

EOSINOFIELE OESOFAGITIS: OP HET KRUISPUNT TUSSEN ALLERGIE EN GASTRO-ENTEROLOGIE

DIEET als BEHANDELING

Joris Arts

Casus

- Man dysfagie en voedsel impactie sinds 2014
- PPI voor reflux ome 40 sinds 5 jaar
- Diagnose van EoE onder PPI
- R/ flixotide puff : APO persisterende eosinofielen en klachten

- 5-2019: start dieet zonder zuivel en ei

Casus (2)

- 7-2019: persisterende klachten onder zuivel en ei.
  Start eliminatie tarwe (gluten bevattende granen)

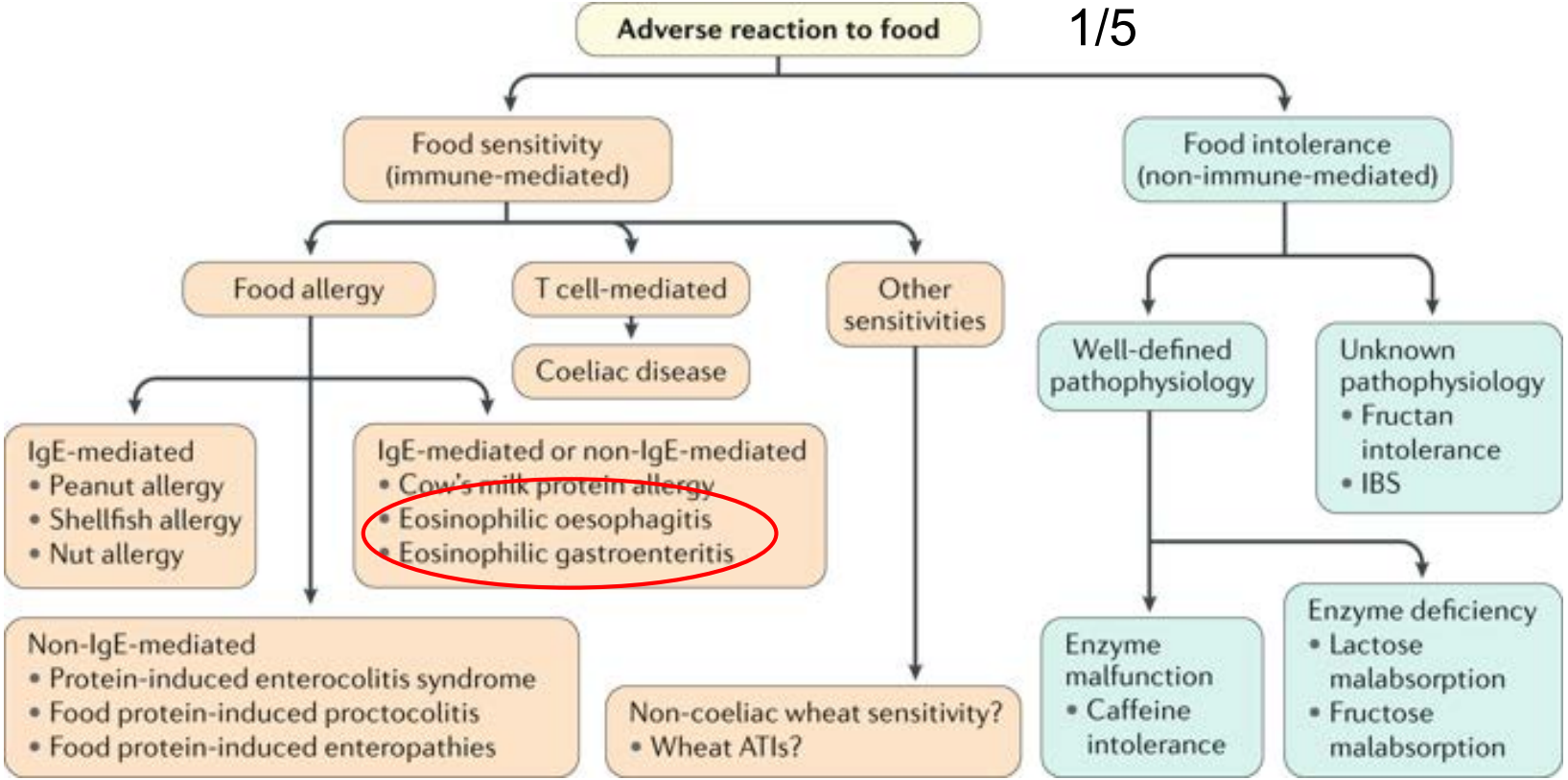
- 9-2019: geen eosinofielen meer; asymptomatisch.
  Herstart zuivel

- 11-2019: asymptomatisch / APO negatief
  Herstart ei

Use of dietary interventions in GI diseases

Food and Microbioma

- Food : allergy / intolerance/ aversion
- Protein antigens in particular can become substrates of gut microorganism metabolism, which can result in
  - altered antigenicity
  - production of metabolites that directly affect the submucosal immuunsystem inducing inflammation or triggers nocireceptors
- Food changes our microbioma



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Alberto Caminero et al Nature Reviews Gastroenterology & Hepatology 2019

Role of Diet
Eosinophilic Oesophagitis

- Pathophysiology
- From Elemental diet to SFED
- Alternatives for SFED
- Long-Term results

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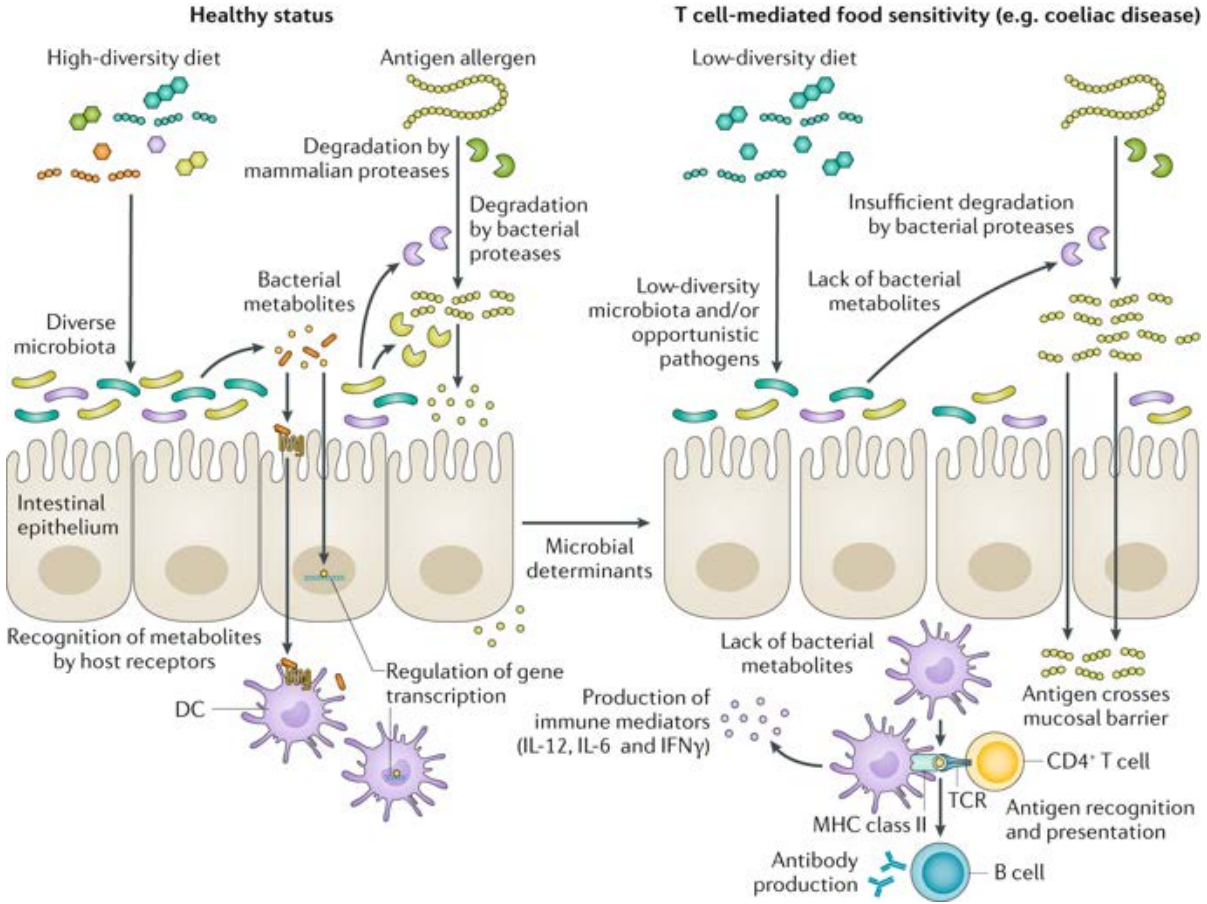

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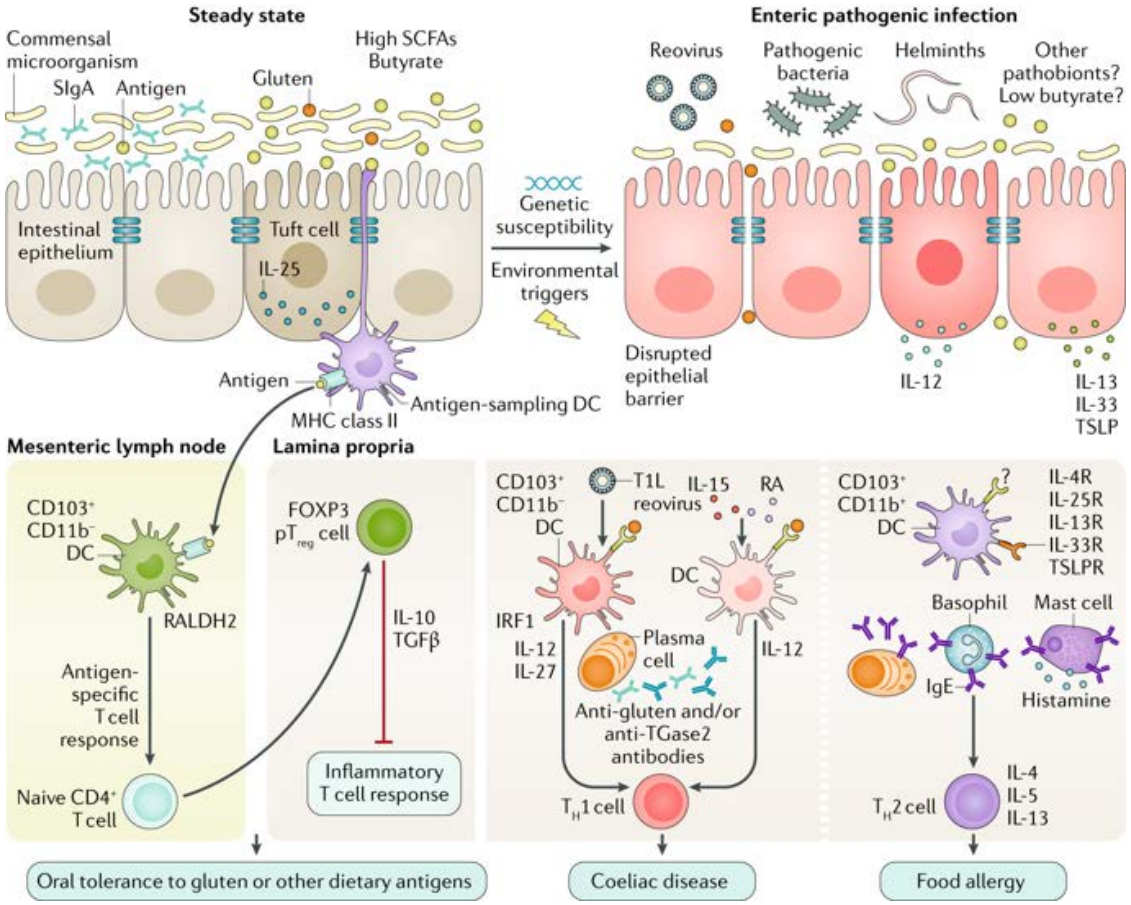

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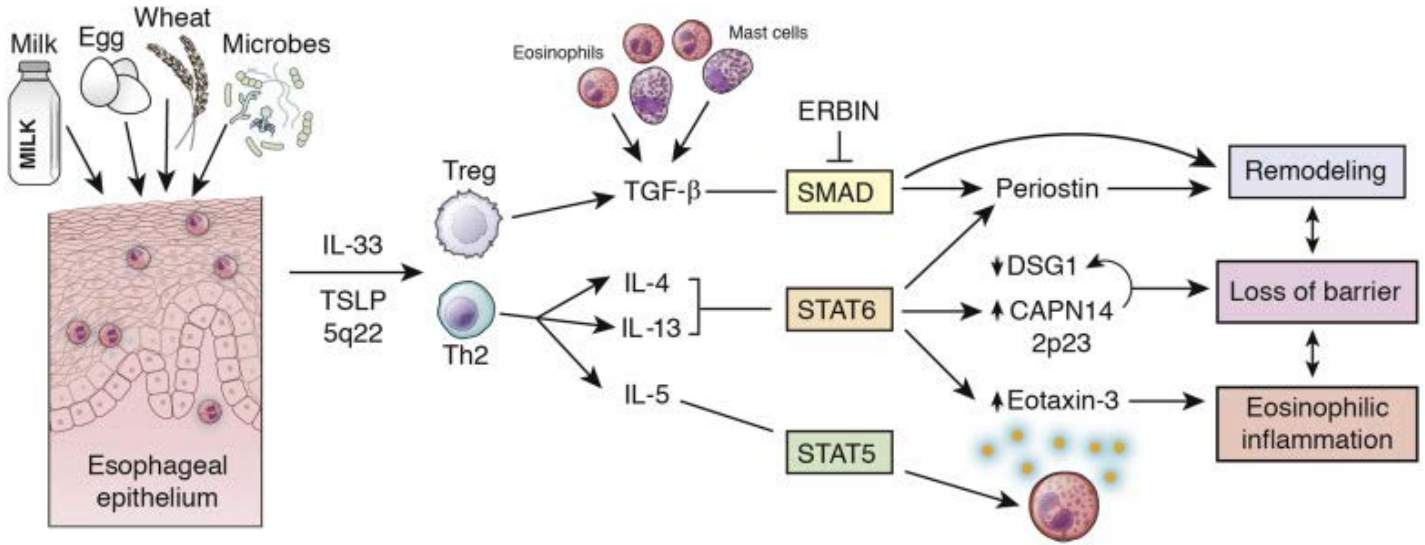
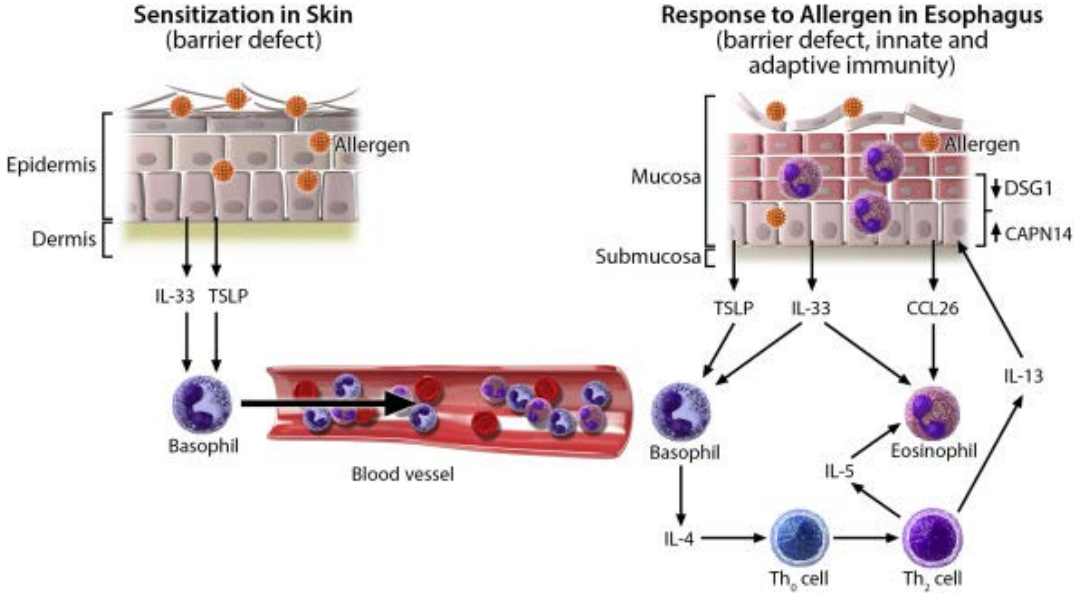
Pathophysiology



O'Shea et al Gastroenterol 2018

Response to Allergen in Esophagus



Travers et al Journal of Allergy and Clinical Immunology 2016

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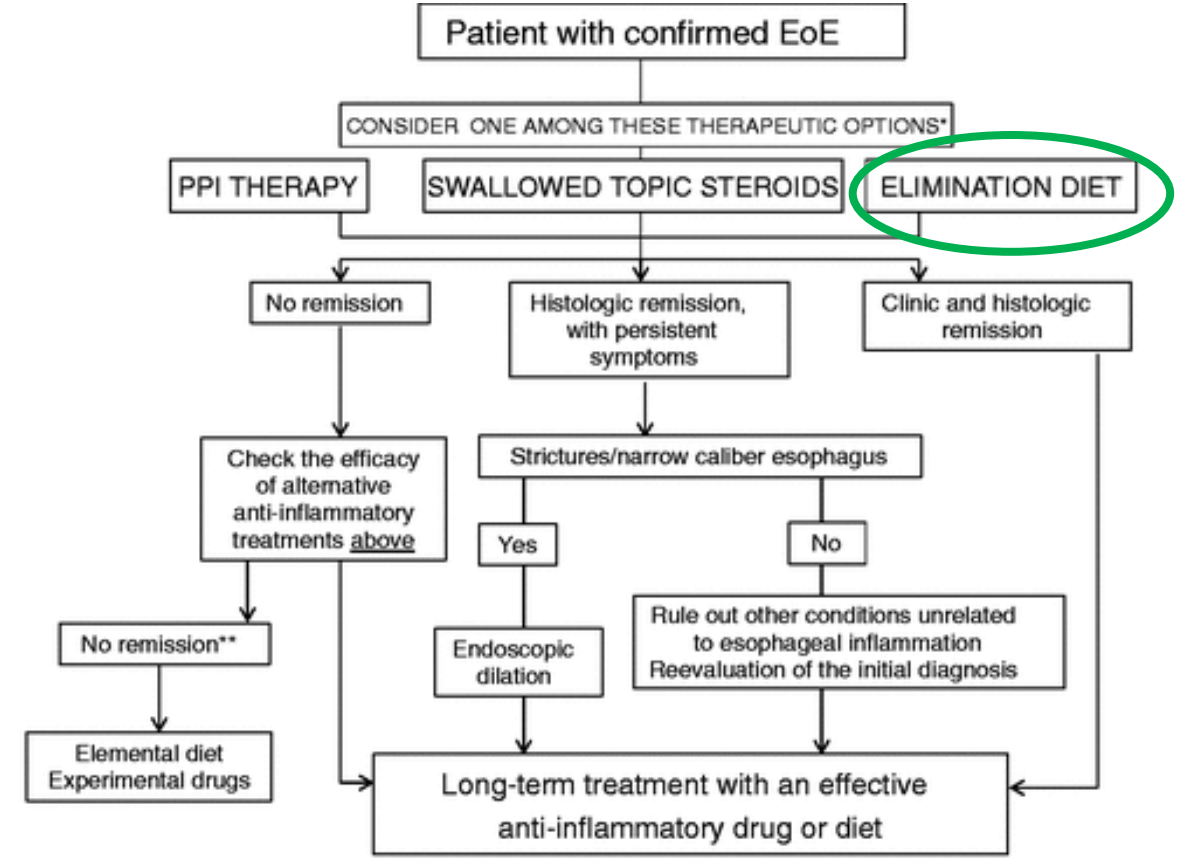

*In patients with persistent symptoms under anti-inflammatory therapy, endoscopic dilation should be considered

** Refer the patient to an EoE center

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Lucendo et al 2017 UEG Journal

Diet
three main approaches

- Elimination of all table foods and substitution by an exclusively elemental (amino acid-based) diet
- Empiric elimination based on most common allergic triggers
- Allergy test-directed elimination, based on positive allergy test results

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IMPORTANT

- Initial diets are not permanent but rather a starting point.
- After documenting remission and subsequent individual food reintroduction, the final goal will be lifelong elimination of identified culprit foods
- Therefore it is crucial to begin with the end in mind for both patients and physicians.

Elemental Diet Children

- First rapport 1995
- The overall efficacy of elemental diets (in adults and children) is high
- These efficacy rates are based on 13 studies, of which 12 were performed in children, and most of the studies were carried out retrospectively

Elemental Diet



- Amino-acid formula
  - Neocate Nutricia as exclusive nutrition
  - Water, green/black tea allowed
  - Sugar-free chewing gum (to stimulate the oromotor function)
- Cave multiple disadvantages
  - Poor tasting
  - Development of solid food aversion
  - Socialization impairment
  - NGT or GT
  - Long reintroduction process / many endoscopies
  - Lack of reimbursement

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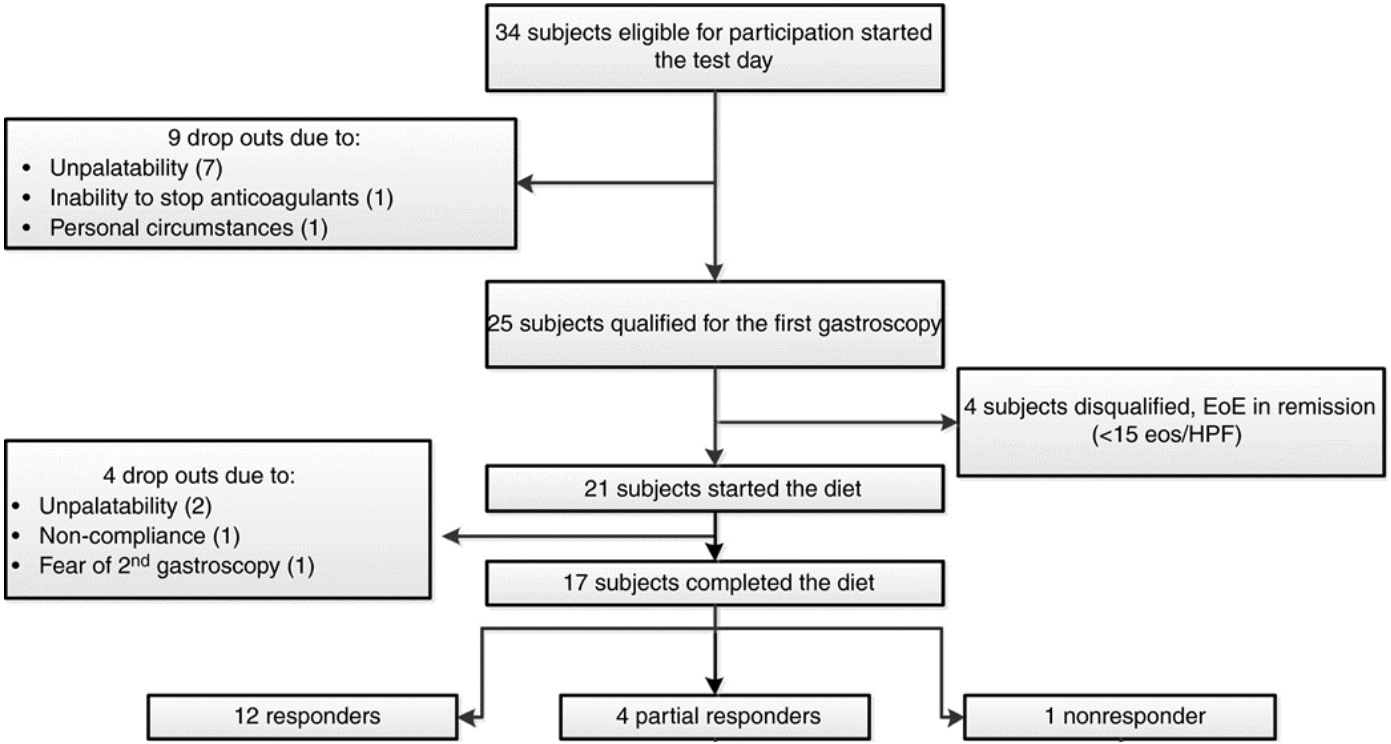
Warners et al. Aliment Pharmacol Ther 2017

Elemental Diet: Prospective Study in Adults



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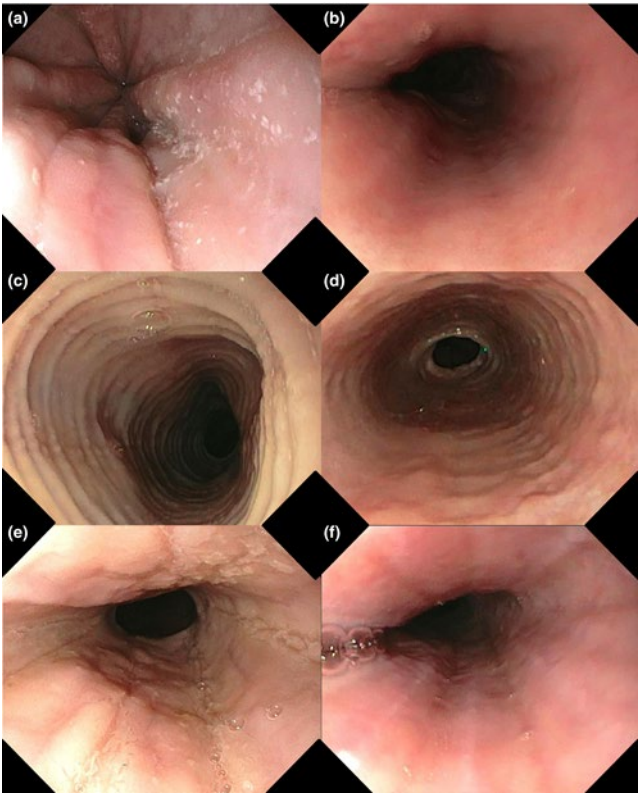
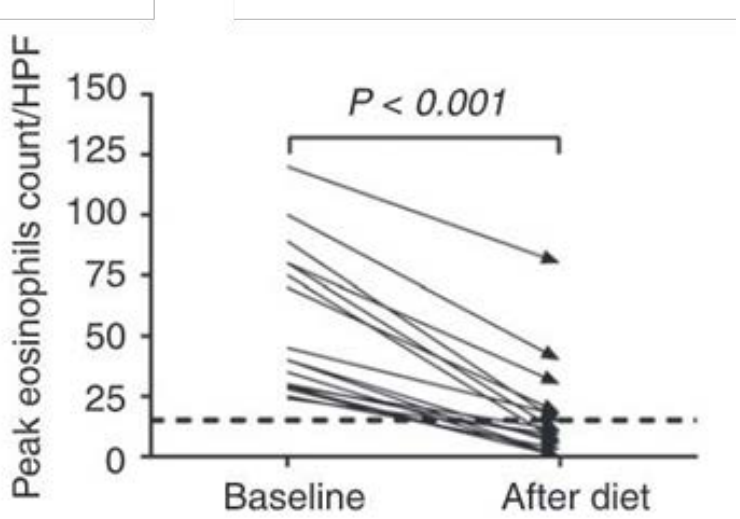
Warners et al. Aliment Pharmacol Ther 2017





- The modified Straumann Dysphagia Instrument 6 (3–8) at baseline to 0 (0–0)
- 15 (88%) patients became completely asymptomatic
- 2 patients with atopic dermatitis and one with allergic rhinitis, substantial improvement

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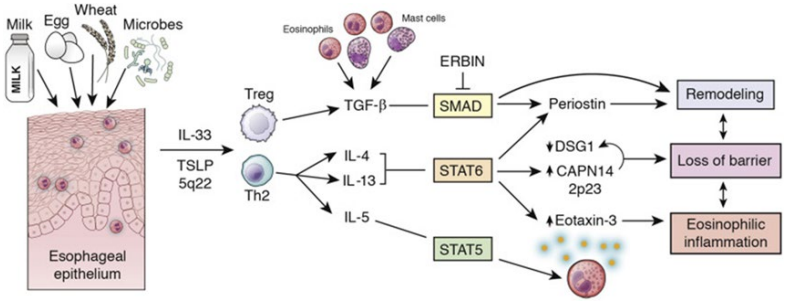
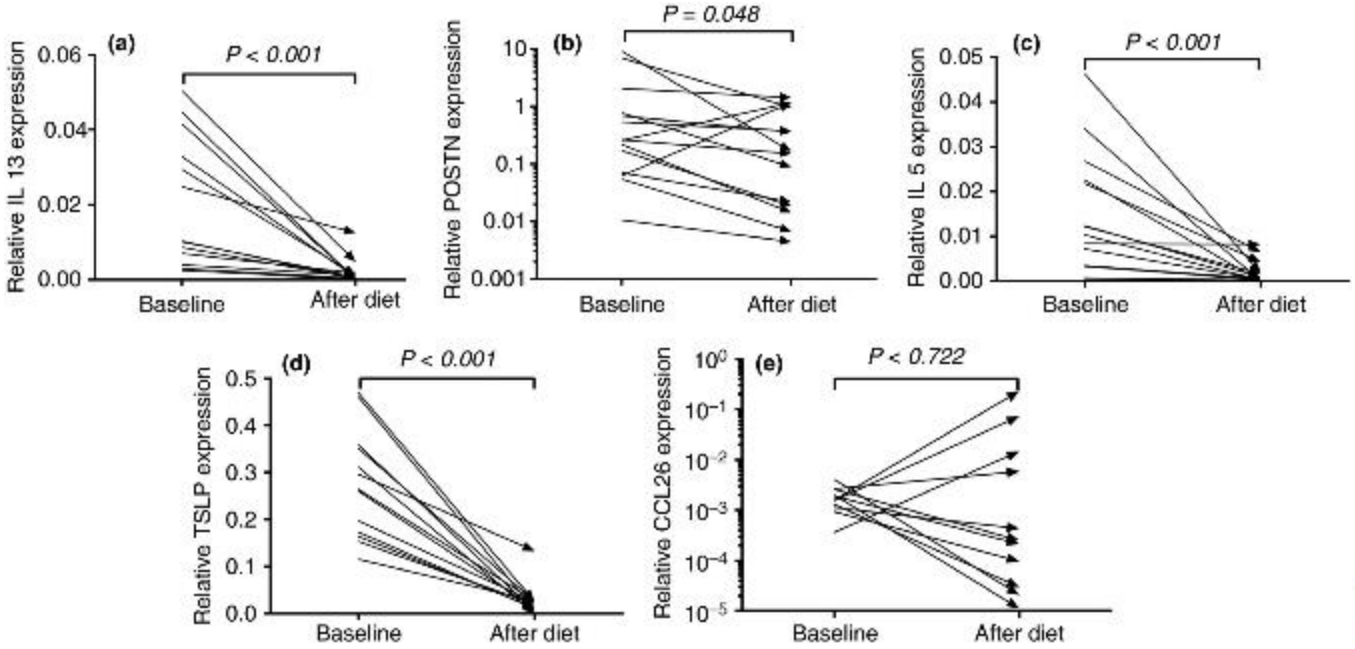
Warners et al. Aliment Pharmacol Ther 2017

Diet: effect on Pathophysiology





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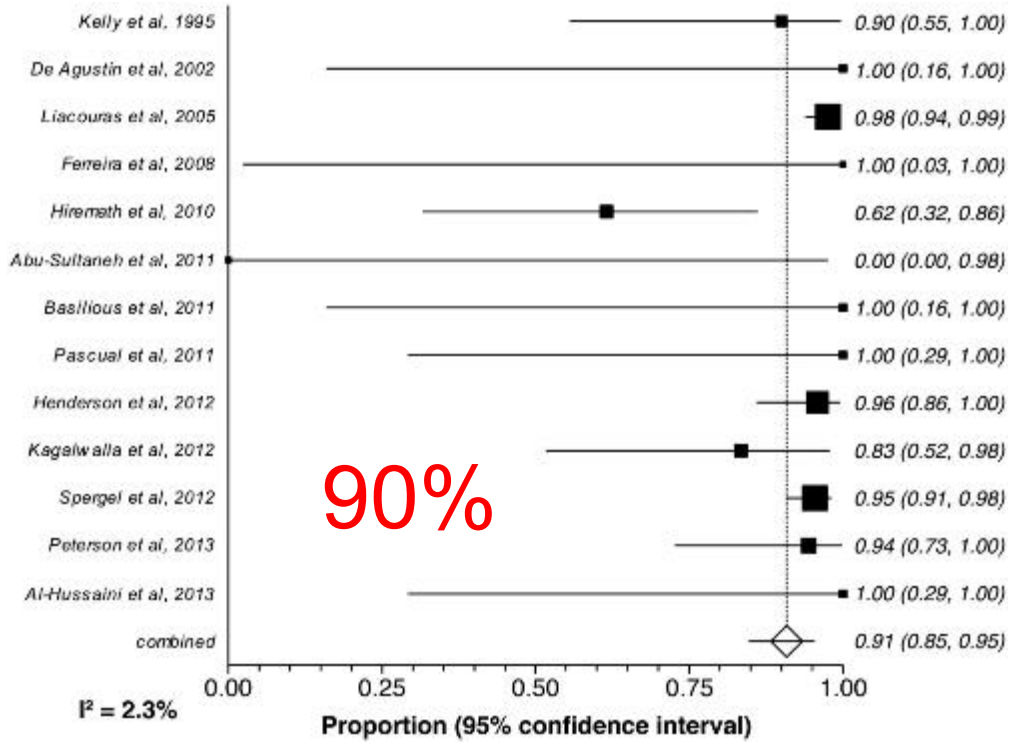
Systematic Review and Meta-analysis



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Arias et al Gastroentero 2014

After Elemental Diet

- Stepwise food introduction
- Four most common allergic triggers
  - Milk
  - Soy
  - Wheat
  - Egg
- If after two weeks no increase of symptoms or < 15 eosinophils/hpf : food group accepted

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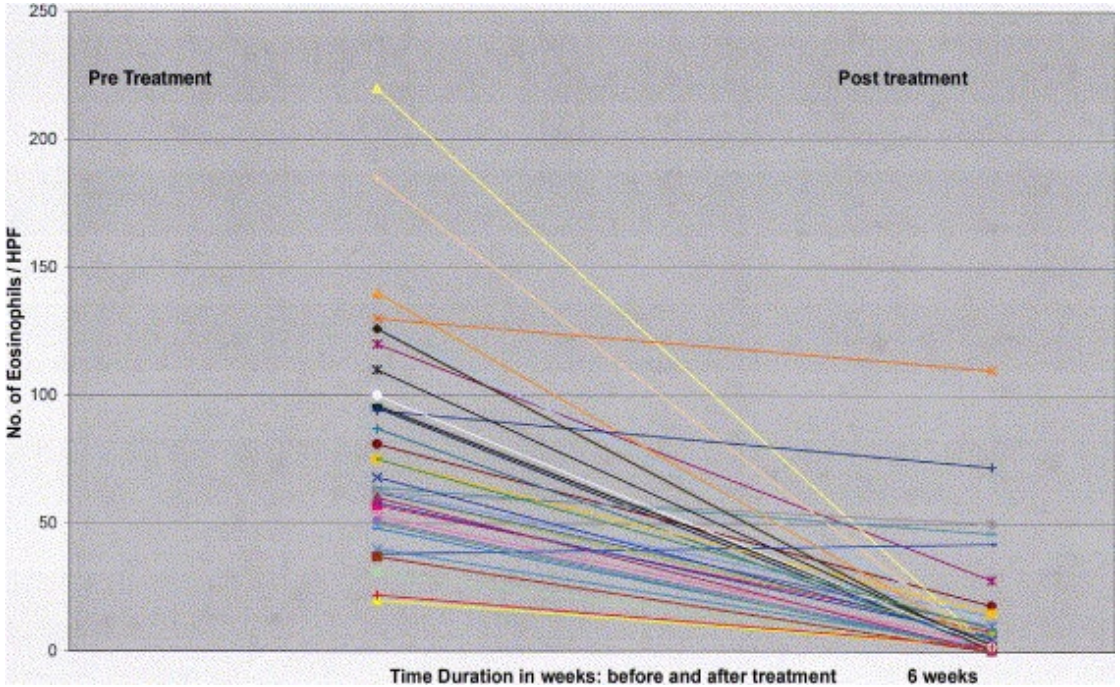
Six Food Elimination Diet
2006 Pediatric Population



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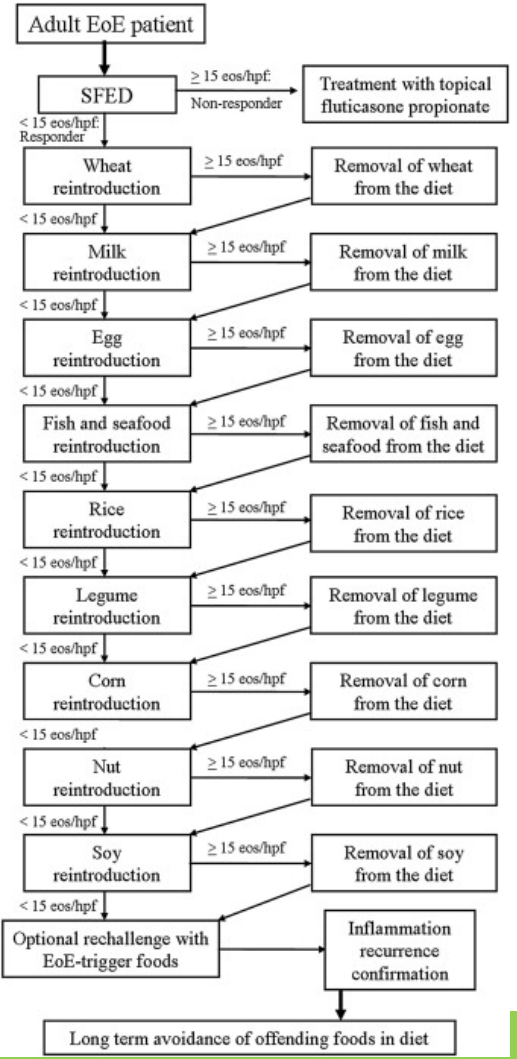
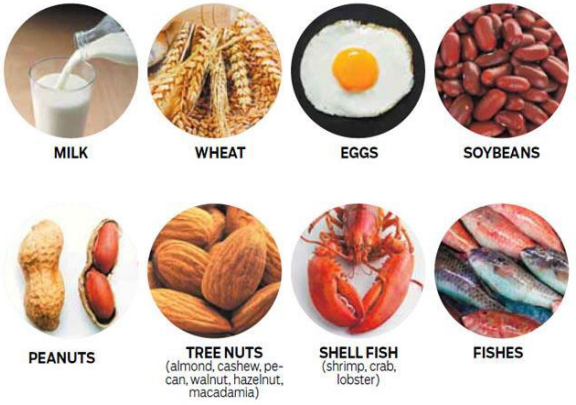
Kagalwalla et al. Clin Gastroenterol Hepatol 2006



SFED



- Up to 42 weeks
- Restrictive diet
- Each six weeks endoscopy and biopsies
- Cost
- Social impact

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Lucendo et al Allergy and Clinical Immunology 2013

First author, year of publication, country	Diet/population/design	Histologic remission	No. of culprit foods identified through individual reintroduction of either 6, 4, or 2 food groups			Most common food triggers identified through individual food reintroduction
			1	2	>2	
Kagalwallaet al, 2011, United States[23]	6-FED/children/unicenter	74%	72%	8%*	8%*	Milk = 74% Wheat = 26% Eggs = 17%
Gonsalves et al, 2012, United States[24]	6-FED/adults/unicenter	70%	85%	15%*		Wheat = 60% Milk = 50%
Lucendo et al, 2013, Spain[25]	6-FED/adults/unicenter	72%	36%	31%	33%	Milk = 62% Wheat = 29% Egg = 26% Legumes = 24%
Rodriguez-Sanchez et al, 2014, Spain[26]	6-FED/adults/unicenter	53%	—	—	—	Milk = 64% Wheat = 28% Egg = 21% Legumes = 7%
Philpott et al, 2016, Australia[27]	6-FED/adults/unicenter	52%	56%	17%	13%	Milk = 43% Wheat = 43% Egg = 34%

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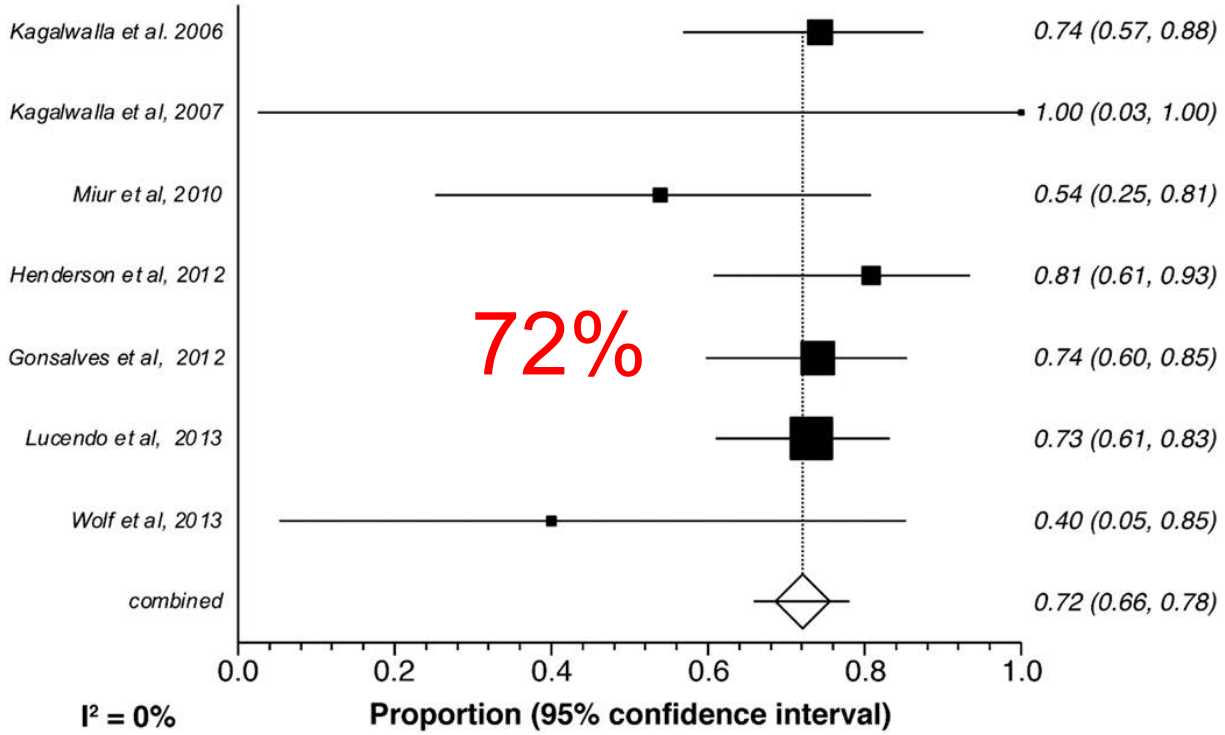
Molina Infanteand Lucendo. J All Clin Immunol 2018

SFED



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Arias et al Gastroentero 2014

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Alternatives for SFED

– Find the responsible food allergen

- skin prick testing (SPT) and atopy patch testing (APT)
- IgE / IgG4
- EPT ?

– FFED / TFED Step up

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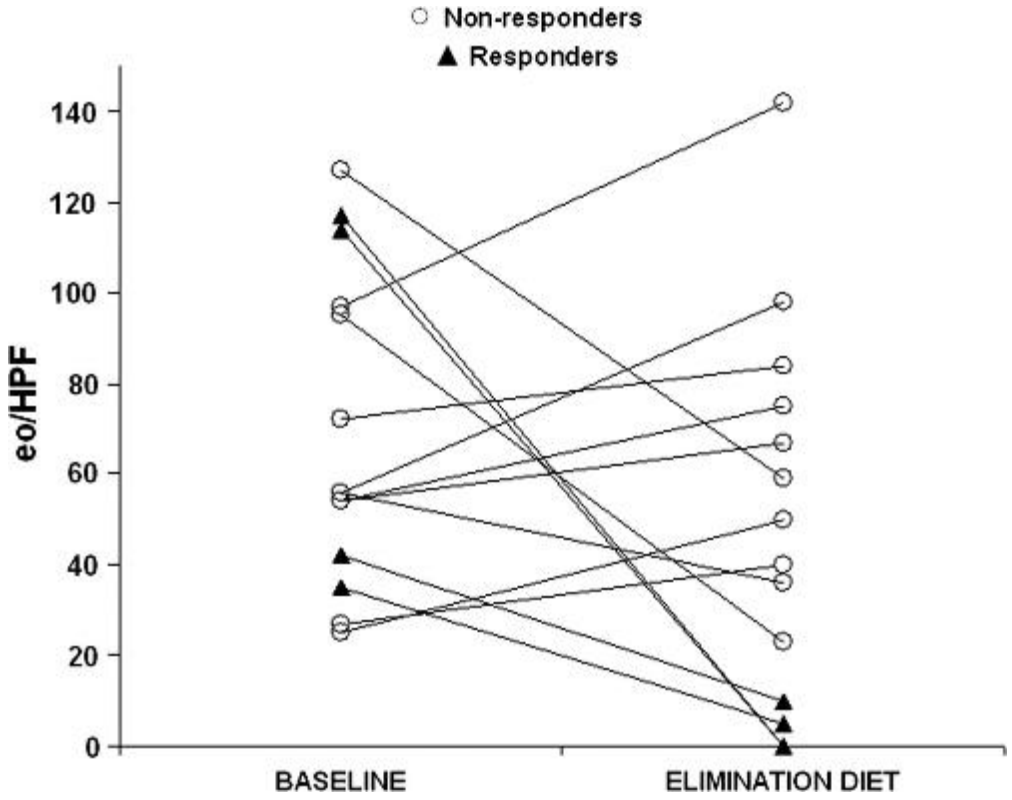
Selective elimination diet based on skin testing



22 patients
- 5 patients rejected the diet
- 15 followed 6 weeks diet

15 patients
- 4 (26%) complete remission
- 1 partial histologic response
- 10 patients (66%) no effect

17 patients R/ steroids
- 82% complete remission

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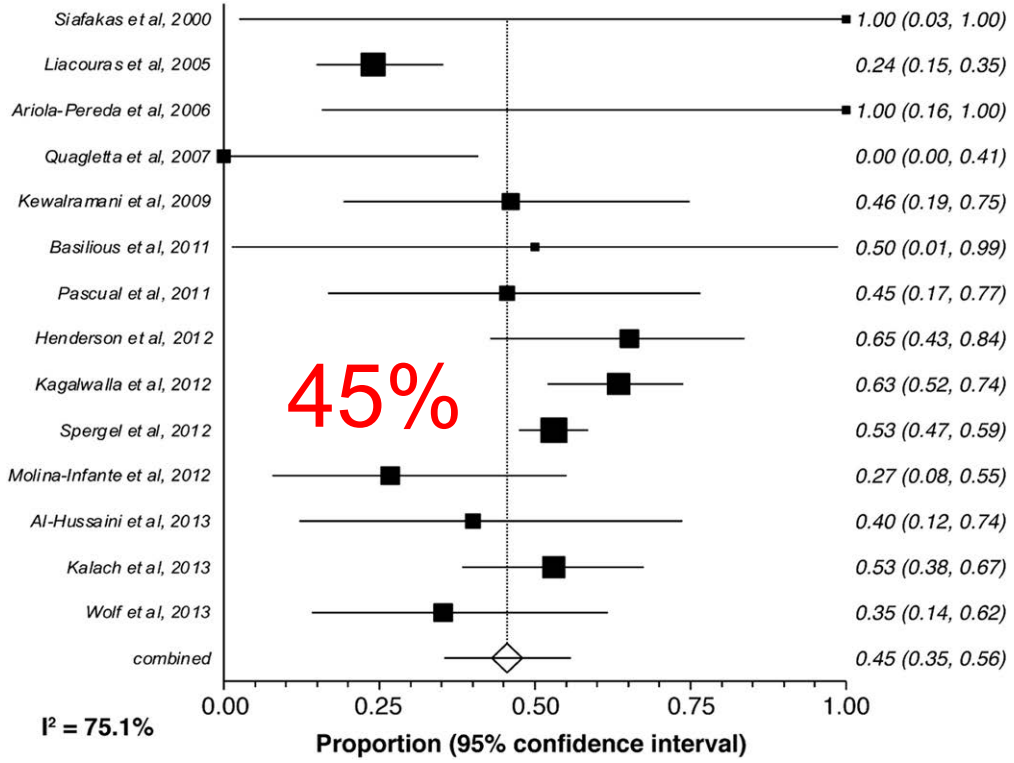
Javier Molina-Infante et al J Allergy and Clin Imunnology 2012

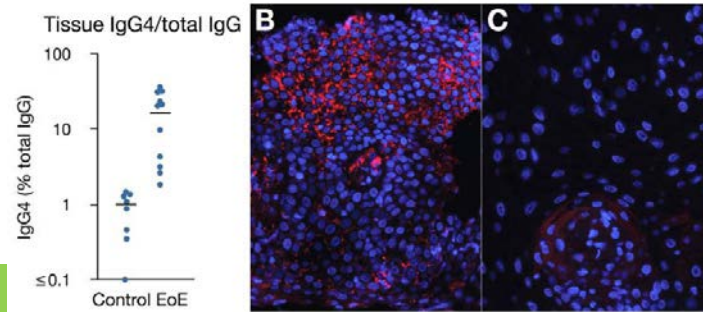
Skin Allergy Testing–Directed Food Elimination



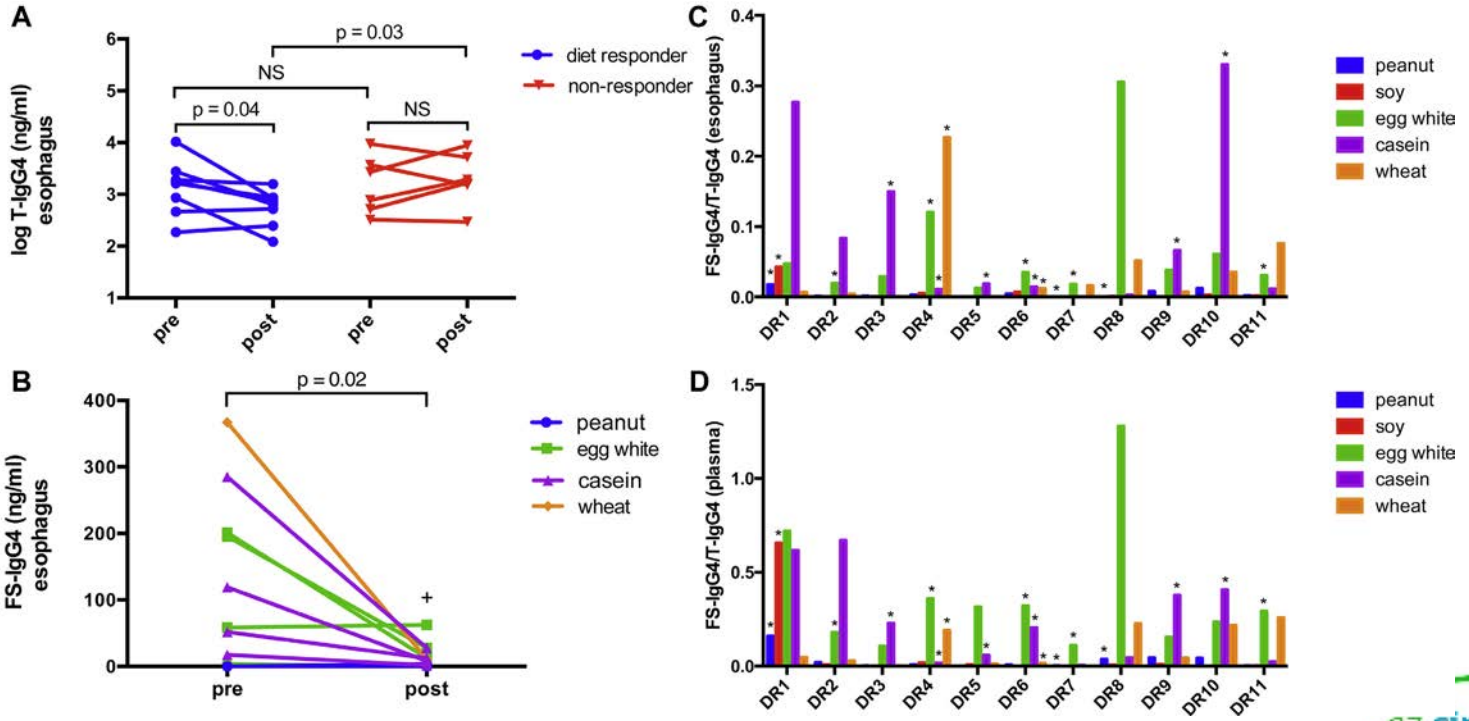
Arias et al Gastroentero 2014

IgE and IgG4 in EoE

- Role of IgE in EoE is n**o**t clear
  - in murine models of EoE, IgE-deficiency do not affect the ability to induce EoE
  - Anti IgE (omalizumab) : clinical improvement but no effect on histology and endoscopic features
  - EoE patients with low IgE to milk improve with milk protein elimination
- But:
  - Increase of IgG4 levels to cow's milk
  - Increase of IgG4 in deep Mucosal layer



Food-specific IgG_4 is associated with eosinophilic esophagitis



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Wright et al J Allergy and Clin Imunnology 2016

EPT (esophageal prick test)

Method

6 allergens in 8 pts with EoE and 3 controls

Results

- 5/8 clear reactions, some had an occlusion of the lumen
- No reactions on milk, wheat or egg

Alternatives for SFED

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– FFED / TFED Step up

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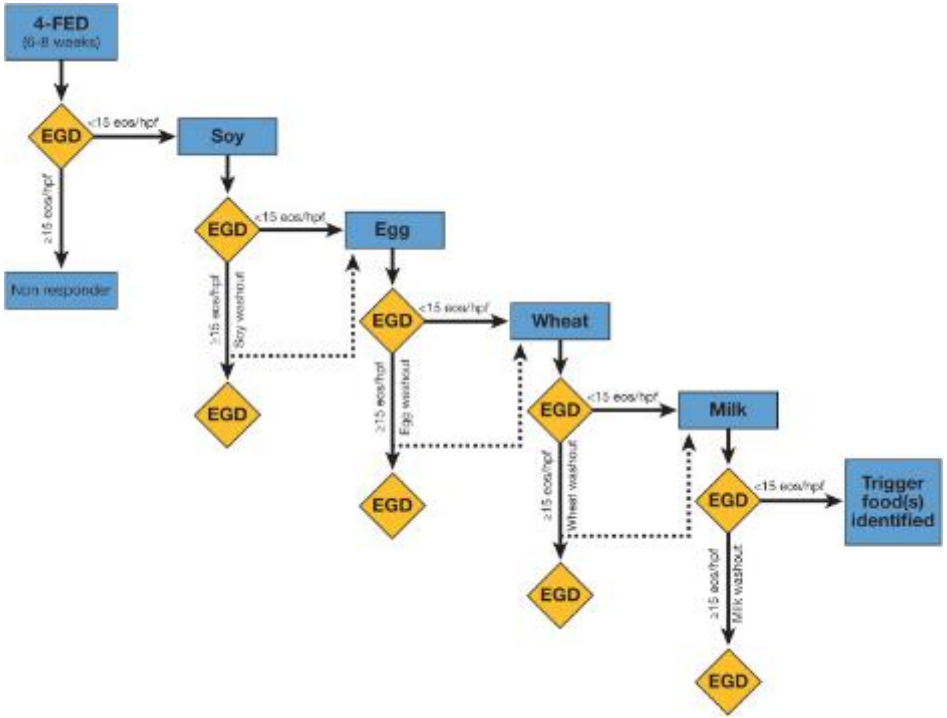
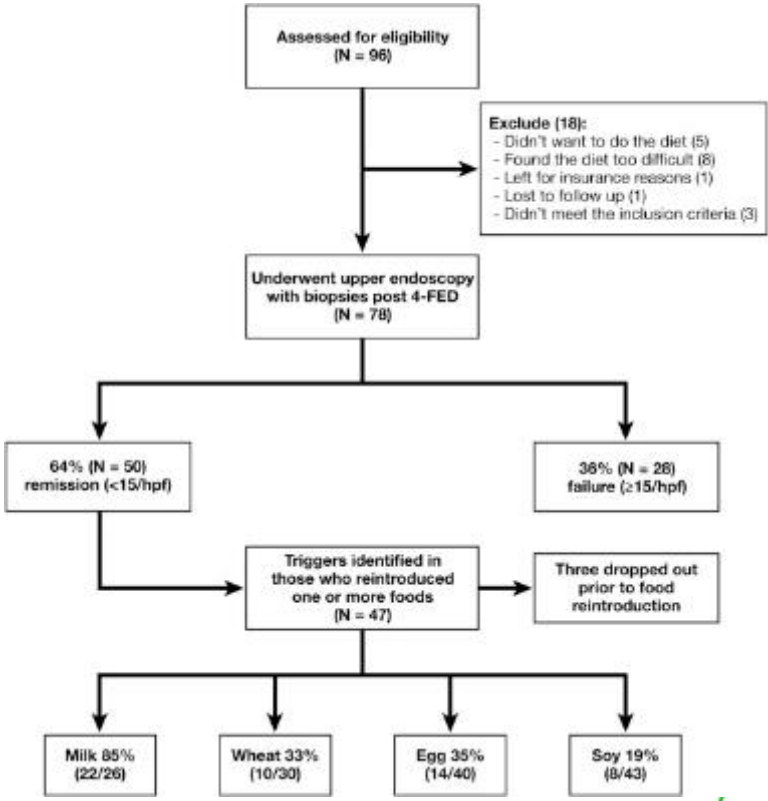
Efficacy of a 4-Food Elimination Diet for Children With Eosinophilic Esophagitis





Step-up empiric elimination diet: TwoFED


MILK


WHEAT


EGGS


SOYBEANS


PEANUTS

Gluten Free

Wheat
Barley
Rye
Oat

Also : starch, vegetable protein, dextrin, maltodectrin…

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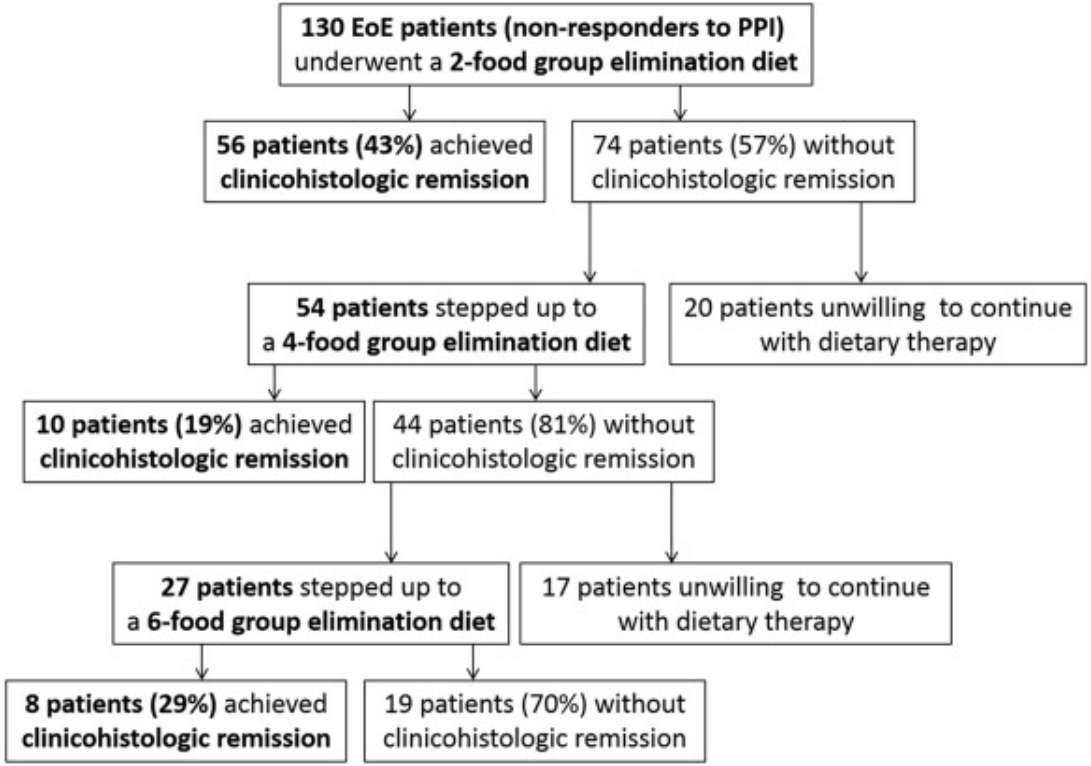
Step-up empiric elimination diet



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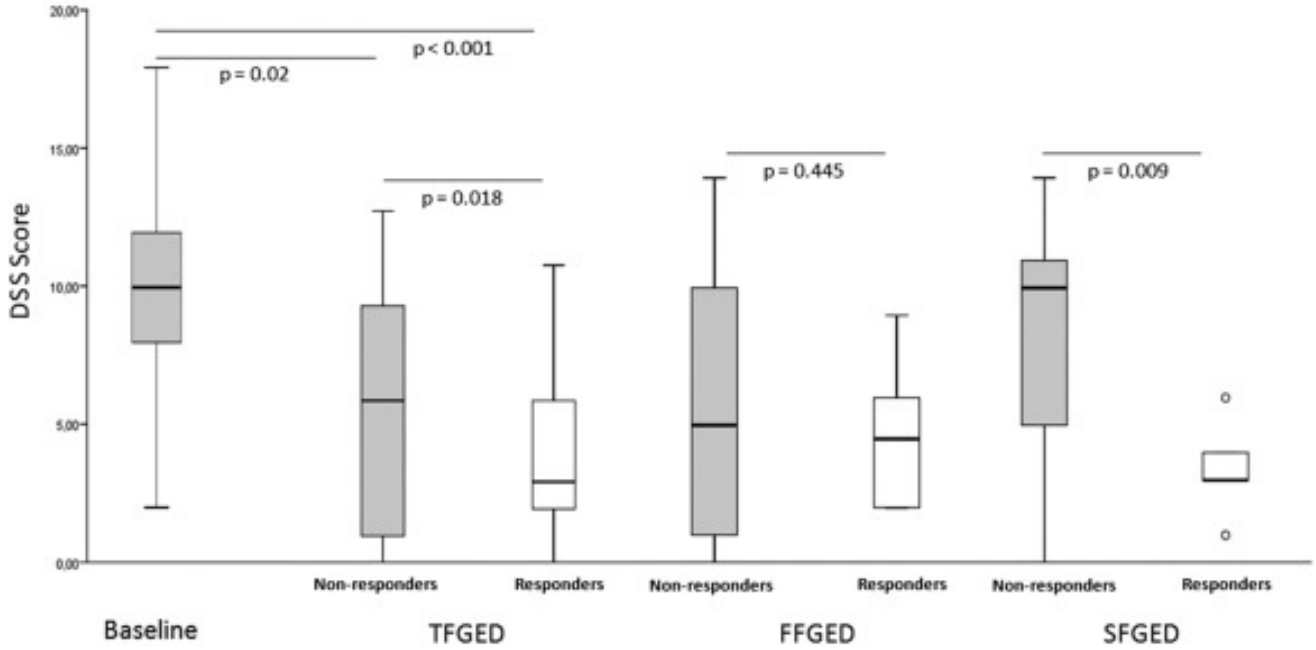
Molina-Infante et al Journal of Allergy and Clinical Immunology oct 2017

Symptoms



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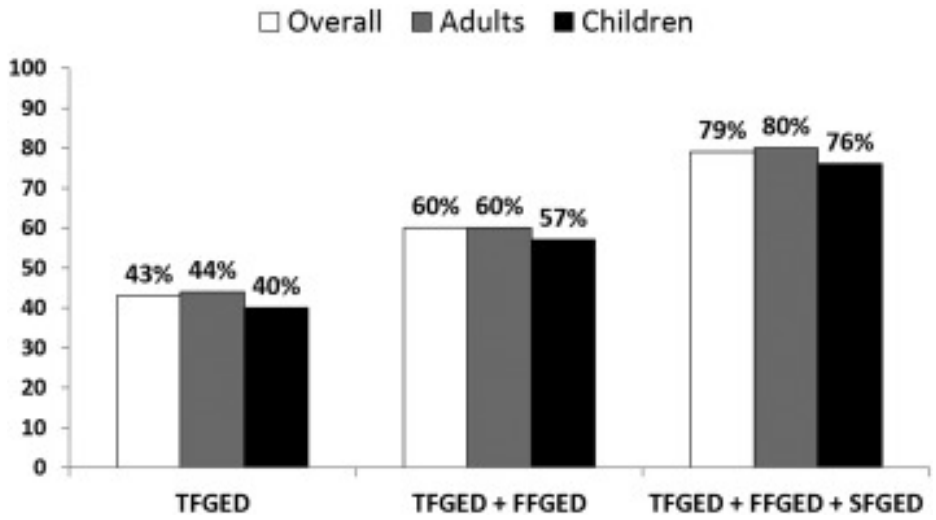
Histologic Response



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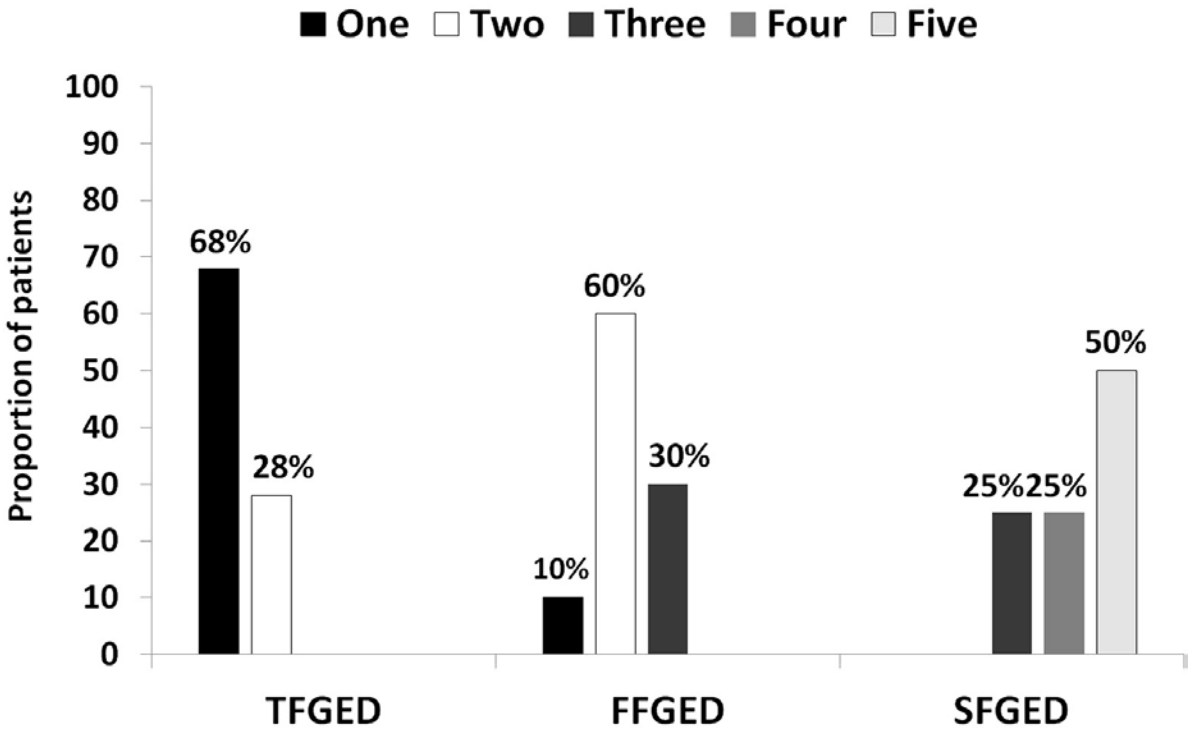
Molina-Infante et al Journal of Allergy and Clinical Immunology oct 2017

Identification of food triggers through individual food group reintroduction



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Molina-Infante et al Journal of Allergy and Clinical Immunology oct 2017

Rescue Topical Steroids

- 73/130 pos effect of diet
- 20 had no respons and 37 refused step up

- 24/57 accepted rescue therapy : pos effect 79% after 8 weeks

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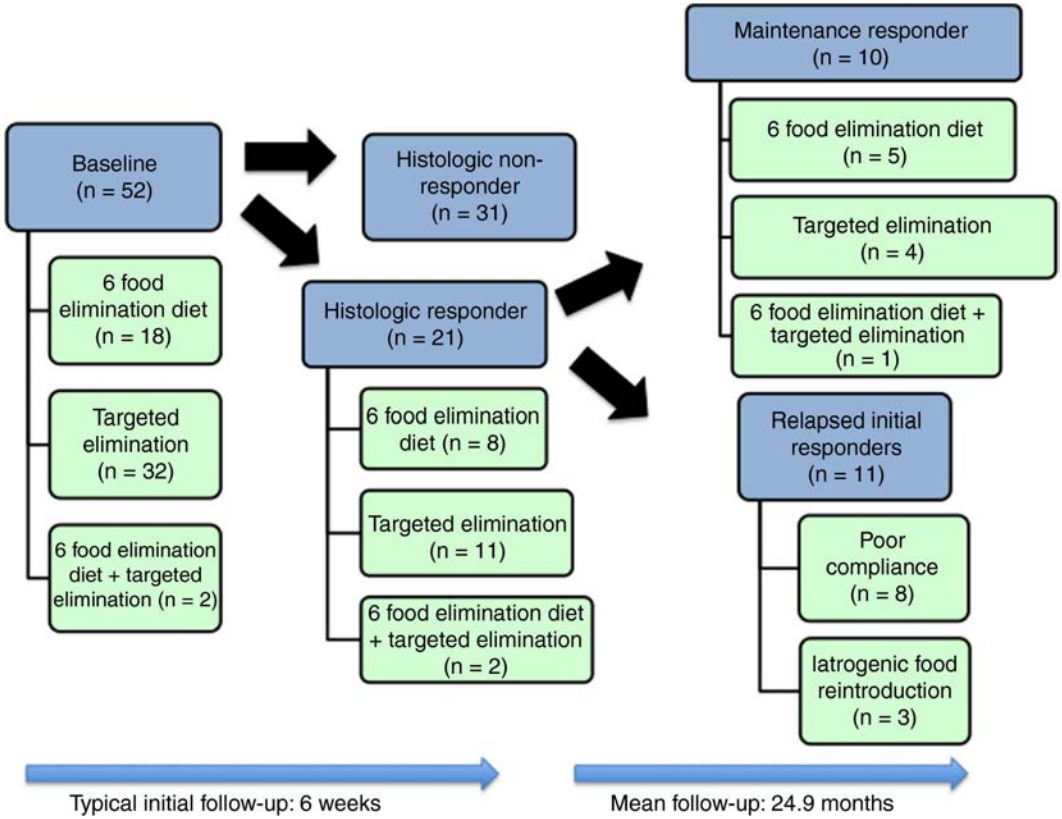
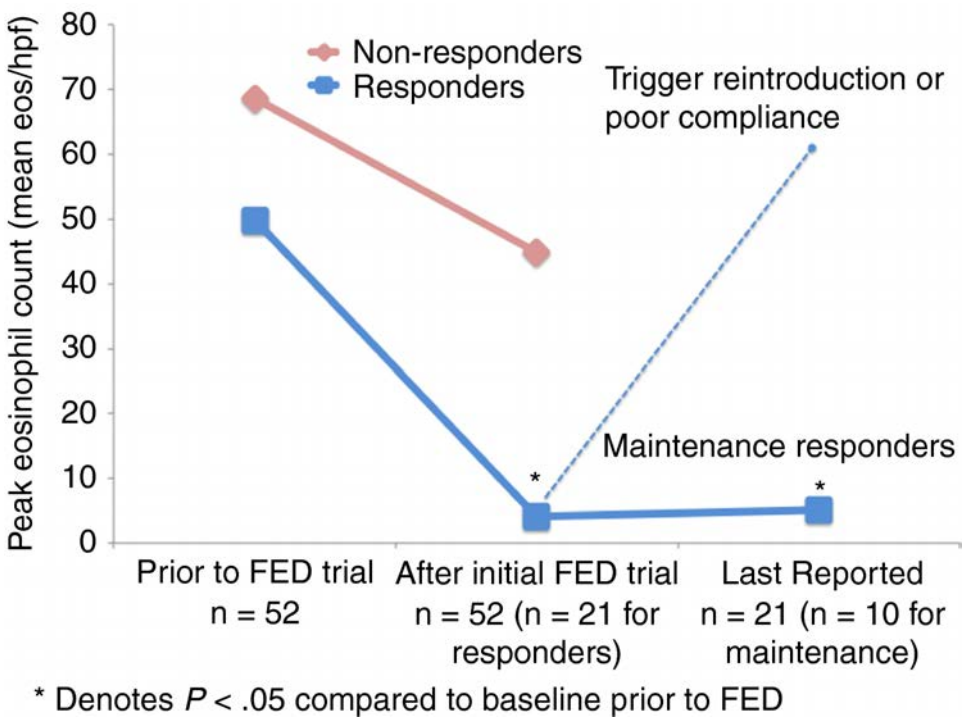
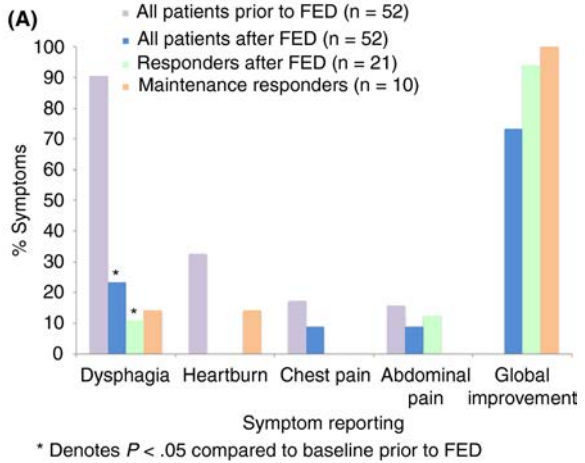
Long-Term results of diet

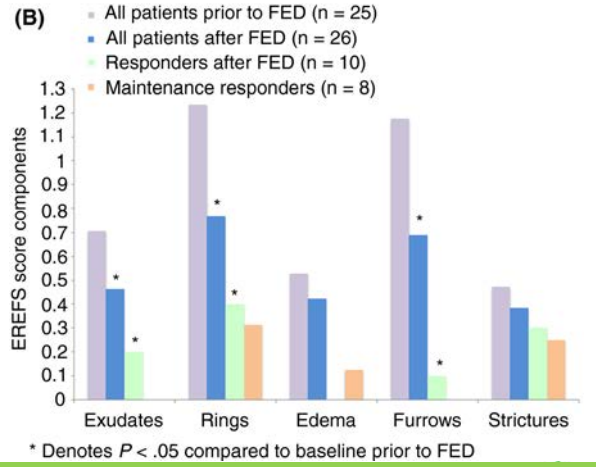


50% na 2j

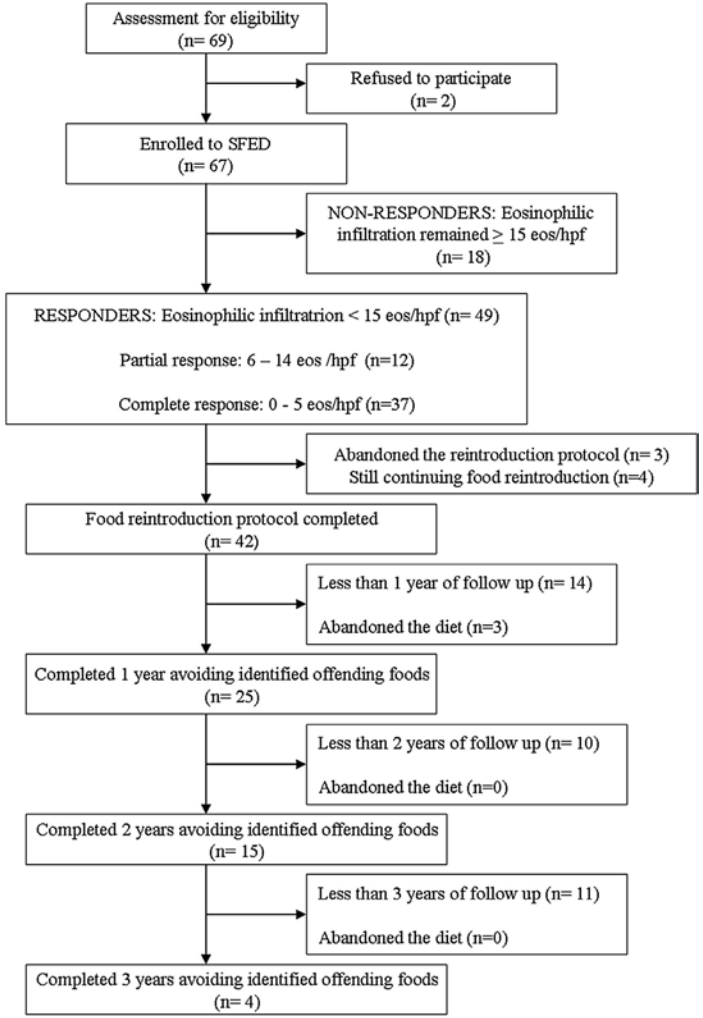
Long-Term Results of Diet







Long-Term Results of Diet



All pts on diet remain asymptomatic after 3 years

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Lucendo et al Allergy and Clinical Immunology 2013

Unmet issues with dietary therapy in patients with EoE

- Correct duration of initial diet, min 6 weeks
- Cow’s milk or all mammalian milks ?
- Wheat or all gluten-containing grains ?
- Correct duration of food challenge (frequency and serving size ?)
- Search for an alternative for the multiple endoscopies

Dieet of EoE

- Ideale oplossing indien haalbaar voor patiënt / lange termijn blijvende remissie
- ‘voorlopig’ step up methode gebruiken
- Controle APO blijft noodzakelijk