

# Dietary Management of IBS

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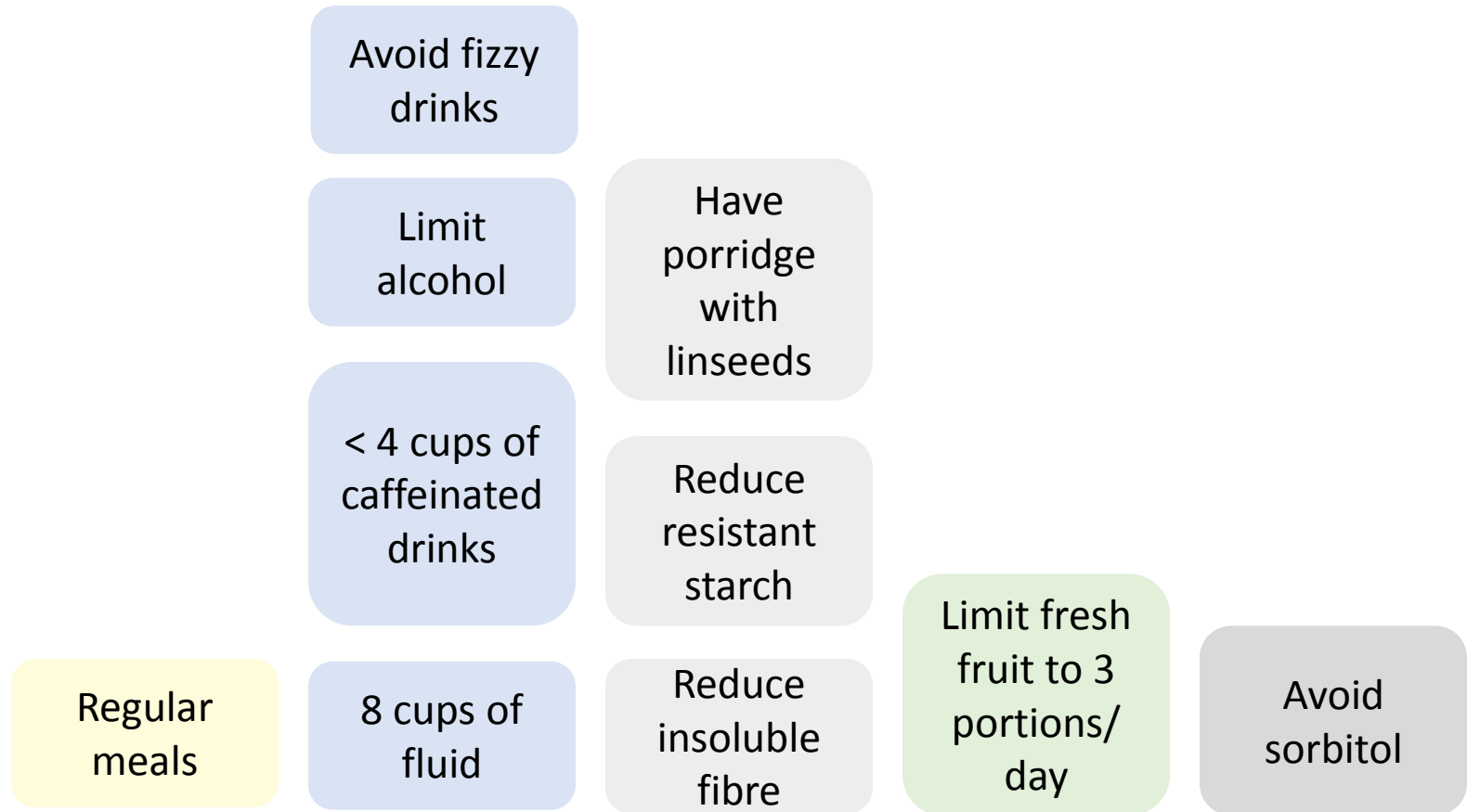
Specialist Gastroenterology Dietitian

# Diet & IBS

- Up to 65% report that food intolerances play a role in their IBS symptoms Camilleri, 2006
- No tests to diagnose intolerances
  - apart from breath tests for lactose & fructose malabsorption
- Self-reported food triggers often inaccurate
  - Mintel report (2016): 13% of UK population avoid gluten
  - Only 30% had gluten intolerance confirmed by DBPC challenge (*Carrocio et al, 2012*)
- Meals are complex mixtures of dietary components
- Timing of symptom onset following a trigger food can vary
- Severity of reactions: dose- dependent

# First line dietary advice

NICE cg61



# Irritable bowel syndrome in adults: diagnosis and management

[Guidance](#)

[Tools and resources](#)

[Information for the public](#)

[Evidence](#)

[History](#)

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## Endorsed resource - British Dietetic Association (BDA)

### Food Fact Sheet: Irritable Bowel Syndrome and Diet

The [British Dietetic Association](#) has produced a [Food Fact Sheet](#) that supports recommendations relating to dietary and lifestyle advice for IBS in the NICE guideline on [irritable bowel syndrome in adults](#) and quality standard for [irritable bowel syndrome in adults](#).

This resource should not be used by people aged under 18 years.

The information and links in this resource to food allergy are beyond the scope of the NICE guideline and quality standard.

**Disclaimer:**



# Irritable Bowel Syndrome

The Irritable Bowel Syndrome (IBS) consists of a number of symptoms. The term 'syndrome' seems quite grand but it is just the word that doctors use to describe a collection of symptoms.

The most important symptoms in IBS are abdominal pain and abnormal bowel habit. Many patients with IBS get crampy abdominal discomfort or pain which comes and goes and which fluctuates with bowel function.

- altered bowel habit (constipation, diarrhoea or alternating constipation and diarrhoea)
- abdominal pain (often crampy), distension, tension or hardness
- symptoms made worse by eating
- passage of mucus.

Other features such as lethargy, nausea, backache and bladder symptoms are common in people with IBS, and may be used to support the diagnosis. It is important to have a diagnosis of IBS confirmed and other conditions such as coeliac disease and inflammatory bowel disease ruled out. Four reasons to consult your doctor

- reduce your intake of manufactured foods and cook from fresh ingredients where possible

What if healthy eating advice doesn't work?



# Second line: Low FODMAP diet

**F**ermentable

**O**ligosaccharides (fructans & galacto-oligosaccharides)

**D**isaccharides (lactose)

**M**onosaccharides (fructose)

**A**nd

**P**olyols (xylitol, mannitol, sorbitol & isomalt)

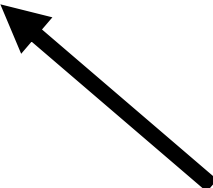
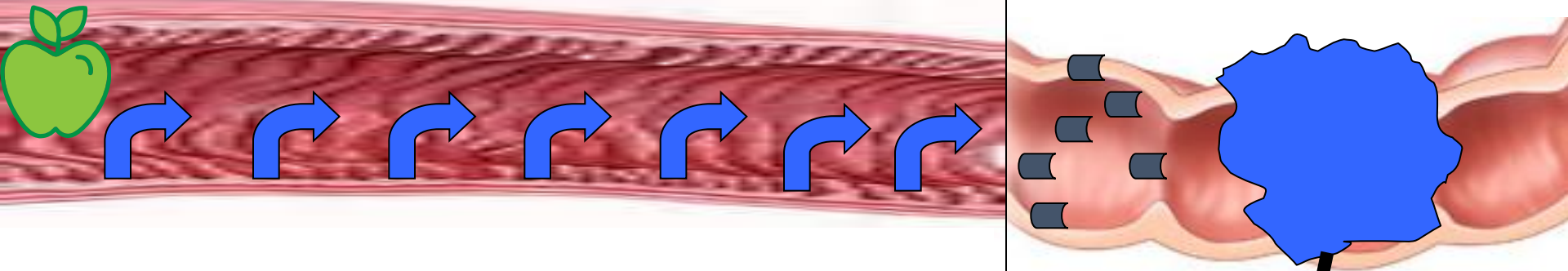
# The FODMAP Hypothesis

Loose stools

Bloating

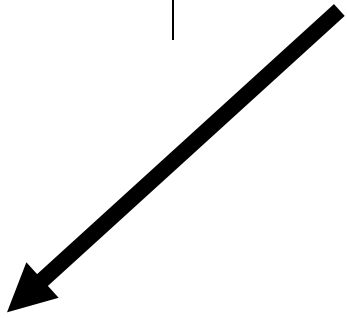
Small intestine

Colon



Pain

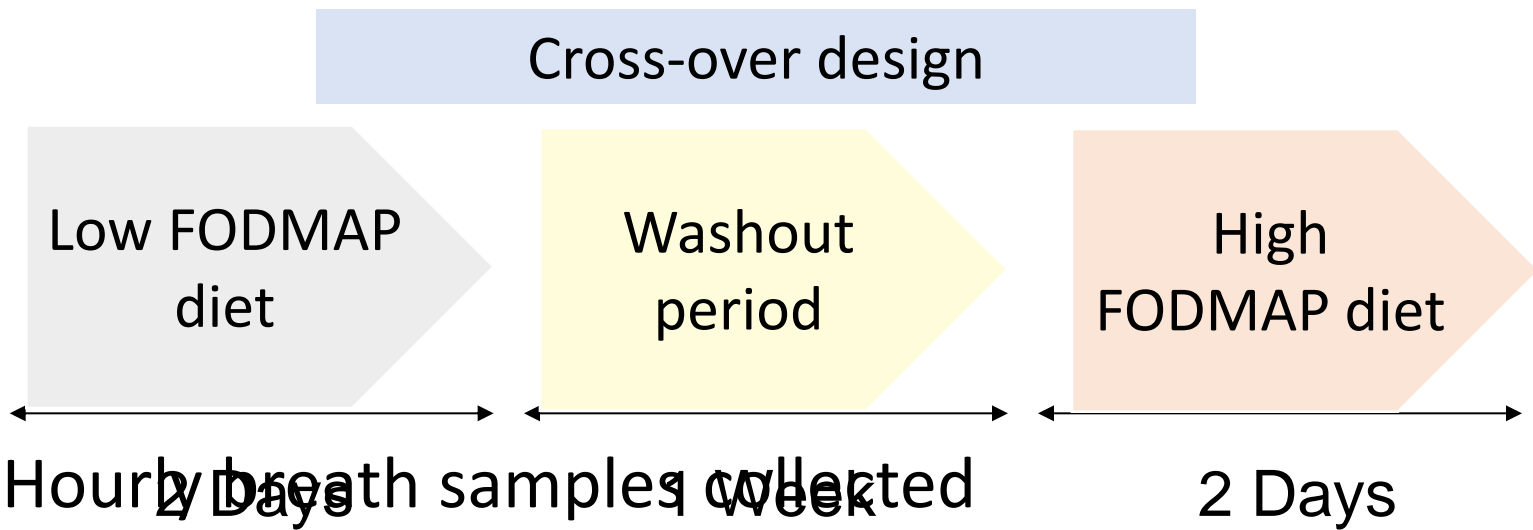
Flatulence





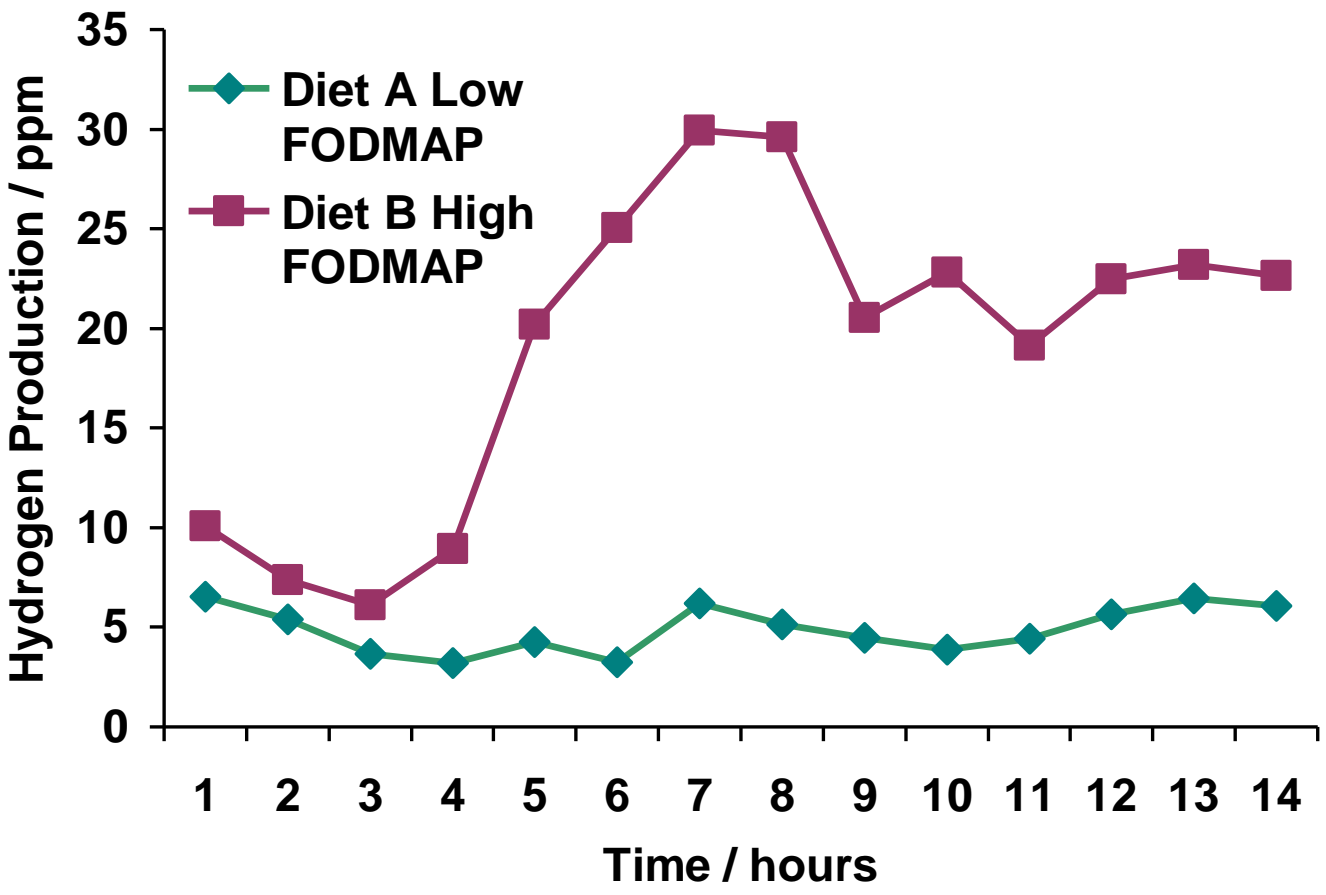
# Do FODMAPs really create more gas?

- Ong *et al*, 2010
- Healthy volunteers (n=15)
- IBS patients (n=15)



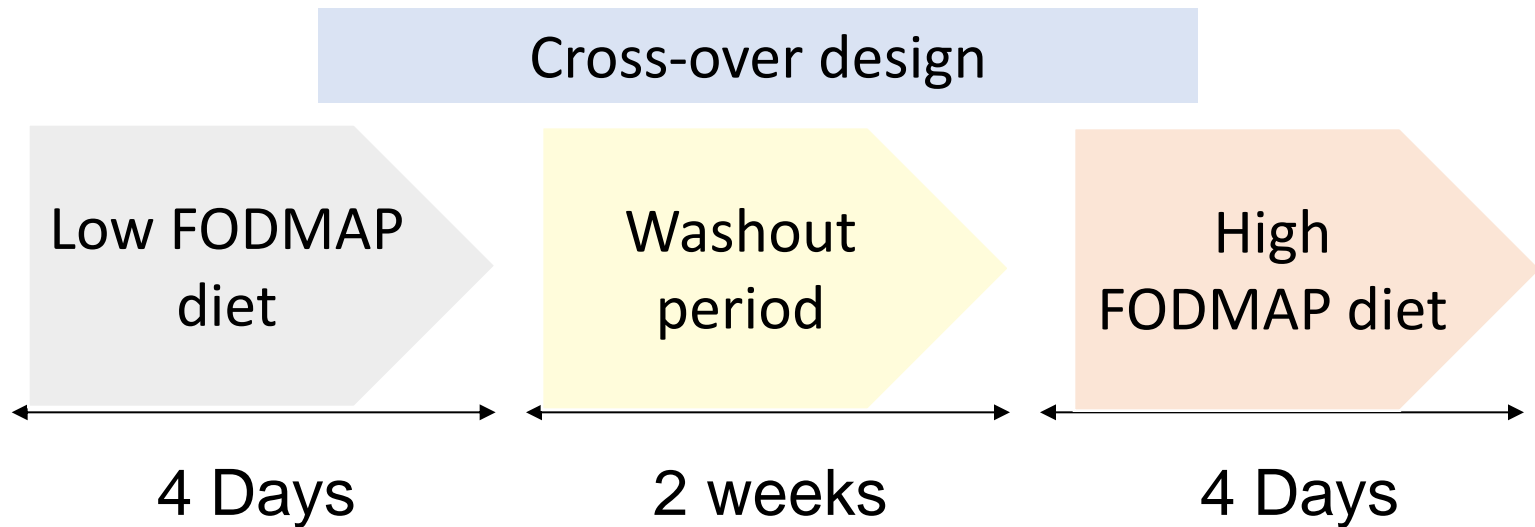
- Hourly breath samples collected
- Likert scale to score GI symptoms

Breath hydrogen was higher on high FODMAP diet.



# Do FODMAPs increase intestinal fluid?

- Barret *et al*, 2010
- 10 ileostomy patients
- All food provided



- Stoma output weight & water content measured

# FODMAPs are osmotically active

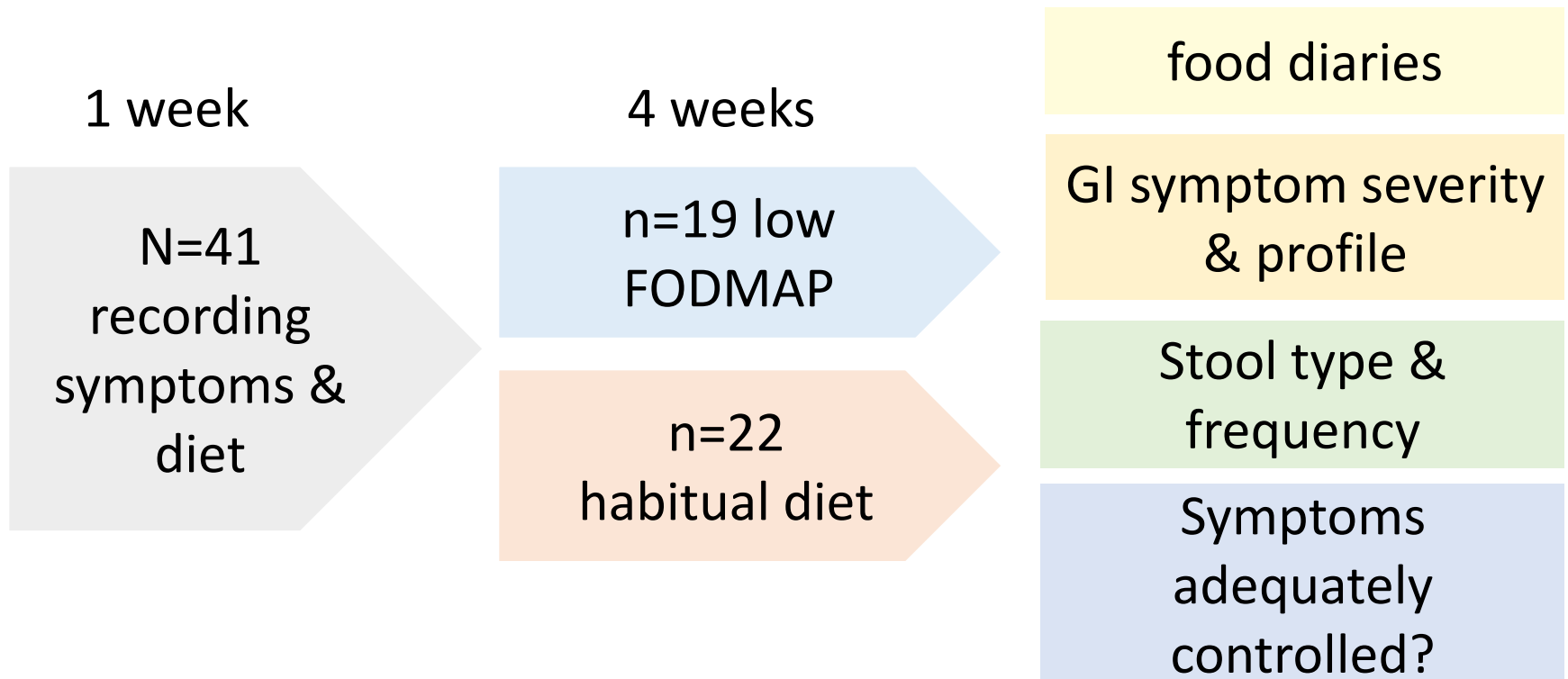
- Effluent weight  $\uparrow$  22%  
(95% CI, 5-39)  $P=0.01$
- Water content  $\uparrow$  20%  
(2-38)  $P= 0.013$



Barret *et al*, 2010

# Low FODMAP diet: does it work?

- Staudacher *et al*, 2012
- First RCT to compare low FODMAP & 'habitual' diet



# “I have adequate control of my symptoms”

Symptom	Symptom score improvement (intention to treat), n (%)		
	Control (n=22)	Low FODMAP (n=19)	P
Bloating	7 (32)	14 (74)	0.007
Abdominal pain	11 (50)	13 (68)	0.233
Flatulence	9 (41)	13 (68)	0.078
Borborygmi	8 (36)	13 (68)	0.041
Urgency	5 (23)	10 (53)	0.047
Diarrhoea	9 (41)	8 (42)	0.938
Constipation	5 (23)	5 (26)	1.00
Tiredness	8 (36)	10 (53)	0.295
Overall symptoms	8 (36)	15 (79)	0.006



Staudacher *et al*,  
2012

# Objective measures

**TABLE 4** Stool frequency, consistency, and percentage of stools with normal consistency in IBS patients after 4 wk of habitual diet intake or fermentable carbohydrate restriction<sup>1</sup>

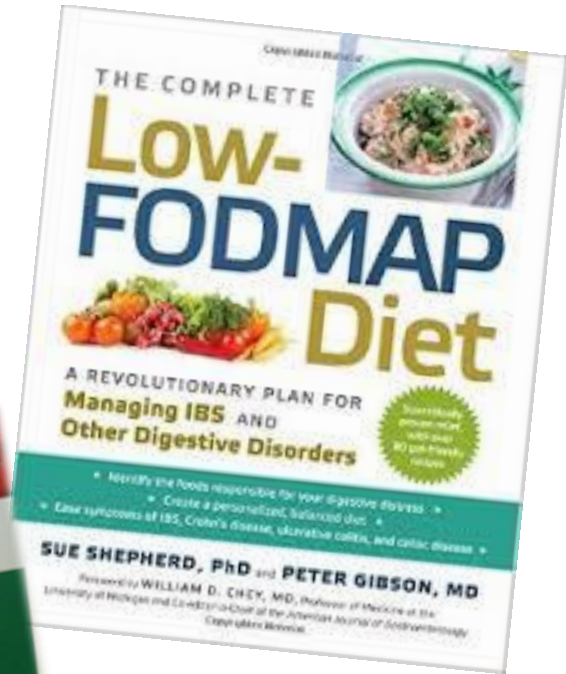
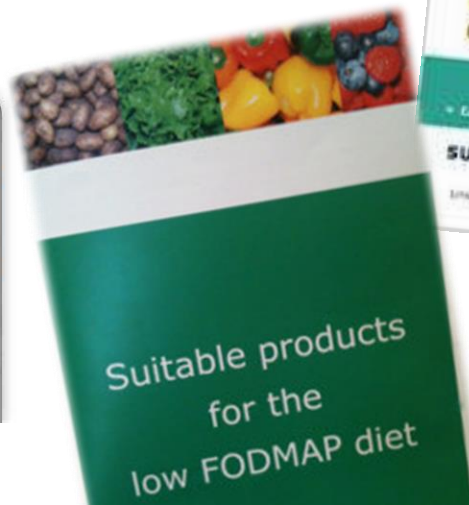
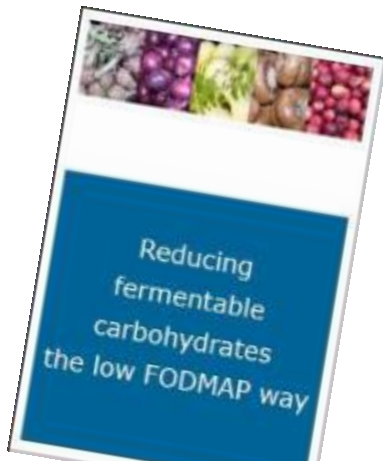
Stool output	Control <sup>2</sup>	Intervention <sup>3</sup>	<i>P</i>
<u>Stool frequency, <i>n/wk</i></u>	13.5 (11.9–15.1)	10.2 (8.5–11.9)	0.008
Stool consistency, <i>BSC score</i>	4.7 (4.2–5.1)	4.5 (4.0–5.0)	0.56
<u>Percentage of stools with normal consistency,<sup>4</sup> %</u>	6.6 <sup>5</sup> (1.6–14.9)	23.6 <sup>5</sup> (11.9–39.1)	0.02

<sup>1</sup> Values are estimated marginal means (95%CI) analyzed on the per-protocol population, control, *n* = 19, intervention, *n* = 16. BSC, Bristol Stool Chart; IBS, irritable bowel syndrome.

Staudacher *et al*,  
2012

# Low FODMAP Diet

- Effective
- Improves global symptoms in 69-81%
- Dietitian-lead
- Not a life-long diet!





# Low FODMAP paradox

- Lower numbers of 'good bacteria' in people with IBS Öhman et al., 2015
- Certain FODMAPs, fructans & GOS, have prebiotic effects
- A low FODMAP diet reduces bifidobacteria and total bacterial abundance Staudacher *et al.* 2012; Halmos *et al.* 2015
- Long term effects?

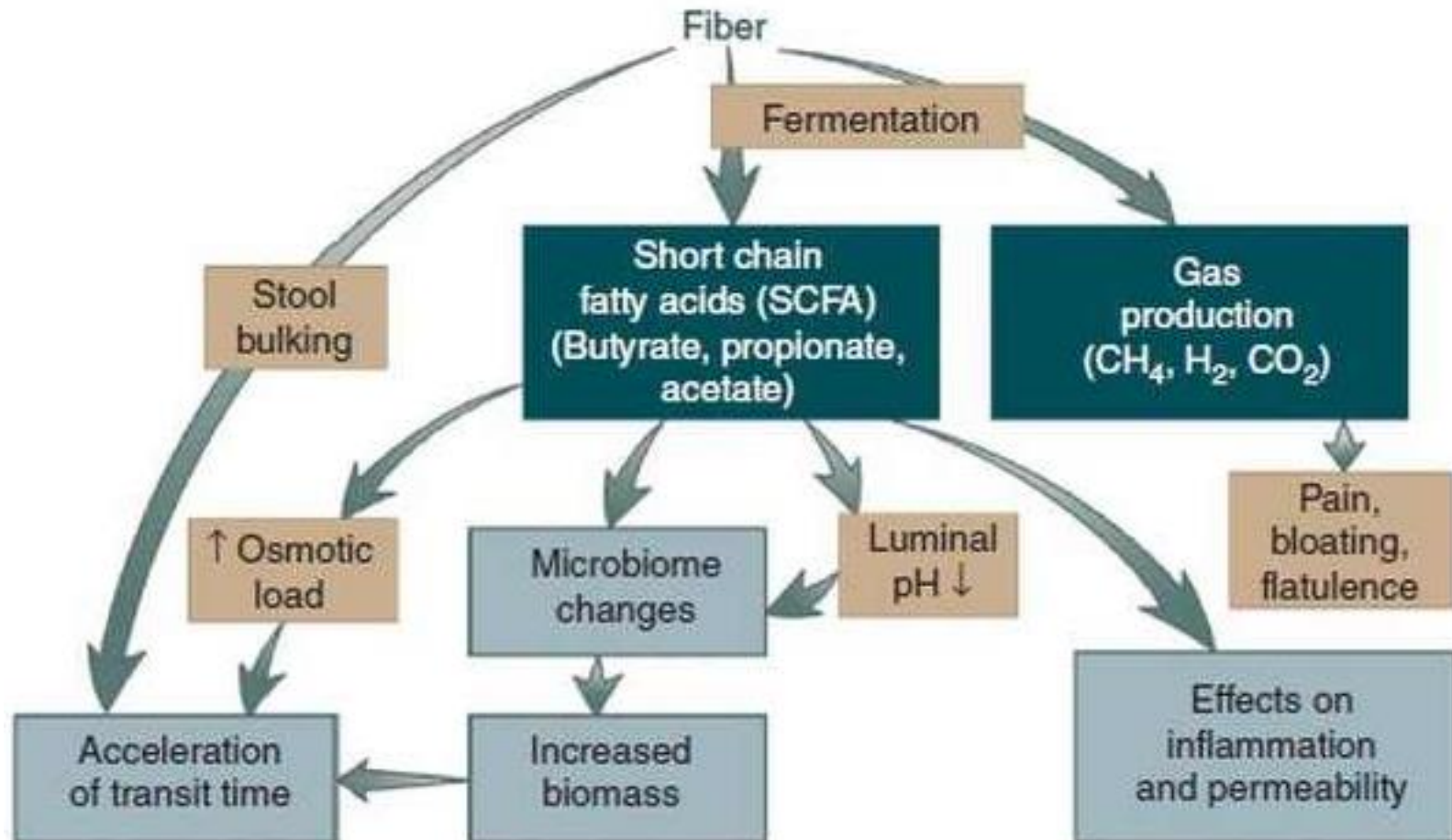
# FIBRE: role in IBS



# Soluble & Insoluble Fibre

SOLUBLE FIBRE	INSOLUBLE FIBRE
Dissolves in water- forms a gel	Increases bulk of stools ? Stimulant laxative effect
Often fermentable by colonic bacteria, Increases bacterial mass & produces SCFAs	Usually non-fermentable
Mainly in pulses, the flesh of fruits & vegetables and oats	Mainly in wheat bran, whole grains and skins of fruits & vegetables
<ul style="list-style-type: none"><li>- Ispanghula Husk (e.g.Fybogel/Psyllium/Metamucil)</li><li>- Wheat Dextrin (e.g. Benefibre)</li></ul>	<ul style="list-style-type: none"><li>- Methylcellulose (Celevac/ Citrucel)</li><li>- Sterculia (Normocol)</li></ul>

# Fibre: proposed mode of action



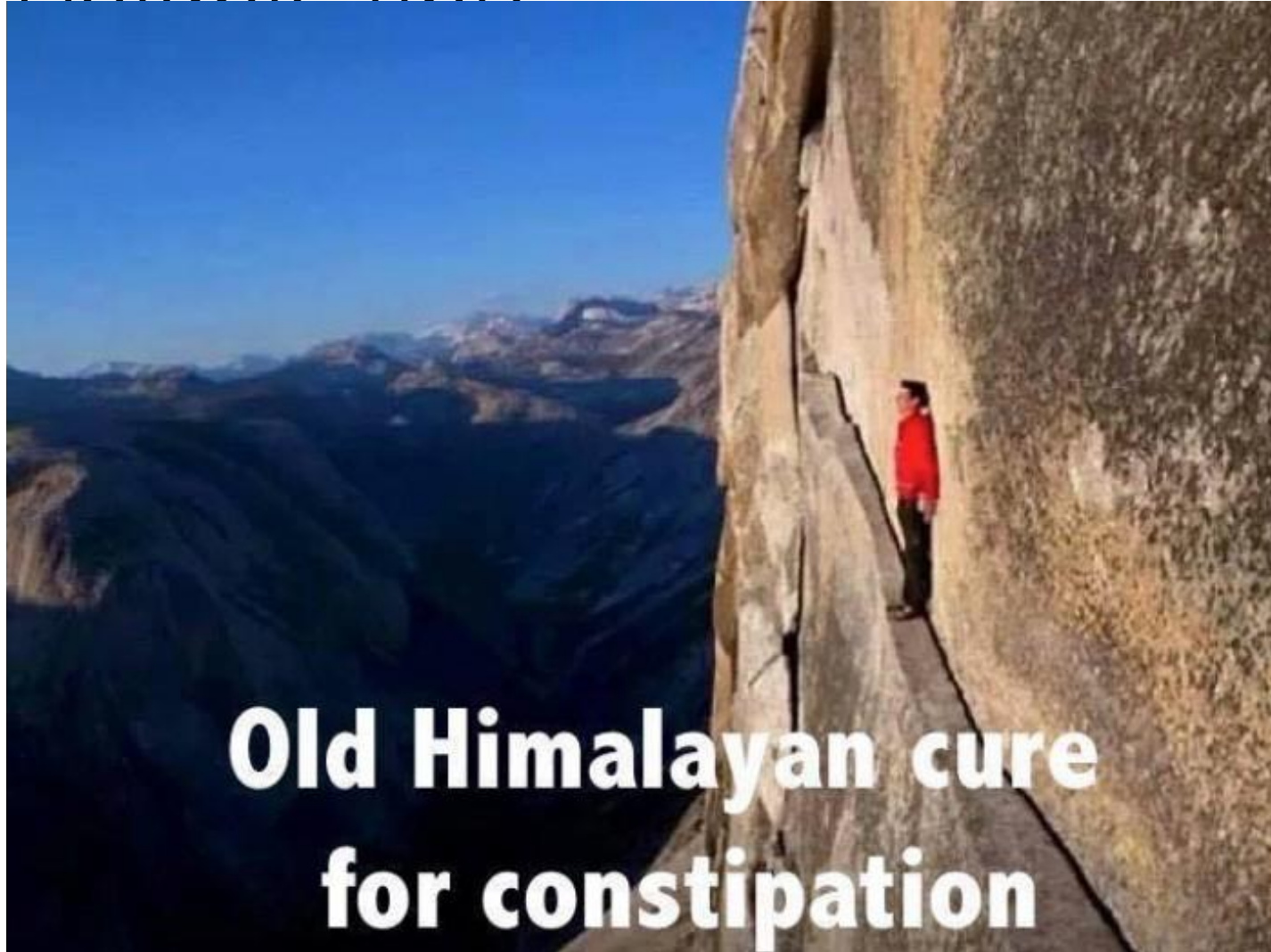
Likely mechanism of action of fiber on intestinal transit time and visceral hypersensitivity

# Insoluble Fibre: role in constipation

- bran more effective than placebo in increasing stool **weight, frequency** and **colonic transit** than placebo
- in both constipated and non-constipated
- **no difference in symptom severity scores** reported by constipated patients
- difficulty passing hard stools rather than decreased frequency of bowel movements?

(Badiali *et al*,1995)

Is there a better alternative to insoluble fibre?



**Old Himalayan cure  
for constipation**

# Soluble Fibre: role in constipation

Study	Active intervention	Criteria used to define response to therapy	Number in fibre arm	Treatment effect in fibre arm	Number in placebo/no therapy arm	Treatment effect in placebo/no therapy arm
Fenn <i>et al.</i> <sup>20</sup>	Psyllium	Proportion with an improvement in global symptoms	104	86.5%	97	47.4%
Ashraf <i>et al.</i> <sup>19</sup>	Psyllium	Increase in mean stool frequency per week	11	0.9	11	0.2
Nunes <i>et al.</i> <sup>23</sup>	Psyllium	Proportion with normalisation of evacuation	30	86.7%	30	30.0%
Lopez Roman <i>et al.</i> <sup>22</sup>	Inulin and maltodextrin	Proportion with straining during defaecation	15	35.7%	17	78.6%

Suares & Ford (2011) *Systematic review: the effects of fibre in the management of chronic idiopathic constipation*

# Fibre dilemmas

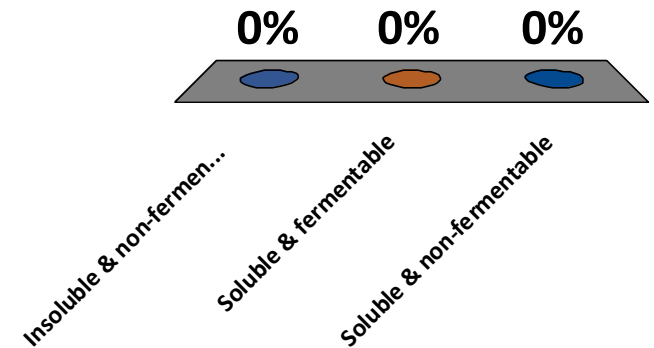
- Some of the foods that are high in soluble fibre are fermentable





Which one of the following is in Fybogel?

- A. Insoluble & non-fermentable
- B. Soluble & fermentable
- C. Soluble & non-fermentable



# A brief summary on fibre

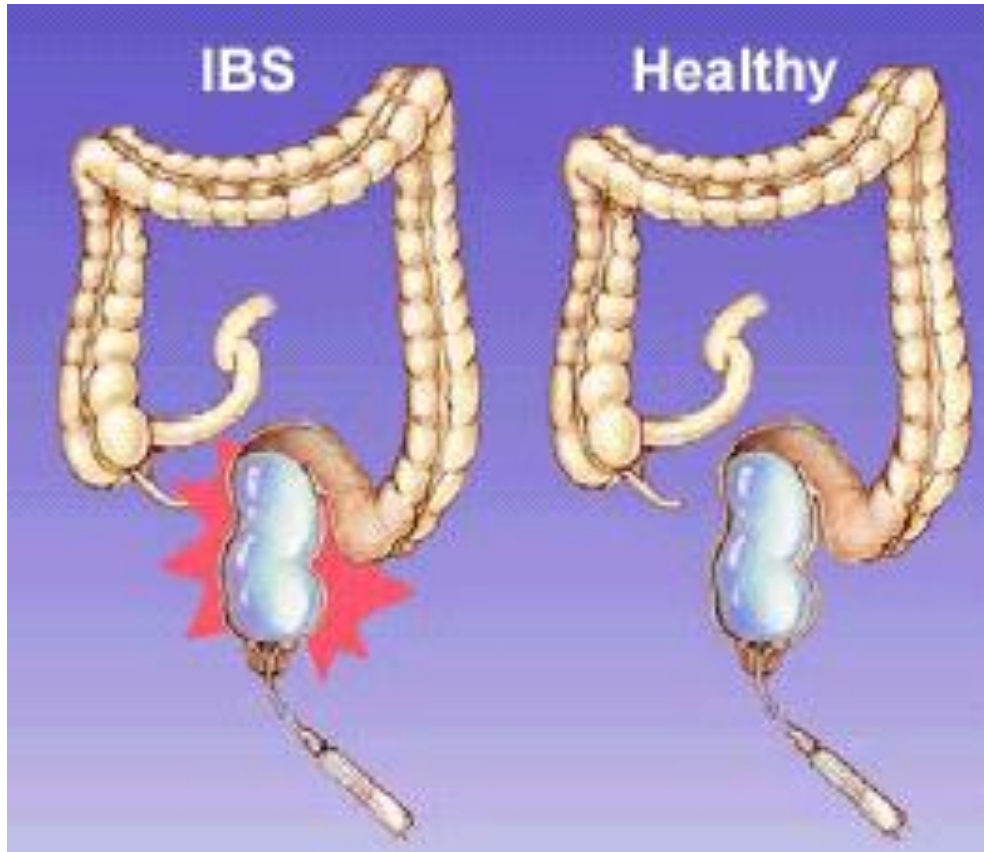
- Soluble fibre more helpful in constipation than insoluble
  - fruits and vegetables
  - oats
  - fibre supplements
  - Fybogel, Benefibre, Psyllium Husks
- If bloating/ abdominal distension alongside constipation
  - soluble fibre supplements may make symptoms worse as they are fermentable
  - low FODMAP diet?

# Dietary fat & IBS

- Stimulates colonic motility Simren et al, 2007
- Impairs gas transit Serra et al, 2002
- Increases visceral sensitivity Simren et al, 2001



# Duodenal lipid infusion study



- Discomfort?

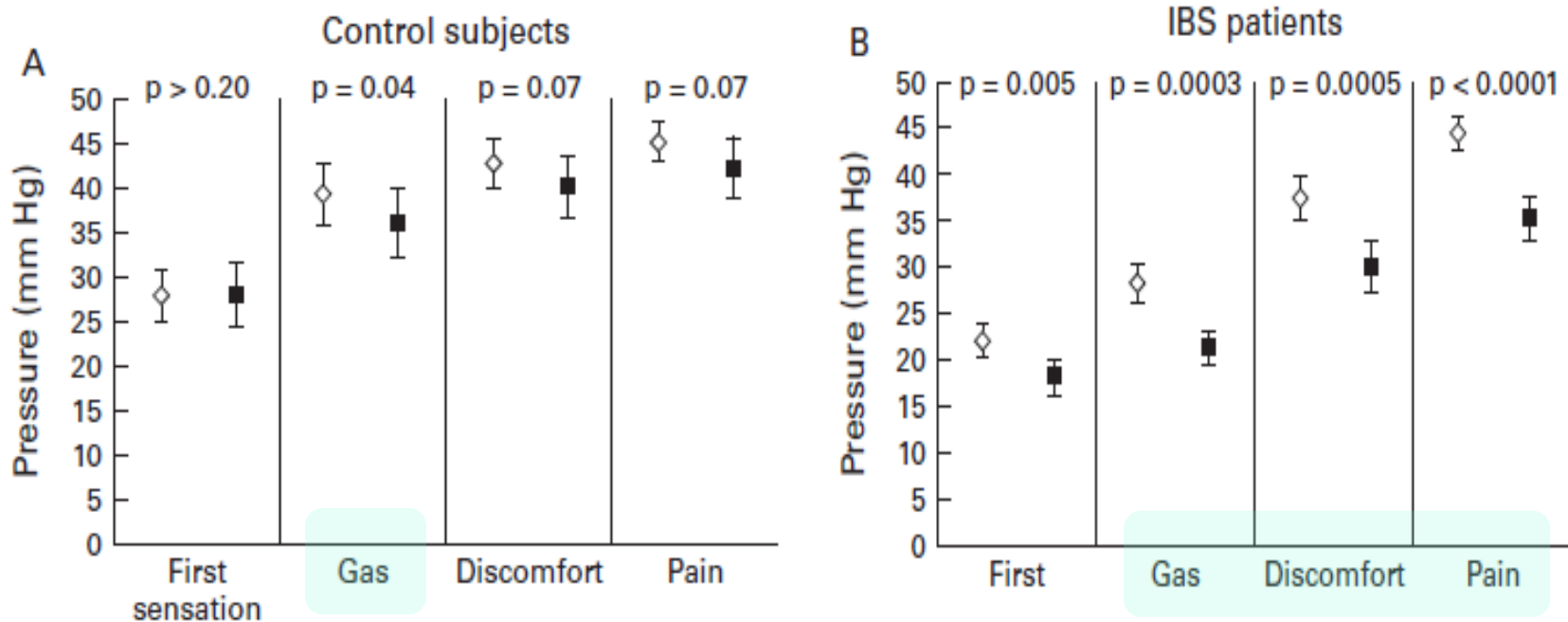
- Pain?

- Gas?

- Lipid vs saline infusion into duodenum

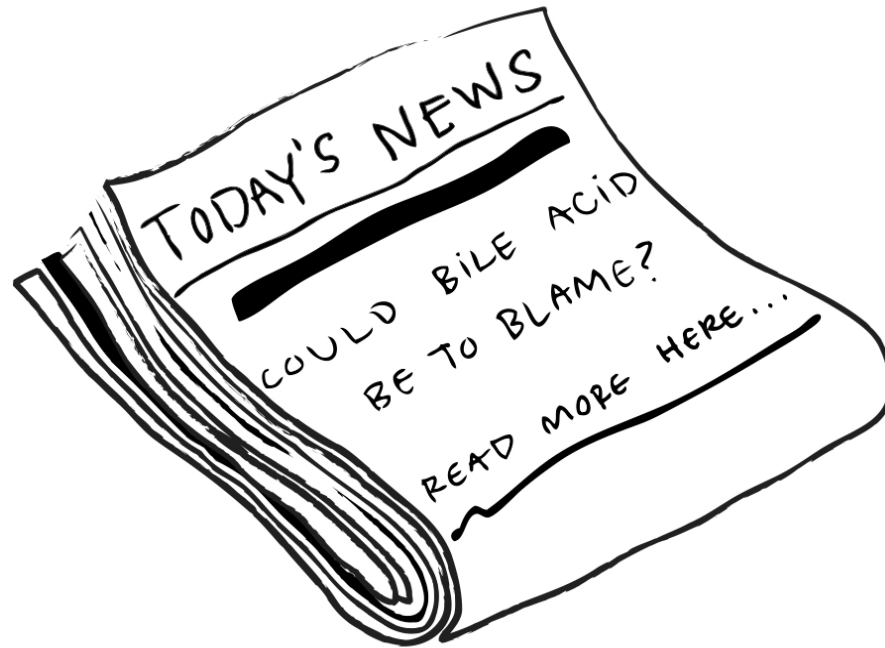
# Duodenal lipid infusion study

◇ Before lipid infusion  
■ After lipid infusion



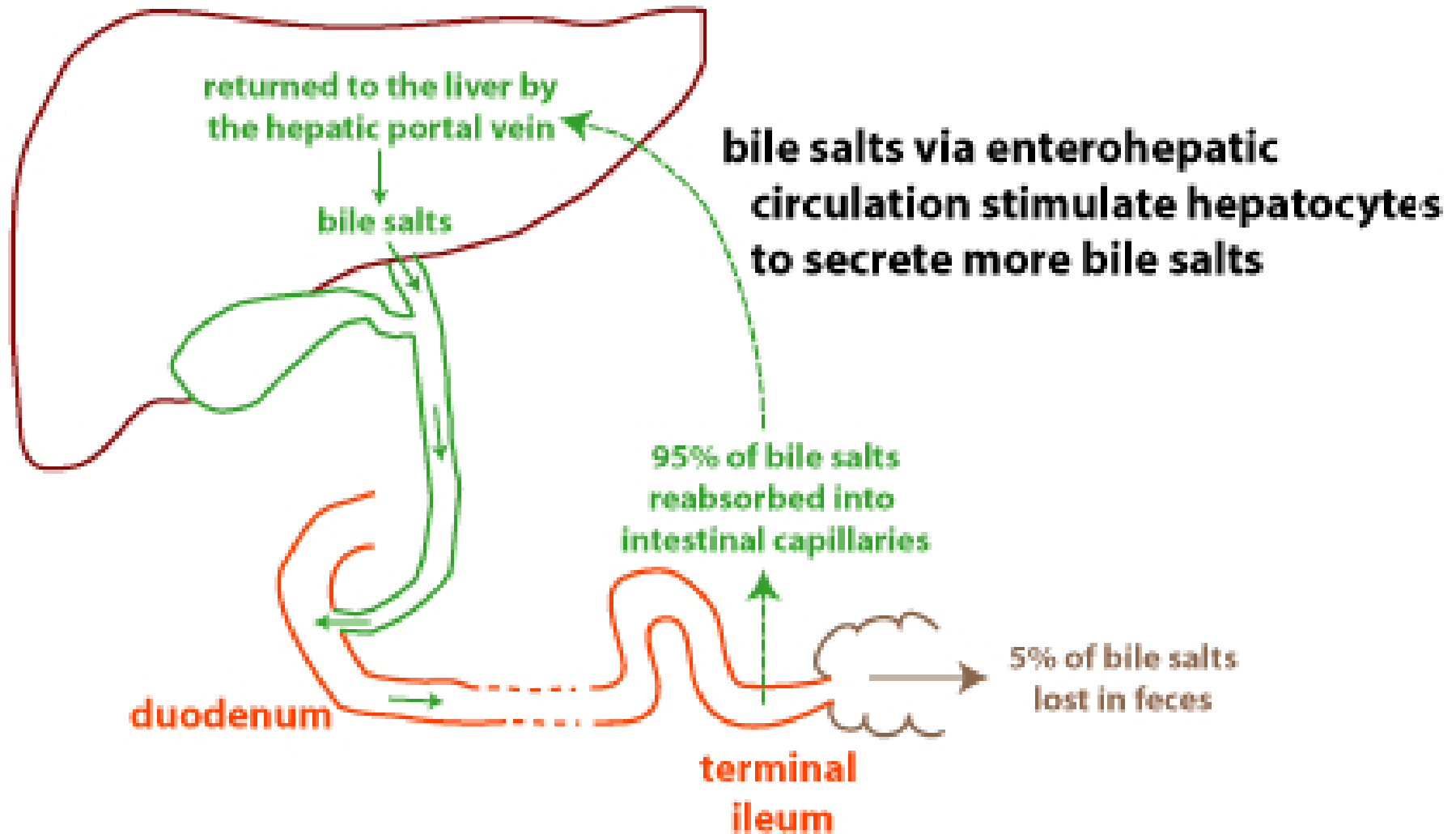
Simren, Abrahamsson and Björnsson (2001)

# Is it really IBS-D?



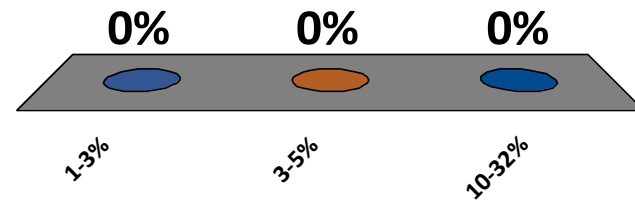
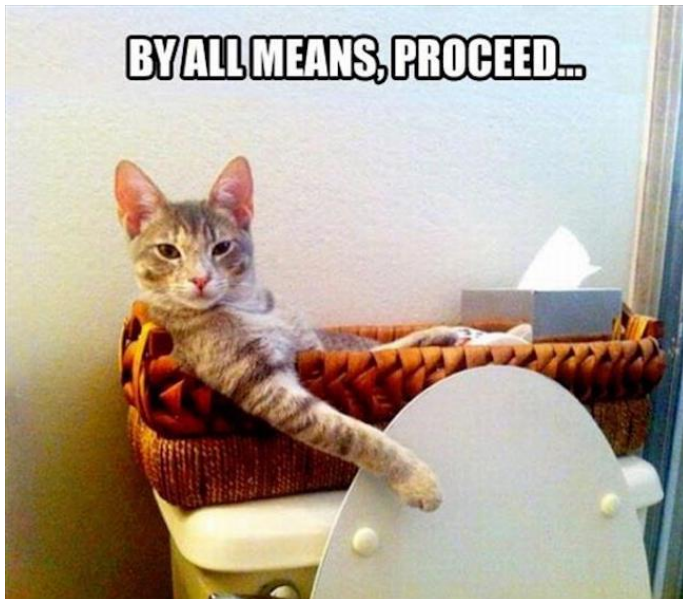
Could it be Bile Acid Malabsorption?

# Bile Acid Metabolism



# How many IBS-D patients might have i-BAM?

- A. 1-3%
- B. 3-5%
- C. 10-32%





# Prevalence of i-BAM in 'IBS-D'

- Wedlake et al, 2009
- Systematic RV of 18 studies, n= 1223
- Type 1 & 3 BAM excluded
- i-BAM-not uncommon
  - 10% severe i-BAM (SeHCAT retention <5%)
  - 32% moderately severe i-BAM (SeHCAT <10%)
- Low fat diet + micronutrient supplementation
- Colestryramine/ Colestipol/ Colesevelam

# New horizons: atopic IBS

- Atopic IBS- a separate entity?
- IBS is common in
  - Oral Allergy Syndrome (OAS)
  - Seasonal Allergic Rhinitis & Eczema
- Allergic symptoms described in the mouth & throat extend to the gut (i.e. cramping & diarrhoea)  
Breiteneder, 2000
- Intestinal allergic inflammation seen all year round in OAS Rentzos et al, 2014
- Foods that may be involved in cross-reactivity: legumes, peanuts, tree nuts & certain fruit & vegetables Skypala 2011

# Pharmacological food intolerances

- Potential triggers:
  - Vaso-active amines, i.e. histamines
  - Salicylates (?sensitivity to aspirin)
  - Sulphites
  - Monosodium glutamate
- Cumulative effects
- Poorly understood



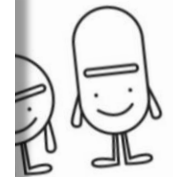
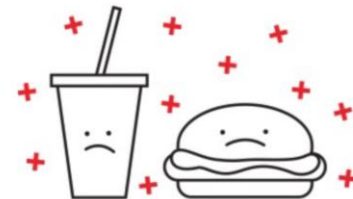
**Sensitivity to Histamine and other Vasoactive Amines**



**Sensitivity to Salicylates in food**



**Sulphite Hypersensitivity**



# Top tips in IBS

- Tell them what they don't have
  - Bowel cancer, inflammatory bowel disease, coeliac disease.
- Tell them what they do have
  - Visceral hypersensitivity, altered gut bacteria, impact of stress on colonic motility, possible food intolerances
- Be honest
  - There is no cure, only tools for managing the condition.
- Give them the tools to self-manage
  - 1<sup>st</sup> line lifestyle & dietary advice
  - Dietitian referral
  - Probiotics (Symprove, Alflorex, F)
  - IAPT
  - Radar key / *Can't wait* card
  - Medication
- Consider other conditions (e.g. BAM, SIBO, PEI, atopic IBS?).



**DID YOU SERIOUSLY ASK ME  
A QUESTION**

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**I JUST ANSWERED 2  
SECONDS AGO...**