

Nieuwe diagnostiek voor gastro-intestinaal specifieke voedsel-allergische reacties

Jolien Schol, MD, PhD student, KU Leuven, Belgium

Diagnosis of food allergies/food intolerance

Typical food allergies:

- Specific IgE's
- Skin prick tests/patch tests

Food intolerance

- Elimination diet
- Breath tests
- Serology (celiac disease)

Atypical food allergies

- Elimination diet
- Confocal laser endomicroscopy

Elimination diet in functional GI disorders

1. Low-FODMAP diet in irritable bowel syndrome (IBS)
2. Low-FODMAP diet in functional dyspepsia (FD)
3. 6-food elimination diet in FD

FODMAPs

F ermentable
O ligosaccharides
D isaccharides
M onosaccharides
A nd
P olyols

FOS
GOS



Lactose



Fructose

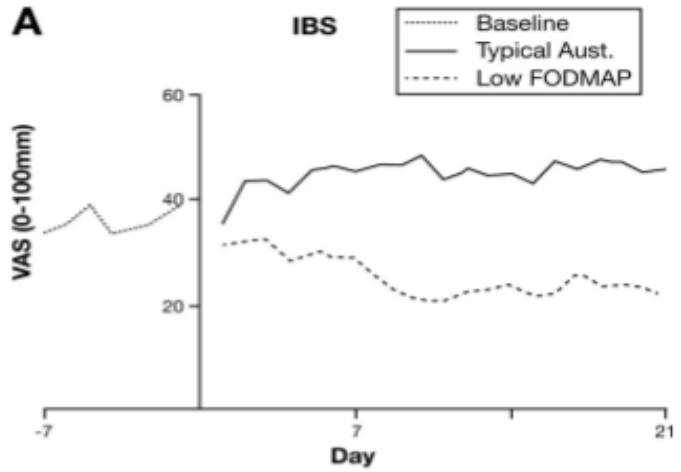


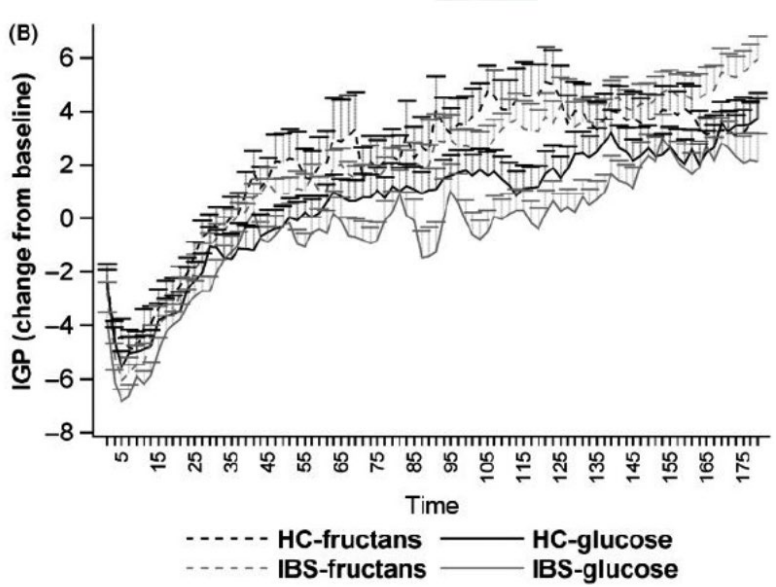
Sorbitol
Mannitol



FODMAP in FD

- Favorable effect of low FODMAP diet in tertiary care IBS
- Intragastric infusion of FODMAPs induced symptoms of FD



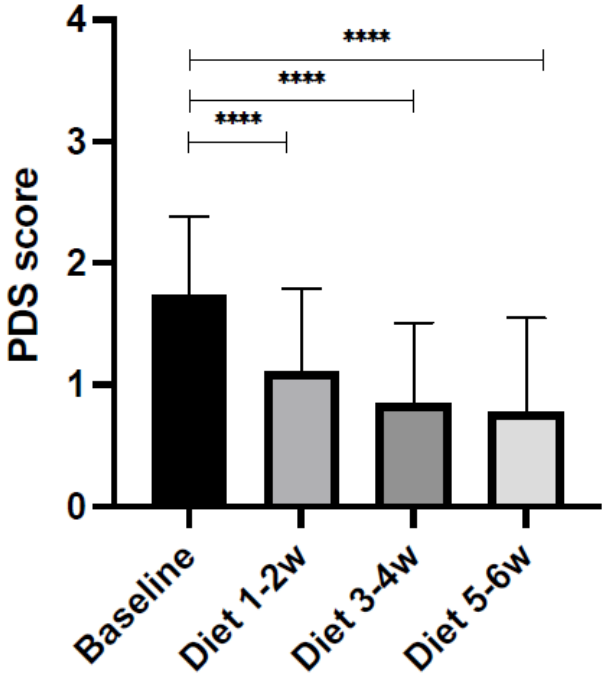


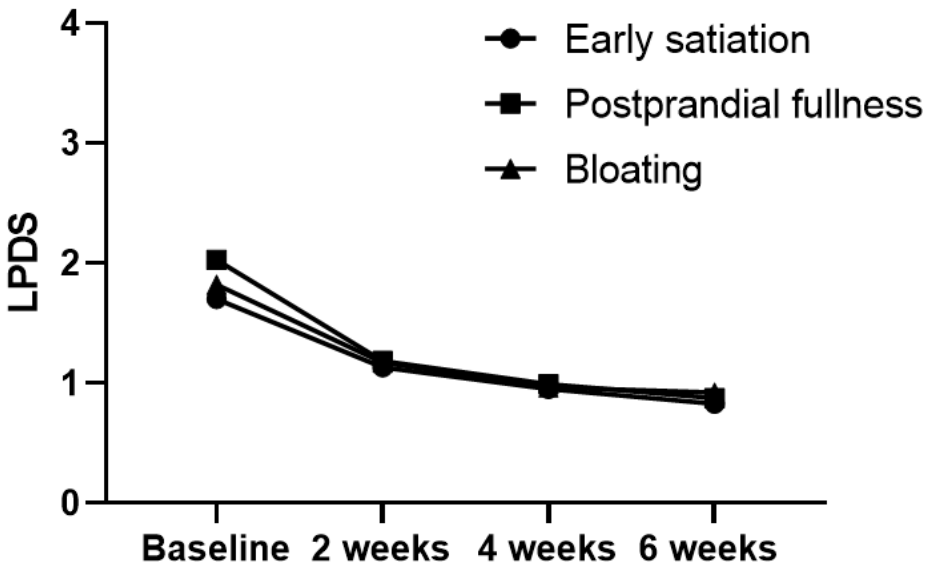
Lacy et al. Gastroenterology 2016
Masuy et al. Neurogastrol Motil. 2018

*p<0.05; *** p<0.0001

FODMAP in FD

n=25
41±2.9 years
81% female
36% IBS overlap

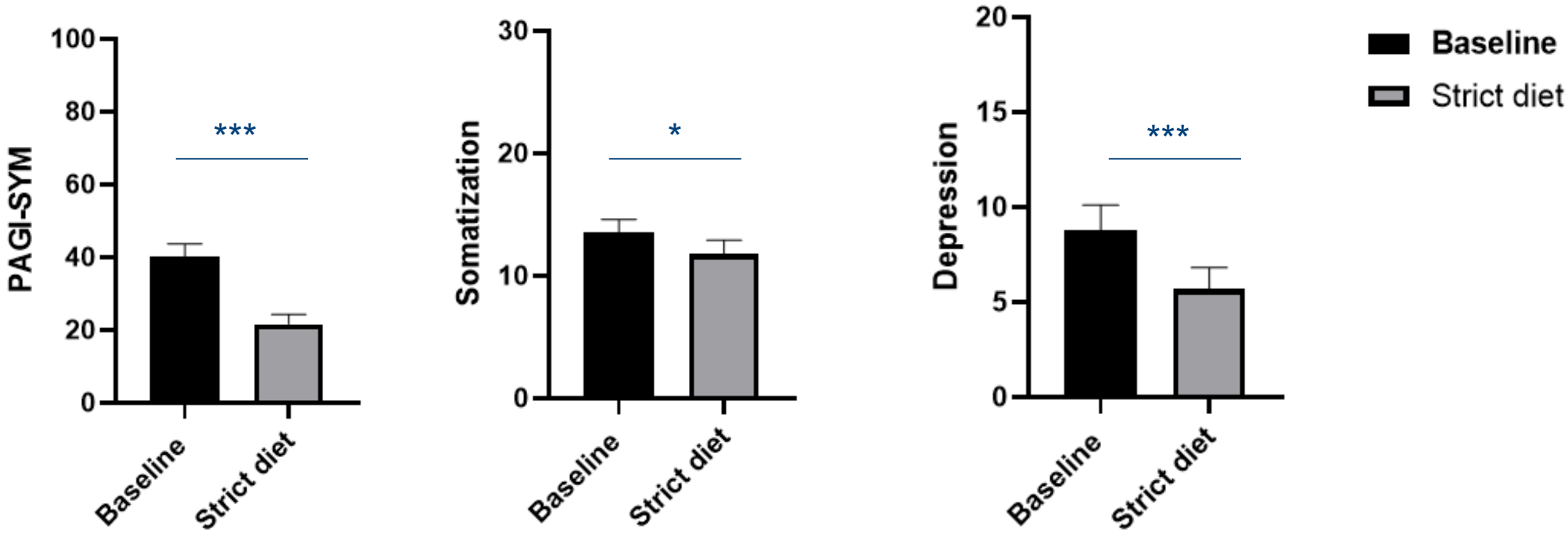




62% responder rate

*p<0.05; *** p<0.0001

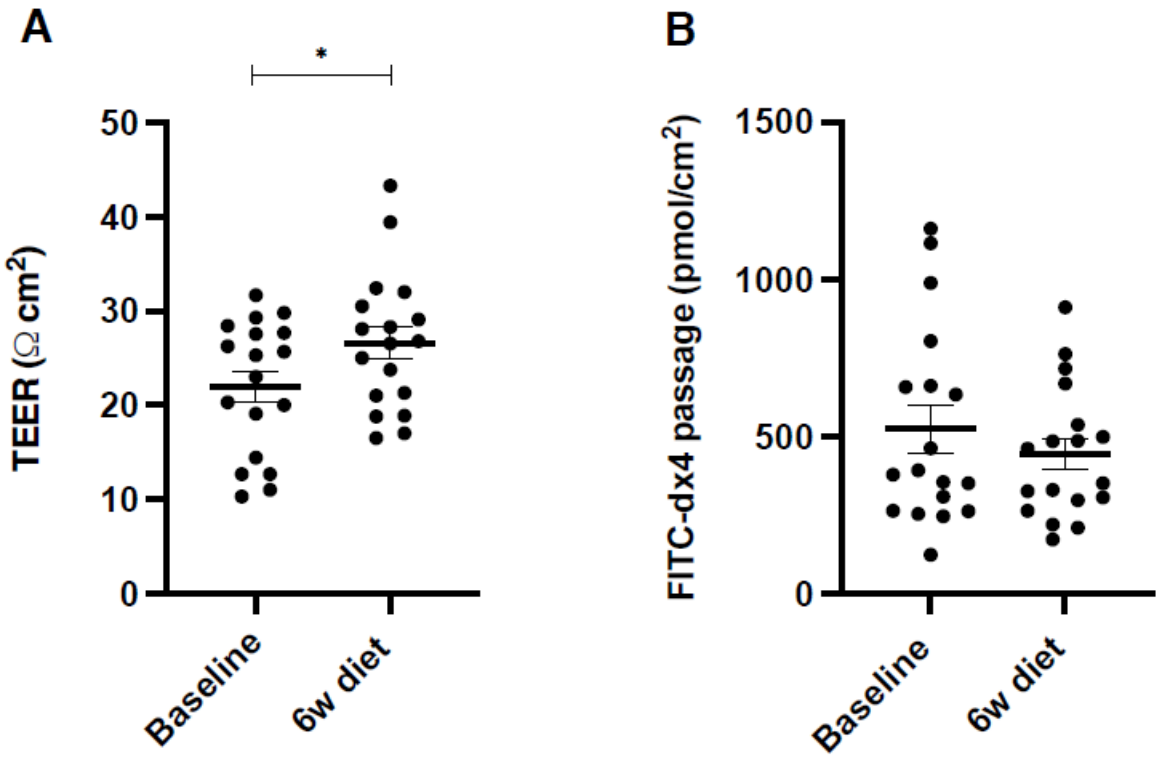
FODMAP in FD



Karen Van den Houte et al., UEGW 2021

*p<0.05; *** p<0.0001

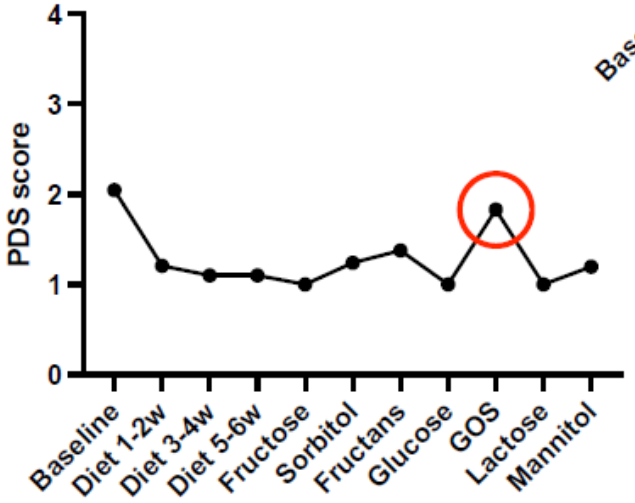
FODMAP in FD

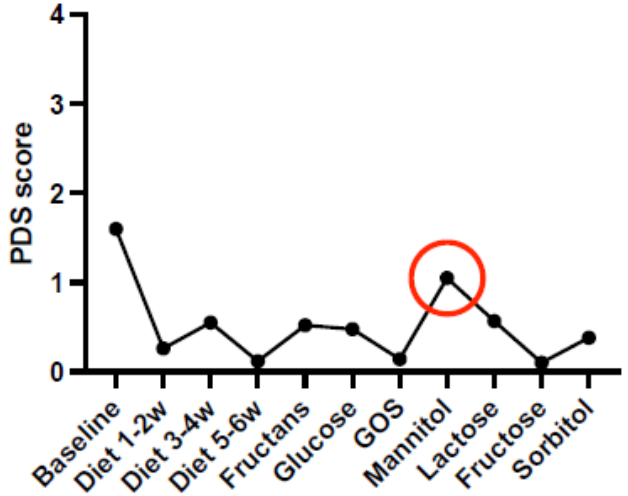


Karen Van den Houte et al., UEGW 2021

*p<0.05; *** p<0.0001

FODMAP in FD





1.2±0.5 FODMAPs

FODMAPs	Patients (%)
Mannitol	29
GOS	29
Fructans	21
Sorbitol	14
Fructose	14
Lactose	12
Glucose	29

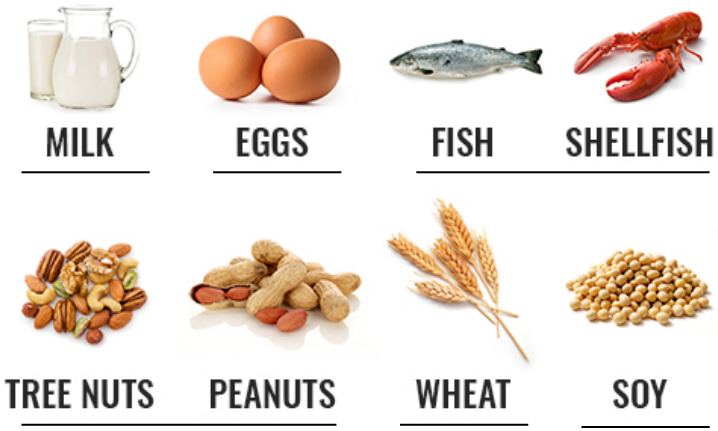
CONCLUSION: FODMAP in FD

- A low FODMAP diet:

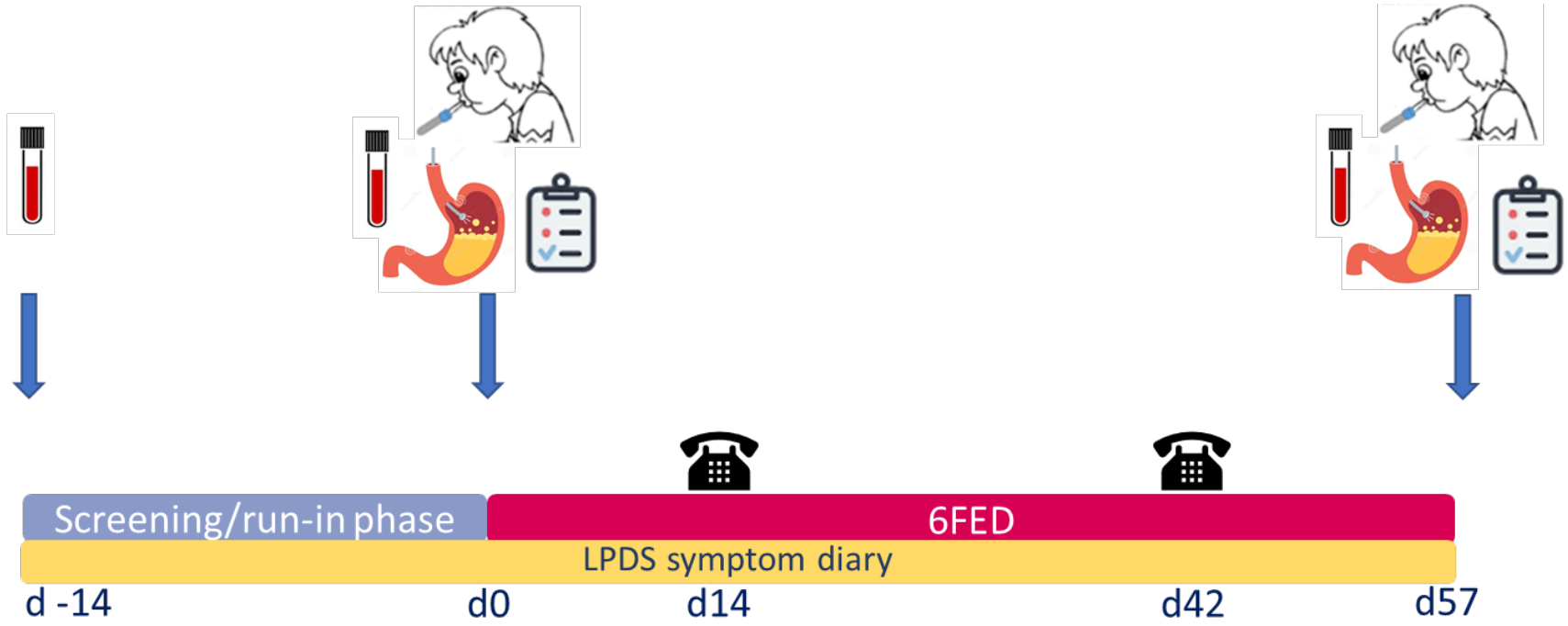
✓ Improves symptom severity in FD
✓ Improves somatization and depression
✓ Highly individual trigger pattern during reintroduction

Elimination diet in functional GI disorders

1. Low-FODMAP diet in irritable bowel syndrome (IBS)
2. Low-FODMAP diet in functional dyspepsia (FD)
3. 6FED in FD



The six food elimination diet in functional dyspepsia



Results (n=9)

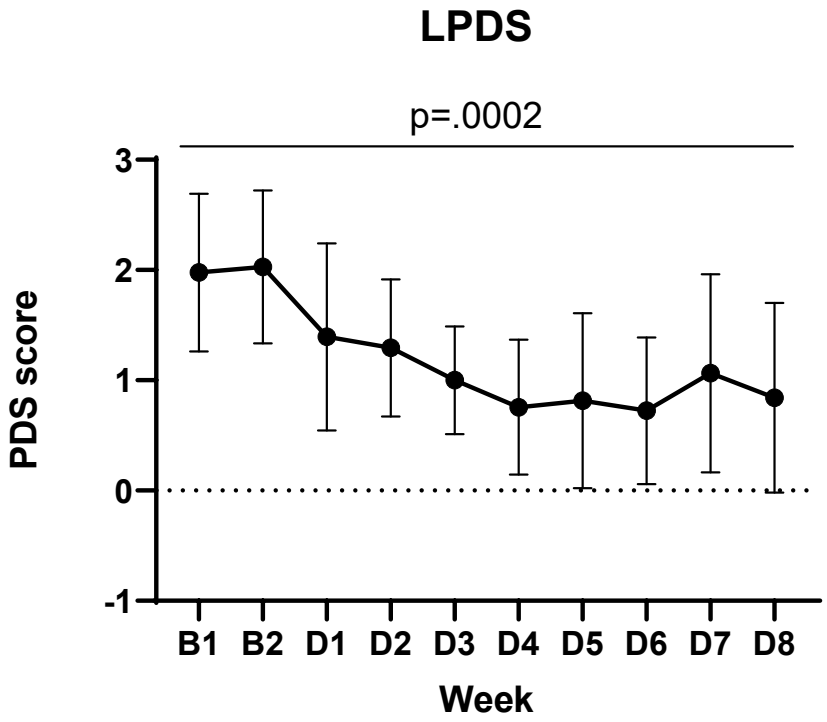


Figure 1. PDS score (postprandial distress syndrome score). B= baseline period; D= diet period,

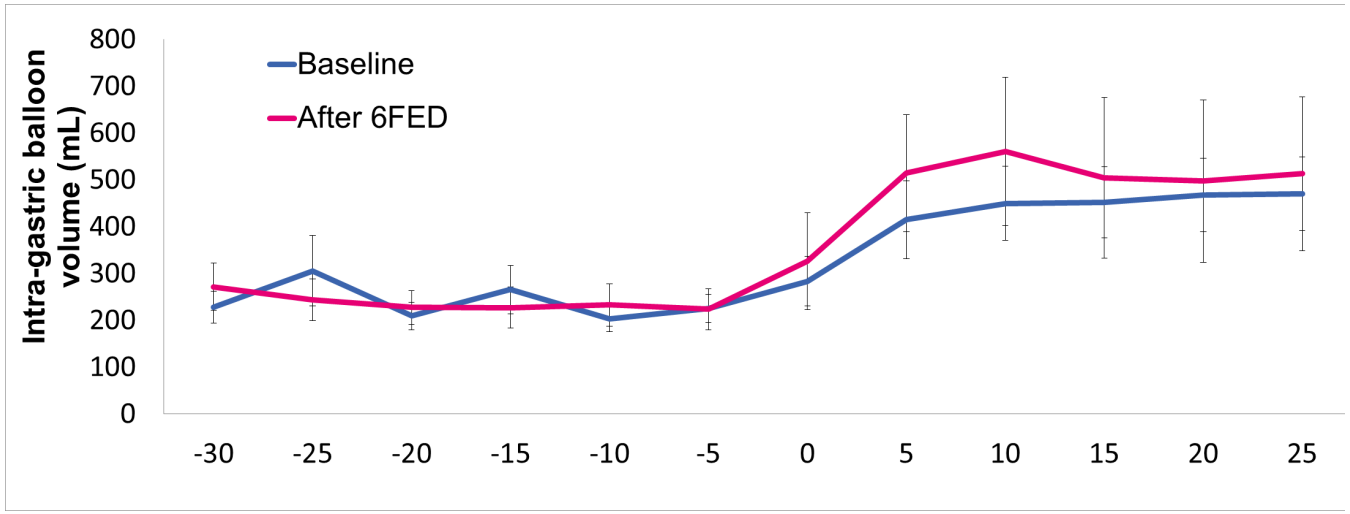
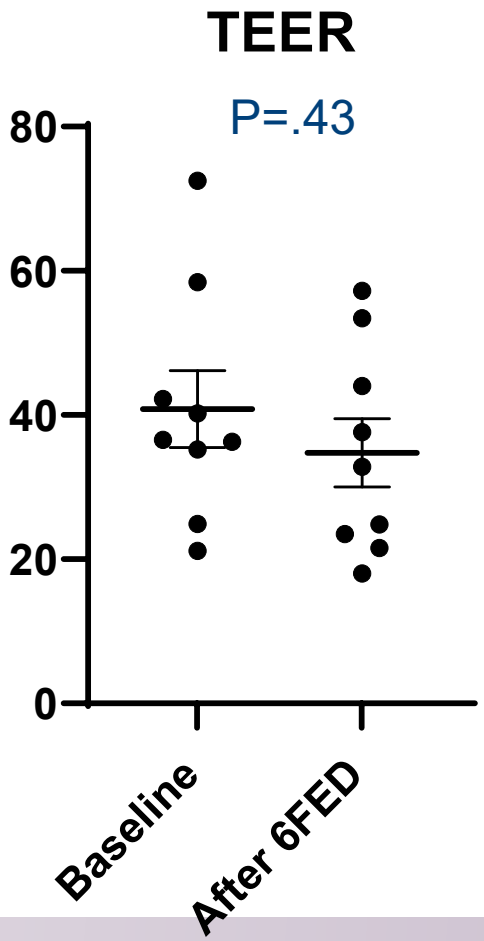
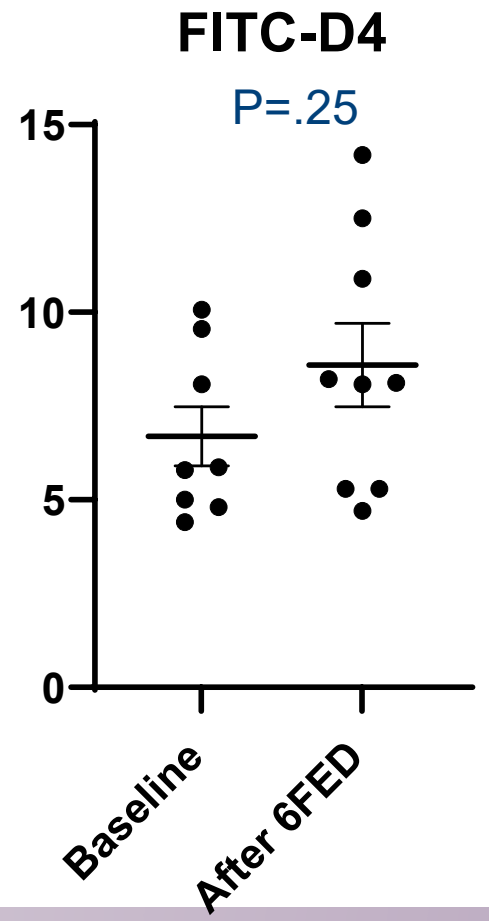


Figure 3. Gastric accommodation (p=.47)

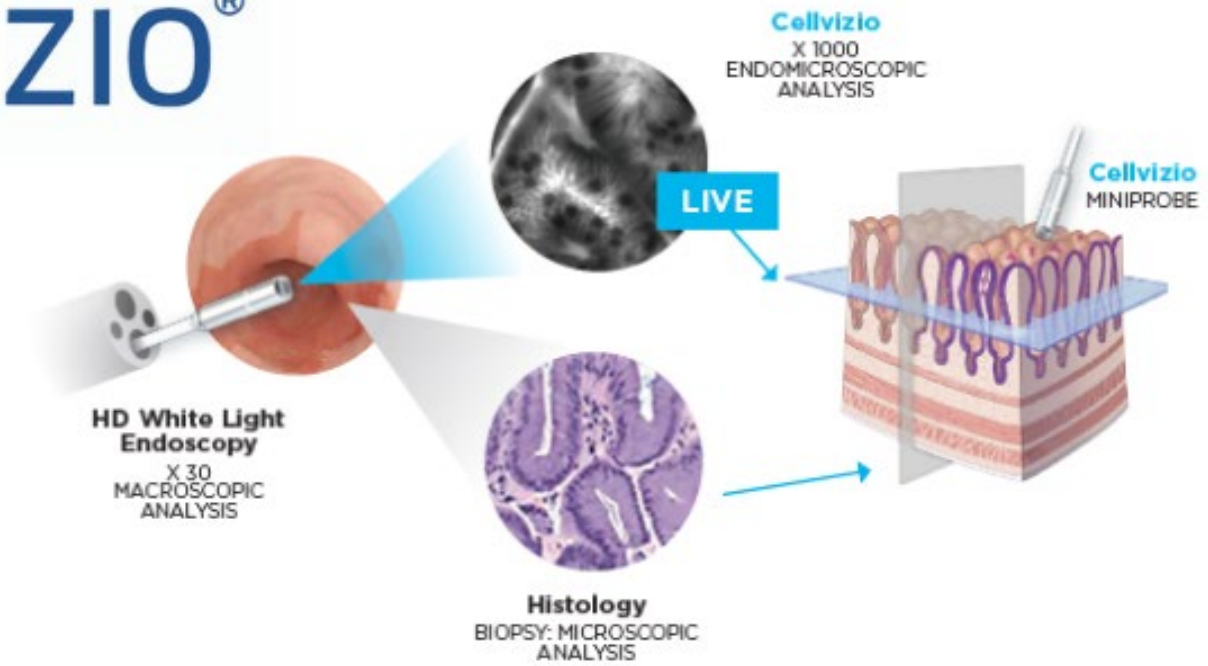
Results: permeability (n=9)

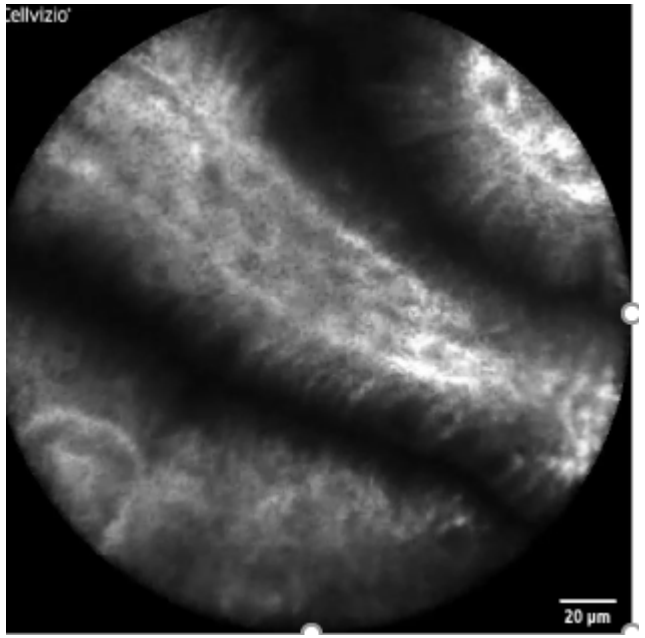




Confocal laser endomicroscopy (CLE)

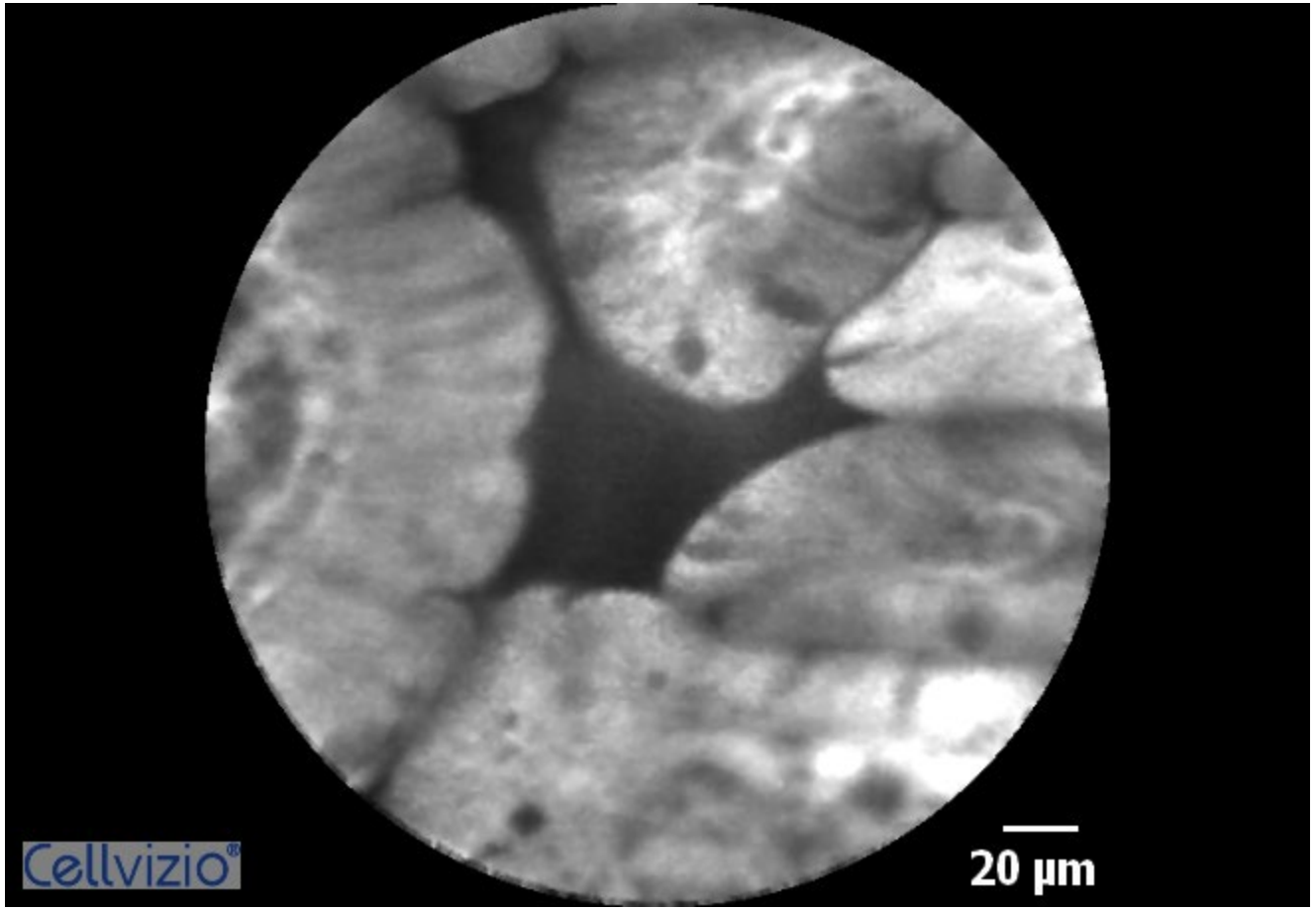
Cellvizio®



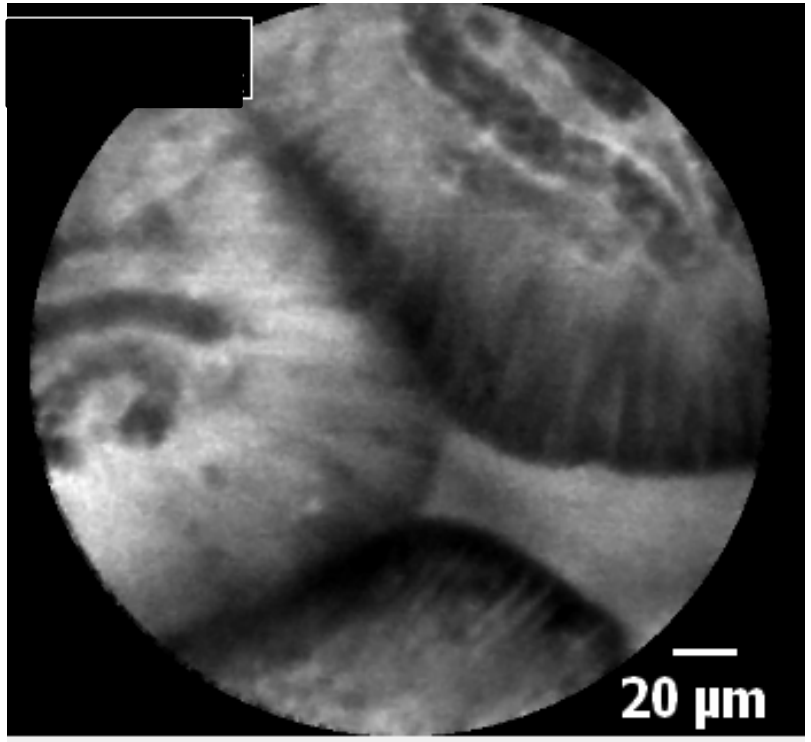


http://www.cellvizio.net/learn/technical-training/2-what-is-cellvizio

Negative

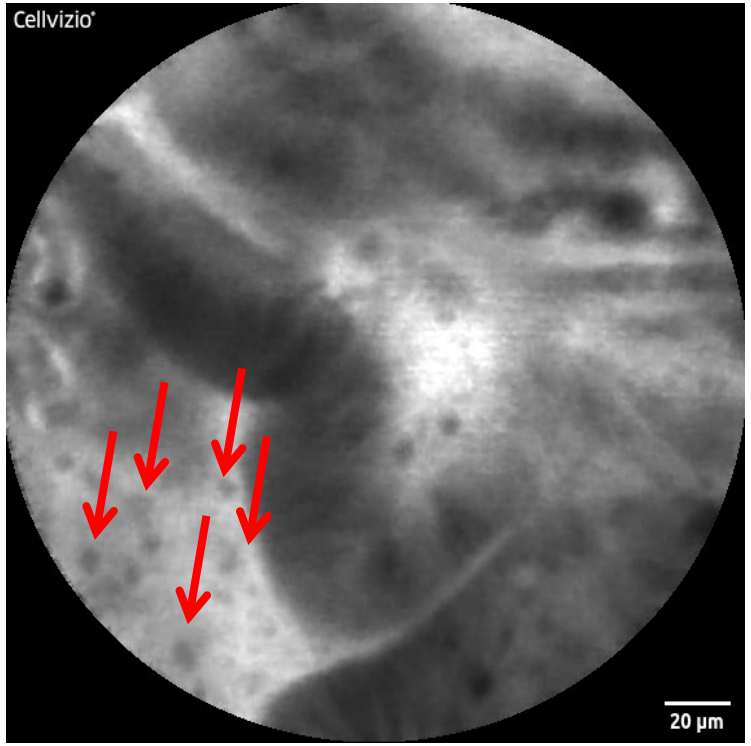


Positive



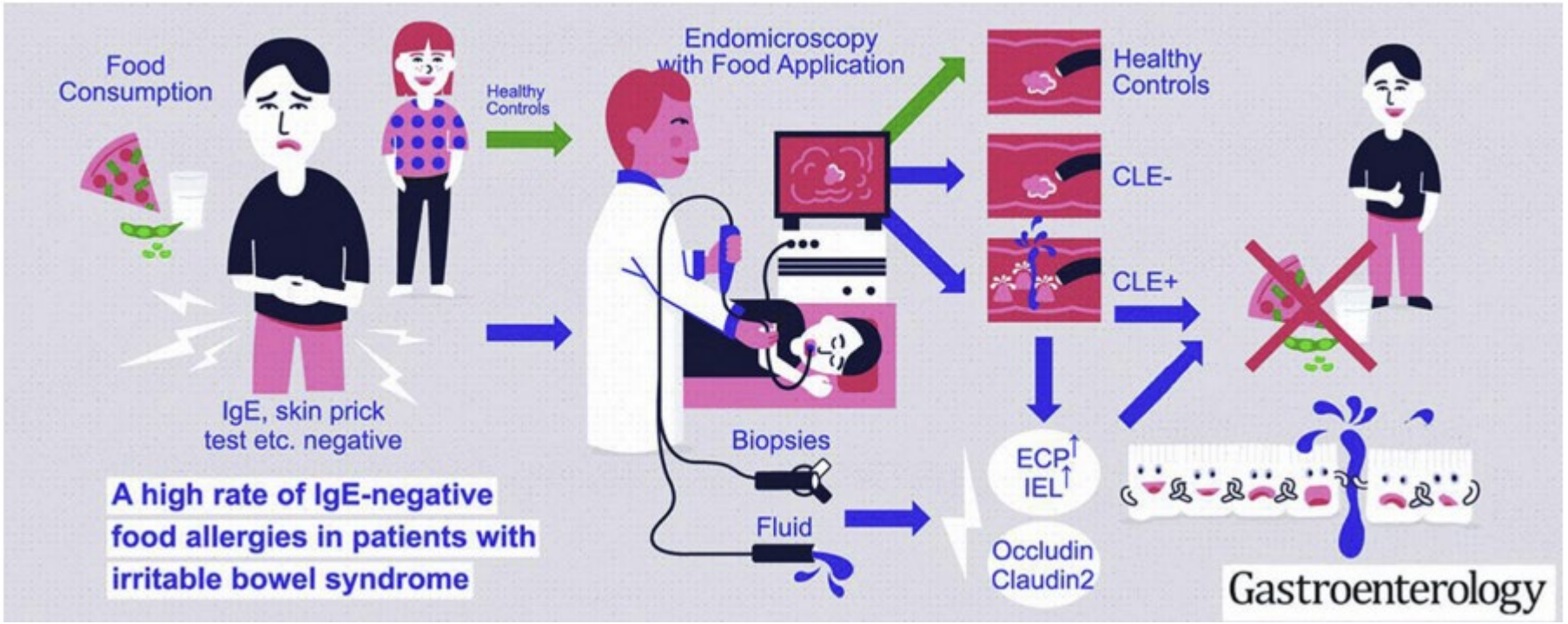
Fluorescein leakage

+

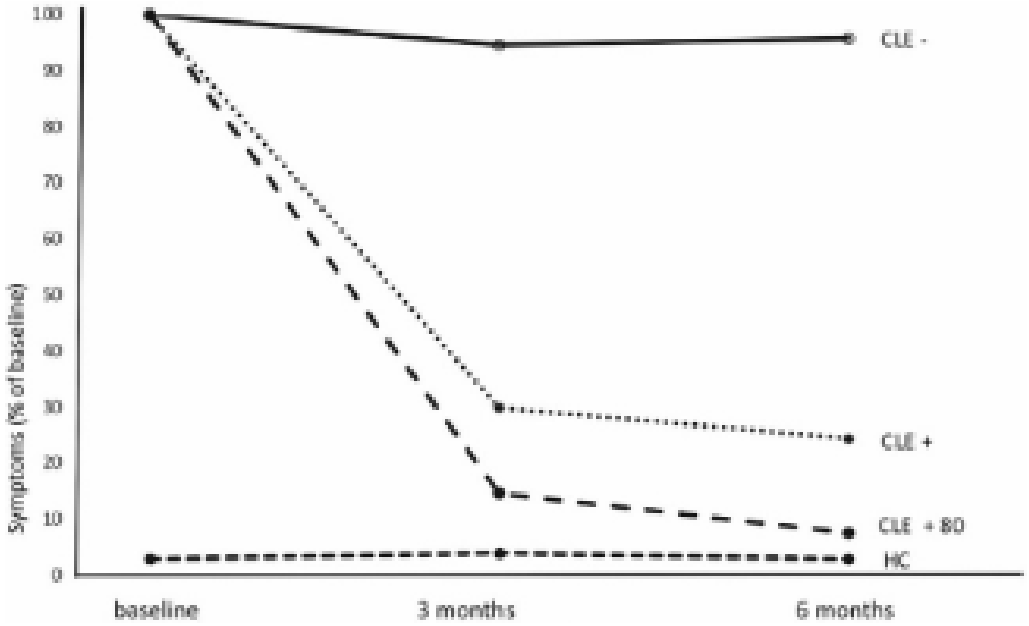


Cell shedding

CLE in IBS


Food Consumption
Healthy Controls
Endomicroscopy with Food Application
Healthy Controls
CLE-
CLE+
IgE, skin prick test etc. negative
Biopsies
Fluid
ECP↑
IEL↑
Occludin
Claudin2
A high rate of IgE-negative food allergies in patients with irritable bowel syndrome
Gastroenterology

CLE in IBS

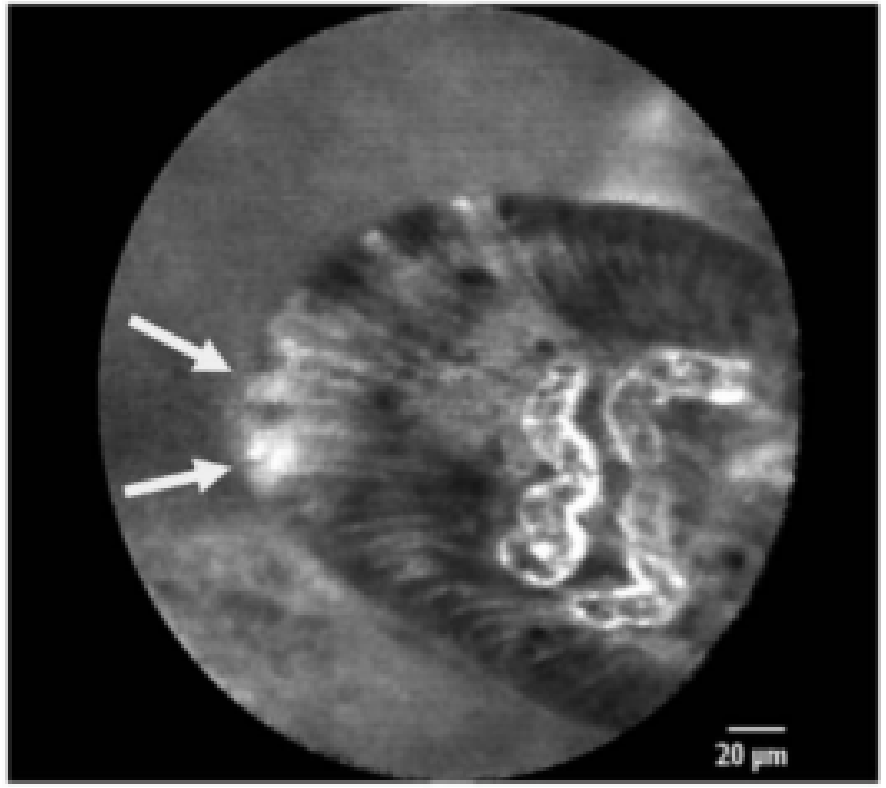


Supplementary Figure 2. Improvement of symptoms in the CLE^{+} patients after food antigen exclusion. The graph shows mean values at baseline, after 3 months, and after 6 months of reactive food antigen/allergen exclusion in the CLE^{+} patients, differentiating between patients with and without a >80% improvement. Development of symptoms of CLE^{-} patients and HCs are also provided.

Fritscher-Ravens et al., Gastroenterology 2019.

Epithelial gaps in FD

a



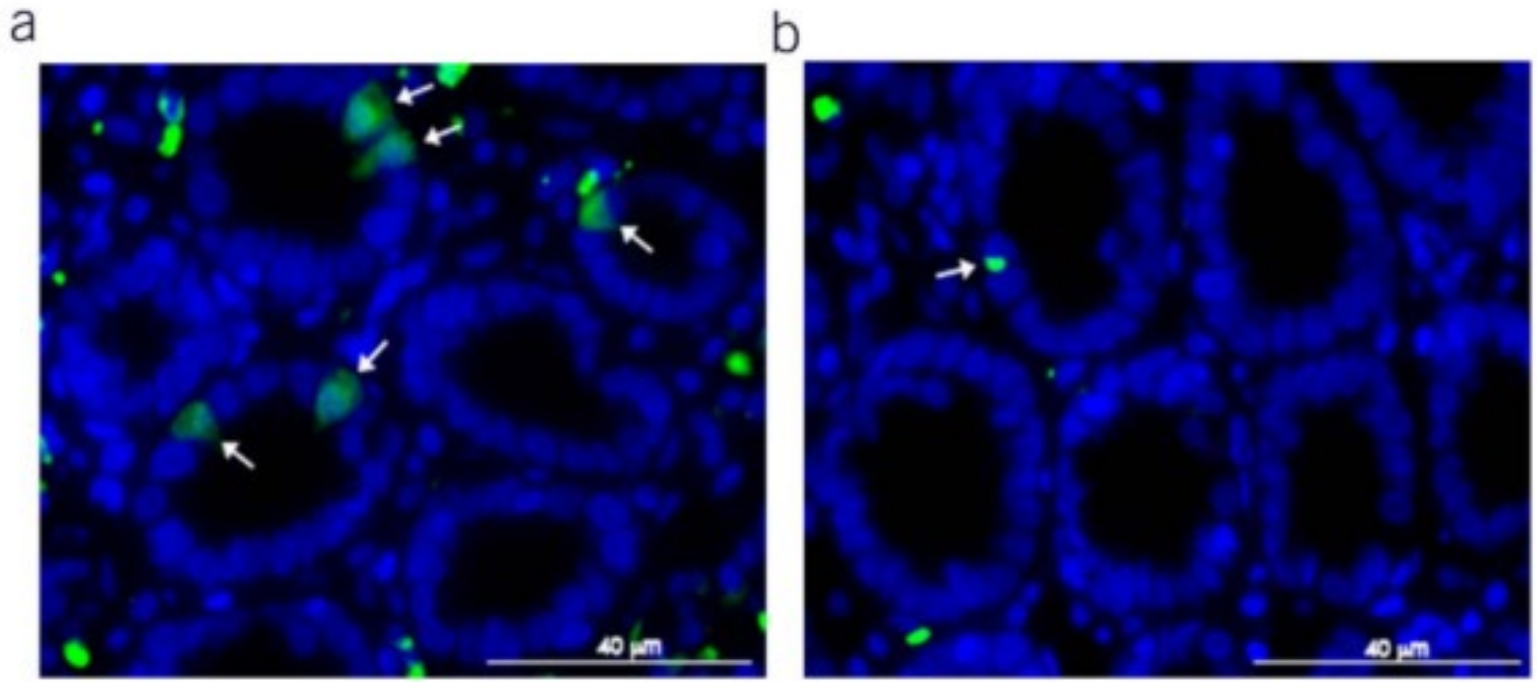
Nojkov et al., Am J Gastroenterol 2020.

Epithelial gaps in FD

Lower TEER in FD vs. HC
Increased epithelial gap density in D3 in FD
Lower CLDN 1 expression in FD

FD

Control



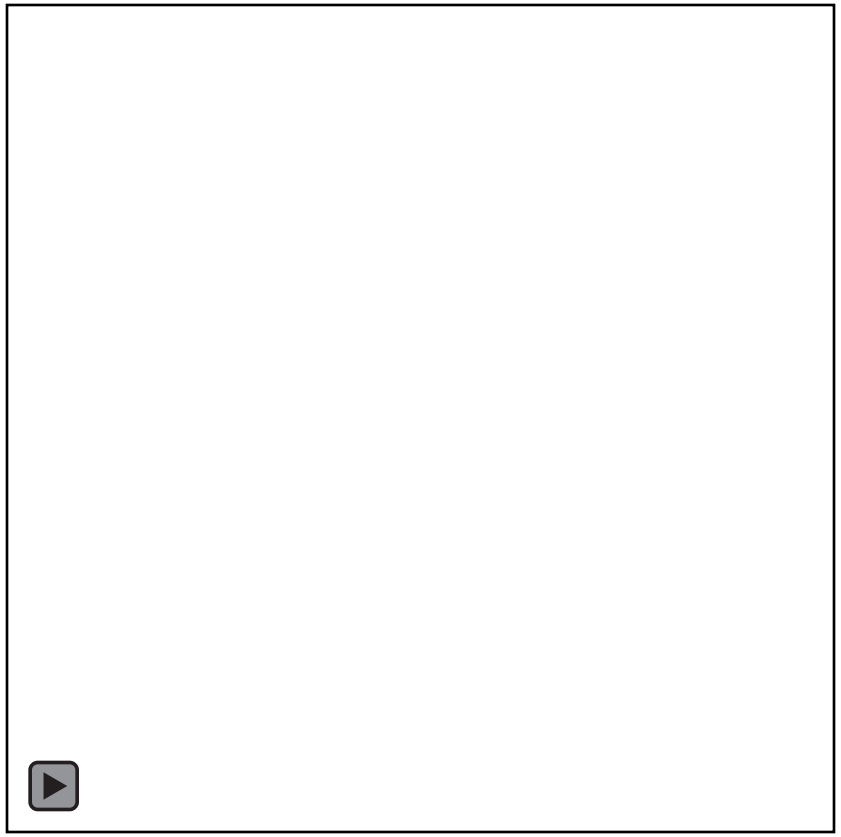
IHC of activated caspase

20.8 ± 6.4 vs 13.8 ± 7.2 positive cells/1,000 epithelial cells (p=0.04)

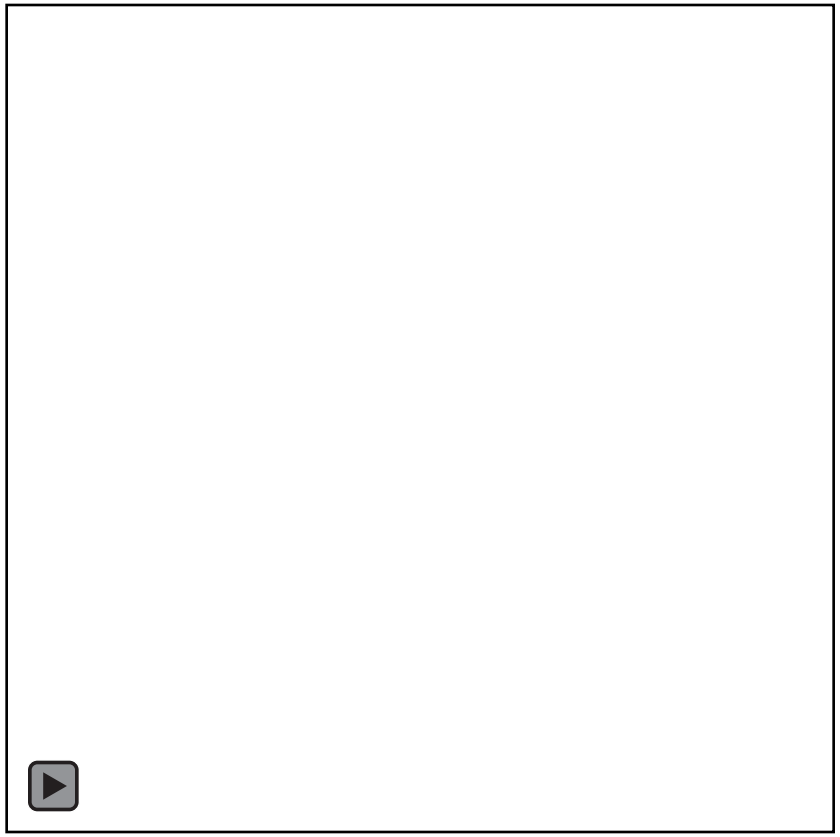
Nojkov et al., Am J Gastroenterol 2020.

Pilot study in FD

Baseline



After wheat



CLE study

Endoscopy and CLE

30 min

Baseline biopsy

2 weeks

5 min observation

Nuts

Fish

egg

soy

milk

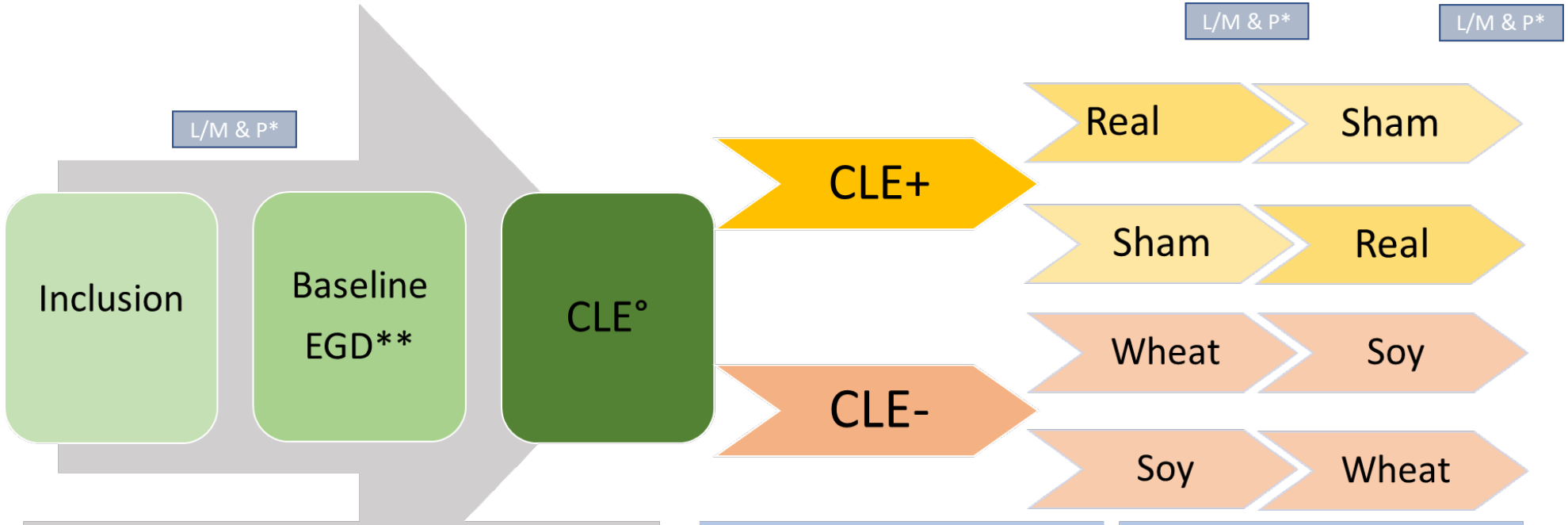
wheat

Biopsy



N = 65 (FD)
N = 65 (IBS)
N = 20 (HV)

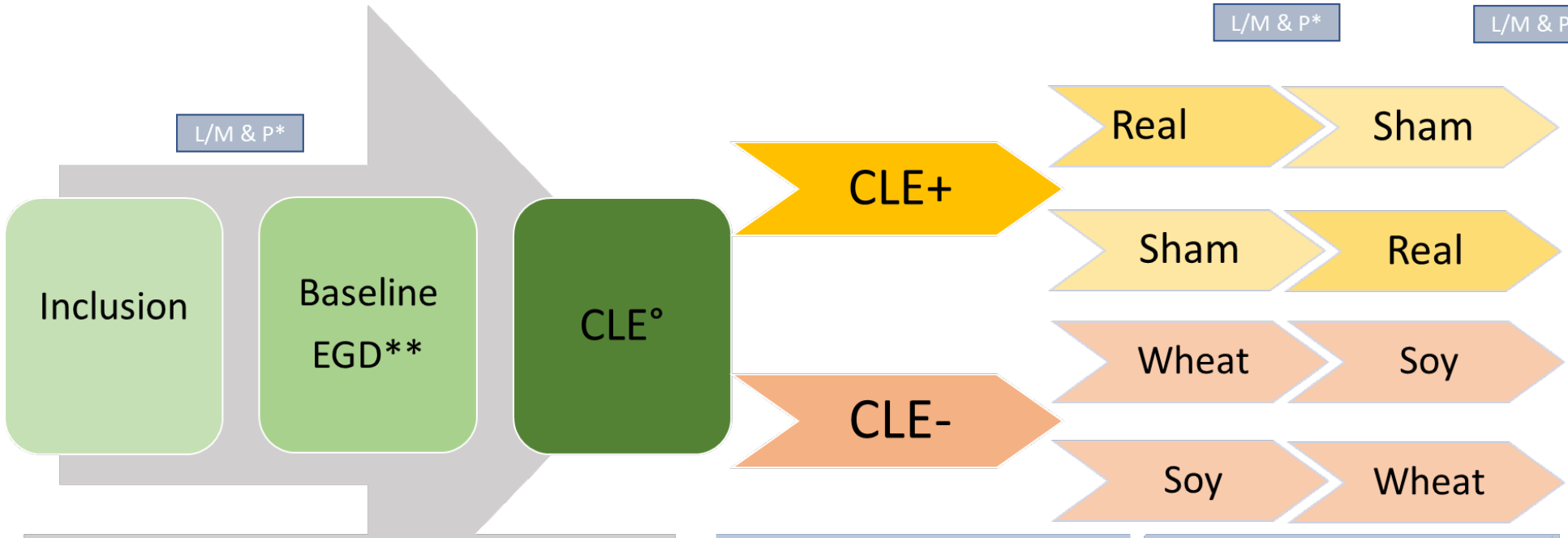
Sham controlled diet (FD)



Inclusion			Daily	Questionnaires	
Specific IgE's	Baseline questionnaires	2 week diary: Stool and symptoms	Stool and symptom diary	PAGI-SYM, SF-NDI, PHQ-9, PHQ-15, GAD, CIN-20 (bi-weekly)	Food intake (weekly) IBS-SSS, VSI (before/after diet periods), OTE

*L/M & P= Lactulose/Mannitol test and Serological permeability markers
** EGD = Esophago-gastro-duodenoscopy
°= Confocal laser endomicroscopy

Sham controlled diet (IBS)



Inclusion			Daily	Bi-weekly/after diet	
Specific IgE's Lactose breath test	Baseline questionnaires	2 week diary: Stool and symptoms	Stool and symptom diary	IBS-SSS, IBS-QOL Food intake	PHQ-9, PHQ-15, GAD, VSI, OTE

*L/M & P= Lactulose/Mannitol test and Serological permeability markers
** EGD = Esophago-gastro-duodenoscopy
°= Confocal laser endomicroscopy

Contactinfo

Functional dyspepsia

jolien.schol@kuleuven.be

016 34 56 63

Irritable bowel syndrome

lukasmichaja.balsiger@kuleuven.be

016 37 70 90