

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)
- [VLBW: Guideline Introduction \(2020\)](#)

# Preterm Infant (VLBW) Enteral Nutrition

## VLBW: Guideline Overview (2020)

### Guideline Overview

#### Guideline Title

Very Low Birth Weight Preterm Infant Enteral Nutrition (2020) Evidence-Based Nutrition Practice Guideline

#### Guideline Narrative Overview

#### Introduction

Each year an estimated 15 million infants are born preterm worldwide. Preterm birth is associated with increased risks for health, growth, and development complications. Adequate nutrition has the potential to minimize risk and perhaps improve health outcomes. The National Institutes for Health (NIH) and the Academy of Nutrition and Dietetics (Academy) initiated a two-phase project, known as the "Pre-B Project," to address the lack of evidence-based nutrition practice guidelines based on systematic reviews for preterm infants. The first phase was coordinated by the NIH and involved a collaborative effort to identify research needs and potential topics for systematic reviews. The Academy coordinated the second phase with a multi-disciplinary work group that conducted a scoping review, systematic reviews, and developed evidence-based practice recommendations.

The preterm scoping review identified that the National Institute for Health and Care Excellence (NICE) was in the process of developing Neonatal Parenteral Nutrition guidelines for several patient populations which included preterm infants, therefore, the Pre-B preterm workgroup decided to focus the Pre-B preterm infant systematic reviews on enteral nutrition. After thorough review of articles identified in the scoping review, and deliberation amongst the preterm workgroup, additional criteria was established. Due to heterogeneity in neonatal practice amongst nations, the preterm workgroup decided to limit studies to those conducted in developed nations. Furthermore, the workgroup decided to focus the guideline on the most vulnerable preterm infants, those born less than or equal to 1,500 grams [which are referred to as very low birthweight (VLBW) infants].

The purpose of this guideline is to provide recommendations based on the Pre-B systematic reviews for VLBW preterm infants. The preterm workgroup prioritized the most vulnerable population, and topics that have been found to be confusing or controversial due to discrepancies found in practice and in research.

#### VLBW Preterm Infants

VLBW preterm infants are the smallest hospitalized patients. According to the American Academy of Pediatrics, these infants grow very rapidly in their first weeks and months of life and have the highest human nutrient requirements to support this rapid growth rates. These tiny infants have very small nutrient stores, so nutrition is needed in the short term to support ongoing brain and somatic growth. Being born prematurely, these infants have immature organ systems which create challenges to provide nutrition that meets their nutritional needs. At the same time, these infants present challenges to the neonatal health care team to support their respiratory, and cardiovascular systems, and therefore nutrition may at times not be seen as the highest priority.

#### Recent Enteral Guidelines

The VLBW Preterm Infant Enteral Nutrition Practice Guideline is intended to inform the practice of registered dietitian nutritionists (RDNs) and physicians who provide individualized nutrition care for VLBW preterm infants. These guidelines also identify existing research gaps in the primary literature that require attention to improve nutrition practice.

Ziegler et al 1976, published body composition of the reference fetus that established estimates of the nutrient accretion the fetus achieves in utero, including estimates of daily nutrient increments for weight, protein, fat, calcium, phosphorus, magnesium, sodium, potassium and chloride.

The fetus has remained the reference for nutrient accretion and growth over the years (Fenton, 1990). This reference fetus data provided the basis for these infants' estimated high protein and mineral needs. However, to be sure of the best nutrition care, randomized trials are needed to test the safety and adequacy of the fetal nutrient accretion estimates.

#### Target Audience

This guideline is intended for use by health care practitioners, working with VLBW preterm infants in Neonatal Intensive Care Units, is intended to address gaps in current evidence-based practice guidelines and to address key questions that have arisen in preterm infant nutrition practice and research including, but not limited to, human milk, fortifiers, formula and macronutrient requirements.

#### Guideline Development

This guideline is based on systematic reviews conducted by the project workgroup, consisting of RDNs, neonatologists, pharmacist, and physicians, as well as systematic review and guideline methodologists and evidence analysts. A patient advocate reviewed content and provided feedback. Recommendations were written based on an evidence-to-decision framework that incorporated evidence as well as clinical experience and the values of families and individuals who provide care for VLBW preterm infants. When there was no evidence available for specific research questions, recommendations were based on expert clinical experience and other supporting evidence.

To view specific methods for the development of this guideline, please see the respective section.

Topics addressed in this Evidence-based Nutrition Practice Guideline include:

- Mother's milk and donor milk
- Human milk fortifiers
- Formula
- Enteral
  - Protein amount and type
  - Fat amount and type
  - Amount of energy

## Contributors

Please expand the Guideline and Systematic Review Project Team and Disclosures section from the project landing page for a listing of individuals who contributed to the development of the project, disclosures and funding information.

## Revision

Academy guidelines are revisited every five years. A scoping review will be conducted to examine the need for new and revised recommendations based on the available science. The process includes:

- Literature searches and evidence scoping to identify new research published since the previous searches were completed. Updated inclusion/ and exclusion criteria and search terms may be warranted.
- Council on Research review to determine if the update will include modification to all, some or no recommendations, compared to the earlier version(s) of the guideline, or development of new recommendations.
- Creation of a table comparing the new guideline and the older version of the guideline. The document will indicate which recommendations remained unchanged; updated; new; or not reviewed.

Using the Academy's EAL process, an unbiased and transparent systematic review will be completed and the updated guidelines published on the EAL. To learn more about the Academy's guideline development process, download Academy of Nutrition and Dietetics Methodology for Developing Evidence-Based Nutrition Practice Guidelines, *JAND* May 2017; 117(5):794-804.

## Other Guideline Overview Material

For more details on the guideline, please use the links on the left to access:

- Scope of the Guideline
- Statement of Intent
- Guideline Methodology
- Dissemination and Implementation of the Guideline
- Benefits and Risks/Harms of Implementing Recommendations

## Contraindications

Clinical judgement and individualization are crucial when providing any Medical Nutrition Therapy (MNT), and particularly for high risk VLBW preterm infants. MNT should be guided by the VLBW preterm infant's family and the multi-disciplinary health care team.

## References:

- American Academy of Pediatrics, Committee on Nutrition. Nutritional needs of low-birth-weight infants. *Pediatrics*. 1977;60(4):519-530
- Excellence NifHC. Neonatal Parenteral Nutrition. NICE. NICE Guidance Web site. <https://www.nice.org.uk/guidance/ng154/chapter/Recommendations>. Published 2020. Accessed March 31, 2020.
- Fenton TR, McMillan DD, Sauve RS. Nutrition and growth analysis of very low birth weight infants. *Pediatrics*. 1990;86(3):378-383.
- Moloney L, Rozga M, Fenton TR. Nutrition Assessment, Exposures, and Interventions for Very-Low-Birth-Weight Preterm Infants: A Scoping Review. *J Acad Nutr Diet*. 2018; 119(2): 323-339.
- Raiten DJ, Steiber AL, Hand RK. Executive summary: evaluation of the evidence to support practice guidelines for nutritional care of preterm infants-the Pre-B Project. *Am J Clin Nutr*. 2016;103(2):599S-605S.
- Raiten DJ, Steiber AL, Carlson SE, et al. Working group reports: evaluation of the evidence to support practice guidelines for nutritional care of preterm infants-the Pre-B Project. *Am J Clin Nutr*. 2016;103(2):648S-678S.
- Thureen PJ, Melara D, Fennessey PV, Hay WW, Jr. Effect of low versus high intravenous amino acid intake on very low birth weight infants in the early neonatal period. *Pediatr Res*. 2003;53(1):24-32.
- United Nations. World Economic Situation and Prospects. [https://www.un.org/en/development/desa/policy/wesp/wesp\\_current/2012country\\_class.pdf](https://www.un.org/en/development/desa/policy/wesp/wesp_current/2012country_class.pdf). Published 2019. Accessed.
- World Health Organization. Preterm birth. WHO. Newsroom Web site. <https://www.who.int/news-room/fact-sheets/detail/preterm-birth>. Published 2018. Accessed March 31, 2020.
- Ziegler EE, O'Donnell AM, Nelson SE, Fomon SJ. Body composition of the reference fetus. *Growth* 1976 Dec; 40(4): 329-41.

[Proceed to Scope of the Guideline](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)
- [VLBW: Guideline Introduction \(2020\)](#)

# Preterm Infant (VLBW) Enteral Nutrition

## VLBW: Scope of Guideline (2020)

### Guideline Scope Characteristics

#### Disease/Condition(s)

The purpose of this guideline is to provide evidence-based nutrition practice guidelines for VLBW (less than or equal to 1,500 grams at birth) preterm infants. Preterm infants are those born prior to 37 weeks gestation. Another goal of this guideline is to examine available evidence in an attempt to address controversial nutrition topics in the literature and practice.

As the science of neonatology progressed, VLBW infants of younger gestational ages were able to survive. In 1977, these infants' nutrition needs, other than calories, had not yet been defined. In the 1980s, nutrition was still being introduced gradually and cautiously to VLBW preterm infants, due to concerns about their inability to metabolize nutrients as well as immature metabolic pathways and immature abilities to suck and swallow.

A clinical trial of various parenteral protein intakes (0g to 2.9g per kg/ per day, two infants over 2.0g per kg per day), conducted by Thureen et al in 2003, seemed to be a turning point, which contributed to a change of focus to the need to provide nutrition early and adequately to preterm infants.

At the same time that knowledge and attitudes toward nutrition support is progressing, these infants continue to provide challenges to the neonatal health care team to support their respiratory, cardiovascular and other immature systems, so providing adequate nutrition continues to be a challenge. These challenges make the RDN an important health care team member, who prioritizes nutrition and advocates for optimal nutrition as a part of the infant's care with the other health care team members.

Nutrition protocols are important to facilitate adequate nutrition provision. Nutrition protocols need to be evidence informed.

For this guideline, the workgroup sought to ask nutrition intervention questions to provide evidence-based nutrition recommendations to guide nutrition care for VLBW preterm infants. Based on the results of the preterm scoping review there was gap in available evidence-based enteral nutrition recommendations for VLBW preterm infants.

The purpose of the VLBW Preterm Infant Enteral Nutrition Evidence-based Nutrition Practice Guideline is to serve as a baseline for enteral nutrition support. Due to the heterogeneity of VLBW preterm infants, their nutrition tolerance and neonatal pathologies, all nutrition support must be individualized for individual infants. This focus reinforces the need for the expertise of neonatal RDNs. These recommendations have been reviewed by the workgroup, guideline quality was assessed with the AGREE II tool, and guidelines were approved by the Academy's Council on Research.

Reference:

Thureen PJ. Measuring energy expenditure in preterm and unstable infants. *J Pediatr.* 2003;142 (4):366-367

## Guideline Category

Enteral Nutrition, Nutrition Support, VLBW Preterm Infants

## Clinical Specialty

Nutrition, Neonatology

## Intended Users

This guideline is primarily intended for health care practitioners working with VLBW preterm infants and their families in developed nations..

## Guideline Objective(s)

### Overall Objective

To provide enteral nutrition recommendations for health care practitioners working with VLBW preterm infants and their families that address the controversies and gaps in nutrition care that will promote health, growth and development; and address health consequences associated with preterm birth.

### Specific Objectives

- To provide evidence-based, specific, action statements regarding recommended enteral nutrition for VLBW preterm infants.
- To guide enteral nutrition recommendations for VLBW preterm infants that allows for patient-centered care, consideration of family preferences, and short- and long-term health, growth and development.

## Target Population

VLBW Preterm Infants

## Target Population Description

Preterm infants less than or equal to 1,500g in developed nations.

## Interventions and Practices Considered

This guideline includes enteral nutrition recommendations

[Proceed to Guideline Statement of Intent](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)
- [VLBW: Guideline Introduction \(2020\)](#)

# Preterm Infant (VLBW) Enteral Nutrition

## VLBW: Guideline Statement of Intent (2020)

### Statement of Intent (2020)

Evidence-based nutrition practice guidelines are developed to help dietetic practitioners, healthcare teams and affected individuals (patients and consumers) make shared decisions about health care choices in specific clinical circumstances. If properly developed, communicated and implemented, guidelines can improve care and health outcomes.

While they represent a statement of best practice based on the latest available evidence at the time of publishing, they are not intended to overrule professional judgment. Rather, they may be viewed as a relative constraint on individual clinician discretion in a clinical circumstance. The independent skill and judgment of the health care provider must always dictate treatment decisions. These nutrition practice guidelines are provided with the express understanding that they do not establish or specify standards of care, whether legal, medical or other.

### **The Role of Patient Preference**

This guideline recognizes the role of patient preferences and values for possible outcomes of care, when the appropriateness of a clinical intervention involves a substantial element of personal choice or values. Regarding types of evidence that are associated with particular outcomes, Shaughnessy and Slawson (1-3) describe two major classes. Patient-oriented evidence that matters (POEM) deals with outcomes of importance to patients, such as changes in morbidity, mortality or quality of life. Disease-oriented evidence (DOE) deals with surrogate endpoints, such as changes in laboratory values or other measures of response. Although the results of DOE sometimes parallel the results of POEM, they do not always correspond.

When possible, Academy recommends using POEM-type evidence rather than DOE. When DOE is the only guidance available, the guideline indicates that key clinical recommendations lack the support of outcomes evidence.

### **References**

1. Slawson DC, Shaughnessy AF. Becoming an information master: using POEMs to change practice with confidence. Patient-Oriented Evidence that Matters. J Fam Pract. 2000 Jan;49(1):63-7. Erratum in: J Fam Pract 2000 Mar;49(3):276.
2. Slawson DC, Shaughnessy AF, Ebell MH, Barry HC. Mastering medical information and the role of POEMs--Patient-Oriented Evidence that Matters. J Fam Pract. 1997 Sep;45(3):195-6.
3. Shaughnessy AF, Slawson DC. POEMs: patient-oriented evidence that matters. Ann Intern Med. 1997 Apr 15;126(8):667.

[Proceed to Guideline Identifying Information](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)
- [VLBW: Guideline Introduction \(2020\)](#)

## **Preterm Infant (VLBW) Enteral Nutrition**

### **VLBW: Guideline Identifying Information (2020)**

#### **Identifying Information and Availability**

Expand the Project Team and Disclosures tab on the project landing page for a listing of individuals who contributed to the development of this guideline and disclosures.

#### **Bibliographic Source**

Academy of Nutrition and Dietetics. Academy of Nutrition and Dietetics Very Low Birthweight Preterm Infant Enteral Nutrition (2020) Evidence-Based Nutrition Practice Guideline, Chicago (IL).

#### **Adaption**

This guideline was not adapted from another source. Development of this guideline was conducted in accordance with the Appraisal of Guidelines Research and Evaluation (AGREE II) critical appraisal instrument.

#### **Date Released**

2020

#### **Guideline Developer**

Academy of Nutrition and Dietetics

#### **Guideline Status**

This is the first publication of the VLBW Preterm Infant Enteral Nutrition (2020) Evidence-Based Nutrition Practice Guideline

#### **Guideline Availability**

The VLBW Preterm Infant Enteral Nutrition (2020) Evidence-Based Nutrition Practice Guideline in its entirety is available online on the Evidence Analysis Library website ([www.andeal.org](http://www.andeal.org)). It is a free resource for members of the Academy of Nutrition and Dietetics and subscribers. The Guideline Introduction and Executive Summary of Recommendations on the EAL is available to the general public. A manuscript is being submitted to the Journal of the Academy of Nutrition and Dietetics. Publication date to be determined.

#### **Copyright Statement**

The Academy of Nutrition and Dietetics encourages the free exchange of evidence in nutrition practice guidelines and promotes the adaption of the guidelines for local conditions. However, please note that guidelines are subject to copyright provisions. To replicate or reproduce this guideline, in part or in full, please obtain agreement from the Academy of Nutrition and Dietetics. Contact [eal@eatright.org](mailto:eal@eatright.org) for copyright permission.

When modifying the guideline for local circumstances, significant departures from these comprehensive guidelines should be fully documented and the reasons for the differences explicitly detailed.

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[Proceed to Guideline Methods](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)

# Preterm Infant (VLBW) Enteral Nutrition

## VLBW: Guideline Methods and Stakeholders (2020)

Evidence-based Nutrition Practice Guidelines (EBNPGs) and their supporting systematic reviews (SR) are developed by a multidisciplinary team, with oversight by the Academy of Nutrition and Dietetics Council on Research. The multidisciplinary team includes a volunteer expert panel, a project manager, lead analyst, medical librarian, several analysts, and Academy staff experts in systematic review methodology. The expert panel is composed of health practitioners (RDs, PharmD, and MDs), researchers, and a patient advocate with extensive experience working with the population of interest. The expert panel represents the views and concerns of the target population throughout the development of the SR and EBNPG.

### Phase I

The Preterm Guideline is a result of a two-phase multi-organizational collaborative effort started by the National Institute of Health and the Academy of Nutrition and Dietetics. The first phase sought to identify the current state of evidence, and the needs and perspectives of stakeholders. A steering committee consisting of members from organizations including but not limited to the American Academy of Pediatrics, the American Society for Nutrition, and the American Society for Parenteral and Enteral Nutrition was established. For additional information regarding Phase I please see:

- Raiten DJ, Steiber AL, Carlson SE, et al. Working group reports: evaluation of the evidence to support practice guidelines for nutritional care of preterm infants-the Pre-B Project. *Am J Clin Nutr.* 2016;103(2):648S-678S.
- Raiten DJ, Steiber AL, Hand RK. Executive summary: evaluation of the evidence to support practice guidelines for nutritional care of preterm infants-the Pre-B Project. *Am J Clin Nutr.* 2016;103(2):599S-605S.

### Phase II

The Academy of Nutrition and Dietetics led Phase II of the Pre-B process which included scoping, conducting systematic reviews, and developing recommendations.

### Expert Panel Description and Selection Process

In 2016, expert panel members were recruited from Phase I participants. Applicants were reviewed by the Academy's Evidence Based Practice Committee (now represented on the Academy's Council on Research) and six applicants were selected. A chair was appointed from this group of selected individuals. Additionally, one patient advocate was recruited from Consumers United for Evidence-based Healthcare (CUE). This organization provides expertise in recruiting and training patient advocates. The expert panel participated in each step of the systematic review and guideline development process. The patient advocate reviewed materials and provided final review of the guideline prior to publication. Academy staff and contractors supporting the workgroup included systematic review and guideline methodologists, a medical librarian, project manager, lead analysts, and trained evidence analysts. The workgroup met in a virtual workspace approximately 1-2 times per month to develop research questions, screen studies, analyze evidence, vote on, and grade conclusion statements, and develop, discuss and rate recommendations.

### Topic Prioritization

The preterm expert panel convened to review and prioritize subtopics and questions proposed from Phase I. Due to the broad scope of content from Phase I, the expert panel conducted a scoping review. For additional information please see:

- Moloney L, Rozga M, Fenton TR. Nutrition Assessment, Exposures, and Interventions for Very-Low-Birth-Weight Preterm Infants: A Scoping Review. *J Acad Nutr Diet.* 2018.

### Guideline Focus

The scoping review identified that the National Institute of Health and Care Excellence (NICE) was in the process of developing Neonatal Parenteral Nutrition guidelines for several patient populations which included preterm infants, therefore, the expert panel decided to focus systematic reviews on enteral nutrition. After thorough review of articles identified in the scoping review, and deliberation amongst the expert panel, additional criteria was established. Due to heterogeneity in neonatal practice amongst nations, the preterm workgroup decided to limit studies to those conducted in developed nations. Furthermore, the workgroup decided to focus the guideline on the most vulnerable preterm infants, those born less than or equal to 1,500 grams [which are referred to as very low birthweight (VLBW) infants].

### Overview of the Guideline Development Process

After the scoping review and prioritization of topics the expert panel followed the rigorous guideline development process:

1. Develop PICO-formatted systematic review research questions to support recommendations;
2. Develop a priori eligibility criteria for the systematic review;
3. Design search plan and register on PROSPERO database;
4. Medical Librarian conducts search of databases;
5. Titles and abstracts from database search were screened and hand searched for relevant articles; Review full-text articles for inclusion;
6. Trained evidence analysts extracted data using a standardized tool and assess quality (risk of bias) for each included article;
7. Study characteristics and results were summarized in tabular form and evidence for each outcome was synthesized qualitatively (evidence summary and conclusion statement) and in tabular form (summary of findings table) for each outcome reported in included studies. Conclusion statements were graded according to Academy and GRADE principles.
8. When evidence was available, workgroup members complete the GRADE's evidence-to-decision (EtD) framework to determine best recommendations based on evidence, clinical expertise, and patient values.

9. Recommendations were rated according to Academy principles and voted on and approved by workgroup members.
10. Evidence-based practice guideline was reviewed externally by individuals with content expertise using the AGREE II tool;
11. Responded to reviewer comments and update publication.

## Systematic Review Process

### Question Development, Literature Search and Study Selection

This guideline followed the Academy of Nutrition and Dietetics systematic review methodology.<sup>1</sup> During the initial teleconference calls, the workgroup developed a list of questions that were deemed important for clinicians and patients. The workgroup developed the a priori inclusion and exclusion criteria. The expert panel prioritized the top seven outcomes of interest: Mortality/survival; Morbidity; Growth; Anthropometrics; Development; Gastrointestinal health; Bone Mineral Content; and Protein Utilization. The PICO questions and search plan for this systematic review were registered a priori on the PROSPERO database (CRD42018086829).<sup>3</sup>

A medical librarian using PubMed, Embase, CINAHL and Cochrane Central databases to identify eligible studies published from January 1980 until the search date of November 2017. Another search was conducted using PubMed to identify eligible human milk studies in November 2018. The search was conducted to identify a range of enteral nutrition topics to inform development of an evidence-based nutrition practice guideline examining enteral feeding interventions and exposures for VLBW infants with a birthweight  $\leq 1500$ g. Relevant systematic reviews were also hand searched for eligible studies. Details regarding the number of results, includes, and excludes can be found under each research question. After the search was completed, results were uploaded onto Abstrkr.<sup>2</sup> Studies were systematically screened based additional a priori inclusion/exclusion criteria.

### Data Extraction and Study Quality Assessment

Data was extracted from the included articles using the Academy's Data Extraction Tool. Extracted data included: Authors; year of publication; study design; inclusion/exclusion criteria; intervention or exposure, sample size, outcomes, and time points of reported outcomes.

All included studies were critically appraised for risk of bias. Two independent reviewers assessed the quality of studies using the Academy's online risk of bias tool, the Quality Criteria Checklist (QCC).<sup>3</sup> The questions of the QCC were based on quality constructs and risk of bias domains identified by the Cochrane Collaboration and the Agency for Healthcare Research and Quality (AHRQ).<sup>4</sup> Questions examine selection bias, performance bias, detection bias, attrition bias, and reporting bias. Any discrepancies between the two reviewers were resolved by consensus or by a third reviewer.

### Data Synthesis and Grading the Evidence

Narrative synthesis was conducted for each outcome that had available data, meta-analysis was conducted when possible. A study characteristics table provided information regarding study characteristics, sample size, population, intervention details and quality of each included study. A conclusion statement was developed for each proposed question/outcome and graded. A Summary of Findings table was generated using GradePro and demonstrated how the strength of evidence (GRADE) was derived for each outcome.<sup>5</sup> A conclusion statement was drafted and graded using the GRADE table.

## Guideline Development

This guideline followed the Academy's Evidence Analysis Center's process for guideline development.<sup>6</sup> For each nutrition topic investigated for which evidence was available the expert panel completed GRADE's Evidence-to-Decision framework, which guides review of the balance of benefits and harms, certainty of evidence, outcome importance, resource use, equity, patient values, acceptability and feasibility based on available evidence and clinical expertise in order to develop recommendations.<sup>7</sup> Each recommendation was rated via the Academy method for rating recommendations based on strength of evidence/confidence in findings and clinical experience. The expert panel discussed the recommendations and rating until consensus was reached.

### External Peer Review Process

This guideline underwent a systematic peer review process. The AGREE II tool (Appraisal of Guidelines for Research and Evaluation) criteria were used to assess the quality of guideline reporting. Reviewer comments were collated by staff and sent to the expert panel for discussion and possible edits.

## References

1. Handu D, Moloney L, Wolfram T, Ziegler P, Acosta A, Steiber A. Academy of Nutrition and Dietetics Methodology for Conducting Systematic Reviews for the Evidence Analysis Library. *J Acad Nutr Diet*. 2016;116(2):311-318.
2. Rathbone J, Hoffmann T, Glasziou P. Faster title and abstract screening? Evaluating Abstrkr, a semi-automated online screening program for systematic reviewers. *Syst Rev*. 2015;4(80).
3. Academy of Nutrition and Dietetics Evidence Analysis Library. Evidence Analysis Manual: Steps in the Academy Evidence Analysis Process: a Systematic Review and Guideline Manual <https://www.andeal.org/evidence-analysis-manual>. Published 2016. Accessed.
4. Guyatt G, Oxman AD, Akl EA, et al. GRADE guidelines: 1. Introduction-GRADE evidence profiles and summary of findings tables. *J Clin Epidemiol*. 2011;64(4):383-394.
5. McMaster University, (developed by Evidence Prime I. GRADEpro GDT: GRADEpro Guideline Development Tool [Software]. gradepro.org. Published 2015. Accessed.
6. Papoutsakis C, Moloney L, Sinley RC, Acosta A, Handu D, Steiber AL. Academy of Nutrition and Dietetics Methodology for Developing Evidence-Based Nutrition Practice Guidelines. *J Acad Nutr Diet*. 2017;117(5):794-804.
7. Moberg J, Oxman AD, Rosenbaum S, et al. The GRADE Evidence to Decision (EtD) framework for health system and public health decisions. *Health Res Policy Syst*. 2018;16(1):45.

## More Information

For a full description of the EAL systematic review and guideline development process, see the Policy and Process tab in the main navigation bar at the top of the page.

[Proceed to Guideline Recommendations](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)

## Preterm Infant (VLBW) Enteral Nutrition

### VLBW: Benefits and Risks/Harms of Implementation (2020)

#### General Benefits and Harms

Various factors should be considered prior to implementation of these recommendations. Every recommendation includes benefits and risks/harms specific to that particular recommendation. Access the recommendations from the Guideline Recommendations and Supporting Evidence tab.

When using these recommendations, please consider the following general benefits:

- The primary goal of implementing these recommendations is improving patient outcomes while keeping in mind your patients' preferences and health status.
- Although costs of MNT sessions and reimbursement vary, MNT is essential for improved outcomes.
- MNT education can be considered cost-effective when considering the benefits of nutrition interventions on the onset and progression of comorbidities vs cost of the interventions.

When using these recommendations, please keep in mind the following:

- Patients age, socio-economic status, cultural issues, psychological and mental health status, health history and other health conditions.
- Use clinical judgement in applying these guidelines.

#### Disclaimer

Academy of Nutrition and Dietetics Evidence-based Nutrition Practice Guidelines are intended to serve as a synthesis of the best evidence available to inform registered dietitian nutritionists as they individualize nutrition care for their clients. Guidelines are provided with the express understanding that they do not establish or specify particular standards of care, whether legal, medical or other.

Evidence-based Nutrition Practice Guidelines are intended to summarize best available research as a decision tool for Academy members. No endorsement by the Academy of Nutrition and Dietetics of any brand-name product or service is intended or should be inferred from a Guideline or from any of its components (including Questions, Evidence Summary, Conclusion Statement, Conclusion Statement Grade, Recommendation or Recommendation Rating).

[Proceed to Dissemination and Implementation](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)

## Preterm Infant (VLBW) Enteral Nutrition

### VLBW: Dissemination, Implementation, and Monitoring & Evaluation (2020)

Dissemination and implementation of guidelines is very important for the Academy. Dissemination focuses on spreading the knowledge and information of these guidelines via various means. Implementation, on the other hand, involves integration of the evidence-based interventions into practice, and examines barriers and facilitators that can influence the effectiveness of these evidence-based recommendations.

The publication of this guideline is an integral aspect of the plans for disseminating the Academy of Nutrition and Dietetics VLBW Preterm Infant Enteral Nutrition Evidence-Based Nutrition Practice Guideline to all dietetics practitioners engaged in, teaching, or researching VLBW preterm infants. Additionally, there are recommended dissemination and adoption strategies for local use of this guideline.

Dissemination of the VLBW Preterm Infant guideline will be achieved by announcement at professional events, on the Academy's social media platforms, available on the Evidence Analysis Library website and published in a professional journal as well as various presentations. Some strategies include:

- National and local events: State dietetic association meetings and media coverage will help launch the guideline
- Local feedback adaptation: Presentation by members of the workgroup at peer review meetings and opportunities for CEUs for courses will be provided.
- Education initiatives: The guideline and supplementary resources will be freely available for use in the education and training of dietetic interns and students in approved Accreditation Council for Education in Nutrition and Dietetics (ACEND) programs
- Champions: Local champions will be identified, and expert members of the guideline team will prepare articles for publications. Resources will be provided that include PowerPoint presentations, full guidelines and pre-prepared case studies
- Specific distribution strategies include:
- Publication in full: The guideline is available electronically at the Academy Evidence Analysis Library website ([www.andeal.org](http://www.andeal.org)) and will be announced to all the dietetic practice groups. The Academy Evidence Analysis Library will also provide downloadable supporting information.
- Scientific publication: The guideline will be published in Journal of Academy and Nutrition and Dietetics.
- Presentations: Results from the systematic review were presented via an oral session FNCE 2019, and poster presentations at ASN 2019. An oral guideline presentation was scheduled for Pediatric Academic Societies Conference in March 2020, however, the conference was cancelled for safety precautions due to the COVID-19 pandemic.

## Implementation

Implementation considerations for the recommendations in the guideline can be found under **Costs: organization or implementation** subsection of each individual recommendation.

## Monitoring and Evaluation

The Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII) enables RDNs to document and monitor nutrition care outcomes and advance nutrition research. In order to monitor use of Academy's evidence-based recommendations, practitioners are encouraged to document care in ANDHII. Learn more at <http://www.andhii.org>.

Academy members interested in getting involved in research are also encouraged to join the Nutrition Research Network. Learn more at <https://www.eatrightpro.org/research/projects-tools-and-initiatives/nutrition-research-network>

[Proceed to Guideline Recommendation Statements](#)

[Return to VLBW Home Page](#)

- [Preterm Infant \(VLBW\) Enteral Nutrition](#)
- [Preterm Infant \(VLBW\) Enteral Nutrition Guideline \(2017-2020\)](#)

# Preterm Infant (VLBW) Enteral Nutrition

## VLBW: Guideline References (2020)

### Very Low Birth Weight (VLBW) Preterm Infant Enteral Nutrition (2020) Evidence Based Nutrition Practice Guideline References

References used in the development of the recommendations and references used in supporting materials (e.g. costs and feasibility) are listed in alphabetical order. The specific references are available in the Supporting Evidence section of each recommendation under **Guideline Recommendations & Supporting Evidence**.

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