method of access is possible.

1. In most patients, nutrition support should be initiated after 1–2 weeks without nutrient intake. Enteral feeding is preferable to parenteral therapy provided there are no contraindications, access can be attained safely, and oral intake is not possible. In some patients, combinations of enteral and parenteral nutrition may be necessary to meet their nutritional needs.
2. Mechanical obstruction is the only absolute contraindication to enteral feeding.

**Methods of Feeding**

Alternative methods of delivering tube feedings exist, and the physician must be familiar with the advantages and limitations relative to a specific patient.

1. For the short-term (<30 days), nasogastric or nasoenteric tubes are preferred over gastrostomy or jejunostomy tubes.
2. Tubes placed past the third portion of the duodenum, and especially past the ligament of Treitz, are associated with a decreased risk of aspiration.
3. Various methods of tube placement may be used at the bedside. Endoscopically or fluoroscopically guided tube placement should be reserved for patients in whom bedside techniques have been unsuccessful. Prokinetic drugs given before placement may be beneficial in positioning smaller nasoenteric tubes (8F and 10F) beyond the pylorus.
4. Intermittent gravity feeding is sufficient for most patients with nasogastric or gastrostomy tubes. Pump-controlled infusions are recommended for jejunal feedings and for gastrostomy feedings given by continuous infusion to decrease gastroesophageal reflux.
5. With nasogastric tube feeding, a single elevated residual volume is an indication to recheck the residual volume in 1 hour; however, the feeding should not automatically be stopped.
6. Jejunal access is appropriate in patients with a history of tube feeding–related aspiration pneumonia or reflux esophagitis.

**Percutaneous Gastrostomy Placement**

Whereas placement of gastrostomy and jejunostomy tubes has traditionally been the purview of surgeons, several techniques have been developed that have led to these procedures being performed by gastroenterologists or radiologists. Each has its own risks and benefits and, sometimes, unique complications.

1. Gastrostomy tubes are justified for patients who need
tube feeding for more than 30 days. The patient’s underlying disease and available expertise must be considered when deciding between types of placement (operative or percutaneous endoscopic or radiological gastrostomy). The physician must be familiar with alternative placement methods and tube types, particularly when treating patients with esophageal disease that may complicate standard insertion techniques.

2. For gastric access using conscious sedation, percutaneous endoscopic gastrostomy is usually preferable to operative gastrostomy. The latter requires more recovery time and is more expensive. Radiological gastrostomy placement, depending on anatomic indications, may obviate the need for endoscopic procedures.

3. Careful attention to technique during placement and monitoring of the patient after placement are essential to minimize complications.

Complications of Tube Feeding

Tube feeding is a relatively safe procedure whose complications usually can be avoided or managed. In addition to the complications of percutaneous tube placement (e.g., infection), patients may experience aspiration, diarrhea, alterations in drug absorption and metabolism, and various metabolic disturbances.

1. To limit the risk of aspiration with gastric feeding, the following precautions should be taken: raise the head of the patient’s bed 30°–45° during feeding and for 1 hour after, use intermittent or continuous feeding regimens rather than the rapid bolus method, gastric residuals should be checked regularly, and all patients should be watched for signs of feeding intolerance.

2. Jejunal access is helpful in patients with recurrent tube feeding aspiration (not oropharyngeal) or in critically ill patients at risk for gastric motility dysfunction (e.g., patients with head trauma).

3. To limit the risk of aspiration with small bowel feeding, the feeding port of the nasoenteric tube or percutaneous endoscopic jejunalostomy should be close to or beyond the ligament of Treitz. Severe vomiting or coughing may displace some nonsurgical tubes, and radiographs may be needed to verify the tube position.

4. Diarrhea is a common, albeit poorly defined complication of enteral feeding that has many potential causes. These include medications such as antibiotics or sorbitol-containing products, altered bacterial flora, formula composition (including osmolality), infusion rate, hypoalbuminemia, bacterial contamination of the enteral fluid, and physiological disturbances related to the patient’s overall physical condition. However, studies of the relationship of each of these factors to diarrhea and tube feeding are inconclusive. Therefore, it isn’t possible to provide any universal recommendations for preventing or eliminating this complication. By considering all potential etiologies, it may be possible to take steps that will reduce diarrhea in selected situations.

5. Careful attention must be paid to fluid and electrolyte management to minimize any metabolic complications.

Specialized Enteral Formulations

Although one or two enteral formulations can meet most patients’ needs, specialty products may be useful in certain disease states. These include blenderized, lactose-containing and lactose-free, fiber-containing, elemental, and modular products and specialized feedings such as pulmonary formulas. Although some formulations have clear clinical indications (e.g., lactose-free mixtures for patients with lactase deficiency), the advantages of others are less clear.

1. Isotonic polymeric formulations can meet most patients’ nutritional needs.

2. The use of elemental formulations should be reserved for patients with severe small bowel absorptive dysfunction.

3. Specialty formulations generally are more expensive than standard formulas and have a limited clinical role; more data are needed to justify their practicality and effectiveness.

Nutrition Support Teams

Multidisciplinary nutrition support teams are a valuable adjunct in the management of tube-fed patients. The combined expertise of such a team likely will result in better care, decreased complications, and increased cost-effectiveness of enteral nutrition.

References


Address requests for reprints to: AGA National Office, 7910 Woodmont Avenue, Suite 914, Bethesda, Maryland 20814. Fax: (301) 654-5920.