

Dietary Therapy and Nutrition Management of Eosinophilic Esophagitis: A Work Group Report of the American Academy of Allergy, Asthma, and Immunology



Marion Groetch, MS, RDN^a, Carina Venter, PhD, RD^b, Isabel Skypala, PhD, RD^{c,d}, Berber Vlieg-Boerstra, PhD, RD^e, Kate Grimshaw, PhD, RD^{f,g}, Raquel Durban, MS, RD, CSP, LDN^h, Alison Cassin, MS, RDNⁱ, Michelle Henry, MS, RD^j, Kara Kliewer, PhD, RD^k, Lynda Kabbash, MD^{l,m}, Dan Atkins, MDⁿ, Anna Nowak-Węgrzyn, MD^a, Mark Holbreich, MD^o, and Mirna Chehade, MD, MPH^p; on behalf of the Eosinophilic Gastrointestinal Disorders Committee of the American Academy of Allergy, Asthma and Immunology *New York, NY; Cincinnati, Ohio; London, UK; Amsterdam, the Netherlands; Southampton, UK; Charlotte, NC; Boston, Mass; Aurora, Colo; and Indianapolis, Ind*

Eosinophilic esophagitis (EoE) is a chronic/immune-antigen-mediated disease characterized clinically by symptoms related to esophageal dysfunction and histologically by eosinophil-predominant inflammation. Dietary elimination therapy has been shown to be an effective, drug-free prescription for the treatment of EoE. A range of different dietary elimination therapies have been used. Regardless of the elimination diet chosen, dietary therapy requires in-depth nutrition assessment and management. Elimination diets are not without risk and may impact nutritional status, eating pleasure, and overall quality of life. With adequate guidance, dietary therapy can be

effective and nutritionally balanced, and the adverse impact on lifestyle can be minimized. This work group report addresses the potential challenges of implementing an elimination diet for the management of EoE and provides instructions and tools for physicians, dietitians, and other allied health professionals to help guide them in planning elimination diets for both children and adults. © 2016 American Academy of Allergy, Asthma & Immunology (*J Allergy Clin Immunol Pract* 2017;5:312-24)

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^aDivision of Allergy and Immunology, Jaffe Food Allergy Institute, Icahn School of Medicine at Mount Sinai, New York, NY

^bDivision of Allergy and Immunology, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

^cAllergy Department, Royal Brompton and Harefield NHS Foundation Trust, London, UK

^dDepartment of Paediatrics, Imperial College, London, UK

^eOnze lieve Vrouwe Gasthuis (OLVG), Department of Paediatrics, Amsterdam, The Netherlands

^fDepartment of Nutrition and Dietetics, Southampton's Children's Hospital, Southampton, UK

^gClinical and Experimental Sciences and Human Development in Health Academic Unit, Faculty of Medicine, University of Southampton, Southampton, UK

^hDivision of Food Allergy, Asthma and Allergy Specialists, PA, Charlotte, NC

ⁱDivision of Nutrition Therapy, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

^jDepartment of Medical Affairs, Fresenius Kabi USA, LLC, Lake Zurich, Ill

^kDivision of Allergy and Immunology, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

^lDepartment of Internal Medicine, Harvard Medical School, Boston, Mass

^mDepartment of Internal Medicine, New England Baptist Hospital, Boston, Mass

ⁿGastrointestinal Eosinophilic Diseases Program and Allergy & Immunology Section, Children's Hospital Colorado, University of Colorado School of Medicine, Aurora, Colo

^oAllergy and Asthma Consultants, Indianapolis, Ind

^pDepartments of Pediatrics and Medicine, Mount Sinai Center for Eosinophilic Disorders, Jaffe Food Allergy Institute, Icahn School of Medicine at Mount Sinai, New York, NY

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Corresponding author: Marion Groetch, MS, RDN, Division of Pediatric Allergy and Immunology, Icahn School of Medicine at Mount Sinai, 1 Gustave L. Levy Place, Box 1198, New York, NY 10029. E-mail: marion.groetch@mssm.edu.

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Abbreviations used

AAF- Amino acid-based formula

BMI- Body mass index

ED- Elemental diet

EEsAI- Eosinophilic Esophagitis Activity Index

EoE- Eosinophilic esophagitis

FALCPA- Food Allergen Labeling and Consumer Protection Act

MNT- Medical nutrition therapy

PAL- Precautionary allergen labels

PEESS- Pediatric Eosinophilic Esophagitis Symptom Score

PFAS- Pollen food allergy syndrome

QoL- Quality of life

SFED- Six-food elimination diet

TCS- Topical (swallowed) corticosteroids

TDED- Test-directed elimination diet

Eosinophilic esophagitis (EoE) is a chronic/immune-antigen-mediated disease characterized clinically by symptoms related to esophageal dysfunction and histologically by eosinophil-predominant inflammation.¹ There are currently an estimated 56.7 cases per 100,000 in children and adults in the United States, and like other allergic disorders, the prevalence of EoE appears to be increasing.²

Treatment goals for EoE are resolution of clinical symptoms and esophageal eosinophilic inflammation, maintenance of remission to prevent potential complications such as esophageal strictures and/or fibrosis, correction and prevention of nutritional deficiencies, prevention of treatment-related complications, and maintenance of quality of life (QoL).³ Three distinct forms of therapy have been recommended for treating EoE: esophageal dilation (adults), medications, and elimination diets (children and adults).^{1,4} Dilation, although effective, does not address the underlying inflammation in the esophagus, and therefore is not considered an effective long-term therapy. There are currently no FDA-approved medications for the treatment of EoE. Off-label use of swallowed topical corticosteroids (TCS) has been shown to effectively treat EoE^{5,6} although the long-term efficacy and safety of TCS is not yet established and prolonged use is required, but often unwanted, for maintenance of disease remission.^{7,8} By contrast, dietary elimination therapy has been shown to achieve both histologic and clinical remission in children and adults and offers the potential for long-term remission without the risk of drug-related side effects.⁹

Implementing dietary therapy can be a challenge. There are currently no tests that accurately identify food triggers in EoE, and implementing an efficacious and nutritionally sound diet is difficult but possible with adequate dietetic guidance. The choice of a specific dietary therapy regimen is individualized and dictated by patient and provider preferences, and feasibility from medical, nutritional, and practical standpoints for each patient is addressed elsewhere.¹⁰

Although access to an experienced dietitian may help patients plan for a nutritionally sound and gratifying diet, as well as improve their diet adherence, the reality is that many patients with EoE and their physicians do not have access to dietitians with EoE expertise. This work group report addresses the potential challenges of implementing a chosen dietary therapy for the management of EoE and provides tools and guidance for

effective implementation to physicians and allied health professionals caring for children and adults with EoE. The report, however, is not intended to replace nutrition assessment, dietary therapy implementation, and monitoring by a registered dietitian.

DIETARY THERAPY OPTIONS

If selecting a dietary therapy, it is recommended that practitioners consider the use of targeted or empiric elimination diets or elemental diet for successful EoE therapy.^{8,11}

Elemental diet

The elemental diet (ED) consists of an amino acid-based formula (AAF) free from intact proteins or peptides and has been found to result in remission in the majority of children with EoE.¹²⁻¹⁴ Based on a recent meta-analysis of reported dietary therapies used to treat EoE, the ED was the most effective therapy with a histologic disease remission rate of 90.8% (7 studies; 95% CI, 84.7-95.5) in children and adults and was as effective as steroid treatment in EoE symptom resolution.¹⁵ Currently, major allergy and gastroenterology societies suggest the use of an AAF over an extensively hydrolyzed formula for the management of an ED^{4,16,17} (see Table I for the available AAF in the United States).

Before embarking on an ED, individual goals should be customized to meet energy, protein, vitamin, and mineral needs of the patient (see Table II for dietary reference intakes and common sources of key nutrients). Close attention should be paid to the nutrient content of the chosen formula, as micronutrient and macronutrient content varies between manufacturers of an AAF (Table I). AAFs also vary in taste. Some manufacturers offer a flavored version or a variety of flavors, although other flavorings such as pure vanilla extract or sugar or corn syrup-based artificial flavorings (eg, strawberry flavored syrup) may also be added to the AAF by the patient or family.

Young children on EDs require special attention. Major developmental milestones for feeding are achieved within the first 3 years of life, and feeding skills are acquired and honed through the presentation of foods.¹⁸ Removing all foods during this period may impact taste preferences and impede or delay the acquisition of feeding skills.¹⁸ When prescribing a formula-only diet for a child in this age group, a baseline feeding evaluation can be helpful in assessing the likelihood for success of later food reintroduction.¹⁹ Modifying the ED by adding 1 or 2 foods (eg, apple or sweet potato) may help to preserve and/or develop oral motor skills and improve food acceptance. Even if only a limited number of foods are permitted in a child's ED, preparing the foods in a number of ways (pureed, mashed, cubed, fried, etc.) can vary texture experiences. The help and advice of a dietitian is particularly useful at this stage to show how a limited number of foods can be offered in a variety of ways. Flavorings and ingredients such as pure vanilla extract (or alcohol-free vanilla extract), sugar/corn syrup-based artificial flavorings (eg, strawberry-flavored syrup), distilled white vinegar, salt, sugar, pure maple syrup, plain lollipops (containing acceptable artificial flavorings), and refined (as opposed to expeller pressed, pressed, or extruded) vegetable oils may also be used for varied taste experience and do not add any significant intact proteins that

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