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Introduction

Welcome to Fresenius Kabi's Quarterly Abstract Bulletin for enteral nutrition. We have reviewed the following journals over the past three months, and selected any nutrition support related articles:

- Age and Ageing
- American Journal of Clinical Nutrition
- Archives of diseases in Childhood
- BMJ
- British Journal of Community Nursing
- British Journal of Nursing
- Clinical Nutrition
- Complete Nutrition
- Critical Care Medicine
- Current Opinion in Clinical Nutrition and Metabolic Care
- Dysphagia
- European Journal of Clinical Nutrition
- Gastrointestinal Nursing
- GUT
- International Journal of Palliative Nursing
- Intensive Care Medicine
- Intensive and Critical Care Nursing
- Journal of Community Nursing
- Journal of Human Nutrition and Dietetics
- Journal of Parenteral and Enteral Nutrition
- Journal of Woundcare
- Lancet
- Nutrition
- Nutrition in Clinical Practice
- Nursing in Practice
- Nursing and Residential Care
- Nursing Older People
- Nurse Prescribing
- Nursing Standard
- Nursing Times
- Paediatric Nursing

We do recommend that the original article is used for the full details and results.

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This publication and previous editions are also available online at www.fresenius-kabi.co.uk under the nutrition service section.
Comparison of resting energy expenditure prediction methods with measured resting energy expenditure in obese, hospitalized adults

B A Anderegg, C Worrall, E Barbour, K N Simpson and M DeLegge

Abstract
Background: Several methods are available to estimate caloric needs in hospitalized, obese patients who require specialized nutrition support; however, it is unclear which of these strategies most accurately approximates the caloric needs of this patient population. The purpose of this study was to determine which strategy most accurately predicts resting energy expenditure in this subset of patients.

Methods: Patients assessed at high nutrition risk who required specialized nutrition support and met inclusion and exclusion criteria were enrolled in this observational study. Adult patients were included if they were admitted to a medical or surgical service with a body mass index $\geq$ 30 kg/m$^2$. Criteria excluding patient enrollment were pregnancy and intolerance or contraindication to indirect calorimetry procedures. Investigators calculated estimations of resting energy expenditure for each patient using variations on the following equations: Harris-Benedict, Mifflin-St. Jeor, Ireton-Jones, 21 kcal/kg body weight, and 25 kcal/kg body weight. For nonventilated patients, the MedGem handheld indirect calorimeter was used. For ventilated patients, the metabolic cart was used. The primary endpoint was to identify which estimation strategy calculated energy expenditures to within 10% of measured energy expenditures.

Results: The Harris-Benedict equation, using adjusted body weight with a stress factor, most frequently estimated resting energy expenditure at 50% of patients.

Conclusion: Measured energy expenditure with indirect calorimetry should be employed when developing nutrition support regimens in obese, hospitalized patients, as estimation strategies are inconsistent and lead to inaccurate predictions of energy expenditure in this patient population.

Enteral Nutrition Formulas: Which formula is right for your adult patient?

Y Chen and S J Peterson

Abstract
In the last few decades, there has been tremendous advancement in the area of enteral nutrition formulas. Enteral nutrition makes it possible to provide important substrates for those who cannot or will not meet daily requirements via oral intake but who have an intact digestive system. Numerous enteral nutrition formulas are currently available, with a large portion of them targeting specific disease conditions, thus making it a daunting task at times for a clinician to sort through all the possibilities and decide on the most appropriate formula. This review provides a close examination of various enteral formula categories and presents proposed mechanisms of specialized ingredients, followed by a thorough evidence-based analysis of existing literature before making recommendations for the various enteral formula categories.
Enteral Nutrition: A hard look at some soft evidence

R L Koretz


Abstract
Those who read the medical literature should understand the principles of evidence-based medicine. Even randomized trials can contain design or interpretative flaws that allow bias to produce, or exaggerate the size of, beneficial effects. Such problems beset the literature of enteral nutrition (EN). Investigators who have compared EN with parenteral nutrition (PN) have alleged that EN produces fewer adverse events, but such studies do not assess the absolute value of either therapy, and data exist suggesting that PN causes net harm. Trials comparing EN with no nutrition therapy have not yielded convincing evidence of efficacy because the study designs have failed to use methods to prevent bias from interfering with the observations. This same problem exists with trials that have assessed volitional feeding programs (eg, oral supplements). Thus, although systematic reviews have alleged that EN benefits patients undergoing surgery, patients in the critical care unit, patients with liver disease, and patients with pancreatitis, the presence of bias limits any positive conclusions. As a manifestation of this issue, when the various trials are separated into studies with high and low risks of bias, those with low risks have not shown any benefit. EN has been accepted and implemented despite the lack of convincing scientific support of efficacy.

Health-related quality of life in patients with home nutritional support

C Wanden-Berghe, A Nolasco, J Sanz-Valero, M Planas and C Cuerda


Abstract
Background: Home nutritional support (HNS) aims to improve or maintain the patient’s quality of life. Given the high social cost of such treatment, however, it is important to investigate whether the perceived quality of life of patients receiving HNS does in fact reflect these objectives. The present study aimed to evaluate the health-related quality of life (HRQoL) of patients who receive HNS. Methods: A multicentre, cross-sectional study of 267 patients was carried out. HRQoL was evaluated using the EuroQol-5-Dimensions (EQ-5D) questionnaire. The Visual Analogue Scale (VAS) was used to complement the EQ-5D, aiming to provide an overall estimation of patient quality of life. Results: The EQ-5D questionnaire showed that 25% of the subjects valued their HRQoL at between -0.08 and 0.15, 50% at between 0.16 and 0.69 and 25% at between 0.70 and 1. Results from the VAS showed that 75% of patients claimed to have a HRQoL > 40. The median for the VAS was 50. Pathologies were oncological (44.0%), neurological (36.6%) and others (19.3%). The results obtained demonstrate that neurological patients placed a lower value on their HRQoL compared to those of other groups (P < 0.001). In addition, women rated their quality of life lower than men in all pathologies (P = 0.006). Conclusions: Perceived HRQoL varied depending on pathology and sex. It was difficult to draw conclusions concerning the impact of HNS because of a lack of baseline data and relevant validated measurement tools. The present study highlights the need for more research into the relationship between HNS and HRQoL.
Usefulness of the daily defined dose method to estimate trends in the consumption, costs and prevalence of the use of home enteral nutrition

G Olveira, M J Tapia, N Colomo, A Munoz, M Gonzalo and F C-Soriguer

Abstract

Background & aims: To analyse the trends in consumption and costs of home enteral nutrition (HEN) products in Andalusia (Spain) and estimate the prevalence of HEN from 2000 to 2007. Methods: Using the defined daily dose (DDD) method, we assigned a DDD to each type of diet, grouped as whole diets, supplements, modules and thickeners. The number of cases/106 inhabitants/day (CID) was calculated. Results: The number of persons receiving HEN rose notably, from 66.4 CID in 2000 to 1315.4 in 2007. The number of persons with home enteral tube feeding has remained stable since 2003, at around 220 CID. HEN with oral nutritional supplements (ONS) increased exponentially, with a prevalence of 910 CID in 2007. The prevalence of HEN in 2007 was similar to that of other European countries. The costs associated with HEN rose from 1.3 million euros in 2000 to over 37 million euros in 2007, due to the progressive increase in the number of persons being prescribed HEN, especially ONS, and the incorporation of more expensive organ-specific formulas. Conclusions: DDD is useful to indirectly estimate the prevalence of HEN and evaluate long-term trends in the prescription and costs of various HEN products.

Preoperative protein and energy intake and postoperative complications in well-nourished, non-hospitalized elderly cardiac surgery patients

M W van Venrooij, P A M van Leeuwen, R de Vos, M M M J Borgmeijer-Hoelen and B A J M de Mol

Abstract

Background & aims: Little is known about the impact of preoperative protein or energy intake in relation to the occurrence of postoperative complications in patients who are not undernourished but cannot keep up their daily protein or energy requirements prior to cardiac surgery. Therefore, a prospective study on intake in preoperatively well-nourished, non-hospitalized cardiac surgery patients (≥65 y) was carried out. Methods: Between December 2004 and November 2005 preoperative protein and energy intake and postoperative outcome data were collected from 100 consecutive patients undergoing cardiac surgery. Results: Comparison of low protein intake (≤0.98g/kg/d) with high protein intake (>0.98g/kg/d) showed a low protein intake did not result in more complications or prolonged length of stay. In low-risk operation patients in particular, a high-energy intake (>22kcal/kg/d) resulted in more postoperative complications than a low energy intake (≤22 kcal/kg/d) (33.3% and 13.2%, respectively; (OR 5.0 95% CI [1.5–16.9])). A preoperative protein intake ≤0.80g/kg/d was seen in 22.6%, and an energy intake ≤25kcal/kg/d in 72.2% of the patients. Conclusions: The outcome of this study suggests that detecting and correcting a preoperative low protein or energy intake is of no clinical relevance in the well-nourished, non-hospitalized elderly cardiac surgery patients. Caloric overfeeding may be associated with an increased complication rate.
Systematic review of postdischarge oral nutritional supplementation in patients undergoing GI surgery

P G Lidder, S Lewis, M Duxbury and S Thomas

Abstract

Objective: To determine whether nutritional supplementation following hospital discharge in patients who undergo gastrointestinal (GI) surgery is beneficial in specific outcome measures. Methods: A systematic review was conducted of randomized controlled trials comparing nutritional supplements vs a “standard care” regimen given to patients following discharge from hospital after GI surgery. Outcome measures were weight change, quality of life, clinical complications, fatigue, and hand grip strength. Results: Four studies were identified. Postdischarge oral nutritional supplements were found to be safe and increased energy intake, protein intake, and weight in patients after discharge from hospital. The greatest gains in weight were seen in malnourished patients. Little evidence was found that nutritional supplements reduce morbidity or improve quality of life, fatigue, or hand-grip strength. Conclusions: In patients who undergo GI surgery and receive nutritional supplements after discharge from hospital, little evidence of clinical benefit was found, principally through lack of robust data. All the studies were under-powered or not specifically designed to show benefit during this period. It is recommended that nutritional supplements be offered to malnourished patients or those at high risk of poor dietary intake at discharge from hospital.

Percutaneous endoscopic gastrostomy feeding in the adult patient

C Best
British Journal of Nursing (2009) 18(12): 724 - 729

Abstract

Percutaneous endoscopic gastrostomy (PEG) is a procedure in which a feeding tube is passed through the abdominal wall directly into the stomach under endoscopic guidance, enabling nutrients, medication and fluids to be delivered directly into the stomach. PEG feeding is the most common form of enteral feeding in people requiring artificial nutritional support for longer than 4-6 weeks. However, the procedure is not without risk, and although most patients experience few problems with their PEG tube, complications do occur. It is important that nurses are able to recognize the risks and problems associated with PEG feeding, and know what actions can be taken to minimize the risks and how to treat the complications when they occur. This article details insertion of the PEG tube and its subsequent care, highlighting possible early and late complications associated with PEG feeding and the steps that can be taken to minimize their occurrence.
Understanding why patients die after gastrostomy tube insertion: A retrospective analysis of mortality

G Longcroft-Wheaton, P Marden, B Colleypriest, D Gavin, G Taylor and M Farrant


Abstract

Objectives: To understand the causes of mortality of inpatients receiving a percutaneous endoscopic gastrostomy (PEG) tube compared with a survival curve predicted from a model proposed by Levine et al (2007). Design: A retrospective study of patients receiving a PEG over an 18-month period. Setting: Royal United Hospital Bath, a district general hospital in the southwest of England. Patients: Fifty-five cases, with 44 found eligible for inclusion. Interventions: A Levine score was calculated for this cohort. A survival curve after PEG was produced and compared with the Kaplan-Meier curve predicted by the Levine model. Main Outcome Measures: Mortality over a period of 1 year. Results: The mortality at 1, 3, 6, and 12 months was 16%, 20%, 25%, and 28%, respectively. This matched the predicted death rate from the Levine model closely (Pearson's rank correlation coefficient = 0.96). Conclusions: The authors found that the mortality of patients receiving a PEG followed that predicted for a similar cohort of patients without PEGs in the Levine model. This suggests that the deaths observed were due to underlying comorbidities, can provide a baseline for mortality targets for PEG services, and is useful patient information regarding the risks and benefits of the procedure. The findings demonstrate that PEG does no harm and supports the accepted opinion that nutrition support is associated with a better outcome. Furthermore, they show that most deaths occur within the first month of placement and would support arguments for delaying placement until outcome from the underlying condition is more predictable.
The role of pretreatment Percutaneous Endoscopic Gastrostomy in facilitating therapy of head and neck cancer and optimizing the body mass index of the obese patient


Abstract

Background: Chemoradiation of head and neck cancer induces severe dysphagia and malnutrition, which may lead to interruptions in therapy and reduction in its efficacy. Percutaneous endoscopic gastrostomy (PEG) feedings bypass the oropharynx, allowing administration of nutrients and medications into the stomach, thus preventing malnutrition, dehydration, and treatment interruption. Methods: Medical records of 161 patients treated for head and neck cancer who had PEGs placed prior to chemoradiation and 2 PEGs placed during chemoradiation were reviewed from the date of PEG placement throughout treatment and utilization. The objective was to determine the contribution of pretreatment PEGs to the therapy of patients with head and neck cancer and to optimize their body mass index. Results: Severe chemoradiation-induced dysphagia developed in 160 patients (98%), necessitating PEG utilization for feeding and hydration. PEGs were used for a mean 251 ± 317 days. Significant complications related to PEG placement and utilization were infrequent. PEG feeding allowed chemoradiation to continue without interruption in 93% of patients. Individualized feeding regimens optimized body mass index in obese and overweight patients with a decline from 33.0 ± 3.4 to 28.4 ± 4.8 kg/m² (P < .001) and 27.3 ± 1.5 to 24.6 ± 2.7 kg/m² (P < .001), respectively. Radiation-induced strictures developed in 12% of patients, requiring endoscopic dilatation. Conclusions: Enteral feeding through prechemoradiation-placed PEGs is an effective and safe method for nutrition and hydration of patients with head and neck cancer undergoing chemoradiation. PEGs allowed chemoradiation to proceed with minimal interruptions despite severe dysphagia, which excluded oral intake for prolonged periods.

The physiologic response and associated clinical benefits from provision of early enteral nutrition

S A McClave and D K Heyland


Abstract

Provision of enteral nutrition (EN) to critically ill patients early upon admission to the intensive care unit exerts a beneficial physiologic effect that downregulates systemic immune responses, reduces oxidative stress, and improves patient outcome. Adding specific pharmaconutrient agents to EN in certain patient populations has a synergistic effect, magnifying the degree of this favorable physiologic response. In contrast, failure to provide enteral nutrients creates a physiologic profile that exacerbates oxidative stress and increases the systemic inflammatory response syndrome. Unfortunately, parenteral nutrition (PN) in the form and manner currently provided in North America does not appear to mimic the same physiologic response seen with EN. In the future, use of alternative fuel sources, steps to promote better tolerance of EN, and innovative strategies for delivery of both EN and PN may serve to further enhance the physiologic effect of nutrition therapy and to achieve even greater improvement in patient outcome.
Malnutrition and wasting in renal disease

M Muscaritoli, A Molfino, M R Bollea and F R Fanelli

Abstract

Purpose of review: Malnutrition and accelerated catabolism frequently complicate chronic kidney disease and end-stage renal disease. This review provides an update on the recent advances in the understanding of the mechanisms underlying protein-energy wasting, both in experimental and human models, and on the currently available therapeutic approaches. Recent findings: Increased levels of circulating cytokines, metabolic acidosis, oxidative stress and insulin resistance all appear to be variably implicated in muscle protein breakdown during end-stage renal disease and dialysis. The individual role of each component in the pathogenesis of chronic kidney disease-related wasting is still unclear, but recent clinical data show a positive relationship between inflammation and muscle protein catabolism as a major contributing factor. Summary: The basis for appropriate therapeutic approaches to protein-energy wasting in chronic kidney disease and end-stage renal disease relies entirely on the understanding of its pathophysiology. Our knowledge of the pathogenesis of malnutrition and hypercatabolism in renal disease is still limited and mostly based on experimental data, but the currently available evidence suggests that multimodal preventive and therapeutic strategies should be entertained.

Nutrition therapy for acute renal failure: a new approach based on ‘risk, injury, failure, loss, and end-stage kidney’ classification (RIFLE)

E Valencia, A Marin and G Hardy
Current Opinion in Clinical Nutrition and Metabolic Care (2009) 12 (3): 241-244

Abstract

Purpose of review: Critically ill patients are hypermetabolic and have increased nutrient requirements. Although it is assumed that nutritional support is beneficial in this group of patients there are no well designed clinical trials to test this hypothesis. The rationale for nutritional support, therefore, is based upon clinical judgement. Although it is not known how long a critically ill patient can tolerate what is effectively starvation, the loss of lean tissue which occurs in catabolic patients (20-40g nitrogen/day) suggests that depletion to a critical level may occur after 14 days. Recent findings: Acute kidney injury (AKI) is a syndrome commonly seen in the ICU. It is usually multifactorial rather than the result of a primary renal disease. The difficulty of adequately defining the syndrome has been addressed by the acute dialysis quality initiative, leading to the risk, injury, failure, loss, and end-stage kidney (RIFLE) criteria. Summary: Broad consensus in the diagnosis and management of AKI in critical illness is achievable. Standardization of nutritional support by RIFLE classification is urgently needed.
Approach to enteral feeding in the PICU

N M Mehta

Abstract
The pediatric intensive care unit (PICU) environment poses unique challenges to achieving enteral nutrition (EN) goals for the critically ill child. Nutrition support in the PICU is often in conflict with the complexity of care provided to acutely ill children. A significant proportion of eligible patients do not receive optimal enteral nutrition for avoidable reasons. Early institution of EN is recommended and the gastric route is preferred because of ease of administration and reduced costs compared with the transpyloric route. In patients with poor gastric emptying or in cases where a trial of gastric feeding has failed, transpyloric or postpyloric feeding may be used to decrease the risk of aspiration and to improve enteral feed tolerance. However, there is no evidence of benefit for routine use of small bowel feeding in all patients admitted to the PICU. The placement of blind nasoenteric feeding tubes can be technically challenging, is not without complications, and requires local expertise and experience for successful placement and maintenance. A protocolized approach to selecting the optimal route and advancing enteral feedings may optimize EN delivery. Institutional practice guidelines based on consensus, available evidence, and national guidelines may decrease time to reaching caloric goal, improve protein balance, and potentially affect clinical outcomes. The rationale and challenges to the delivery and maintenance of optimal EN, and strategies to achieve optimal EN during critical illness, are discussed.

Enteral nutrition support of the preterm infant in the neonatal intensive care unit

S Groh-Wargo and A Sapsford

Abstract
The delivery of a preterm baby is a nutrition emergency. Growth and the accumulation of nutrient reserves are higher during the third trimester of pregnancy than at any other time during the life cycle. Enteral nutrition is the preferred mode of support and human milk the preferred source of enteral nutrition. Human milk is highly digestible and contains many anti-infective components, which confer a lower risk of infection. The mother of a preterm infant requires education, equipment, and encouragement to successfully initiate and sustain lactation. Human milk requires nutrient fortification to meet the protein and mineral needs of the rapidly growing preterm infant. Commercial human milk fortifiers are available. If human milk is unavailable or the volume is insufficient, preterm formulas are available. Preterm formulas have different sources of macronutrients and greater density of all nutrients than formulas intended for term newborns. Preterm infants benefit from early enteral feedings with slow but steady increases in feedings to achieve full support. Infants born at <35 weeks gestational age are supported with tube feedings. A transition to feedings at the breast or to bottle feedings is gradually made as the baby matures. Nutrient recommendations specific to the preterm infant are available. Special products and feeding strategies exist to respond to common medical conditions that can complicate nutrition management. Optimal nutrition care of the preterm infant offers the opportunity to improve outcomes for children.
Cumulative energy imbalance in the pediatric intensive care unit: Role of targeted indirect calorimetry

N M Mehta, L J Bechard, K Leavitt and C Duggan

Abstract
Introduction: Failure to accurately estimate energy requirements may result in underfeeding or overfeeding. In this study, a dedicated multidisciplinary nutrition team measured energy expenditure in critically ill children. Methods: Steady-state indirect calorimetry was used to obtain measured resting energy expenditure, which was compared with equation-estimated energy expenditure and the total energy intake for each subject. The children’s metabolic status was examined in relation to standard clinical characteristics. Results: Sixteen measurements were performed in 14 patients admitted to the multidisciplinary pediatric intensive care unit over a period of 12 months. Mean age of subjects in this cohort was 11.2 years (range 1.6 months to 32 years) and included 7 males and 7 postoperative patients. Altered metabolism was detected in 13 of 14 subjects and in 15 of 16 (94%) measurements. There was no correlation between the metabolic status of subjects and their clinical characteristics. Average daily energy balance was 200 kcal/d (range –518 to +859 kcal/d). Agreement between measured resting energy expenditure and equation-estimated energy expenditure was poor, with mean bias of 72.3 ± 446 kcal/d (limits of agreement -801.9 to + 946.5 kcal/d). Conclusions: A disparity was observed between equation-estimated energy expenditure, measured resting energy expenditure, and total energy intake, with a high incidence of underfeeding or overfeeding. A wide range of metabolic alterations were recorded, which could not be accurately predicted using standard clinical characteristics. Targeted indirect calorimetry on high-risk patients selected by a dedicated nutrition team may prevent cumulative excesses and deficits in energy balance.

Does early enteral feeding of very low birth weight infants increase the risk of necrotizing enterocolitis?

F Ç Celik, C Aygun and E Çetinoglu

Abstract
Background/objective: In this retrospective study, we intended to test whether early enteral feeding (EEF) of very low birth weight (VLBW) preterm babies increases the risk of necrotizing enterocolitis (NEC) or not. Subjects and Methods: Overall, 297 VLBW preterm babies admitted to the neonatal intensive care unit (NICU) between April 2003 and April 2006 were included. The study consisted of two periods: the first period was between April 2003 and October 2004, when babies were not fed enteraly until they were extubated (167 preterm VLBWs). The second period was between November 2004 and April 2006, when babies were fed even when they were intubated, starting preferably on the first day of life (130 preterm VLBWs). Criteria for withholding enteral feeding in both periods were hypotension necessitating vasopressor agent use, abdominal distention, abdominal tenderness and suspected or proven NEC. Possible risk factors for NEC were also recorded. Results: The overall incidence of NEC in VLBW preterm babies was 6.7% and did not differ between the two study periods: 7.2% in the late and 6.2% in the EEF regimens. On logistic regression analysis, the most important risk factors associated with NEC were sepsis (P<0.001) and blood culture positivity (P<0.001). The average daily weight gain was significantly higher in the early fed babies (P=0.011). Conclusions: The EEF of VLBW preterm babies does not increase the risk of NEC. Increased daily weight gain is an important reason to feed these babies earlier.
Reduced incidence of aspiration with spoon-thick consistency in stroke patients

P B Diniz, V Vanin, R Xavier and M A Parente

Abstract

**Background:** Dysphagia and aspiration occur frequently in stroke patients. The aim of the present study was to evaluate 2 consistencies (liquid and spoon-thick/pudding-like) regarding the risk of aspiration and to determine the usefulness of a bedside speech therapy assessment to predict risk of aspiration. **Methods:** This randomized, crossover clinical trial was carried out April to August 2001 at a university hospital. Sixty-one inpatients diagnosed with acute phase or prior stroke received liquid and spoon-thick (pudding-like) feeds during nasoendoscopy and bedside clinical assessment. **Results:** Aspiration occurred in only 3 patients with the spoon-thick consistency vs 21 with the liquid consistency (relative risk = 0.13; 95% confidence interval = 0.04-0.39; P < .001). The bedside assessment had a sensitivity of 81% and a specificity of 70.8% to detect risk of aspiration. **Conclusions:** The use of a spoon-thick consistency reduced the risk of aspiration compared with the liquid consistency. Clinical assessment was useful to predict aspiration, although the probability of dysphagia in the presence of a negative clinical assessment (29%) is a reason for concern.

Senescent swallowing: Impact, strategies, and interventions

D M Ney, J M Weiss, A J H Kind and J Robbins

Abstract

The risk for disordered oropharyngeal swallowing (dysphagia) increases with age. Loss of swallowing function can have devastating health implications, including dehydration, malnutrition, pneumonia, and reduced quality of life. Age-related changes increase risk for dysphagia. First, natural, healthy aging takes its toll on head and neck anatomy and physiologic and neural mechanisms underpinning swallowing function. This progression of change contributes to alterations in the swallowing in healthy older adults and is termed presbyphagia, naturally diminishing functional reserve. Second, disease prevalence increases with age, and dysphagia is a comorbidity of many age-related diseases and/or their treatments. Sensory changes, medication, sarcopenia, and age-related diseases are discussed herein. Recent findings that health complications are associated with dysphagia are presented. Nutrient requirements, fluid intake, and nutrition assessment for older adults are reviewed relative to dysphagia. Dysphagia screening and the pros and cons of tube feeding as a solution are discussed. Optimal intervention strategies for elders with dysphagia ranging from compensatory interventions to more rigorous exercise approaches are presented. Compelling evidence of improved functional swallowing and eating outcomes resulting from active rehabilitation focusing on increasing strength of head and neck musculature is provided. In summary, although oropharyngeal dysphagia may be life threatening, so are some of the traditional alternatives, particularly for frail, elderly patients. Although the state of the evidence calls for more research, this review indicates that the behavioral, dietary, and environmental modifications emerging in this past decade are compassionate, promising, and, in many cases, preferred alternatives to the always present option of tube feeding.
Reference List

  *This article discusses the role, mechanism, and the available updated evidence supporting use of this treatment to induce and maintain remission of Crohn’s disease.*

  *This article discusses the indications, patient preparation, insertion technique and various methods of confirming the tube’s position.*

  *This article outlines the risks involved with the use of nasogastric tubes, with advice on how to use them safely and avoiding and dealing with complications.*

  *This article discusses the evidence and best practice for mouth care, looking at its effects on health and nutrition, and the risk factors associated with poor oral hygiene.*

  *This article considers the role of nutrition, and the challenges of meeting the nutritional requirements of older people in long-term health-care settings.*

  *This special report details the new ASPEN provision and assessment of nutrition support therapy in the adult critically ill patient practice recommendations.*


  *This article discusses early enteral nutrition in high risk patients.*
Notes