

Pediatric Functional Abdominal Pain Disorders

The poster features a background image of a coastal promenade with a stone breakwater on the left and a modern glass-walled building on the right. The sky is clear and blue. The text is overlaid in green and black.

REGION Nordsjællands Hospital

Dansk Pædiatrisk Selskab
Danish Paediatric Society

Program for Dansk Pædiatrisk Selskab Børnedage 2024

D. 2. - 4. juni 2024
Marienlyst Strandhotel, Helsingør
Arrangør: Børne- og ungeafdelingen,
Nordsjællands hospital

Der tages forbehold for ændringer i programmet

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CAMPAIGN ON F.A.P.

Comic leaflet for children



ESPGHAN

WHAT IS FUNCTIONAL ABDOMINAL PAIN?

Functional abdominal pain is abdominal pain that:

1. Does not have a clear cause
2. Happens at least 4 days a month for 2 months
3. Is persistent
4. Can be triggered by stress or anxiety

Functional abdominal pain usually occurs in children aged 4-18 years old.

DO YOU KNOW?

Up to **30%** of school-aged children have functional abdominal pain

and **80%** get better within 2 years of seeing a doctor!

For more information
www.espghan.org

Functional Abdominal Pain
ESPGHAN

FUNCTIONAL ABDOMINAL PAIN

ALEX'S STORY

"COULD YOUR CHILD HAVE FUNCTIONAL ABDOMINAL PAIN?"

Functional Abdominal Pain

SIGNS AND SYMPTOMS

Besides abdominal pain, children may also complain of:

- NAUSEA
- HEADACHE
- DIZZINESS
- LIMB PAIN
- TIREDNESS
- DIFFICULTY SLEEPING

HOW TO HELP

Although there is no known cause, there are several areas where you can help:

- DIET
- SLEEP
- ACTIVITY
- MENTAL HEALTH
- STRESS/ ANXIETY

ALEX'S STORY

ALEX ALWAYS HAS STOMACH PAIN ... OR GOING TO THE TOILET

IT IS NOT DIRECTLY RELATED TO DIET... ALEX FEELS NAUSEOUS AND GETS HEADACHES

THIS MEANS FEWER DAYS AT SCHOOL, WHICH UPSETS SOME FRIENDS

SO THEY SEE A DOCTOR

ALEX'S PARENTS ARE REALLY WORRIED

THEY RUN SOME TESTS AND ALEX IS GIVEN LOTS OF INFORMATION

SOUNDS LIKE FUNCTIONAL ABDOMINAL PAIN

THE THERAPY IS GIVEN WHICH HELPS THE PARENTS TOO

NOW THE PAIN IS MANAGEABLE AND ALEX IS NOT MISSING SCHOOL ANYMORE

CAMPAIGN ON F.A.P.

Support leaflet



ESPGHAN

What is functional abdominal pain?

Functional abdominal pain usually occurs in children 4-18 years old.

Functional abdominal pain...

- ✓ Does not have a clear cause
- ✓ Involves abdominal pain that lasts at least 4 days a month for 2 months
- ✓ Is not solely affected by eating, activity, or bowel movements
- ✓ Can be triggered by stress or anxiety



Signs and Symptoms

Your child may complain of frequent abdominal pain, usually around the umbilicus. They may also complain of headaches, limb pain, and difficulty sleeping. Children with functional abdominal pain usually have no other signs of serious illness.

Functional abdominal pain can significantly impact your child's daily life and is often accompanied or made worse by stress, anxiety or low mood.

Call the doctor if your child is diagnosed with functional abdominal pain and develops:

Worsening belly pain

A fever

Loss of appetite

Pain while peeing



For more information, visit:

www.espghan.org



Contacts and Resources

- <https://kidshealth.org/en/parents/functional-abdominal-pain.html>
- <https://thesleepcharity.org.uk/information-support/children>
- <https://hypnosis4abdominalpain.com/>

Functional Abdominal Pain



What can you do to help?

Functional abdominal pain usually resolves over time, so the goal of treatment is to ease symptoms and help children to return to their daily life. A few things you can do to help manage their symptoms at home are:

Activity

Encourage them to continue normal activities like going to school, playing sports, and spending time with family and friends. Activities can distract them from their pain and ease their symptoms, whilst physical exercise can improve bowel function and stress levels.

Sleep

Poor sleep can worsen symptoms. If sleep is an issue for your child, try to help them improve their sleep patterns. Some tips can be found in the resources section.



Diet

A balanced diet and staying hydrated will promote a healthier gut and improve wellbeing. It is important to discuss any diet related changes with a dietician.

Stress and Anxiety

Functional abdominal pain can trigger, and be triggered by, stress and other mental health symptoms. Talking to your child about their stressors and developing strategies to manage them could be beneficial, as well as reassuring them the pain does not have a serious cause and is temporary.

Mental Health

If your child suffers from any mental health conditions, such as anxiety or depression, getting help to overcome these will be important. Consider a counsellor for support and to help manage their condition.

Key Points to Remember



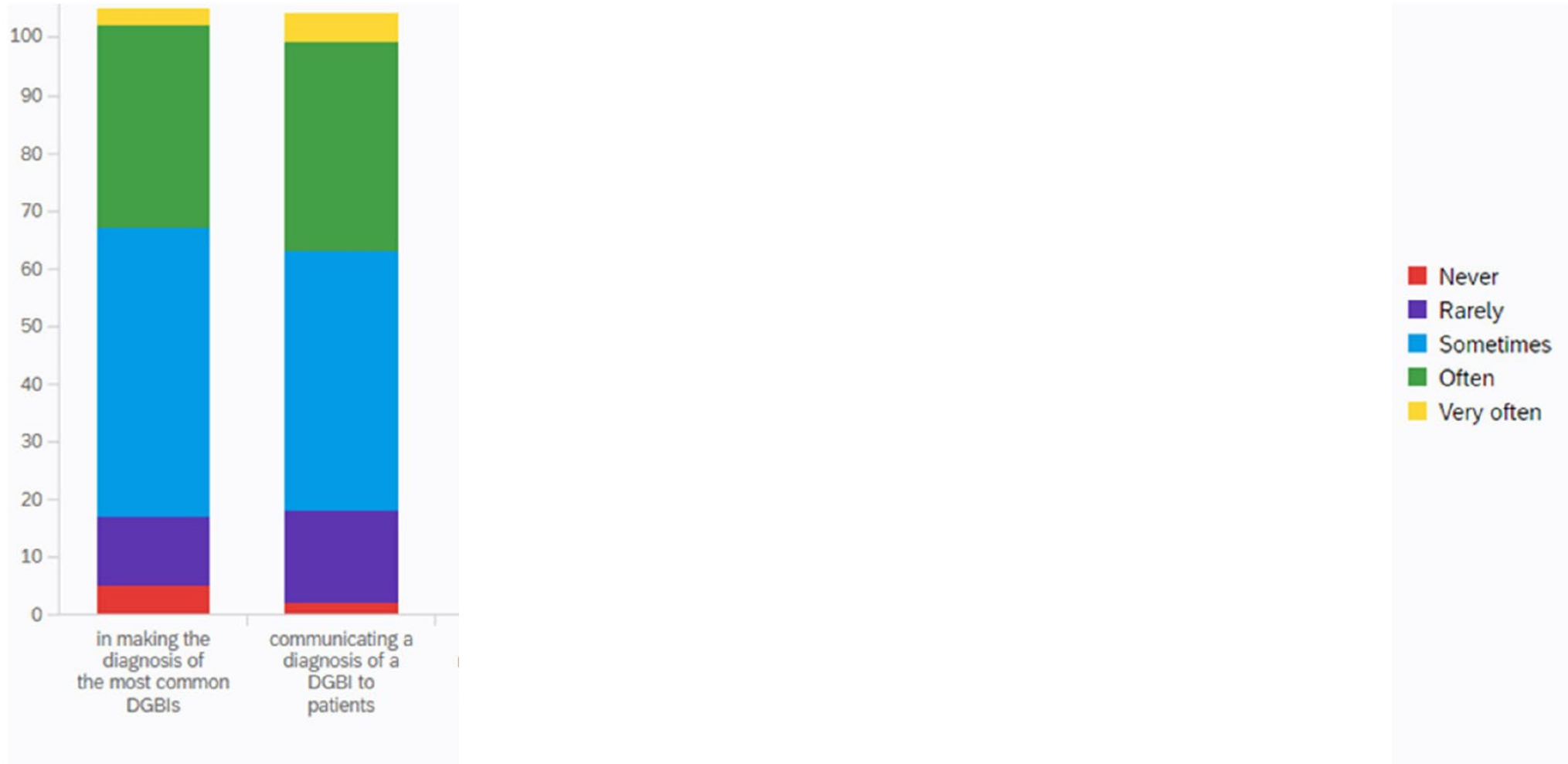
Although there is no known cause, functional abdominal pain is real and dismissing symptoms may make things worse.

These symptoms can be distressing and cause considerable pain, but they are not dangerous and will not lead to long-term damage to your child.

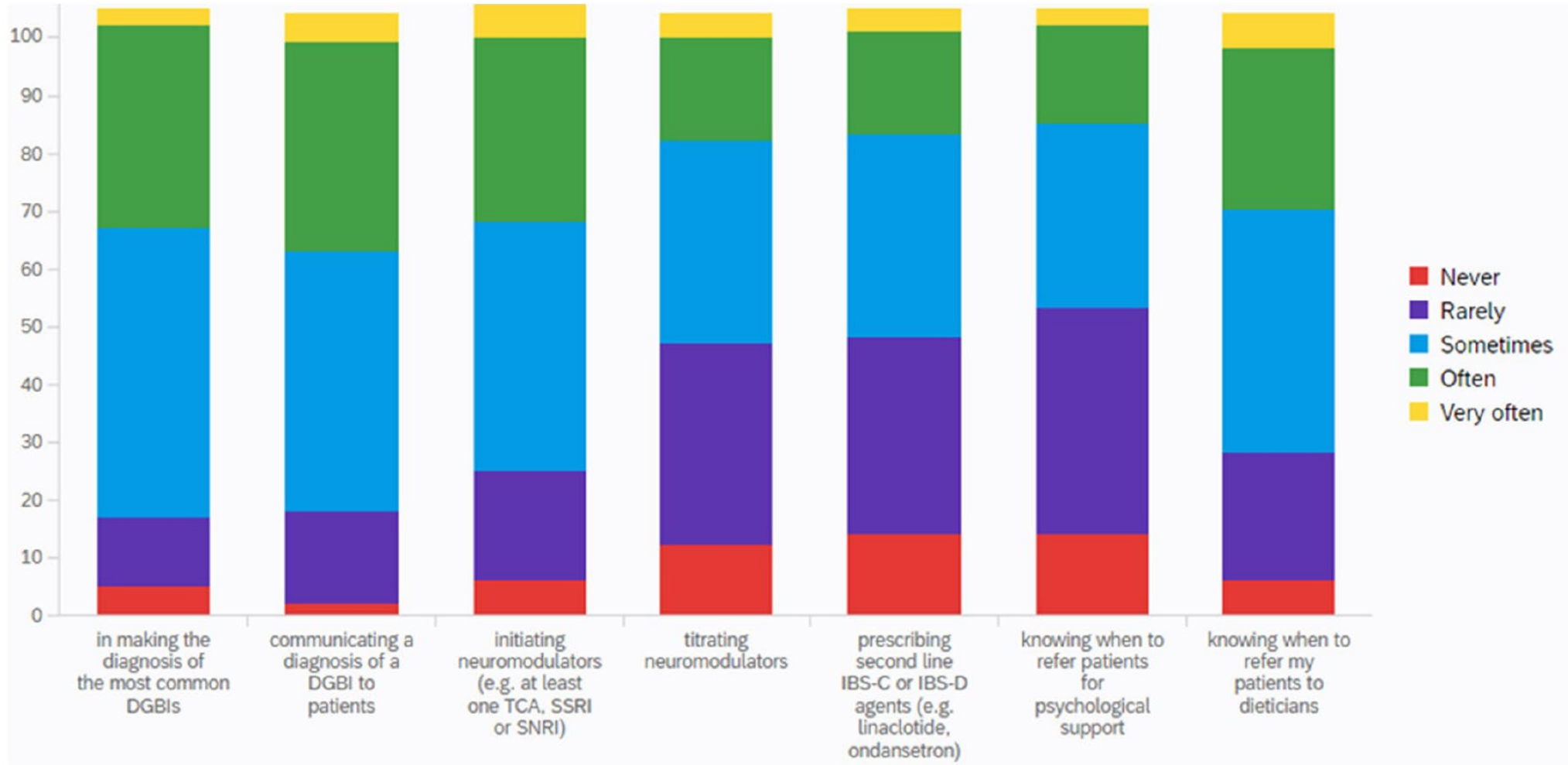


Children with functional abdominal pain may feel sad and disappointed about missing activities, school, and time with their friends which could lead to negativity about dealing with their pain. Helping children to keep a positive outlook can make a huge difference.

UK trainee reported percentage comfort levels with the diagnosis and management of DGB



UK trainee reported percentage comfort levels with the diagnosis and management of DGB



Important problem?

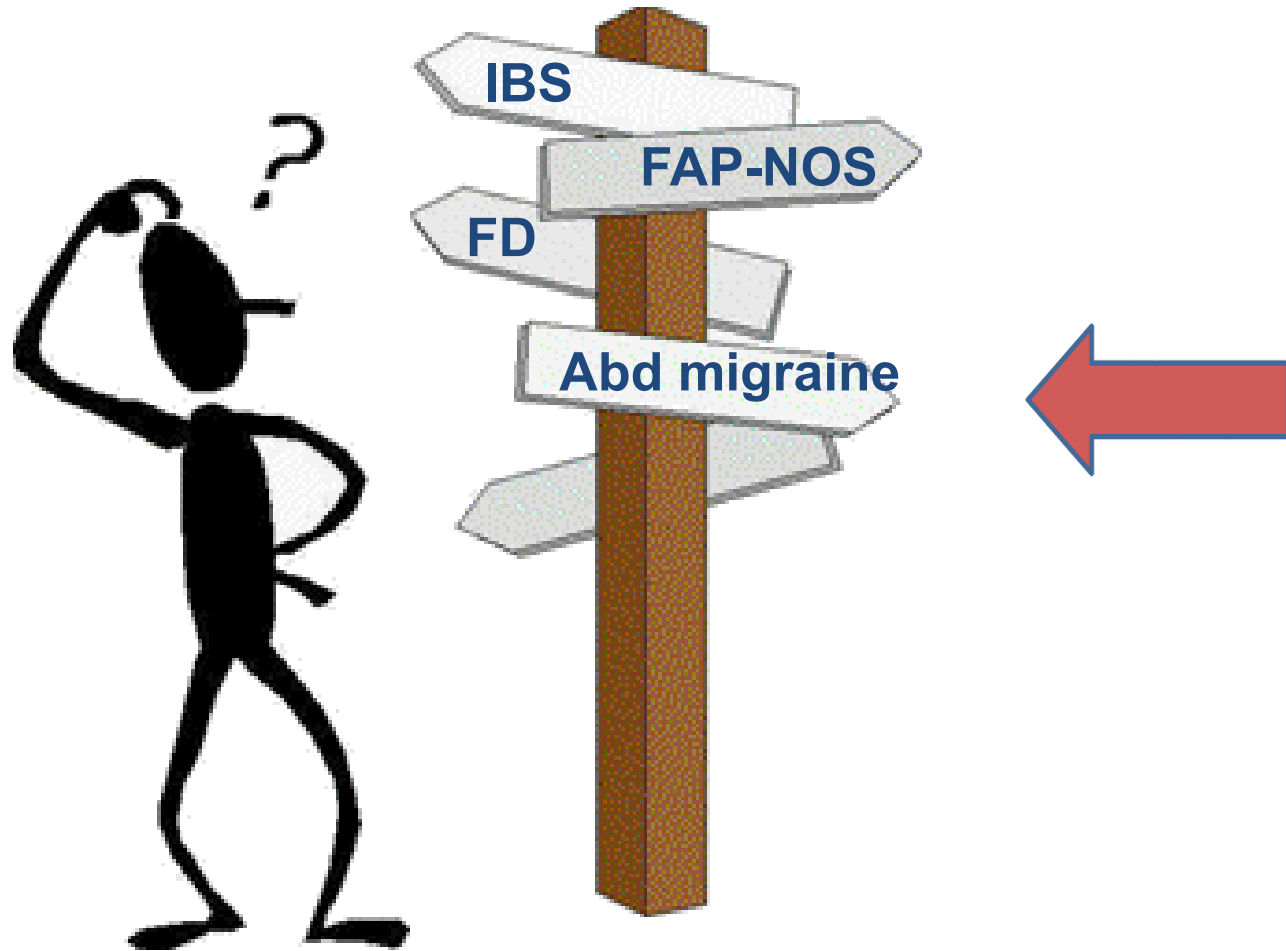


1. High prevalence
2. High cost
3. School absence
4. Low QoL
5. Depression and anxiety

History

- **14 y.o. girl, developmentally normal**
- **Periumbilical abdominal pain every day with radiation to the epigastric region for the past 6 months**
- **Pain wax and weans, most of the time crampy, sometimes wakes her up at night**
- **Defecation pattern is completely normal**
- **Not related to meals**
- **Tried “everything”**
- **Missing school**

Are Rome criteria useful-helpful?



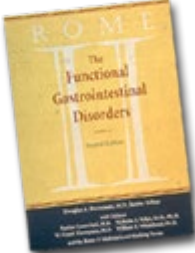
History of Rome Criteria



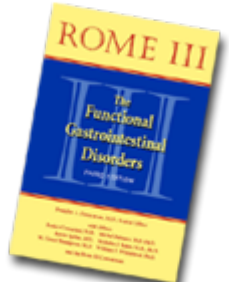
1990 Rome Classification



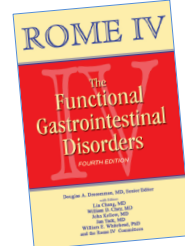
1994 Rome I book



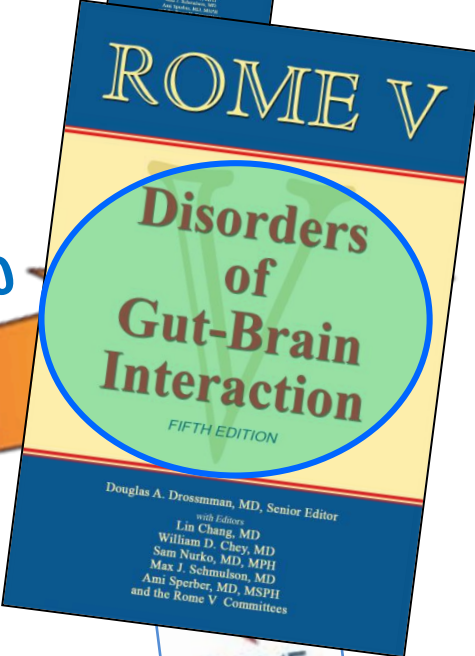
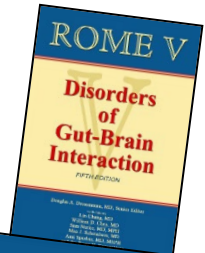
Rome II 2000



Rome III 2006



Rome IV 2016



2026 Gastroenterology

1980-1984 Epidemiology studies

1989 Pre-Rome IBS Criteria

Manning Criteria

1984 Kruis Criteria



Roma 88



Children



2006 Gastroenterology



2016 Gastroenterology



Functional Disorders: children and adolescents

Disorders of Gut-Brain Interaction (Rome V)

H1. Functional nausea and vomiting disorders

- H1a. Cyclic vomiting syndrome
- H1b. Functional nausea and functional vomiting
- H1c. Rumination syndrome
- H1d. Aerofagia

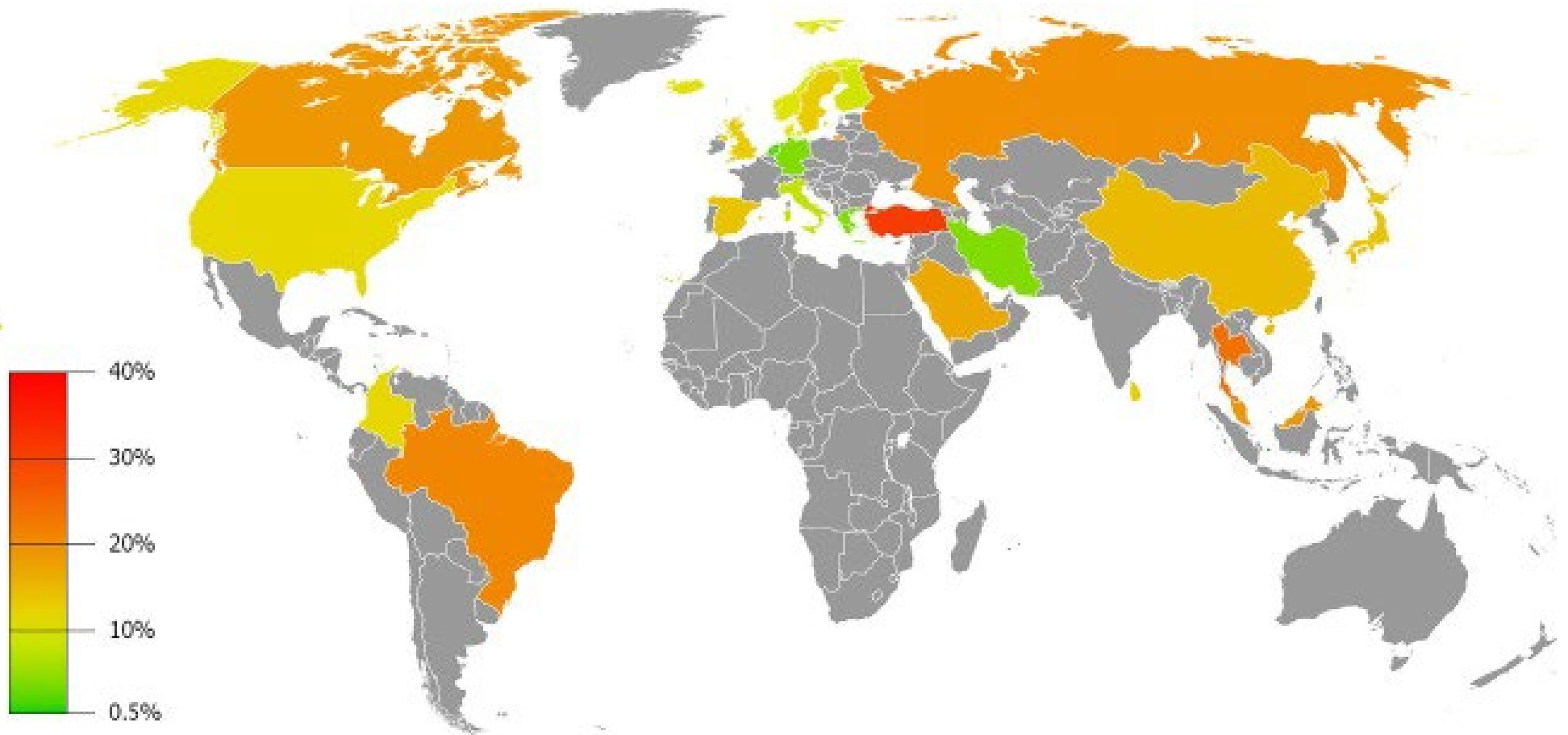
H2. Functional abdominal pain disorders

- H2a. Functional dyspepsia
- H2b. Irritable bowel syndrome
- H2c. Abdominal migraine
- H2d. Functional abdominal pain, not otherwise specified

H3. Functional defecation disorders

- H3.1 Functional constipation
- H3.2 Nonretentive fecal incontinence

Prevalence of functional abdominal pain



Multisite pain characteristics in a cohort of children with FAPDs (n = 406)

Multisite pain characteristics	n (%)
Any nonabdominal multisite pain	295 (73%)
More than 1 nonabdominal multisite pain site	200 (49%)
Number of nonabdominal pain sites in those with multisite pain	2 [1-3]*
Nonabdominal multisite pain locations	
Headaches	172 (42%)
Chest pain	143 (35%)
Muscle soreness	134 (33%)
Lower back pain	110 (27%)
Joint pain	94 (23%)
Extremity (arms and legs) pain	87 (21%)
Pain with urination	30 (7%)

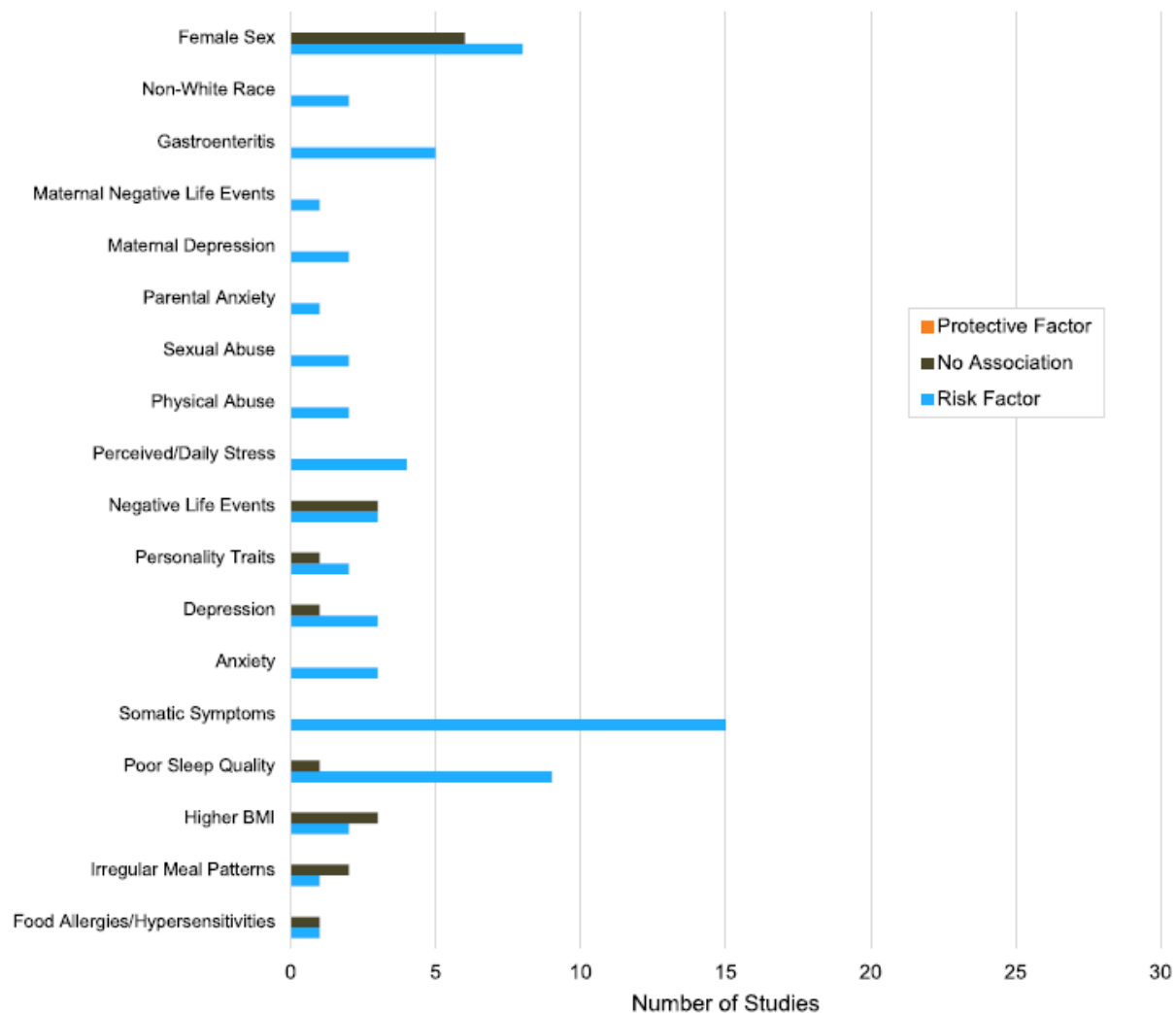
Comparisons between children with FAPDs with vs without multisite pain on abdominal pain, psychosocial distress, functional disability, and HRQoL

Variables	With multisite pain (n = 295)	Without multisite pain (n = 111)	P value
Abdominal pain episodes/2 wk.	12 [6-20]*	7 [3-14]	<.001
Abdominal pain intensity (0-10)	3.2 [2.3-4.2]	2.8 [2.2-3.9]	.03
Anxiety (t score)	54 [45-62]	45 [39-54]	<.001
Depression (t score)	46 [42-53]	43 [41-47]	<.001
Functional disability	10 [5-19]	5 [1-9]	<.001
PedsQL total score	77.2 [65.2-87]	88 [81.5-93.4]	<.001
PedsQL physical function	78.1 [62.5-90.6]	90.6 [81.3-96.9]	<.001
PedsQL emotional function	70 [50-85]	90 [80-95]	<.001
PedsQL social function	95 [80-100]	95 [85-100]	.27
PedsQL school function	75 [60-85]	85 [75-95]	<.001
PedsQL psychosocial function	76.7 [63.3-86.7]	88.3 [80-93.3]	<.001

Children with functional gastrointestinal disorders with and without co-existing nausea

- Nausea is a prevalent comorbid symptom in patients with functional abdominal pain disorders: 53% have been proven to experience nausea at least two times a week.
- Children with nausea report more feelings of anxiety and depression and lower overall health-related quality of life than children with a functional abdominal pain disorder without nausea.
- Addressing the presence of nausea in children with functional gastrointestinal disorders seems essential to customize their treatment and improve overall quality of life.

Risk & Protective factors for AP-DGBI in children



Organic or functional?

Diagnostic workup?



Mother / Child's Agenda

She loves school
and has many
friends

I hope he finds
something

I hope it is
not cancer

I want some
tests!

It is not in
her head!

I hope he
doesn't find
anything

No tests
please !

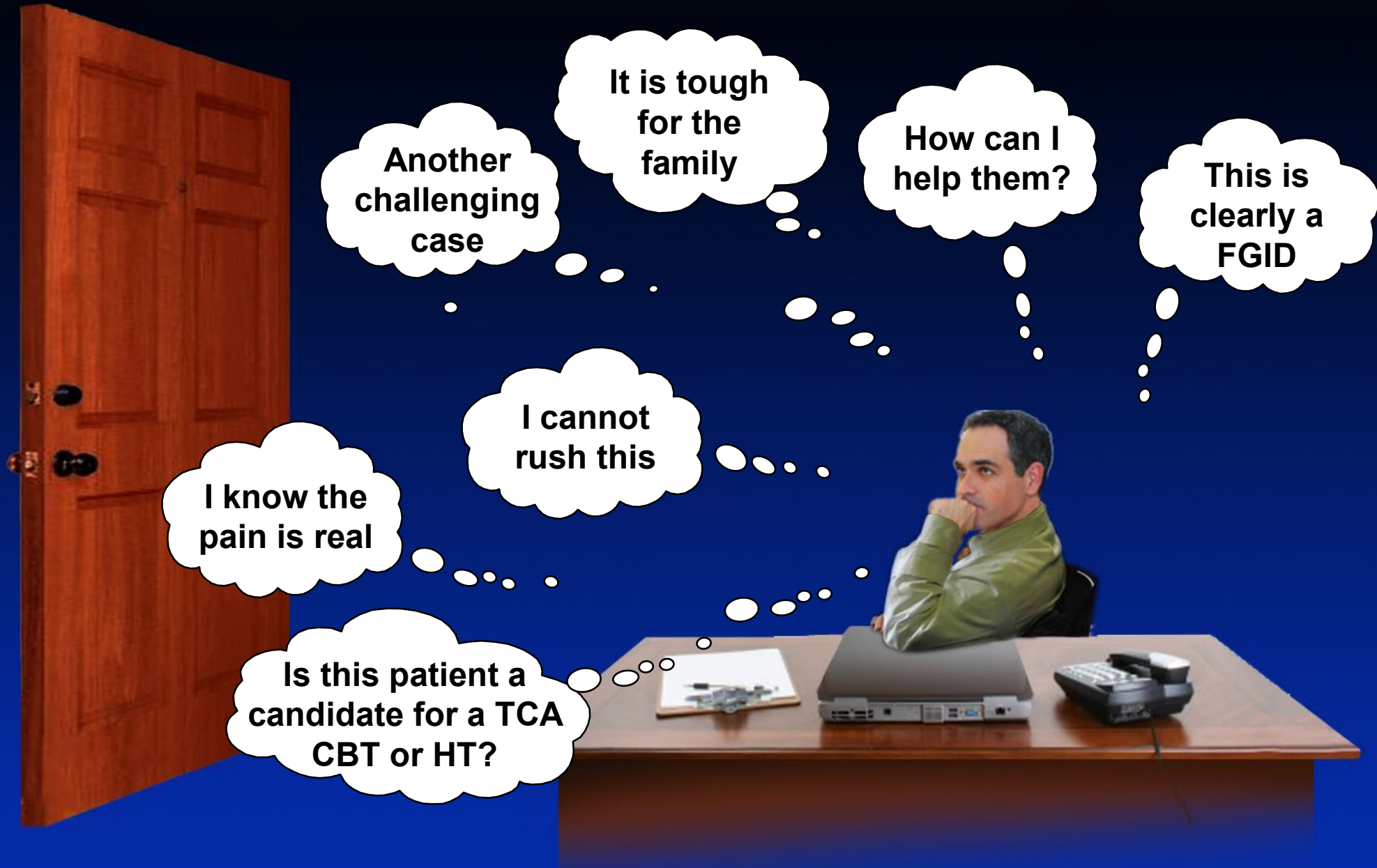
I do not know
why I'm here



Doctor's Incorrect Agenda



Doctor's Correct Agenda



Another
challenging
case

It is tough
for the
family

How can I
help them?

This is
clearly a
FGID

I cannot
rush this

I know the
pain is real

Is this patient a
candidate for a TCA
CBT or HT?

Medical history and Physical examination alarm symptoms

- Weight loss
- Failure to thrive
- Severe vomiting/ diarrhea
- GI-bloodloss
- Fever
- IBD in family

- Oral ulcers
- Perianal fissures
- Arthritis
- Hepatosplenomegaly
- Icterus



- Pain during ~~night~~, joint pain

***No alarm symptoms:
94% functional***

Increased prevalence celiac disease in pediatric patients with IBS

A 6-Year Prospective Cohort Study

Functional Gastrointestinal Disorder	Patients, No.	Patients With Celiac Disease, No.	Prevalence of Celiac Disease, % (95% CI)
Irritable bowel syndrome	270	12	4.4 (2.5-7.6)
Functional dyspepsia	201	2	1.0 (0.2-3.5)
Functional abdominal pain	311	1	0.3 (0.1-1.7)
Abdominal migraine	0	0	0.0 (0.0-0.0)

Clinical Evaluation of Inflammatory and Blood Parameters in the Workup of Pediatric Chronic Abdominal Pain

- Fecal calprotectin, anti-tTG, G lamblia, CRP, ESR, Hb:
 - sensitivity 90%
- Fecal calprotectin, anti-tTG, G lamblia:
 - sensitivity 88%
- In the presence of ≥ 1 alarm symptoms
 - sensitivity 92%



The Use of Fecal Calprotectin Testing in Paediatric Disorders: A Position Paper of the European Society for Paediatric Gastroenterology and Nutrition Gastroenterology Committee

Statement 13

15 (a) FC levels in children with FAPDs are similar to healthy controls.

15 (b) FC levels in children with IBS symptoms are slightly higher than in healthy controls but lower compared with children with IBD.

The Use of Fecal Calprotectin Testing in Paediatric Disorders: A Position Paper of the European Society for Paediatric Gastroenterology and Nutrition Gastroenterology Committee

Statement 13

15 (a) FC levels in children with FAPDs are similar to healthy controls.

15 (b) FC levels in children with IBS symptoms are slightly higher than in healthy controls but lower compared with children with IBD.

Recommendation 13

The ESPGHAN expert group recommends to use FC as a tool to differentiate functional abdominal pain disorders from organic diseases.

(GoR; Strong)

Agreement 92.9% Mean 8.3 Abstentions: 1

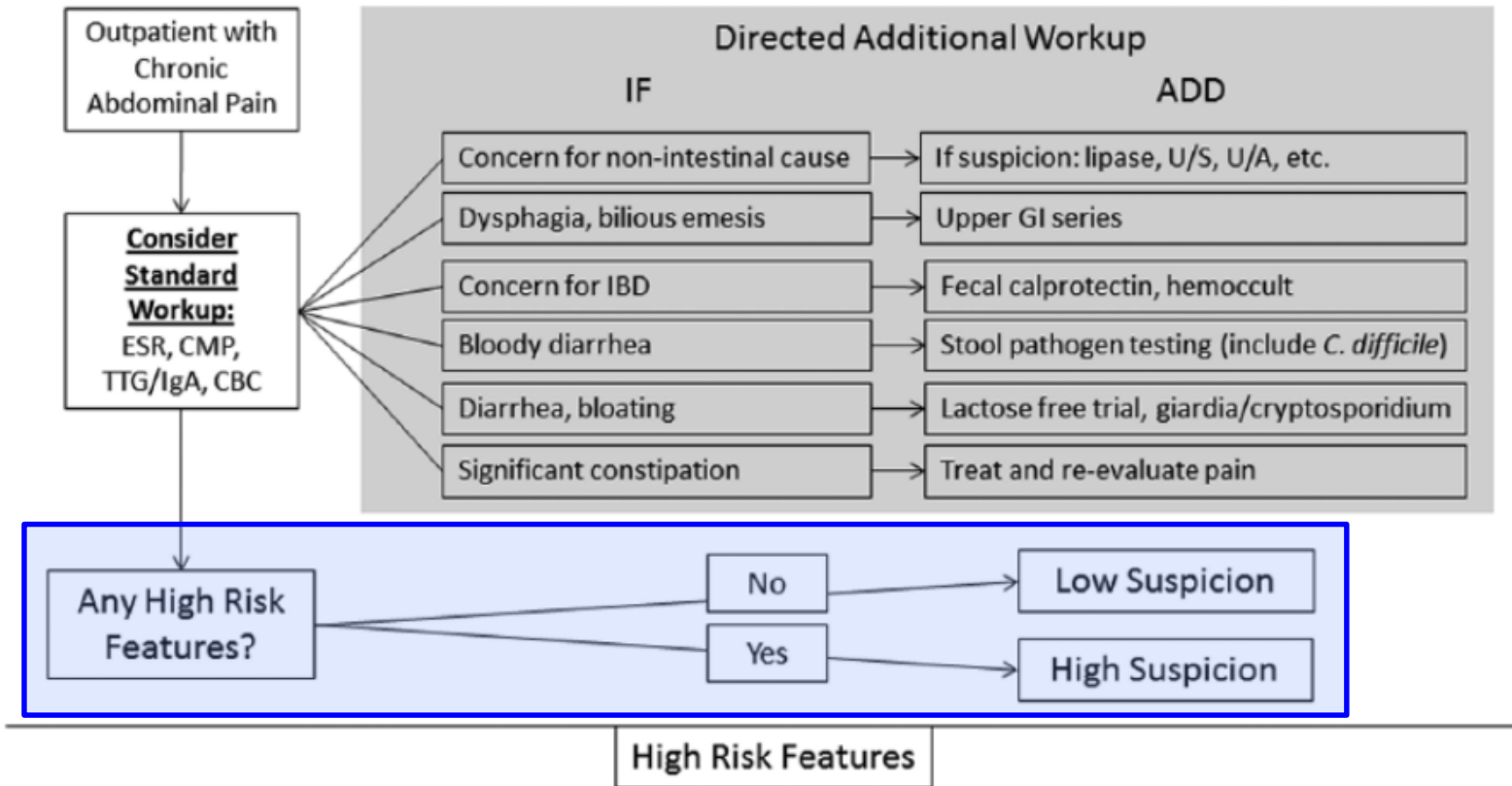
The value of abdominal ultrasound in functional abdominal pain



Value of Abdominal Sonography in the Assessment of Children with Abdominal Pain

- **676 children with abdominal pain underwent US**
 - **644 children with RAP**
 - **32 children with acute or subacute abdominal pain**
- **Abdominal abnormalities were sonographically detected in 10 children with RAP (2%)**
- **Acute pain (56%)**

Algorithm for Evaluation of Chronic Abdominal Pain and Stratification of Suspicion for Significant Endoscopic Findings

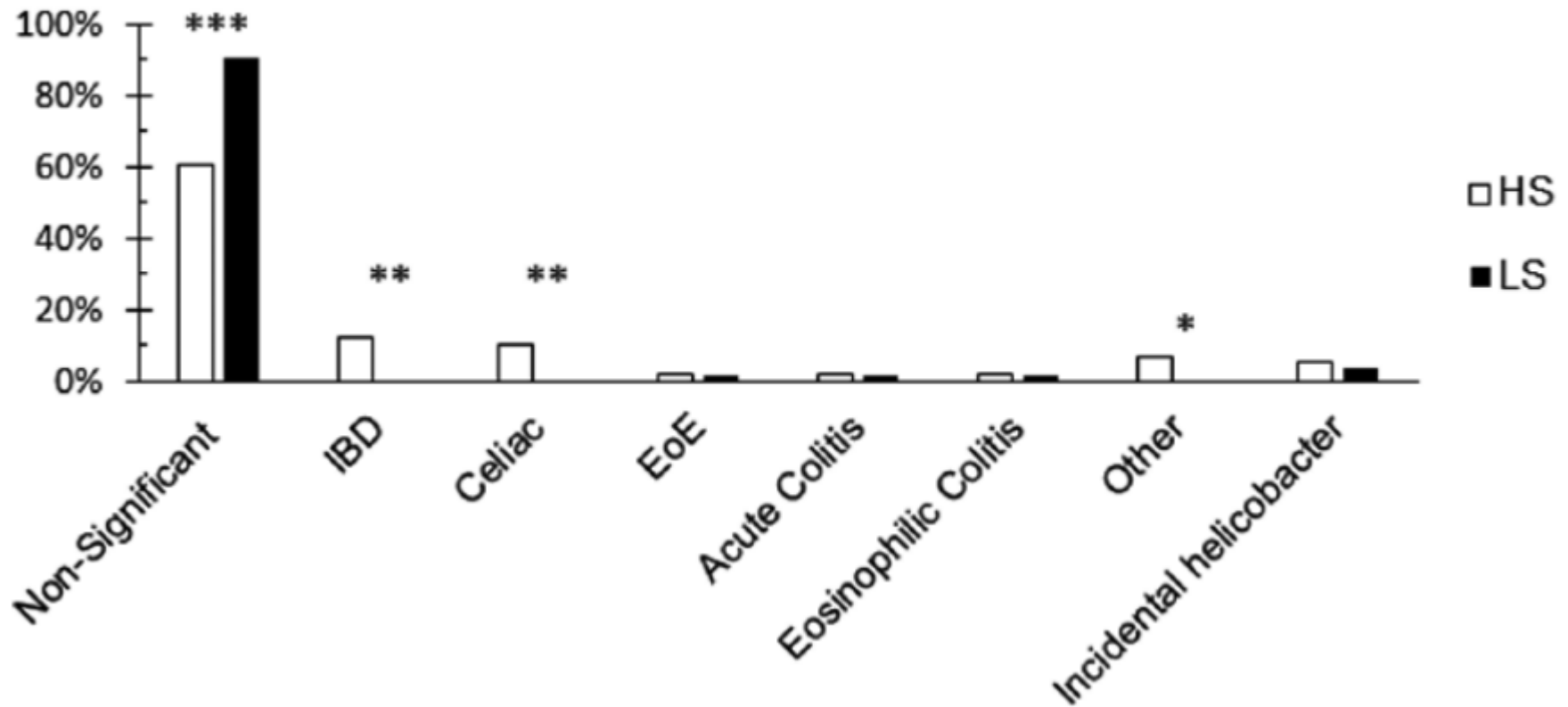


- (+) Hemoccult
- Fecal Calprotectin > 200 µg/g
- Report of Unexplained bloody stools
- (+) TTG
- Albumin < 3 g/dL

- Iron deficiency anemia
- Extra-intestinal IBD findings
- Nocturnal stooling
- 1st degree relative with IBD or EoE
- History of food impaction

- Significant diarrhea
- Esophageal Stricture
- Significant weight loss/growth failure
- Elevated ESR

Diagnoses after EGD with or without Colonoscopy for Abdominal Pain



Management of pediatric IBS/FAP-NOS

start first-line management

Reassurance/explanation/positive diagnosis
Parental distraction
Identify psychosocial stressors
Simple dietary changes

persisting symptoms

Diagnosis?

IBS

FAP-NOS

Choose or mix ≥ 1 intervention(s)

Choose or mix ≥ 1 intervention(s)

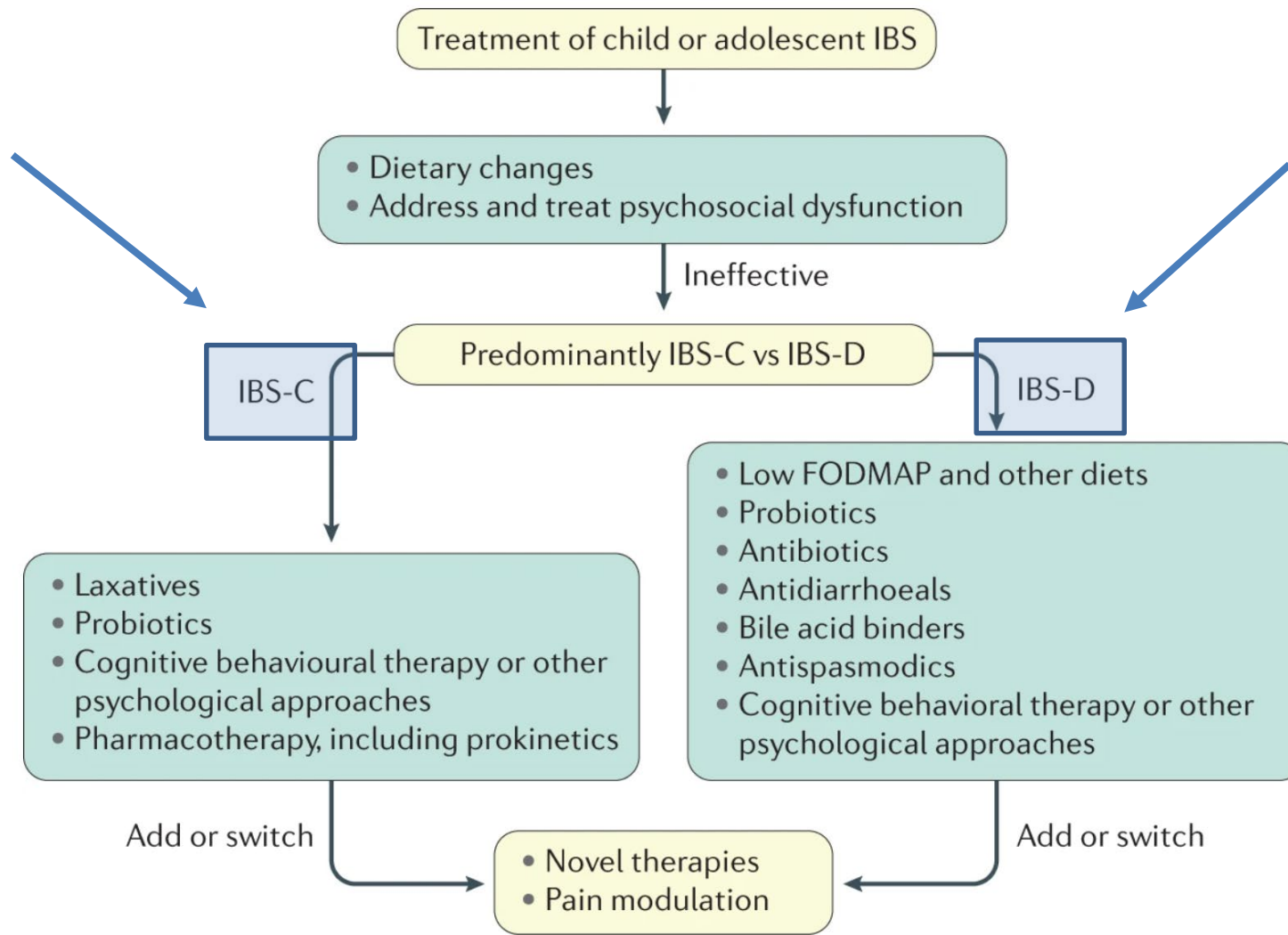
Cognitive behavioral therapy
Hypnotherapy
Peppermint oil
Probiotics

Antispasmodics
Amitriptyline**
PENFS**

Cognitive behavioral therapy
Hypnotherapy
Peppermint oil
Probiotics

add or change

Therapeutic algorithm for IBS in children



The Golden Half Hour in Chronic Pediatric Pain Feedback as the First Intervention

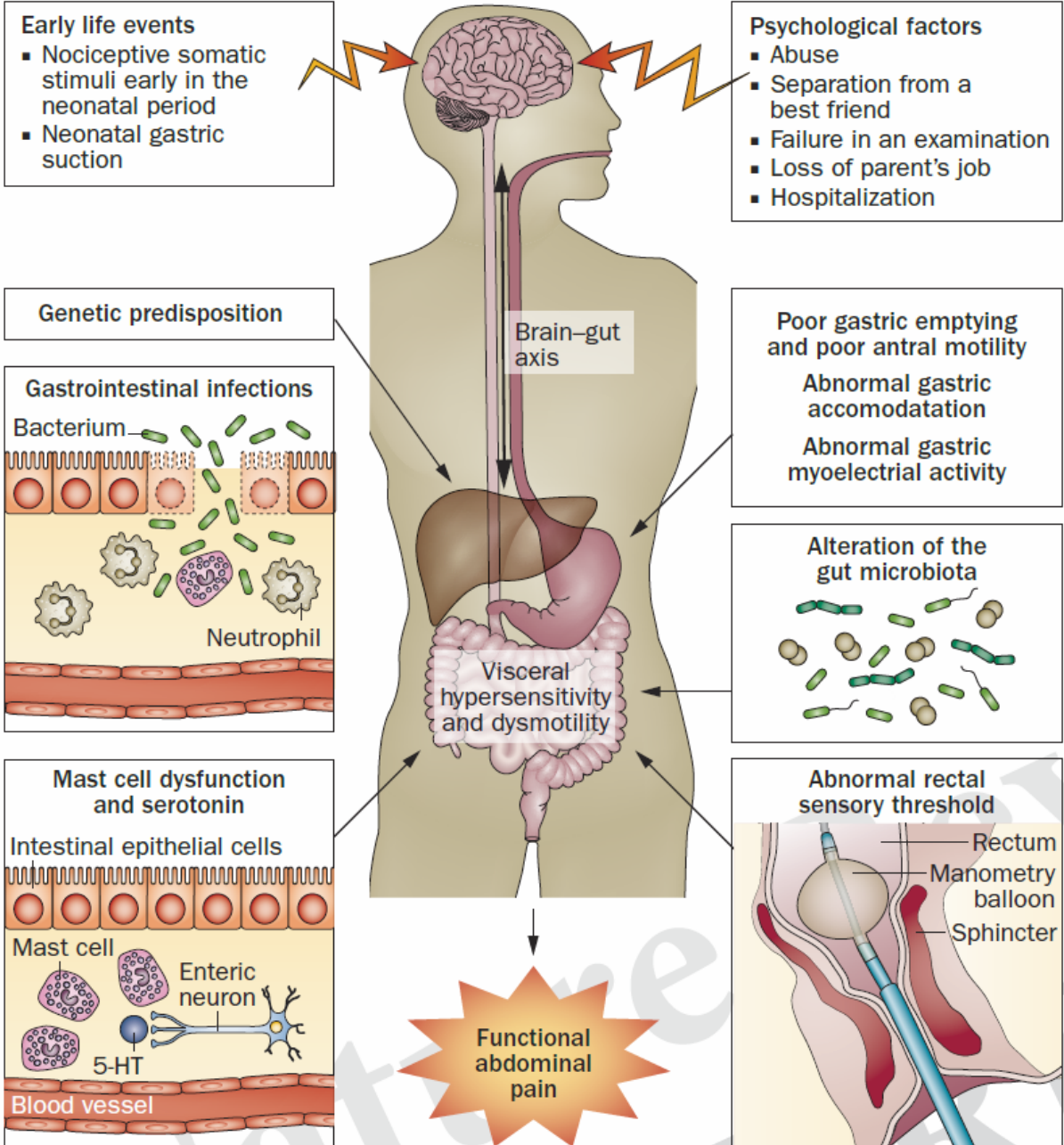
- **Elicit parent and child expectations at the outset (diagnostic tests)**
- **Validate Symptoms, families feel dismissed/stigmatized when mental health referral is made for what they perceive is a physical problem**
- **Offer a positive diagnosis**
- **Provide education**
- **Emphasize a multidisciplinary intervention plan (medical intervention, with psychological intervention, increased physical activity)**
- **Stay Connected follow-up visits every 4-6 wks**
- **Offer an Optimistic Appraisal**

1e phase of treatment of FAP or IBS

- **Reassurance & diagnosis**
- **Explain concept of hypersensitivity**
- **Explain causes**
- **Back to school!**

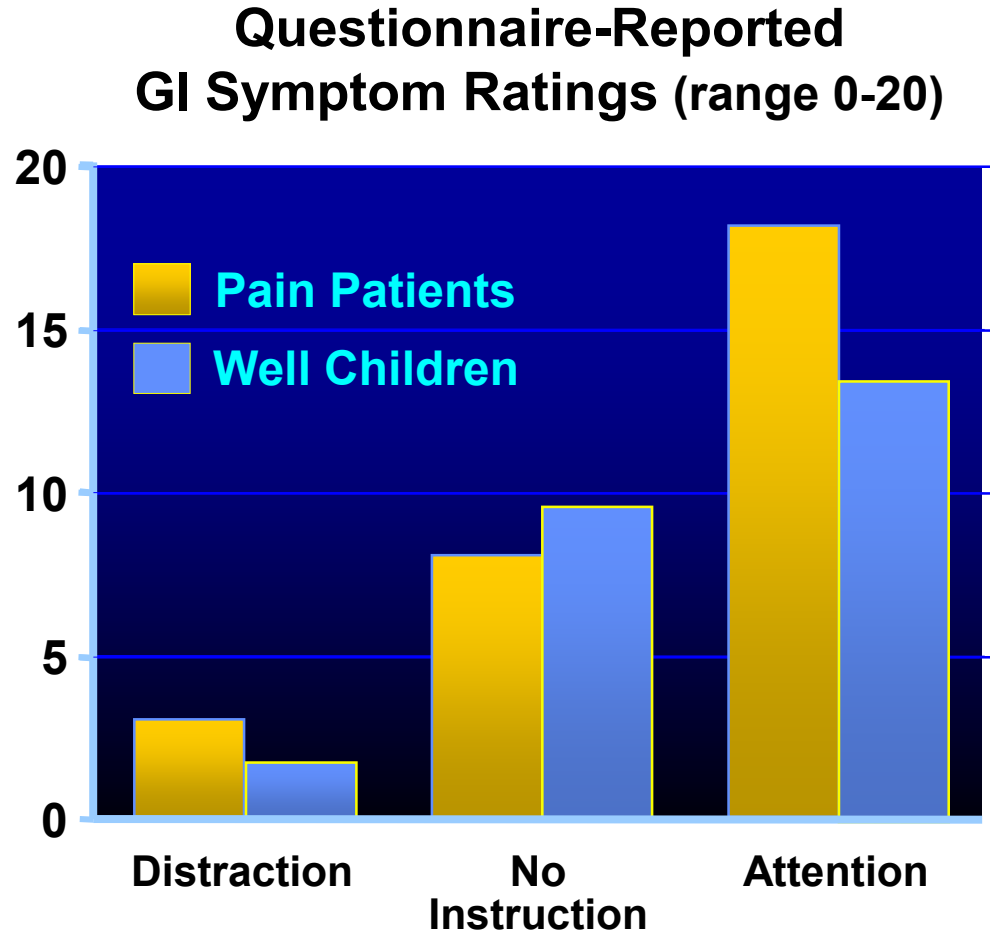


Mechanisms Underlying the Irritable Bowel Syndrome (IBS)

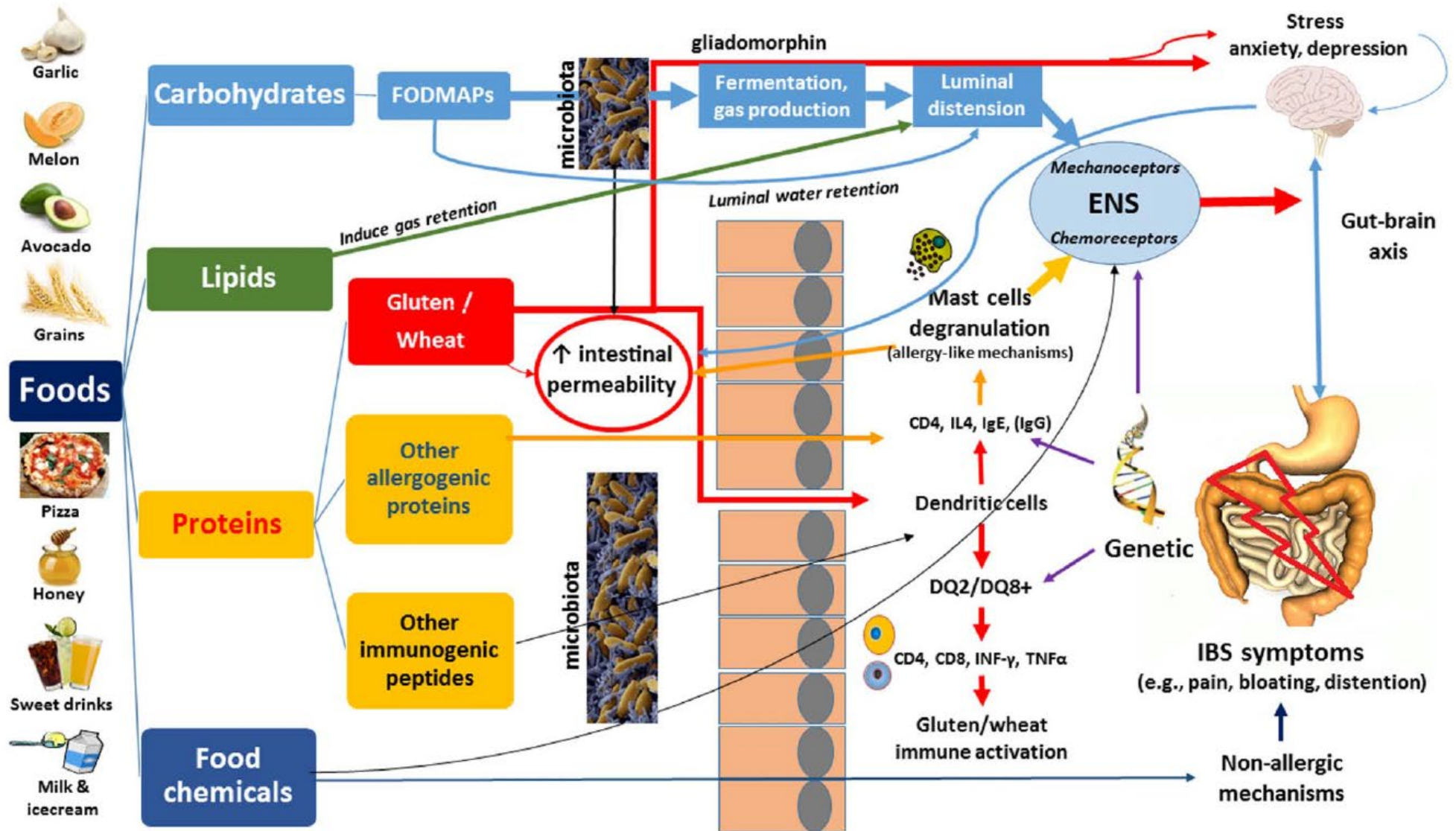


Kortnerink JJ, et al. Nat Rev Gastroenterol Hepatol 2015

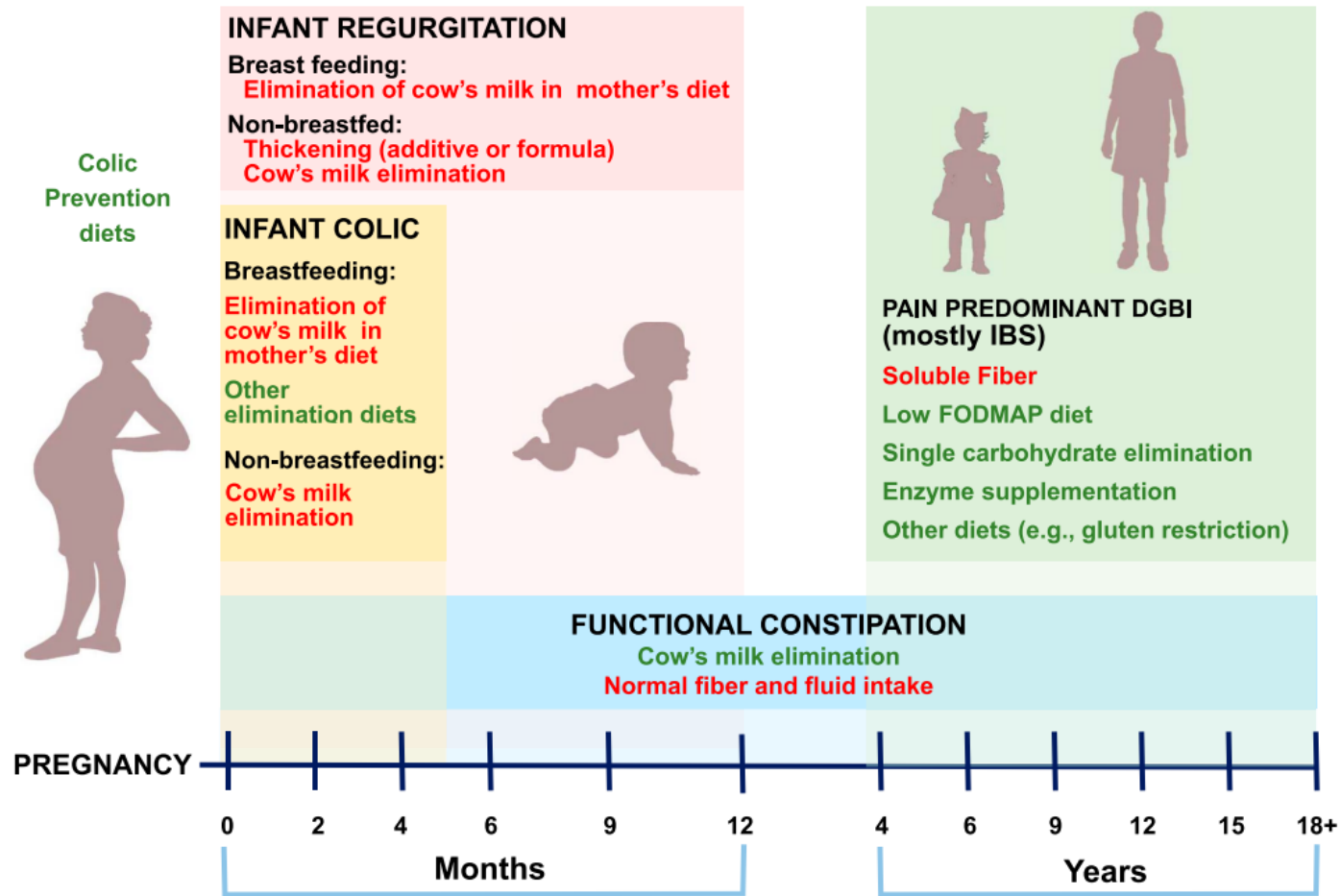
Parent Attention vs. Distraction



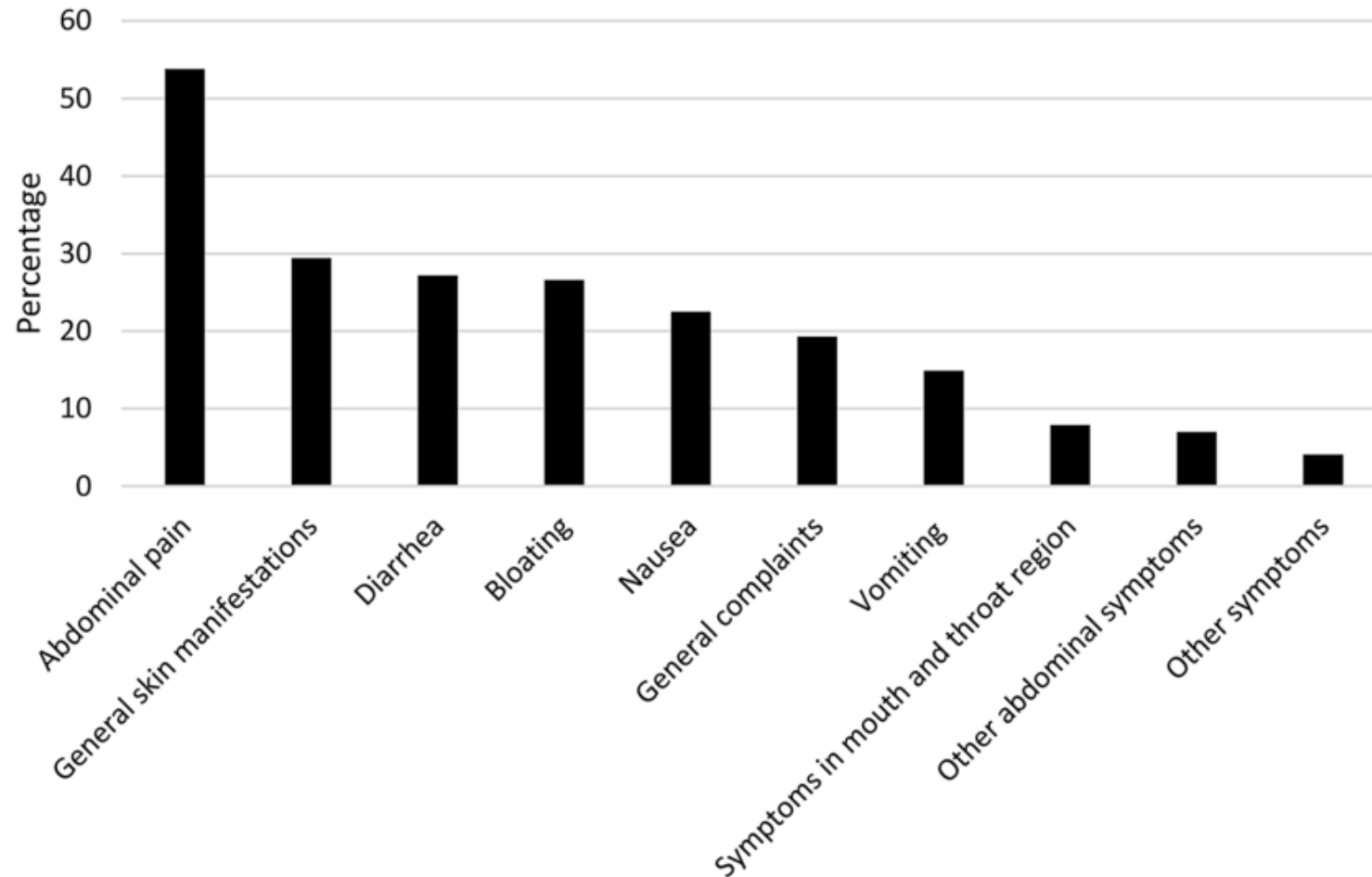
- Pain induced by water load test
- Parents randomized to using distraction or attention in their interaction with children in pain
- All mothers felt distraction was inappropriate response to pain



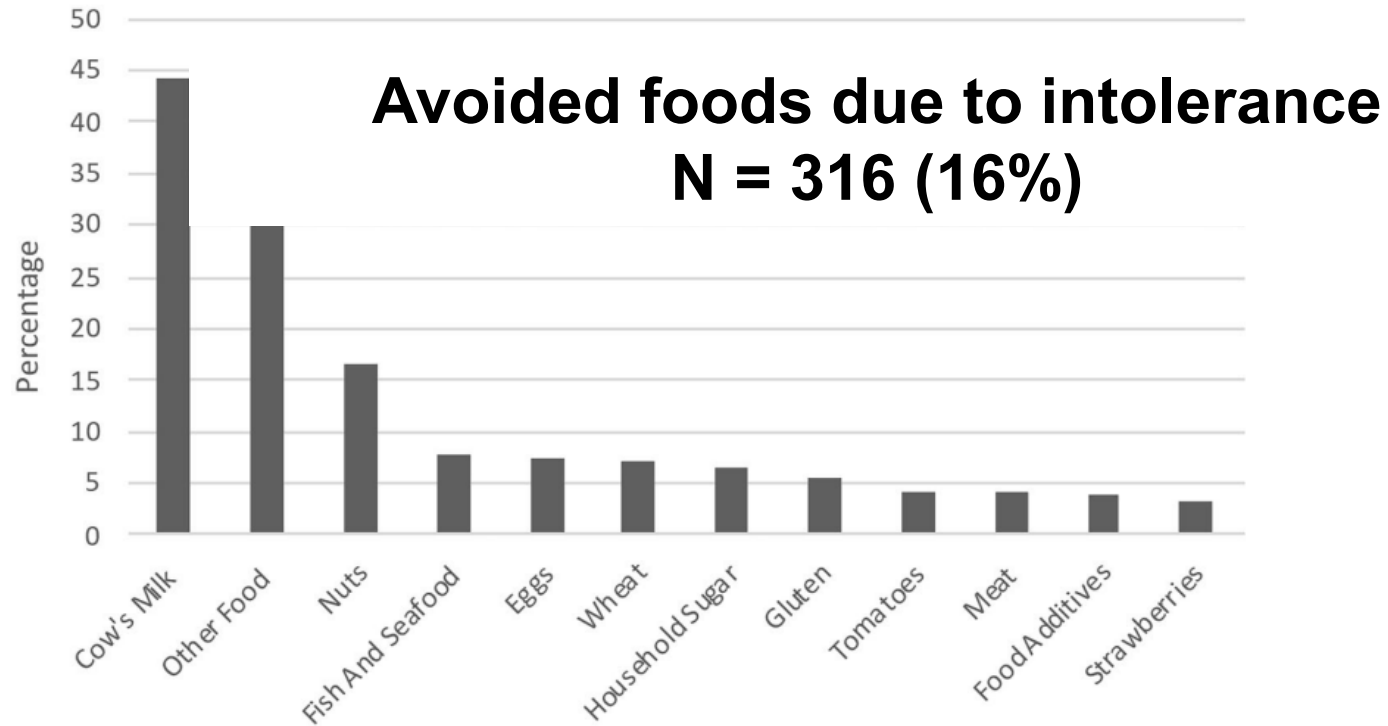
Specific dietary interventions for pediatric disorders of gut-brain interaction



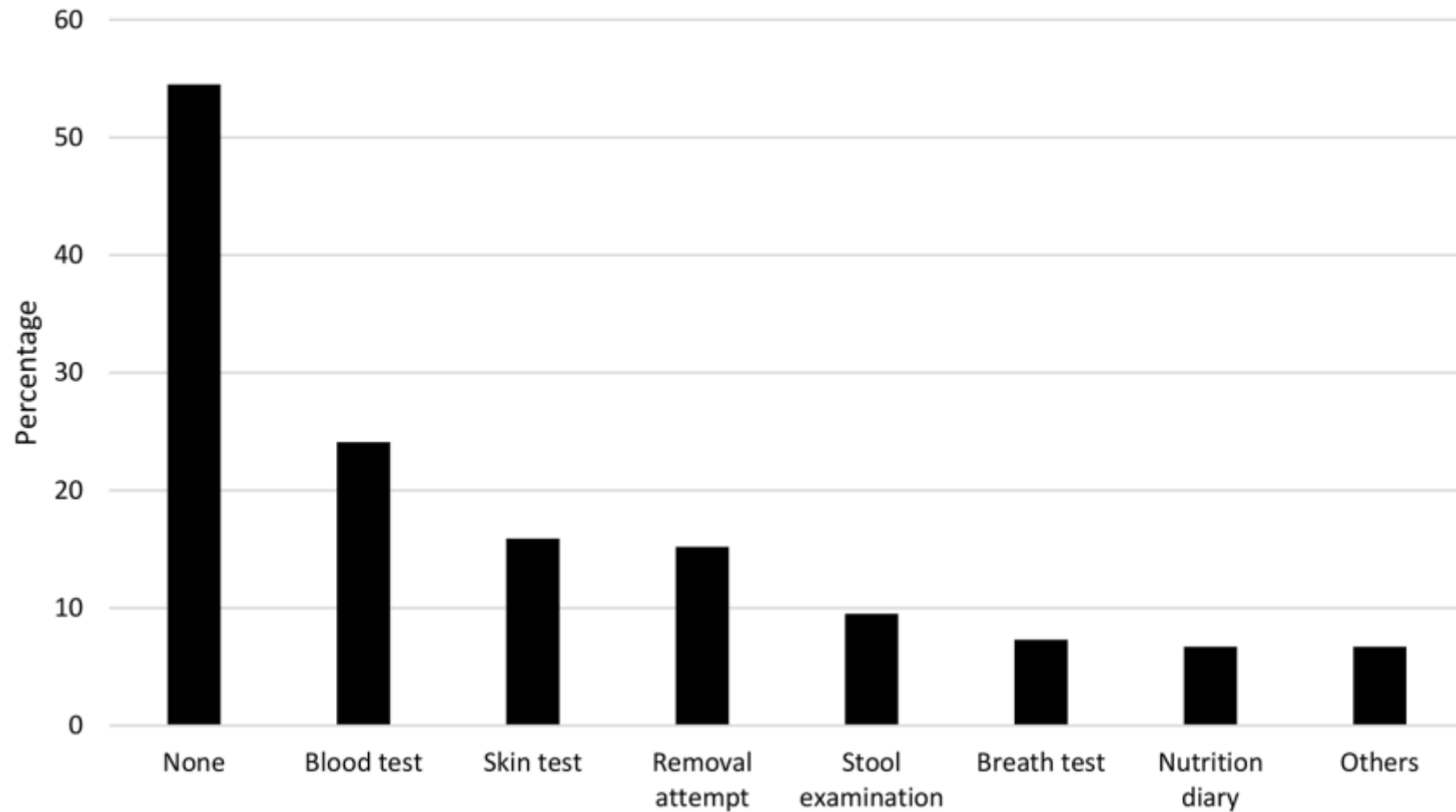
Reported symptoms by ingestion of suspected food



Food intolerances in 2036 children and adolescents in Switzerland



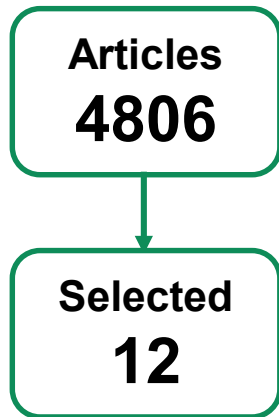
Tests performed for diagnosis of food intolerance



Food intolerances in children and adolescents in Switzerland

- **Eating behavior in children influenced by consumption of social media**
- **16% of children and adolescents avoid foods, half of them without any medical advice**
- **50% affected patients avoid foods without guidance by professional dieticians, risking possible negative impacts on their physical and mental health**

Dietary interventions for Functional Abdominal Pain Disorders in children: a Systematic Review



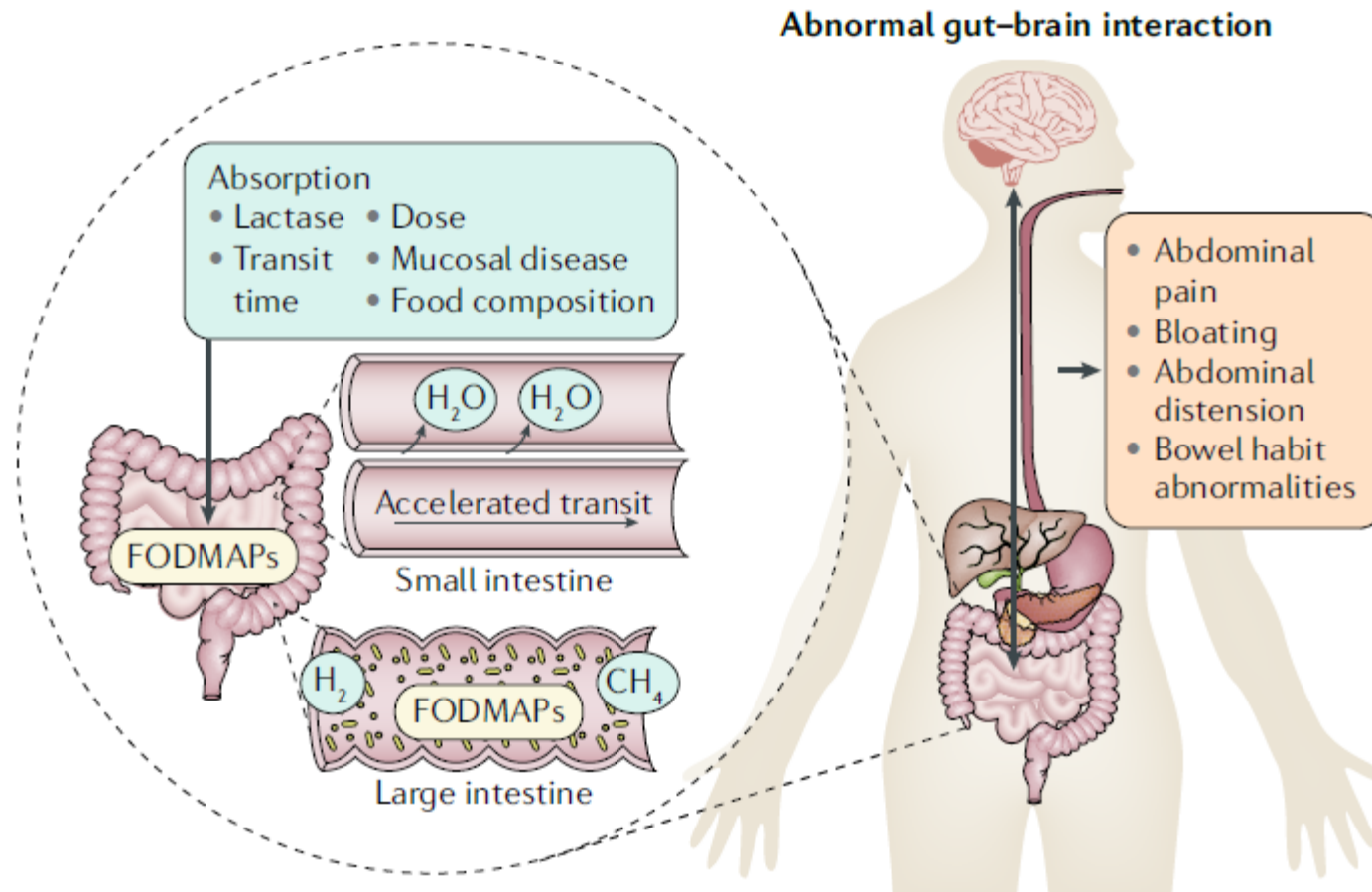
- **819 children, aged 4-18 years**
- **Trials investigating fibers, FODMAP diet, fructans, fructose restricted diet, prebiotic (inulin), serum-derived bovine immunoglobulin and vitamin D supplementation were included**
- **No studies were found on treatment with additional fluid intake or histamine-free diet**

FODMAP

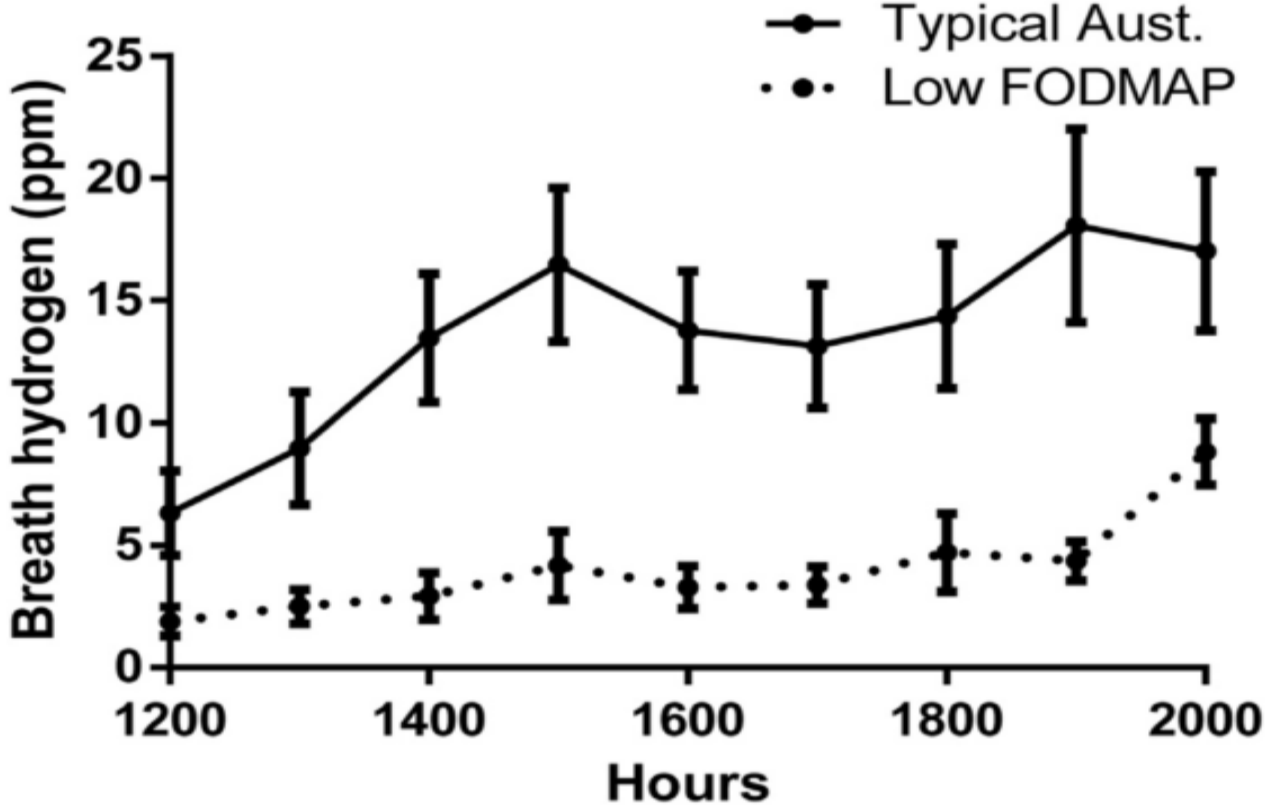
- **F**ermentable
- **O**ligosaccharides (fructans, (FOS and GOS))
- **D**isaccharides (lactose)
- **M**onosaccharides (fructose)
- **A**nd
- **P**olyols (sugar alcohols)
 - artificial sweeteners sorbitol, mannitol, maltitol, and xylitol



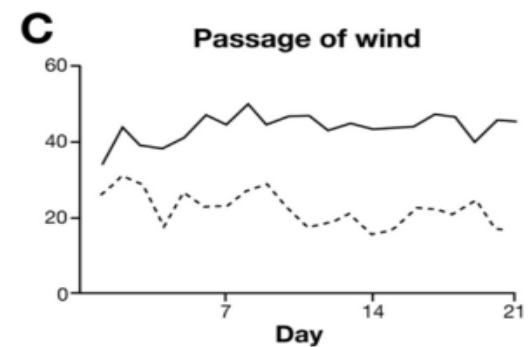
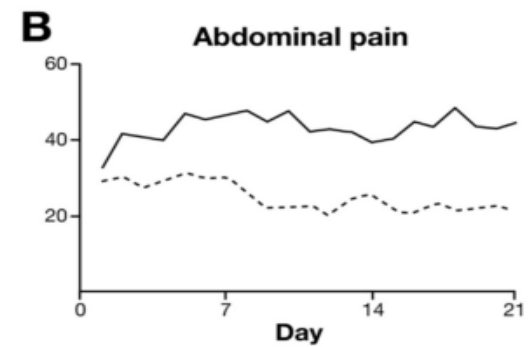
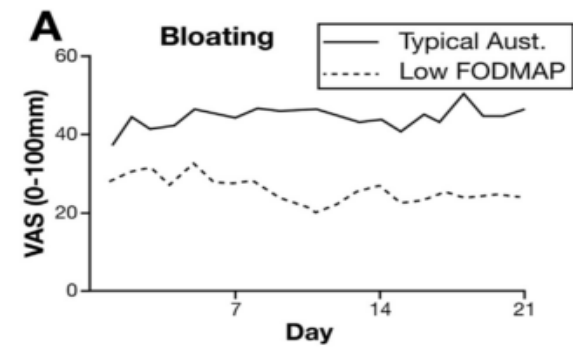
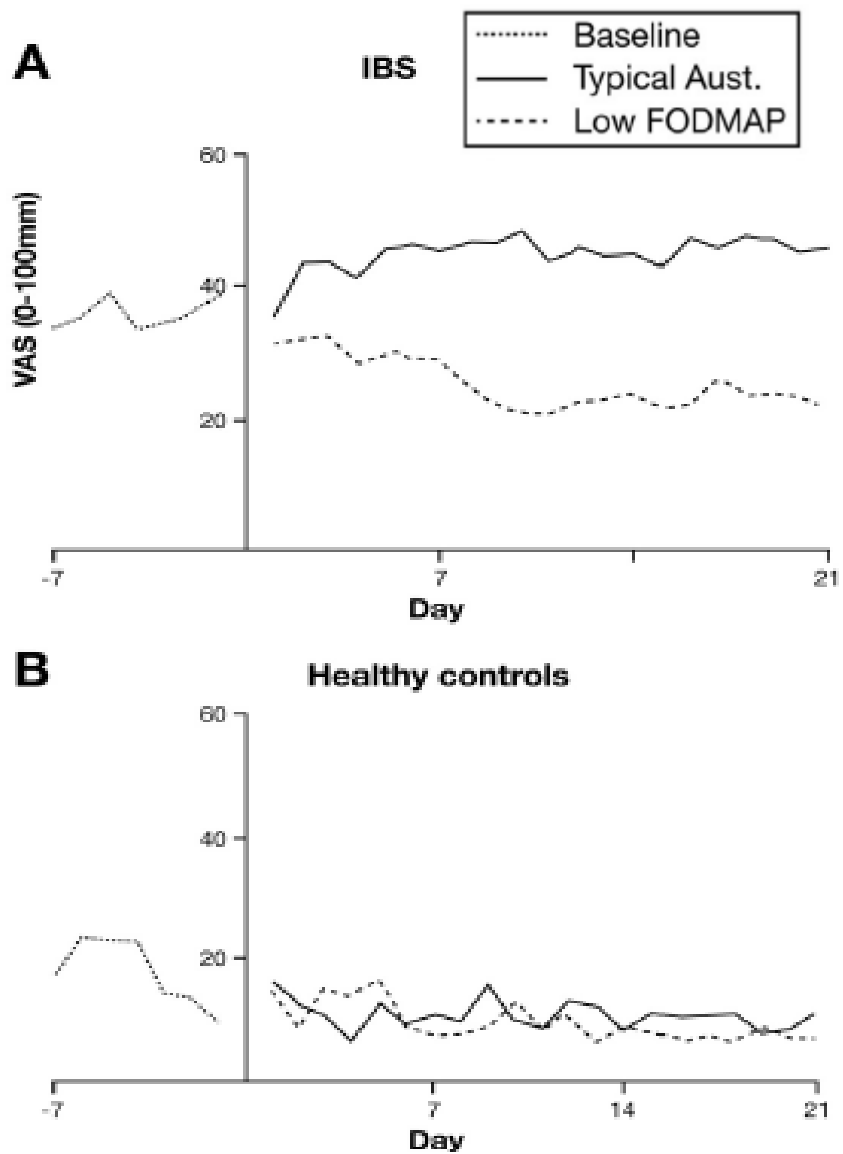
FODMAP



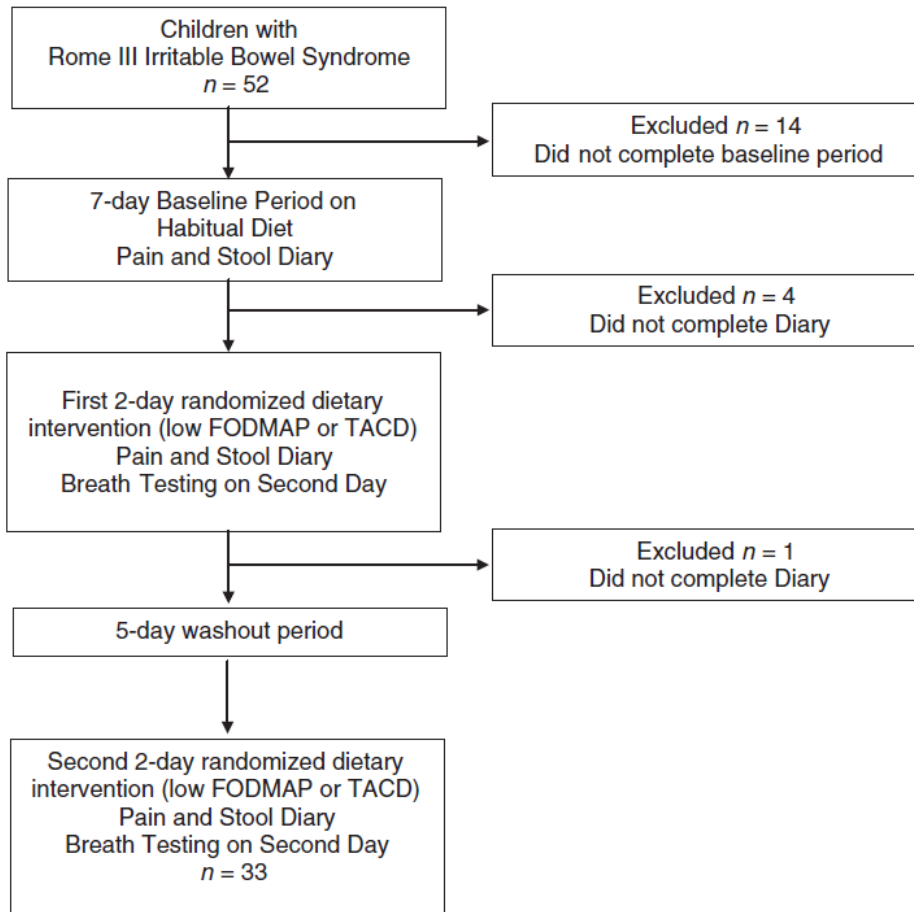
Breath hydrogen test Typical Australian diet versus Low FODMAP diet



Gastrointestinal symptoms during different diets



RCT: gut microbiome biomarkers are associated with clinical response to a low FODMAP diet in children with IBS

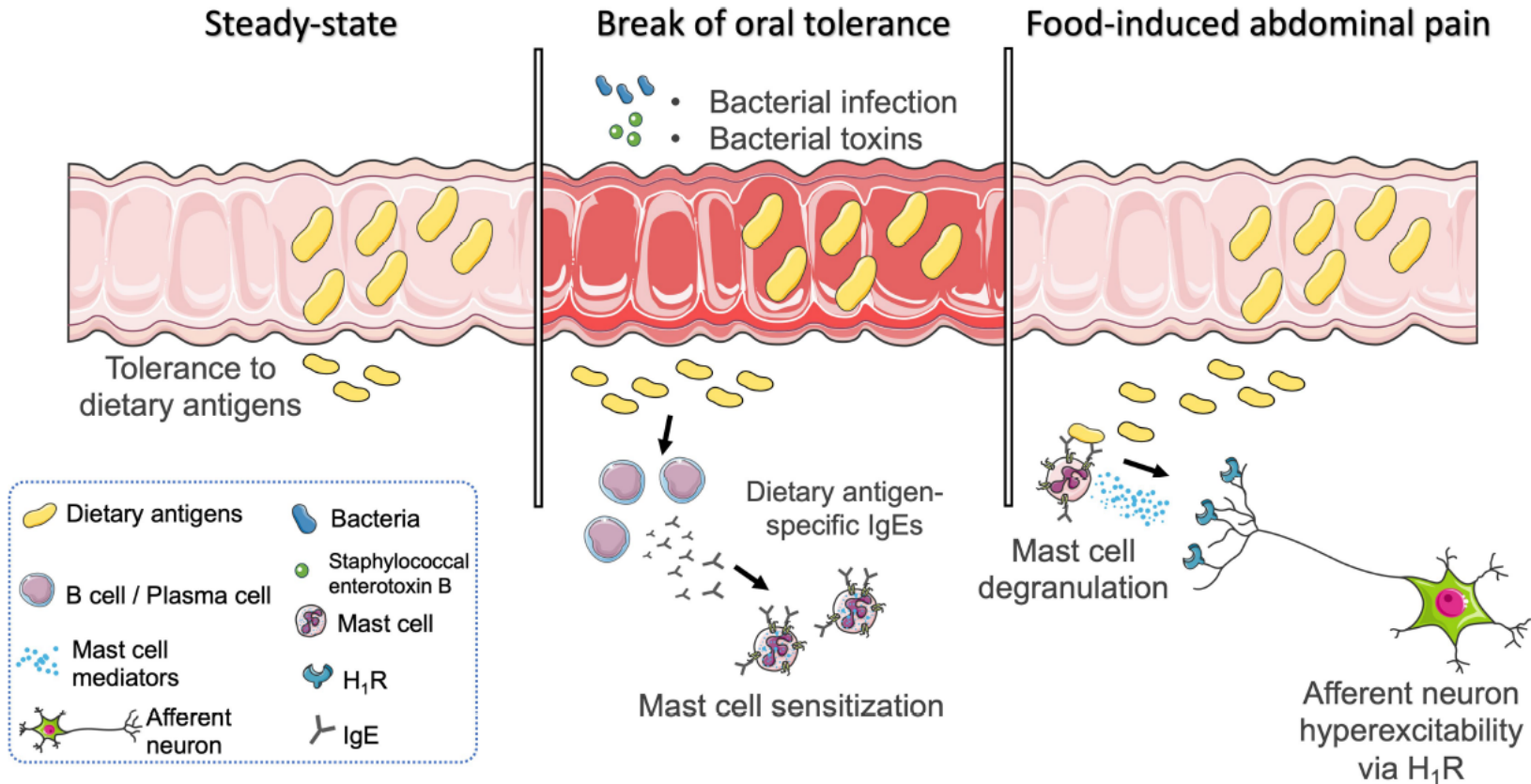


- **Less abdominal pain occurred during the low FODMAP diet vs. TACD [1.1 episodes/day vs. 1.7 P < 0.05]**
- **Compared to baseline (1.4 0.2), children had fewer daily abdominal pain episodes during the low FODMAP diet (P < 0.01) more episodes during the TACD (P < 0.01)**

Dietary interventions for Functional Abdominal Pain Disorders in children: a Systematic Review

- **Based on the current evidence, the use of fibers can be discussed in daily practice due to their favorable treatment outcomes and lack of side effects**

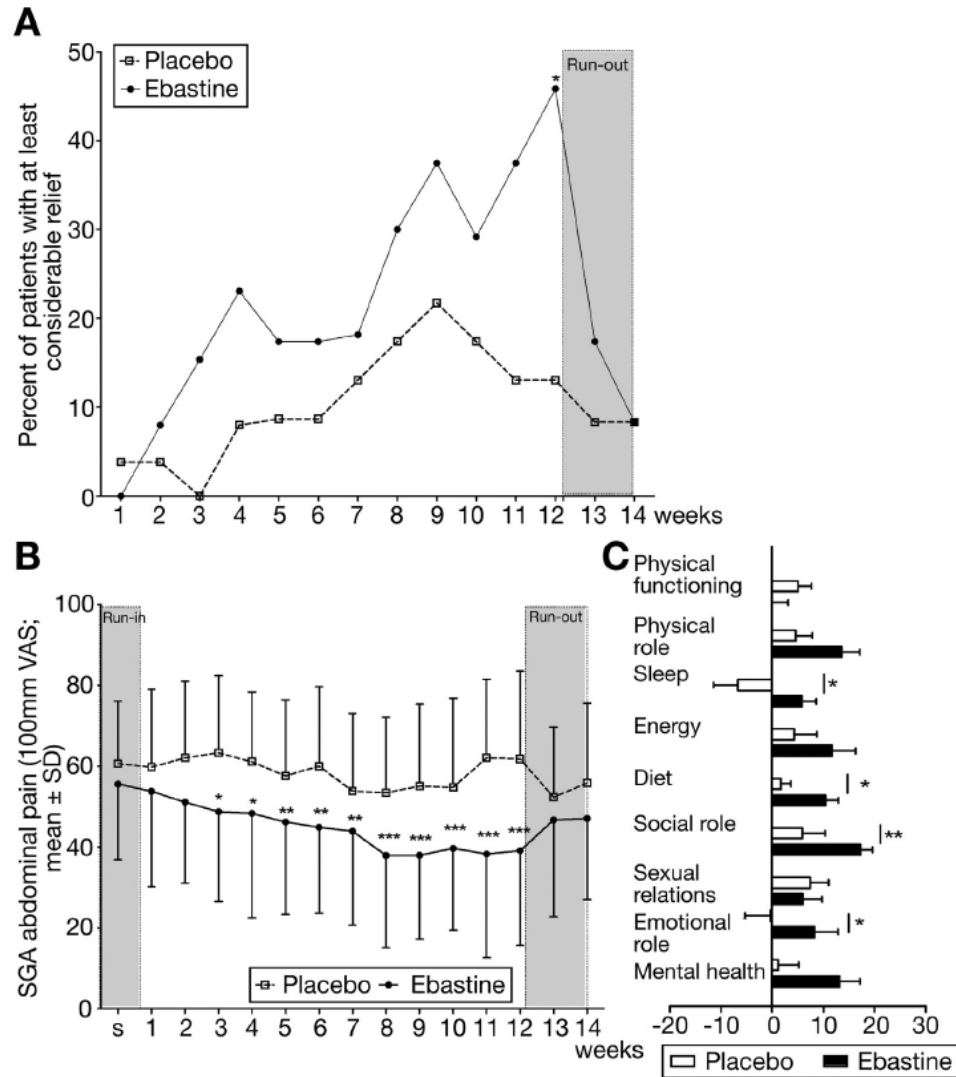
Local immune response to dietary antigens triggered by bacterial infection leads to food-induced abdominal pain



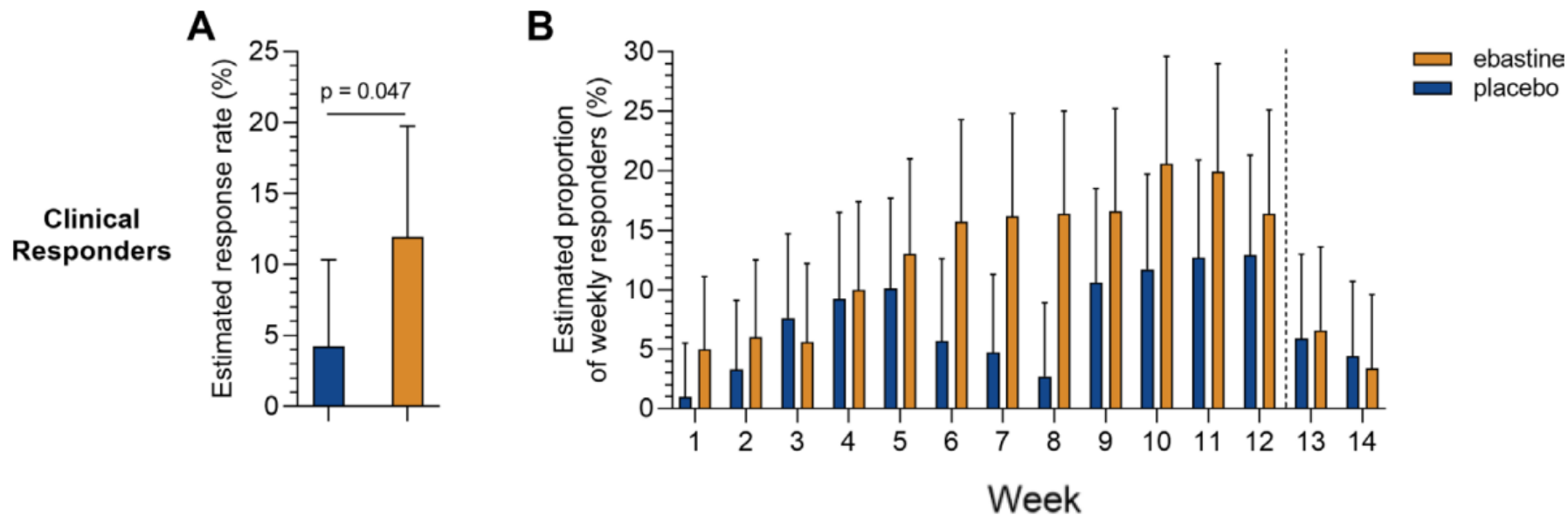
Ebastine

- **Ebastine is a second-generation H₁ antagonist that currently is indicated for allergic rhinitis and chronic idiopathic urticarial**
- **Ebastine does not penetrate the blood–brain barrier, it does not produce cognitive/psychomotor impairment or sedation, compared with placebo**
- **Side effects are rare and include headache, excitement, diarrhea, constipation, asthenia, and gastric intolerance**

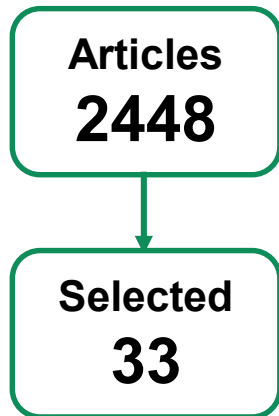
Effect of ebastine on global symptom relief and abdominal pain



Treatment of non-constipated IBS with the histamine 1 receptor antagonist ebastine 20mg: a randomized, double-blind, placebo controlled trial



Psychosocial interventions for the treatment of Functional Abdominal Pain Disorders in Children: A systematic review and meta-analysis

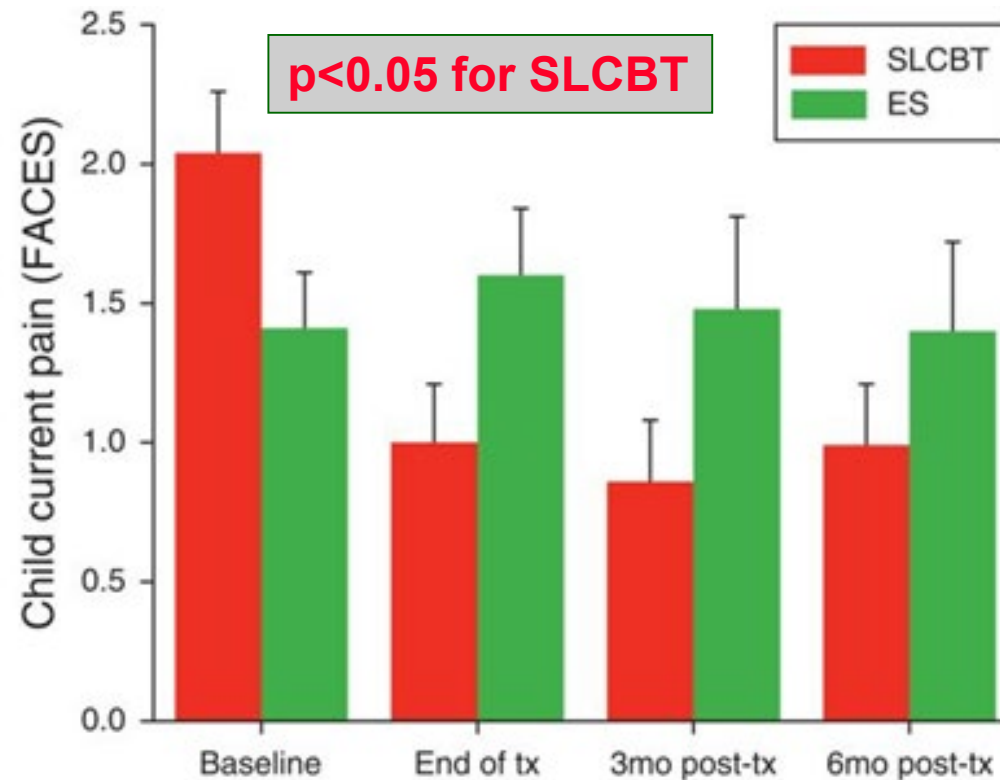


- 2657 children, aged 4-18 years
- 12 compared CBT to no intervention
- 5 CBT to educational support
- 3 yoga to no intervention
- 2 HT to no intervention
- 2 gut-directed HT to HT
- 2 guided imagery to relaxation
- 7 looked at other unique comparisons

Social learning CBT vs Education support: parents-children

- **200 children (7-17) with Apley criteria for abdominal pain for at least 3 months**
- **3-session intervention of cognitive-behavioral treatment targeting parents' responses to their children's pain complaints and children's coping responses**
 - Relaxation training
 - Working with parent and child to modify family responses
 - Cognitive restructuring

Social learning CBT vs Education support: parents-children



Hypnotherapy

- Hypnotherapy (HT):

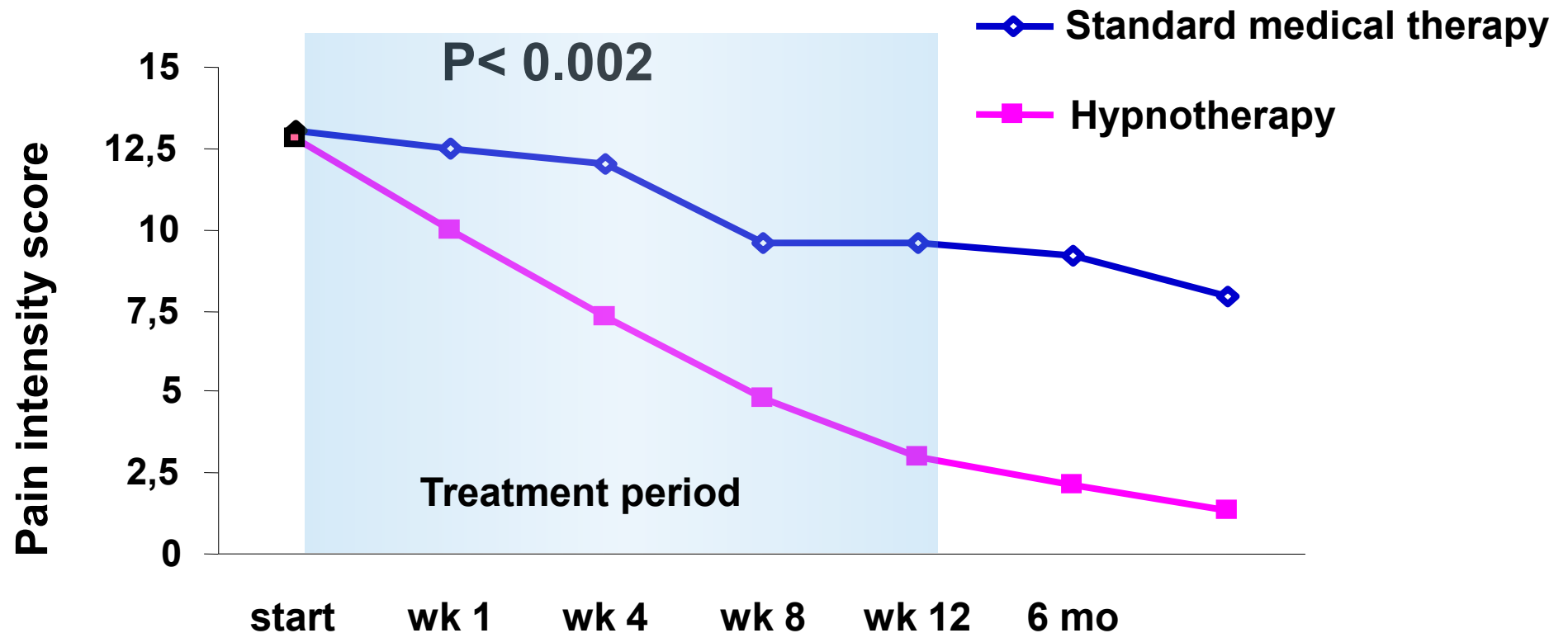
Six sessions according to Manchester protocol

- general relaxation (e.g. breathing exercises)
- control of abdominal pain and gut functioning
- ego strengthening suggestions

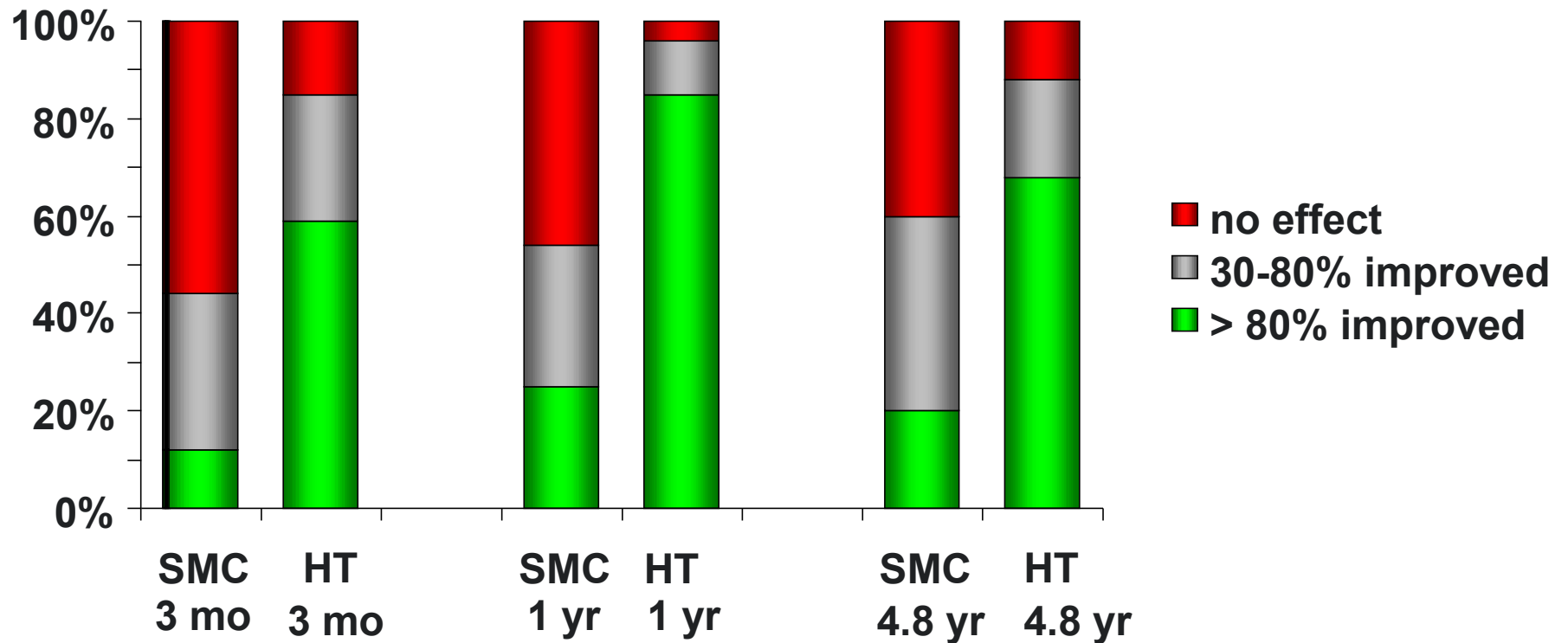
Child is in control!



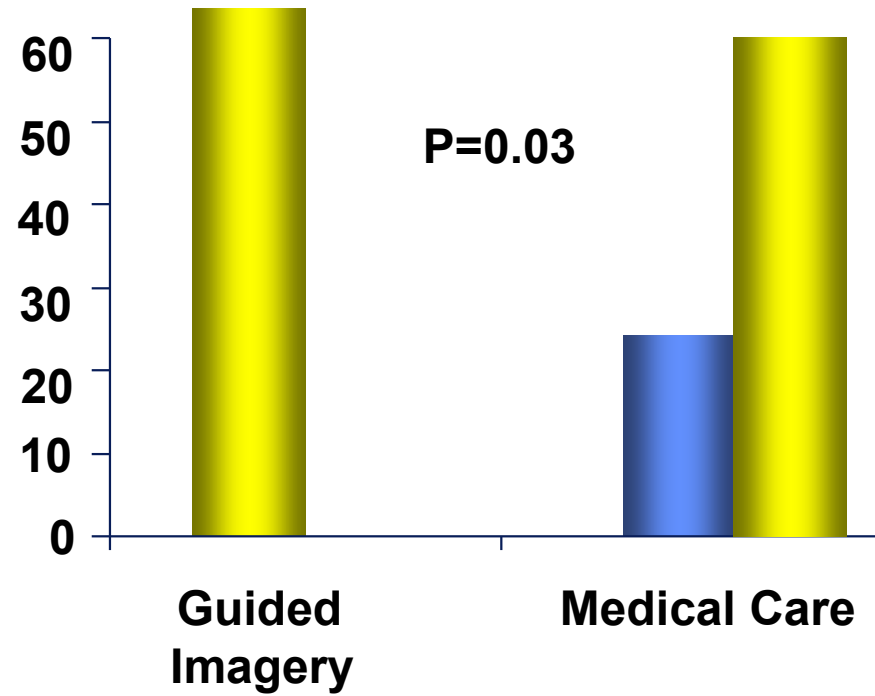
Effect of therapy on pain intensity scores



Results – Clinical remission



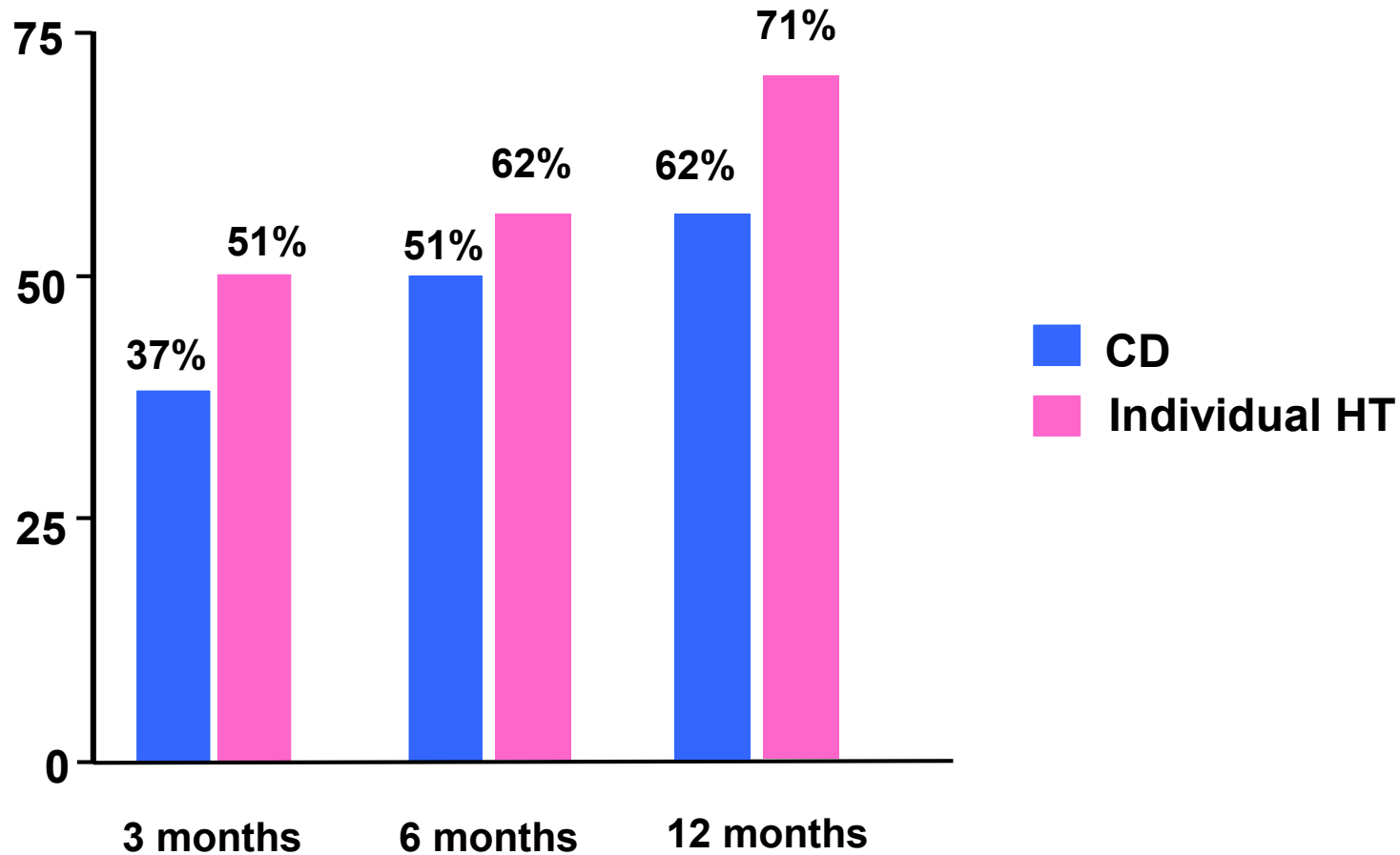
Success



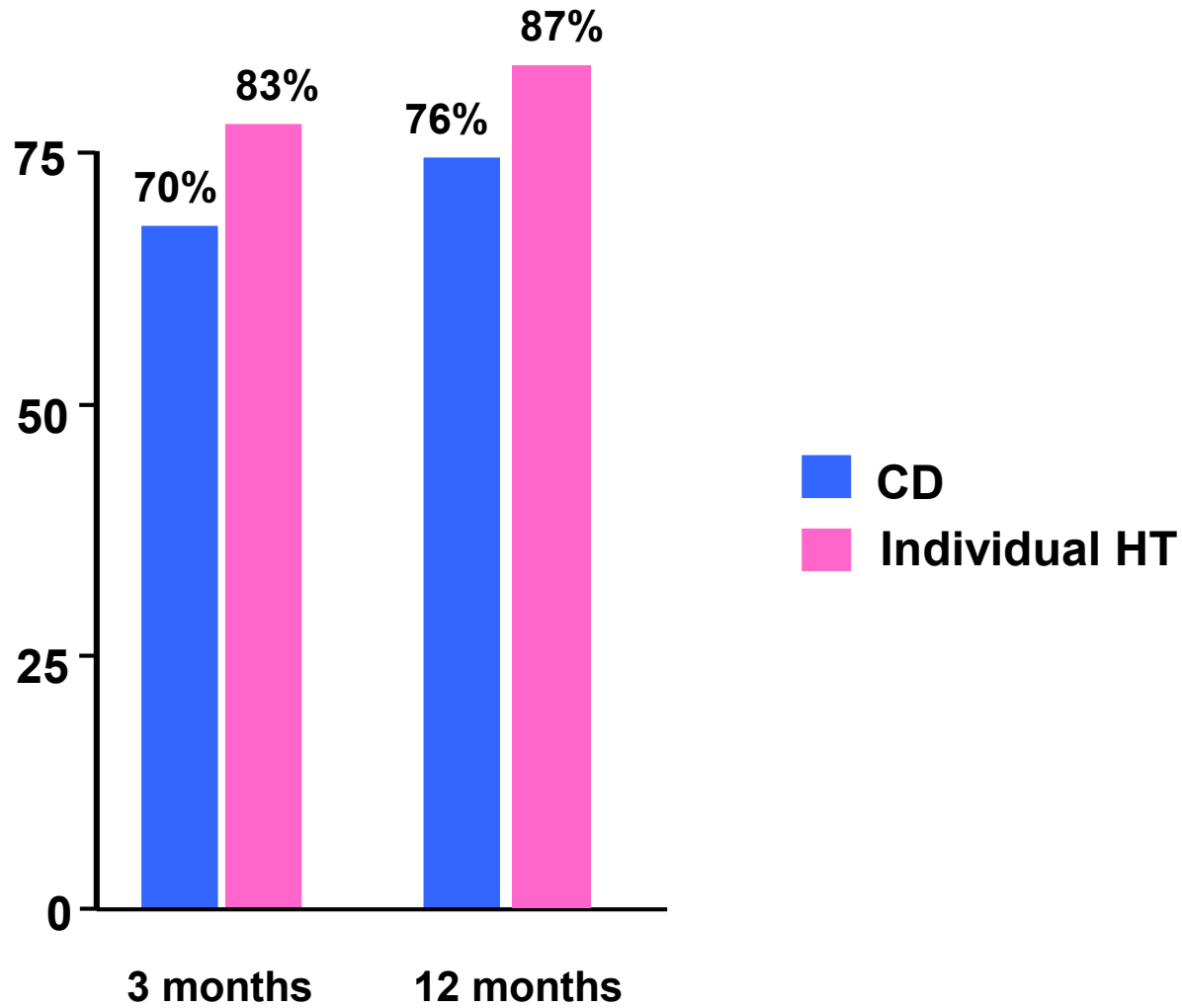
Baseline characteristics

Characteristic	CD Group (n = 126)	iHT Group (n = 124)
Age, mean (SD), y	13.4 (2.9)	13.3 (2.8)
Female	94 (74.6)	85 (68.5)
IBS		
IBS-C	39 (60.0)	35 (57.4)
IBS-D	10 (15.4)	3 (4.9)
IBS-M	14 (21.5)	20 (32.8)
IBS-U	2 (3.1)	3 (4.9)
Total IBS	65 (51.6)	61 (49.2)
FAP(S)		
FAP	22 (36.1)	29 (46.0)
FAPS	39 (63.9)	34 (54.0)
Total FAP(S)	61 (48.4)	63 (50.8)
Duration of symptoms, median (IQR), y	2.3 (1.2-5.1)	2.7 (1.1-5.3)
School absenteeism	86 (68.3)	100 (80.6)
No. of school days missed in prior 6 mo, median (IQR)	14.0 (5.0-30.0)	21.1 (4.0-24.5)
Positive family history of abdominal pain	60 (47.6)	56 (45.2)
Prior psychological treatment	19 (15.2)	24 (19.4)

Success defined as at least 50% reduction in the pain frequency and pain intensity score



Parents reported adequate relief

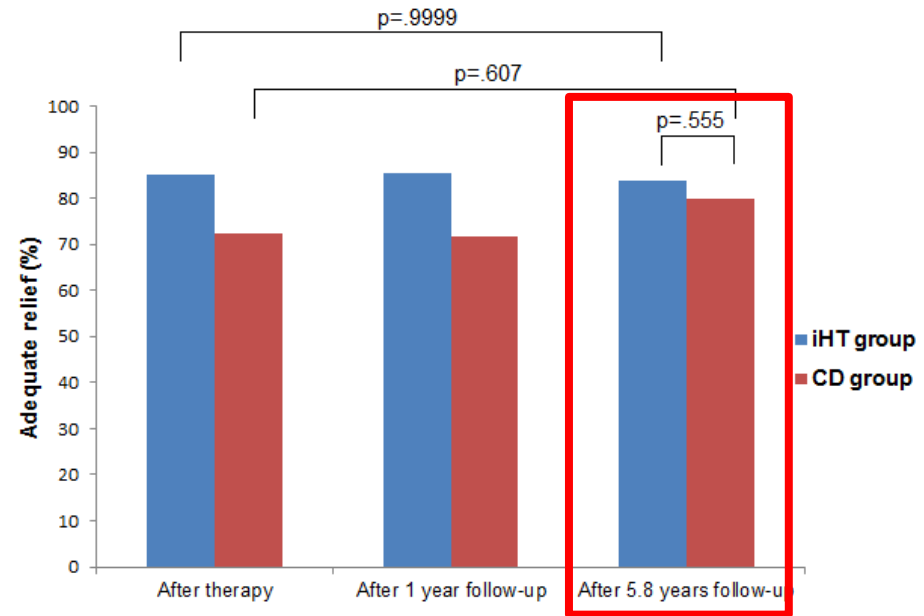


Results

- **Significant improvement in:**
 - Anxiety
 - Depression
 - QoL
 - Pain beliefs
- **Treatment effect not related to:**
 - Prepuberty and older children
 - IBS or FAPS
 - Anxiety or depression
 - Therapist

Long-term follow up

Adequate relief:
iHT: 83.8% vs CD: 80%



Treatment success*:

	CD group	iHT group	p-value
After therapy	21 (34.4%)	37 (52.1%)	.041*
1 year follow-up	38 (62.3%)	48 (69.6%)	.382
5.8 years follow-up	39 (67.2%)	42 (66.7%)	.946

Hypnosis4abdominalpain.com

Hypnosebijbuikpijn.be / hypnosebuikpijn.nl

Hipnosisdolorabdominal.com

Hypnosebeibauchschmerzen.de



Home For whom? Ab

In development: Swiss-German, French, Swedish, Hungarian, Italian and Portuguese

Welcome

10 -15% of the world's children suffer from abdominal pain – too many! Our research reveals that listening to self-hypnosis recordings helps more than 70% of children. Using self-hypnosis also reduces medical and psychological visits, improves quality of life, increases school attendance, self-confidence – and even sleep improves!

Abdominal pain is troublesome and annoying

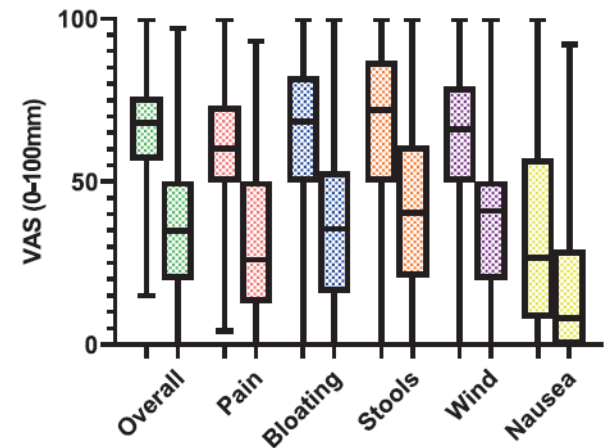
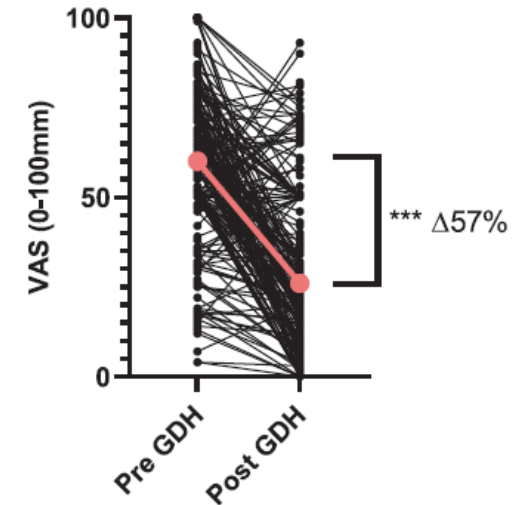
By missing school, not playing sports or being with friends, abdominal pain impacts many parts of children's lives. This ongoing pain is caused by irritable bowels. Genetic predisposition, personality traits and home or school stress can play a role in irritable bowel syndrome. Listening to hypnosis recordings can help these children.

Hypnosis at home is a great solution

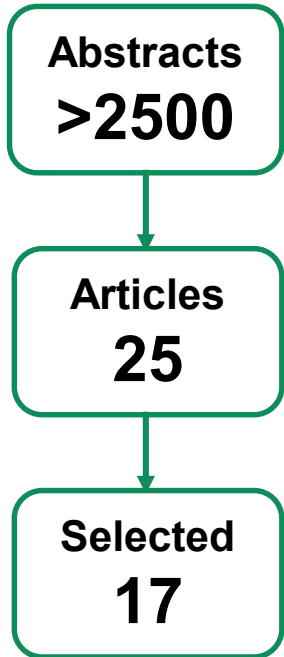


Smartphone app- delivered gut- directed hypnotherapy improves symptoms of self- reported irritable bowel syndrome: A retrospective evaluation

- 2843 patients with self-reported IBS commenced the free sessions
- 1428 (50%) purchased the app
- 253 (9%) completed all 42 sessions!



Pharmacologic treatment of functional abdominal pain disorders: a systematic review



- **17 RCTs**
- **1197 children, aged 4-18 years**
- **Antispasmodics, antidepressants, antibiotics, antihistaminic, antiemetic, histamine-2-receptor antagonist, 5-HT4-receptor agonist, melatonin, and buspirone**
- **No studies included on laxatives, antidiarrheals, analgesics, antimigraines, and serotonergics**

Antispasmodics

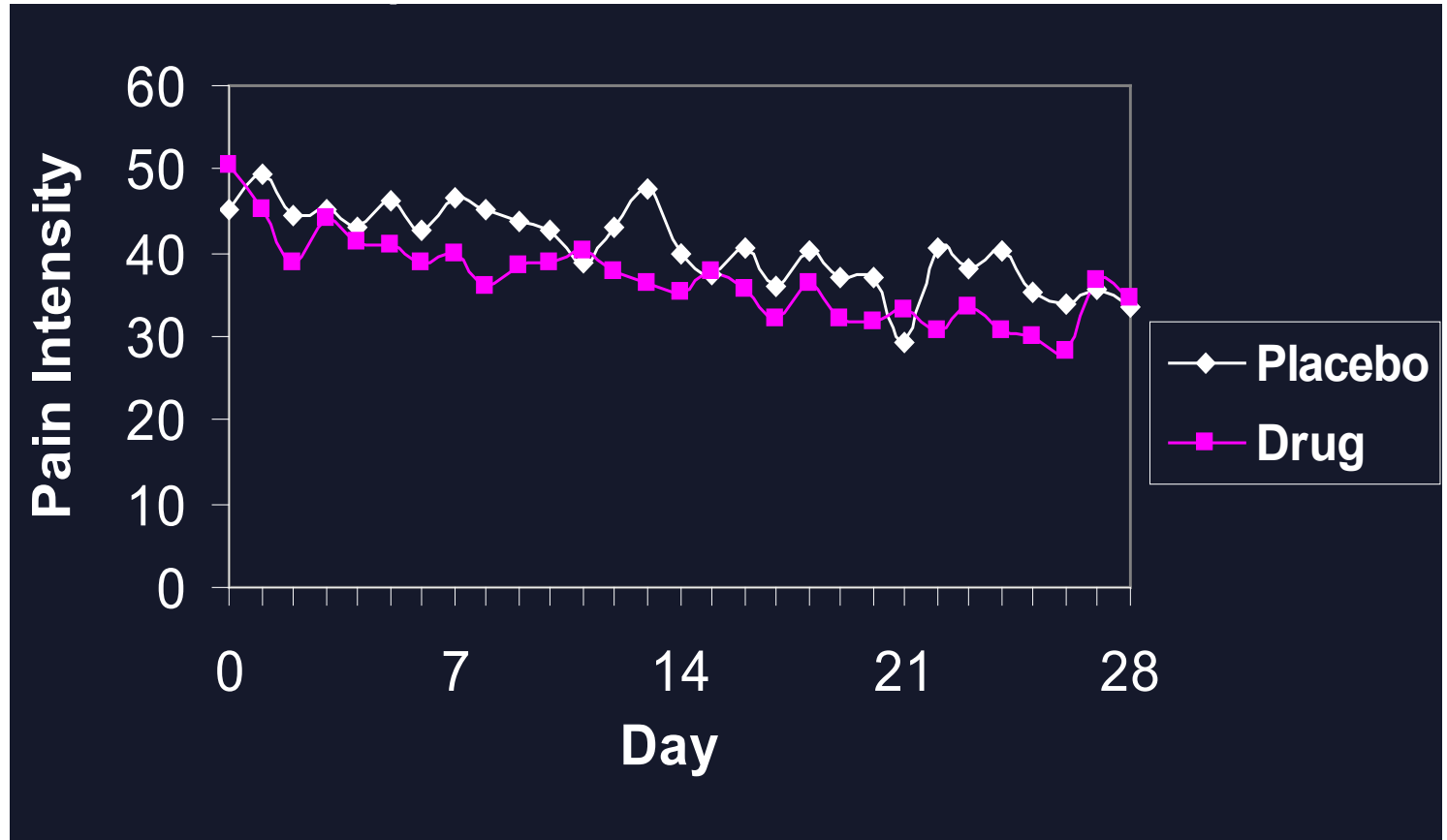
Kline 2001	N=50, 8-17y IBS	2 weeks peppermint oil vs. placebo	GRADE: very low
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- **Improvement in severity of symptoms: 71% vs. 19% (p<0.001)**
- **No adverse effects reported**
- **Quality:**
 - **No concealment of allocation**
 - **Attrition bias**
 - **Small sample size**



Amitriptyline vs placebo

90 children,
5 centers,
4 wks rx,
5 years to
complete it

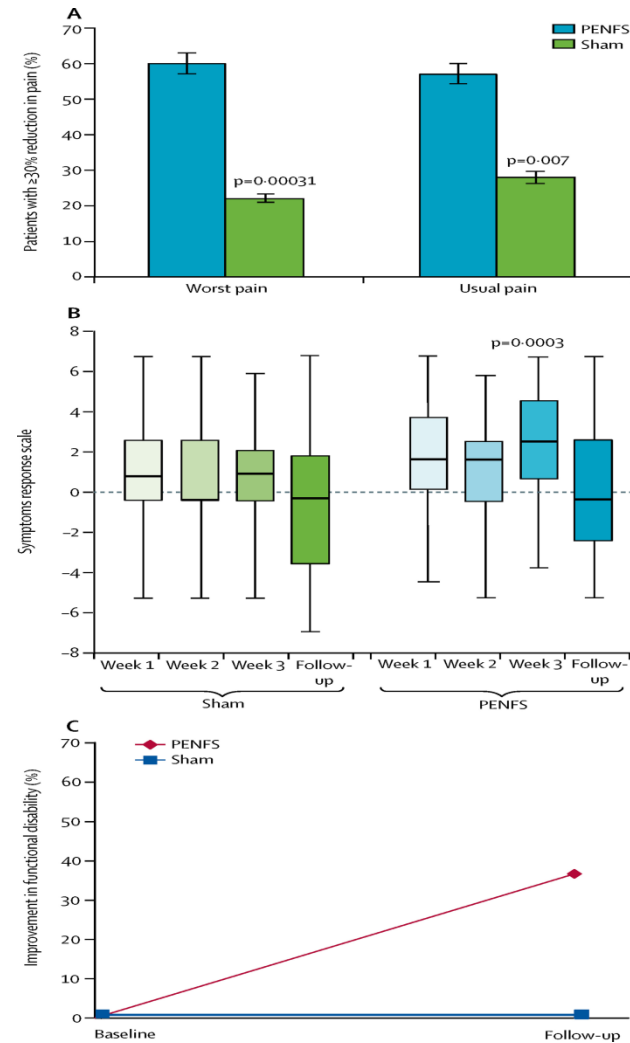


Neurostimulation for abdominal pain-related FGIDs in adolescents: a randomised, double-blind, sham-controlled trial

- **Percutaneous electrical nerve field stimulation (PENFS) external ear to modulate central pain pathway**
- **115 Adolescents, 11–18 years, AP-FGID**
- **PENFS (n=60) with an active device or sham (n=55)**



Percutaneous Electrical Nerve Field Stimulation



The Placebo Response in Pediatric Abdominal Pain-Related Functional Gastrointestinal Disorders: A Systematic Review and Meta-Analysis

Daniël R. Hoekman, MD^{1,*}, Judith Zeevenhooven, BSc^{1,*}, Faridi S. van Etten-Jamaludin, BSc², Iuke Douwes Dekker, MD³, Marc A. Benninga, MD, PhD¹, Merit M. Tabbers, MD, PhD¹, and Arine M. Vlieger, MD, PhD⁴

Objective To investigate the magnitude and determinants of the placebo response in studies with pediatric abdominal pain-related functional gastrointestinal disorders.

Study design The Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, and CINAHL were searched for systematic reviews and randomized placebo-controlled trials concerning children 4-18 years of age with an abdominal pain-related functional gastrointestinal disorder. The primary outcome was the pooled proportion of subjects assigned to placebo with improvement as defined by the authors. The effect of trial characteristics on the magnitude of the placebo response was investigated using univariate meta-regression analysis.

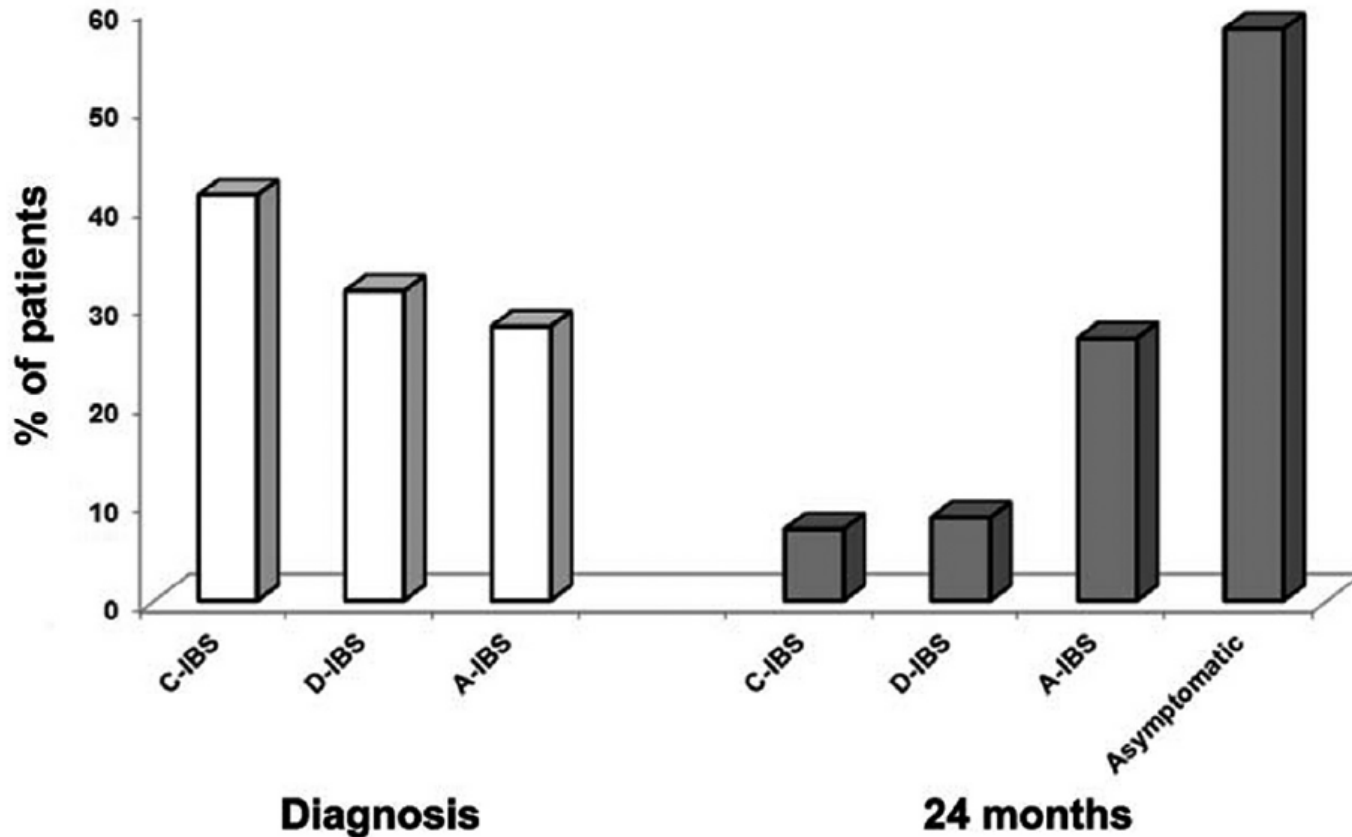
Results Twenty-one trials were identified. The pooled proportion of subjects with improvement was 41% (95% CI, 34%-49%; 17 studies) and with no pain was 17% (95% CI, 8%-32%; 7 studies). The pooled standardized mean difference on the Faces Pain Scales compared with baseline was -0.73 (95% CI, -1.04 to -0.42; 8 studies). There was significant heterogeneity across studies with respect to both outcomes. Lower dosing frequency ($P = .04$), positive study ($P = .03$), longer duration of treatment ($P < .001$), and higher placebo dropout ($P < .001$) were associated with higher report of no pain. Response on Faces Pain Scales was greater in studies conducted in the Middle East ($P = .002$).

the randomization schedule ($P = .02$), and in studies with a higher percentage of females.

Conclusions Children with abdominal pain-related functional gastrointestinal disorders improve

41%!!!

Do children just grow out of IBS?



- Spontaneous resolution over 2 years FU
- Treatment with..... not associated with treatment success

Conclusions

- **Successful management of patients with functional pain disorders with a trusting, positive, patient-physician relationship**
- **Fibers and probiotics only play a minor role**
- **The role of FODMAP diet should be established in future larger trials**
- **CBT, hypnotherapy and neurostimulation are effective treatments**
- **Evidence for the use of pharmacological treatment is lacking**
- **Labeling??? Placebo??**

Questions?

