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All attendees will be muted and will remain in Listen Only Mode.

Type your questions here so that the moderator can see them. Not all questions will be answered but we will get to as many as possible.
How to Receive CME and MOC Points

LIVE VIRTUAL GRAND ROUNDS WEBINAR

ACG will send a link to a CME & MOC evaluation to all attendees on the live webinar.

ABIM Board Certified physicians need to complete their MOC activities by December 31, 2020 in order for the MOC points to count toward any MOC requirements that are due by the end of the year. No MOC credit may be awarded after March 1, 2021 for this activity.

MOC QUESTION

If you plan to claim MOC Points for this activity, you will be asked to: Please list specific changes you will make in your practice as a result of the information you received from this activity.

Include specific strategies or changes that you plan to implement. THESE ANSWERS WILL BE REVIEWED.
ACG Virtual Grand Rounds

Join us for upcoming Virtual Grand Rounds!

NOTE: there will be no Virtual Grand Rounds on October 29 due to ACG 2020

Week 32: Managing Medical-Legal Risk in Colonoscopy: Rules for Success
Douglas K. Rex, MD, MACG
November 5, 2020 at Noon EDT

Week 33: Emotional Intelligence: Strategies for Improving Leadership in Medicine
Sara Ancello, DO; Divya Bhatt, MD; and Uchenna Agbim, MD
November 12, 2020 at Noon EDT

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ACG 2020 Virtual

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Dietary Therapy for EoE

- History and Evolution of Dietary Therapy
- What to Do After Instituting Dietary Therapy
  - Reintroduction Protocols
  - Non-Invasive Assessments of the Esophagus
- Practical Considerations in Implementing a Diet Plan
- Unmet Needs in Dietary Therapy
  - Allergy testing and Long Term efficacy
- Tips and Tricks for Success
Diet in Eosinophilic Esophagitis (EoE)

Historical Notes

- **1995**: Elemental Diet (children) by Kelly Sampson.
- **2005**: SFED (children) by Kagalwalla.
- **2007**: Targeted Treatment (children) by Spergel.
- **2007**: SFED (adults) by Gonsalves and Lucendo.
- **2012**: Milk only (children) by Kagalwalla.
- **2013**: Elemental Targeted Empiric (91%, 72%, 45%) by Lucendo.
- **2016**: 2-4-6 Diet by Lucendo.
- **2018**: FFED by Kagalwalla.

Dietary Therapy for Treatment of EoE

- **Elemental**: 91%
- **Targeted**: 45%
- **Empiric**: 72%

Fig. 1: Summarized effects of elemental diets (a), skin allergy testing-directed food removal (b), and empirical six-food elimination diets (SFED) (c) for inducing histologic remission of EoE. According to a recent meta-analysis [17], confidence intervals at 95% were calculated using the exact binomial method. I² values indicate the heterogeneity or intra-study differences. It can be seen that the higher efficacy rate was for elemental diets (91%), followed by SFED, which showed a combined response rate of 72%, extremely heterogeneous among the individual studies considered (I²=0%). Skin allergy testing-directed food removal showed the lowest combined effectiveness (55%) with a wide heterogeneity of results from individual studies.

Dietary Therapy for Treatment of EoE

- Elemental: 91%
- Targeted: 45%
- Empiric: 72%

Fig. 1 Summarized effects of elemental diets (a), skin allergy testing-directed food removal (b), and empirical six-food elimination diets (SPEED, c) for inducing histologic remission of EoE, according to a recent meta-analysis [17]. Confidence intervals at 95% were calculated using the exact binomial method. I² values indicate the heterogeneity or intra-study differences. It can be seen that the higher efficacy rate was for elemental diets (91%), followed by SPEED, which showed a combined response rate of 72% extremely homogeneous among the individual studies considered (I²=0%). Skin allergy testing-directed food removal showed the lowest combined effectiveness (45%) with a wide heterogeneity of results from individual studies.

Histologic Response to Different Empiric Diets

Gonsalves, Yang, Doerfler, Ritz, Ditto, Hirano. Gastroenterol 2012;142:1451–59
Molina A. J Allergy Clin Immunol. 2014 Nov;134(5)
Histologic Response to Different Empiric Diets

- **SFED**
  - Adults: 70%
  - Children: 65%
- **FFED**
  - Adults: 50%
  - Children: 64%
- **TFED**
  - Adults: 44%

**References**
- Gonsalves, Yang, Doerfler, Ritz, Ditto, Hirano. Gastroenterol 2012;142:1451–59

Single Food Elimination Diet Histologic Response

- Milk: 65%

**Reference**
**Single Food Elimination Diet in Adults**

**SOFEED Diet Study**

- Prospective, multicenter, randomized trial
- (1FED - eliminate milk) vs (6FED - eliminate milk, egg, wheat, soy, peanut/tree nut, fish/shellfish)

*Stay Tuned...*

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**Step Up Versus Step Down?**

Source: Curr Opin Gastroenterol © 2011 Lippincott Williams & Wilkins

Histologic remission (< 15 eos/HPF)

- Overall
- Adults
- Children

TFGED
TFGED + FFGED
TFGED + FFGED + SFGED


Multiple Options for Dietary Therapy are Available
Discuss the Right Strategy with your Patient based on their goals of Care

Dietary Therapy for EoE

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How Do I Complete Food Reintroduction after initiating a Diet Plan?
Will I always need to have an endoscopy to assess my esophagus during food reintroduction?

Minimally-Invasive Testing for EoE:
Esophageal String Test- 1 hr

Ackerman, Am J Gastroenterol. 2019 Sep 18
Minimally-Invasive Testing for EoE: Unsedated Transnasal Endoscopy

Figure 1. Visual and microscopic findings of esophagitis (EoE) by using transnasal endoscope (TNE). A, Biopsy sample with active EoE by using standard 2.8 mm EG5 Entoguide: surface area, 0.10 mm². B, Biopsy sample from the same patient with active EoE by using TNE 3.2 mm Entoguide: surface area, 0.12 mm². C, Biopsy with active inflammation and eosinophilic esophagitis.

Friedlander J. Gastrointest Endosc. 2016 Feb;83(2):299-306

Minimally-Invasive Testing for EoE: Cytosponge

Figure 1. Histology and EoE staining of biopsy and Cytosponge specimens from a patient with positive findings. (A) Biopsy with mild esophageal eosinophilia (original magnification, >20). (B) Cytosponge (original magnification, >20) with eosinophilic eosinophils. Note mild oposisitis present. (C) EDI staining biopsy showing both intracellular and extracellular staining, grade II original magnification, >20. (D) EDI staining Cytosponge demonstrating grade II staining extracellular and grade I intracellular original magnification, >40.

Katzka D. Clin Gastroenterol Hepatol 2015 Jan;13(1):77-83
Minimally-Invasive Testing for EoE: Cytosponge

Minimally Invasive Devices are Being Developed Likely Greater Acceptability for Patients Undergoing Dietary Therapy and Surveillance

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What can you eat on an EoE Elimination Diet?

SFED: Healthy Sample Menu

Breakfast:
- Applegate Farms turkey breakfast sausage (2)
- 1-2 corn tortilla or Rice & Tapioca toast
- 1-2 tsp all fruit jam
- ½ cup- 1 cup ripe melon
- Coffee or tea

Lunch:
- Cooked vegetable soup (Amy’s™)
- Brown Rice crackers & Sunbutter™ or Avocado
- Banana
- Sparkling water

Dinner:
- Roasted poultry
- Roasted green beans
- Sweet potato cooked with olive oil
- Rice or Hemp milk
- Berries & Lemon Sorbet

Snacks:
- Fruit, Enjoy Life trail mix, veggie soups, potato/corn chips & salsa, dry cereal (Rice or Corn Chex™), hummus and veggies, air popped popcorn, popsicles, sorbet, Enjoy Life cookies/bars, homemade gluten free Rice Krispy Treats, fortified rice milk

Northwestern EGID PI Education Materials
SFED: Can it be healthy?

- Meet USDA dietary guidelines for Adults
  - Emphasis on more plant based foods
  - Fruits, vegetables and beans
  - Lean proteins including
    - poultry, pork, beef, lamb
  - Seeds and heart healthy fats
    - Olive oil, canola oil, grape seed oil safe
  - Alternative whole grains
    - root vegetables, millet, quinoa, amaranth, rice, 100% corn
- Naturally low in processed foods

### Potential Nutrient Deficiencies

<table>
<thead>
<tr>
<th>Food</th>
<th>Nutrients</th>
<th>Alternative food sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>Protein, Calcium, Vitamin D, B12, A, B6, Riboflavin, Phosphorus, Panthothenic Acid, Potassium, Magnesium, Iodine</td>
<td>Meats, legumes, whole grains, nuts, fortified foods/beverages (i.e. enriched soy milk)</td>
</tr>
<tr>
<td>Soy</td>
<td>Protein, Iron, Zinc, Magnesium, Thiamin, Riboflavin, Pyridoxine, Folate, Calcium, Phosphorus</td>
<td>Meats, allowed grains/legumes, fortified foods/beverages</td>
</tr>
<tr>
<td>Wheat</td>
<td>Carbohydrate, Iron, Thiamin, Riboflavin, Folate, Niacin, Biotin, Zinc, Selenium, Magnesium, Fiber</td>
<td>Other enriched grains (i.e. oat, corn, rice, soy flour), fruits, vegetables, legumes</td>
</tr>
<tr>
<td>Egg</td>
<td>Protein, Pantothenic Acid, Biotin, Choline, Selenium</td>
<td>Meats, legumes, whole grains, fish, seafood</td>
</tr>
<tr>
<td>Peanut/Tree Nut</td>
<td>Vitamin E, Selenium, Zinc, Manganese, Magnesium, Folate, Vitamin B6, Phosphorus</td>
<td>Allowed legumes, whole grains, vegetable oils, fish, seafood</td>
</tr>
<tr>
<td>Fish/Shellfish</td>
<td>Protein, Omega 3 fatty acids, Iron, Phosphorus, Iodine, Zinc, Selenium, B12</td>
<td>Whole grains, milk, nuts, meats, oils, flax seed, soy</td>
</tr>
</tbody>
</table>
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Can We Predict Food Triggers with Allergy Testing?

Elemental 91%
Targeted 45%
Empiric 72%

Fig. 1 Summarized effects of elemental diets (a), skin allergy testing-directed food removal (b), and empirical six-food elimination diets (SPED; c) for inducing histologic remission of EoE, according to a recent meta-analysis [17]. Confidence intervals at 95% were calculated using the exact binomial method. I² values indicate the heterogeneity or intra-study differences. It can be seen that the higher efficacy rate was for elemental diets (91%), followed by SPED, which showed a combined response rate of 72%, extremely heterogeneous among the individual studies considered (I²=0%). Skin allergy testing-directed food removal showed the lowest combined effectiveness (55%) with a wide heterogeneity of results from individual studies.

APT had sensitivity of 5%, specificity of 92%

Conclusions APT does not reliably predict food triggers identified by food elimination diet in adult patients with EoE. As a result, APT does not have a clear role in the evaluation of patients with EoE.


Can We Predict Food Triggers with Allergy Testing?

Can We Predict Food Triggers with Allergy Testing?

Current Data Suggests Limitations with the Use of Diagnostic Allergy Testing to Predict Food Triggers in EoE

Collaboration with Allergist is important due to other Atopic Conditions

Percentage of Patients Maintaining Diet over Time

100% were in remission

American College of Gastroenterology
Long term dietary therapy effective in 50% of patients
Median 24 month follow-up

Reed et al. Aliment Pharmacol Ther 2017 Nov;46(9):836-844.

Understanding Factors Affecting Adherence
A survey study

• 57% who completed SFED were active on Maintenance

• Factors Affecting Adherence
  • Diet effectiveness at reducing symptoms
  • Social situations
  • Diet related anxiety

• Majority of prior diet and current diet users recommended diet to other EoE patients

Understanding Factors Affecting Adherence
A survey study

• 57% who completed SFED were active on Maintenance

• Factors Affecting Adherence
  • Diet effectiveness at reducing symptoms

Diet Therapy is Effective for Long Term Maintenance
Identifying Factors that Affect and Optimize Adherence is Important to other EoE patients


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Tips and Tricks for Success in Diet Therapy

- Most patients typically tackle diet therapy once...

- Set them up for Success!
  - Discuss available diet options
  - Review reintroduction protocols
  - Dietary consultation
    - Education and monitoring compliance
    - Sample menus/restaurant cards
    - Think about timing of diet initiation

Practical Approach to Dietary Therapy in Adults

- What to do if diet does not work after 6 wks?
  - Assess for compliance/hidden sources of contamination
  - Make sure other confounders i.e. reflux, aeroallergens are being treated
  - Depending on severity of case
    - Empiric elimination of further dietary agents
    - Elemental formula
    - Change to medical therapy with topical corticosteroids
Improving Factors Affecting Compliance

Long Term Strategies

- Once food triggers are identified offer strategies to help improve QOL
- Use of topical corticosteroids for times when diet is difficult
  - Travel, busy work schedule, special occasions
  - Try to liberalize diet – baked milk reintroduction

Dietary Therapy for EoE

Conclusions

- Dietary Therapy Works for EoE
- Many Options Exist and Should be Tailored to Patient Preference
  - SFED vs FFED vs TFED vs Single food
- Practical Considerations in Implementing a Diet Plan
  - Reintroduction and Non-Invasive Assessments of the Esophagus
- Maintenance Therapy is Effective
Thank You!

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Division of Gastroenterology & Hepatology
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Questions?

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