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Systemic review of clinicians' knowledge, attitudes, and beliefs about nutrition in intensive care

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Patients admitted for critical care are at high risk of malnutrition due to rapid muscle wasting. This can result in impaired recovery and reduced quality of life. Providing adequate nutrition is crucial to mitigate these issues and help improve recovery. This systemic scoping review of the literature was conducted to gain knowledge about the attitudes and beliefs of clinicians regarding nutrition support for critically ill patients. Of the 18 studies included, participants were mainly nurses (78%) and intensive care physicians (39%).

Key findings:

- Nutrition was seen as a priority, but ranking below life-saving interventions and the monitoring and management of renal and gastrointestinal issues.
- Differences in perceived clinician responsibilities exist. Nurses were largely seen as responsible for nutrition delivery and monitoring. Discrepancies existed between dietitians' and physicians' responsibility for nutrition prescription and assessment.
- Other barriers to adequate nutrition delivery included delay of EN commencement due to fasting protocols for surgery or a procedure, inadequate resources or lack of a nutrition team, absence of nutrition protocols, and GI complications including diarrhea, nausea, vomiting, and abdominal pain.

Suggestions for improvement:

- Implementation of nutrition protocols such as the those provided by ASPEN and ESPEN.
- Enhanced clinical nutrition education for all members of the multidisciplinary team.
- Clarification of roles and responsibilities pertaining to nutrition care.

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Summary prepared by Nestlé Health Science

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Low risk for microbial contamination of syringe and tube feeding bag surfaces after multiple reuses with home blenderized tube feeding

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Authors: Debra Milton, Brie Murphy, Teresa W. Johnson, Holly Carter, Amy Y. Spurlock, Jenna Hussey, Kelly Johnson

It is estimated over 400,000 people in the U.S. are receiving home enteral nutrition (HEN), with 50-60% using partial or full blenderized tube feeding (BTF). Guidelines for the reuse of enteral tube feeding (ETF) equipment are limited to manufacturer recommendations. Anecdotally, many patients reuse tube feeding bags and syringes beyond these recommendations. This study was undertaken to determine microbial contamination after 15 uses of in vitro BTF in feeding bags and syringes prepared in a home environment.

Procedure:

The authors of this study prepared a BTF recipe in their homes using expected safe food handling methods:

- Cleaning of disassembled blender parts, all utensils, and food contact surfaces with clean soapy water.
- Wiping down counters and soaking of blender parts and utensils in diluted bleach solution for >1 minute, then air drying.
- Filling of a Bolee® bag and 60 mL ENFit® syringe with BTF.
- To simulate home feeding, the bag and syringe filled with BTF were allowed to sit at room temperature for 20 minutes before discarding the contents and cleaning them.
- The remaining BTF was refrigerated and used for two additional “feedings” within 1 day.
- This process was completed for 5 days simulating three feedings each day, using a fresh BTF recipe each day.

At the end of 5 days, the Bolee® bags and syringes were swabbed and tested for microbial contamination. The European Commission recommendation for an acceptable limit on bacterial count is <10 CFU/cm². Microbial counts for all syringes were <1.4 CFU/cm². Six of the bags were <2.5 CFU/cm²; 1 bag was below and 1 bag slightly above 10 CFU/cm².

Conclusion:

When using US Food Code guidelines for safe food handling and the manufacturer’s cleaning guidelines between uses, reusable Bolee® gravity bags and syringes may be used multiple times for BTF with a low risk of microbial contamination.

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Practical approach to clinical controversies in glycemic control for hospitalized surgical patients

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Glycemic management of critically ill and noncritically ill surgical patients is crucial to avoid complications such as infections, delayed wound healing, sepsis, pneumonia, and mortality. Guideline recommendations vary with different organizations, but all recommend the utilization of insulin therapy to achieve optimal glycemic targets while avoiding hypoglycemia.

Summary of guideline recommendations on glycemic management:

Guideline	Treatment Threshold	Glucose goal	Hypoglycemia threshold	Notes
ADA	>180 mg/dL	140-180 mg/dL	<70 mg/dl	110-140 mg/dL may be more appropriate for postsurgical pts or after cardiac surgery; 180-250 mg/dL may be used in areas with limited monitoring frequency and nursing supervision; >250 mg/dL may be appropriate for terminally ill patients with short lifespan expected
AACE/ADA consensus statement	≥180 mg/dL	Critically ill: 140-180 mg/dL Non-critically ill: <140 mg/dL premeal and <180 mg/dL random	<70 mg/dL	
Society of Thoracic Surgeons	>180 mg/dL	<180 mg/dL or <150 mg/dL if ICU stay > 72 hours	None stated	
SCCM	>150 mg/dL	<150 mg/dL; absolute goal <180 mg/dL		With neurologic injuries, begin therapy >150 mg/dL to maintain <180 mg/dL; limit time <100 mg/dL with brain injury; after cardiac surgery use goal of <150 mg/dL; for critically ill trauma patients begin therapy when >150 mg/dL
ASPEN	>180 mg/dL	140-180 mg/dL		
Surviving Sepsis Campaign	≥180 mg/dL	144-180 mg/dL		

Adapted from Table 1

Critically ill surgical patients are primarily monitored using IV insulin infusion protocols whereas non-critically ill patients are managed with subcutaneous insulin using basal, bolus and sliding scale insulin. Also see Table 2 in the article regarding glycemic targets and management for surgical subpopulations such as: pancreatic, cardiac, neurosurgery and thermal burn patients having reconstructive surgery.

Glycemic management should focus on the average daily glucose concentrations but also on maintaining blood glucose within the target range as much as possible to reduce glycemic variability. As patients move from critical care to non-critical units and then to outpatient care, adequate monitoring and follow-up are essential for glycemic management.

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