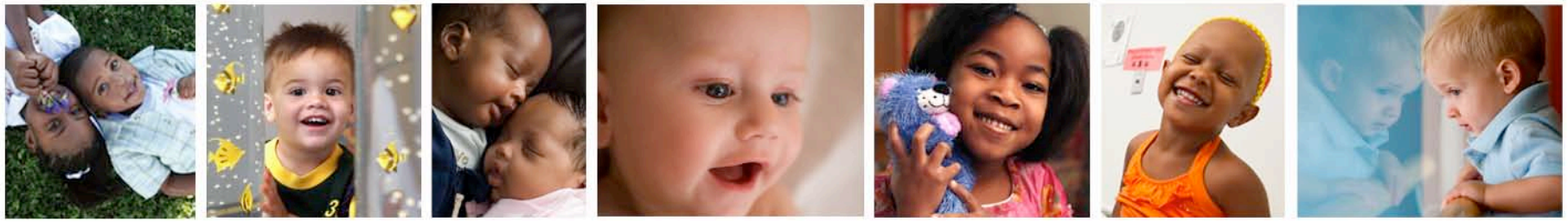

Nuevas Guías de Apoyo Nutricional para el Paciente Pediátrico Críticamente Enfermo

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Nutrition Support Guidelines for the Critically Ill Child

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Nutrition Support Guidelines for the Critically Ill Child

- A total of 2,032 citations were scanned for relevance related to pediatric nutritional support
- Data for critically ill pediatric patients (>1 mo and < 18 yr) with a length of stay greater than 2 or 3 days
- Children admitted to a pediatric intensive care unit (PICU), with a medical, surgical, and cardiac diagnosis.

Nutrition Support Guidelines for the Critically Ill Child

- After careful review,16 randomized controlled trials and 37 cohort studies appeared to answer 1 of the 8 pre-identified question groups for this guideline

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- The GRADE criteria (Grading of Recommendations, Assessment, Development, and Evaluation) was used to adjust the evidence grade based on assessment of the quality of study design and execution.

Nutrition Support Guidelines for the Critically Ill Child

Table 2. Language for Guidelines Recommendations.

Quality of Evidence	Weighing Risks vs Benefits	GRADE Recommendations	Clinical Guideline Statement
High to very low	Net benefits outweigh harms	Strong	We recommend.
High to very low	Trade-offs for patient are important	Weak	We suggest.
High to very low	Uncertain trade-offs	Further research needed	We cannot make a recommendation at this time.

GRADE, Grading of Recommendations, Assessment, Development, and Evaluation.

Nutrition Support Guidelines for the Critically Ill Child

	Quality of the evidence	GRADE recommendation
What is the impact of nutritional status on outcomes in the critically ill child?	Very low	Strong
What are the best practices to screen and identify patients with malnutrition or those at risk of nutrition deterioration in the PICU?	Very low	Strong

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- Observational studies found association of malnutrition including obesity with bad outcomes
- Recommendation: Patients in the PICU should have detailed nutritional evaluation by 48hrs
- Observational studies recommend anthropometric evaluation of children on admission to PICU
- Implement validated screening methods to identify patients at risk of malnutrition
- High-risk patients are likely to benefit from early nutritional assessment and interventions

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	Quality of the evidence	GRADE recommendation
What is the recommended energy requirement for critically ill children?	Low	Weak
How should energy requirement be determined in the absence of IC?	Very low	Weak
What is the target energy intake in critically ill children?	Low	Weak

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- Observational studies suggest that MEE by IC to determine energy needs and guide prescription
- If IC is not available using equations: Schofield, WHO, predictive equations are not accurate.
- The Harris-Benedict equation and the RDA should not be used to determine energy needs
- Observational studies suggest achieving delivery of at least 2/3 of the prescription by day 7

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	Quality of the evidence	GRADE recommendation
What is the minimum recommended protein requirement for critically ill children?	Moderate	Strong
What is the optimal protein delivery strategy in the PICU?	Moderate	Weak
How should protein delivery goals be determined in critically ill children?	Moderate	Strong

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- Based on RCTs and observational studies: we recommend a minimum protein intake of 1.5 g/kg/d
- In Infants and younger children the optimal protein intake may be much higher
- One observational study found and association of higher protein intake with lower 60-d mortality
- Protein provision should be early. RDA is not recommended to guide prescription in PICU

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	Quality of the evidence	GRADE recommendation
Is EN feasible in critically ill children?	Low	Strong
What is the benefit of EN in this group?	Low	Weak

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- Observational studies recommend EN as the preferred mode of nutrient delivery in PICU
- Observational studies support the feasibility of EN and can be safely delivered to children with medical and surgical diagnosis, including those receiving vasoactive medications.
- Common barriers to EN in PICU include: 1) delayed initiation, 2) interruptions, 3) Long fastings

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- Observational studies suggest that interruptions to EN should be minimized
- Some amount of EN is beneficial for gastrointestinal mucosal integrity and motility
- Large cohort studies found an association of early EN (24-48 hr) and improved clinical outcomes

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	Quality of the evidence	GRADE recommendation
What is the optimum method for advancing EN in the PICU population?	Low	Weak
What is the role of a nutrition support team or a dedicated dietitian in optimizing nutrition therapy?	Low	Weak

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- Observational studies suggest the use of a stepwise algorithmic approach to advance EN
- The stepwise approach must include bedside support to guide the process of EN delivery
- Observational studies suggest that a nutrition support team, including a dedicated dietitian be
- available on the PICU team, to facilitate timely nutritional assessment and optimal EN delivery

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	Quality of the evidence	GRADE recommendation
What is the best site for EN delivery: gastric or small bowel??	Low	Weak
When should EN be initiated?	Low	Weak

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- Existing data are insufficient to make universal recommendations regarding the optimal EN route
- Observational studies suggest the gastric route be the preferred site for EN
- The post-pyloric or small intestinal site may be used in patients intolerant to gastric feeding
- Existing data are insufficient to make recommendations regarding the use of continuous vs intermittent gastric feeding

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	Quality of the evidence	GRADE recommendation
What is the indication for and optimal timing of PN in critically ill children?	Moderate	Strong
What is the role of PN as a supplement to inadequate EN?	Low	Weak

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- Based on a single RCT, we do not recommend the initiation of PN within 24 hr of PICU admission
- In children tolerating EN, we suggest stepwise advancement of nutrient delivery by enteral route
- Based on current evidence, the role of supplemental PN to reach a caloric goal, is not know

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- The time when PN should be initiated to supplement EN is also unknown
- Based on a single RCT, supplemental PN should be delayed until 1 week after PICU admission in patients with normal baseline nutritional status and low risk of nutritional deterioration
- PN supplementation: children unable to receive EN, or malnourished pts., or unable to advance EN

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	Quality of the evidence	GRADE recommendation
What is the role of immunonutrition in critically ill children?	Moderate	Strong

- Based on evidence, we do not recommend the use of immunonutrition in critically ill children

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- Conclusions
  - The guidelines reiterate the importance of nutrition assessment—particularly, the detection of malnourished patients who are most vulnerable and therefore potentially may benefit from timely nutrition intervention.
  - There is a need for renewed focus on accurate estimation of energy needs and attention to cumulative energy imbalance. IC must be used to guide energy prescriptions, where feasible, and cautious use of estimating equations and increased surveillance for unintended caloric underfeeding and overfeeding are recommended

Nutrition Support Guidelines for the Critically Ill Child

- Conclusions
  - Optimal protein dose and its correlation with clinical outcomes is an area of great interest. The optimal route and timing of nutrient delivery are areas of intense debate and investigations.
  - EN remains the preferred route for nutrient delivery. Several strategies to optimize EN during critical illness have emerged.
  - The role of supplemental PN has been highlighted, and a delayed approach appears to be beneficial.
  - Immunonutrition cannot be currently recommended.

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