Gastroenterology Cases

GLMS Symposium

13th February 2021

Sri Selvaratnam

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Case One

- 45 year old Chinese gentleman
- Three month history:
  - Reflux symptoms
  - Intermittent epigastric discomfort
  - Belching
- No dysphagia, weight loss, bleeding symptoms
- Unremarkable family history
- Occasional smoker
- Normal examination

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Routine Investigations

- Blood Tests:
  - Normal FBC/Iron studies/Renal and Liver Function Tests
  - Coeliac serology normal

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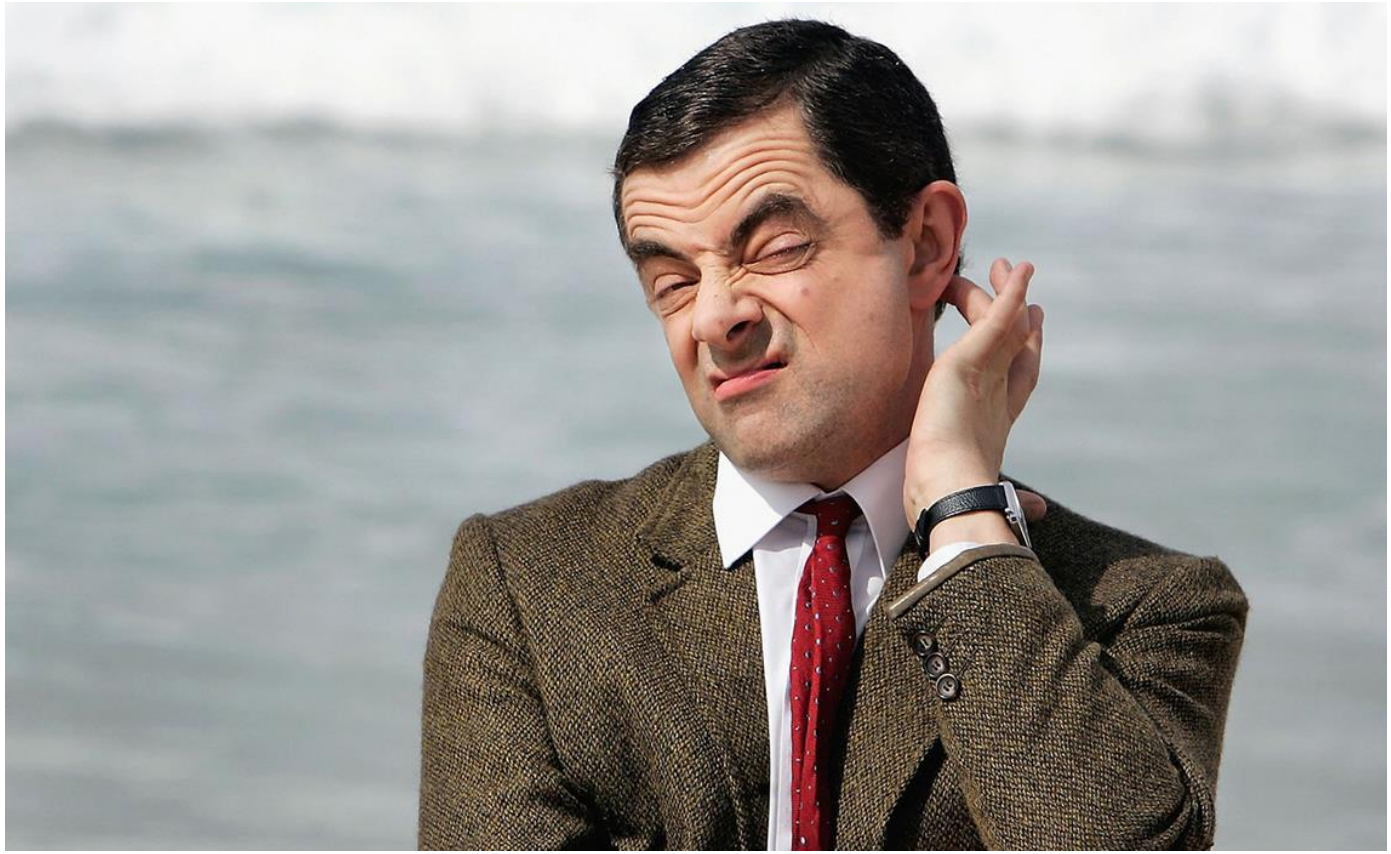
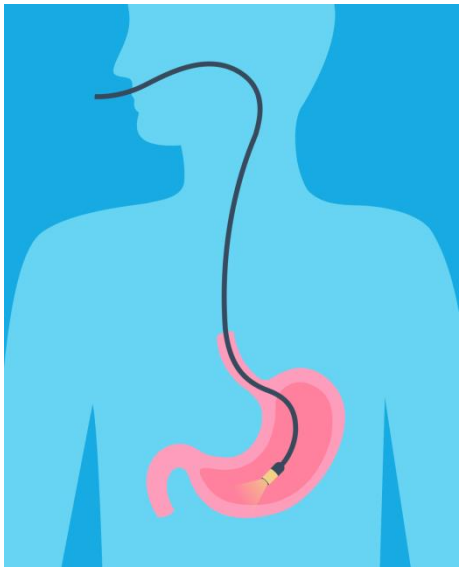
Where to from here?



- PPI Trial and reassess?
- Refer for Gastroscopy?
- PPI Trial and Gastroscopy?



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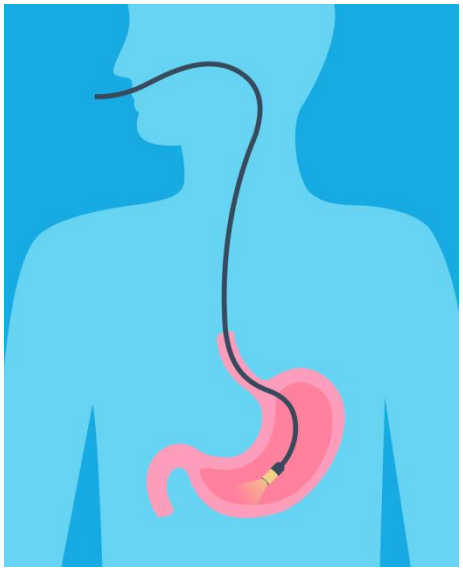

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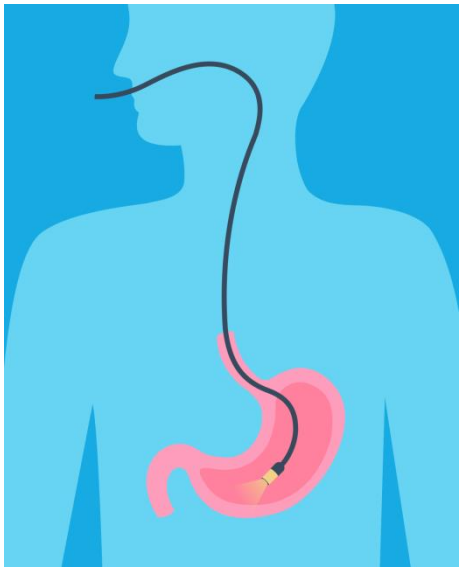

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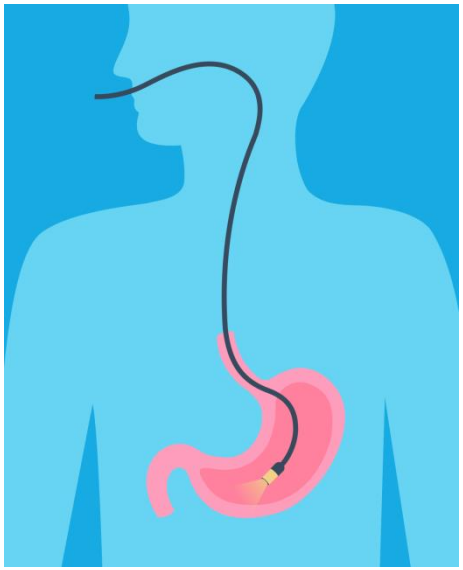

Dyspepsia

- Up to 25% have an underlying organic cause

- Examples:
  - GORD
  - Peptic Ulcer Disease
  - Malignancy (1%)
  - Gastroparesis
  - Medications
  - Hepatobiliary

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High Risk Groups

- Age ≥ 50 years
  - Incidence of gastric cancer increases with age
- **Age ≥ 40 years Māori, Pacific or Asian descent**
  - **Gastric cancer tends to occur a decade earlier in these groups**
- Family history of gastric cancer < 50 years
- Severe/persistent dyspeptic symptoms
- Melaena
- Dysphagia
- Previous history of PUD
- Aspirin/NSAID use
- Iron deficiency anaemia
- Persistent regurgitation or protracted vomiting
- Unexplained weight loss

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Initial Management

- Omeprazole 40mg daily
  - Significant improvement in symptoms

- Referred for outpatient Gastroscopy…

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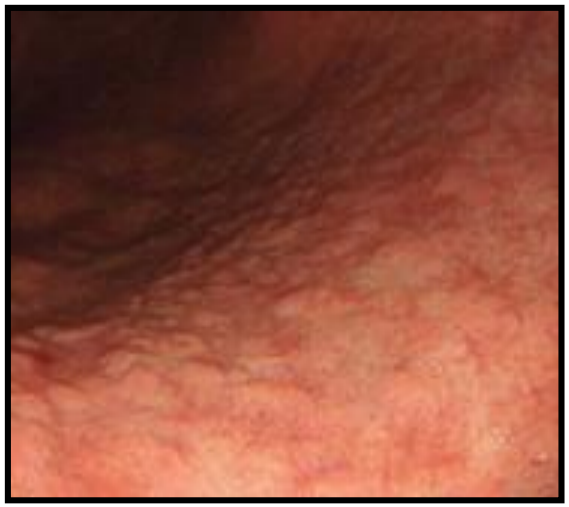
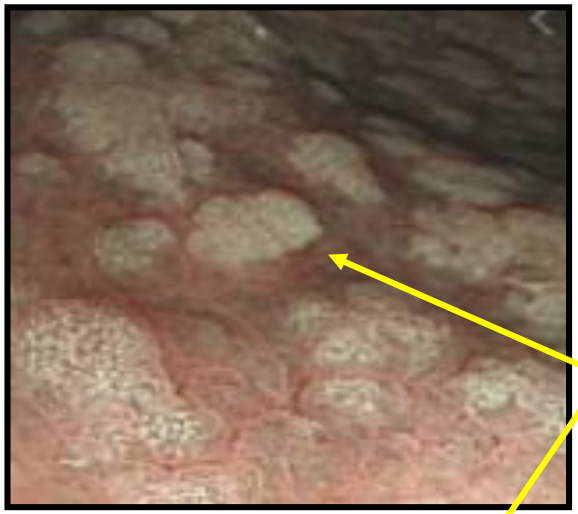
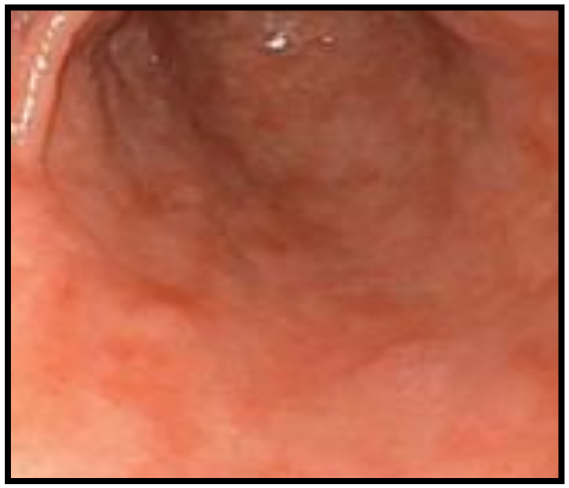
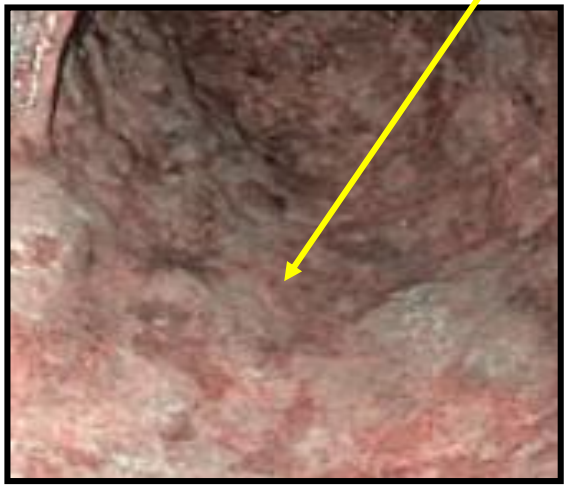
Gastroscopy Findings









Gastric Intestinal Metaplasia

Gastric Intestinal Metaplasia

- Replacement of surface gastric epithelium by intestinal epithelium
- Limited or extensive
- Increased risk of gastric cancer
  - Extensive
  - Family history of gastric cancer
- Associated with *H. pylori*
- *H. pylori* eradication reduces progression to cancer
  - May reverse GIM
- **Regular Endoscopy Screening Recommended**
  - **Generally 1-2 yearly**
  - **Depending on extent and risk profile**

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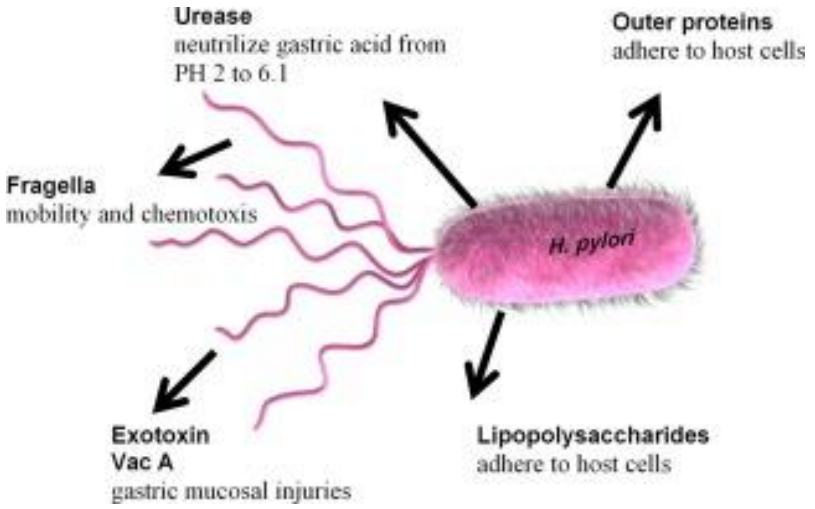
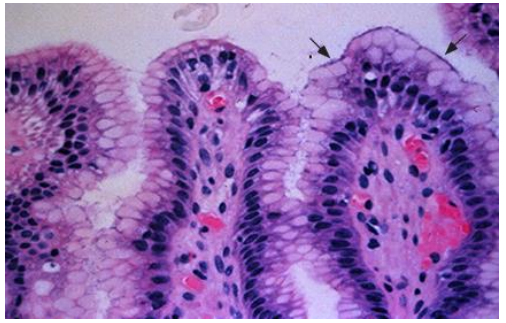
Helicobacter pylori

- Gram negative bacterium
- At least 50% of the world population
- Adaptations to survive and proliferate in gastric milieu



Helicobacter pylori

- Colonizes but does not invade gastric surface epithelium
- Disrupts mucus layer
- Underlying mucosa vulnerable to acid damage
- Host immune response perpetuates tissue injury



H. pylori: Transmission

- Faecal-oral or oral-oral most likely
- Major risk factors: overcrowding, low SES
- Developing nations:
  - Usually in childhood
- Developed nations:
  - Early adult years

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H. pylori: Disease Associations

- Majority asymptomatic
- Chronic inflammation:
  - Peptic Ulcer Disease
  - Atrophic Gastritis
  - Intestinal Metaplasia
  - MALT lymphoma
  - Gastric Adenocarcinoma (six-fold increased risk)
- Class I carcinogen

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H. pylori: Non-invasive tests

- Faecal Antigen Test
  - Sensitivity 94%, Specificity 97%
- Serology
  - Not recommended but widely performed
  - Sensitivity 85%, Specificity 79%
  - Does not distinguish between active and past infection
- Urea Breath Testing
  - Sensitivity 91%, Specificity 97%
  - Limited access, cost-prohibitive

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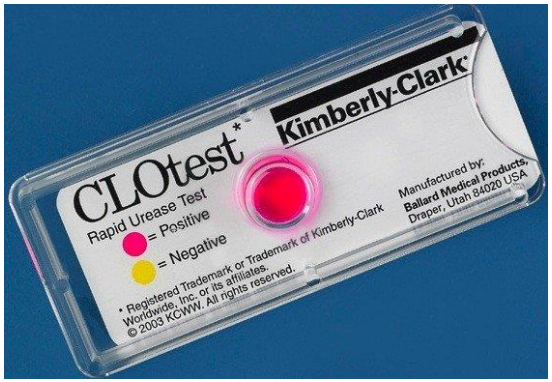
H. pylori: Endoscopic Testing

- Biopsy Urease Testing (CLO test):
  - Gastric biopsy in urea-containing medium and pH reagent
  - Colour change with positive result
  - Result within 1 and 24 hours
  - Sensitivity 93%, Specificity 97%



H. pylori: Endoscopic Testing

- Histology:
  - Sensitivity 95%, Specificity 98%
  - Provides additional information

- Bacterial Culture and Sensitivity testing:
  - Difficult to culture
  - Sensitivity 60%, Specificity 96%

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H. pylori: Treatment

- First Line Eradication:
  - Omeprazole 20mg BD
  - Amoxicillin 1g BD (Metronidazole 400mg BD)
  - Clarithromycin 500mg BD
- Seven Days
- 85% success rate*
- Confirmation
  - Faecal Antigen Test 8/52 post treatment
  - 2/52 off PPI

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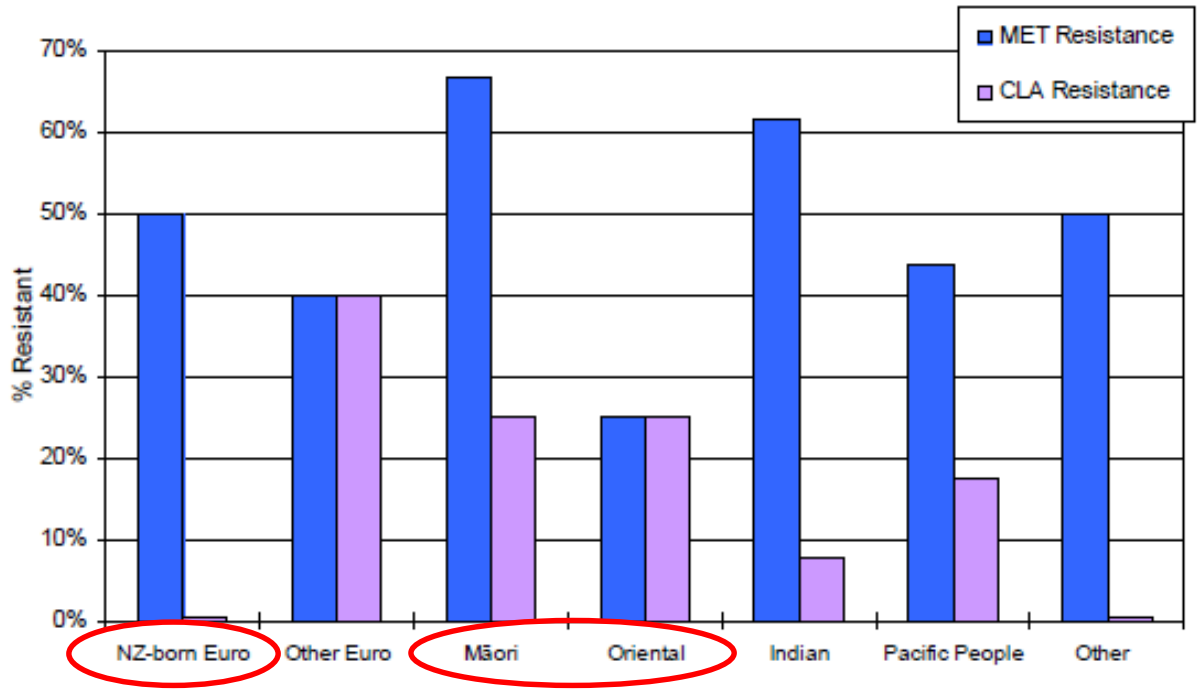
H. pylori: Local Resistance

Figure 1. Primary *H. pylori* metronidazole and clarithromycin resistance rates according to ethnicity



MET, metronidazole; CLA, clarithromycin.
Other Euro, Europeans born overseas; Other: includes African, Middle Eastern people.

Hsiang JC, Selvaratnam S, Taylor S, et al. *N Z Med J*. 2013

H. pylori: Local Resistance

Table 2. Proportion of primary antibiotic resistance of *H. pylori* infection between 1993–2012 in the Auckland region of New Zealand

Antibiotic resistance	1999[5]	2012	P value
Metronidazole resistance	84/257 (32.7%)	36/73 (49.3%)	0.014
Clarithromycin resistance	18/257 (7%)	12/73 (16.4%)	0.032
Metronidazole + clarithromycin resistance	8/257 (3.1%)	6/73 (8.2%)*	0.13

* Includes two triple resistance strains [amoxicillin (1) and moxifloxacin (1)].

Hsiang JC, Selvaratnam S, Taylor S, et al. *N Z Med J*. 2013

H. pylori: Treatment

- Second Line Eradication:
  - Omeprazole 20mg BD
  - Bismuth 120mg QID
  - Tetracycline 500mg QID
  - Metronidazole 400mg TDS
- Fourteen days
- Special Authority required for Tetracycline
- Doxycycline not recommended as alternative

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H. pylori: Still Present?

- Likely overseas acquired
- Hybrid Therapy
  - Omeprazole + Amoxicillin for 7-14 days
  - Add Clarithromycin + Metronidazole for next 7 days
  - 88-93% success rate in regions with high clarithromycin resistance (Italy, Spain, Taiwan)
- Gastroscopy: Culture and Sensitivities
- Rifabutin-based therapy…

Back to the case…

- First line *H. pylori* eradication therapy
- Successful eradication
- Resolution of epigastric discomfort and belching
- Intermittent reflux symptoms controlled with Omeprazole 20mg daily
- Improvement at one year surveillance…


FAQS

“Does *H. pylori* cause my reflux?”

- Conflicting low quality data
- Effect on GOJ competence
  - No effect on LOS pressure frequency of relaxations
  - No effect on oesophageal peristalsis
- Does not colonize oesophageal mucosa
- Might modify gastric refluxate…

“Not really, but may worsen symptoms”

"Can I get it again, doc?"

- Reinfection unusual
- Usually represents recrudescence of original strain
- Rate of adult reinfection <1% per year
- Similar to rate of primary acquisition

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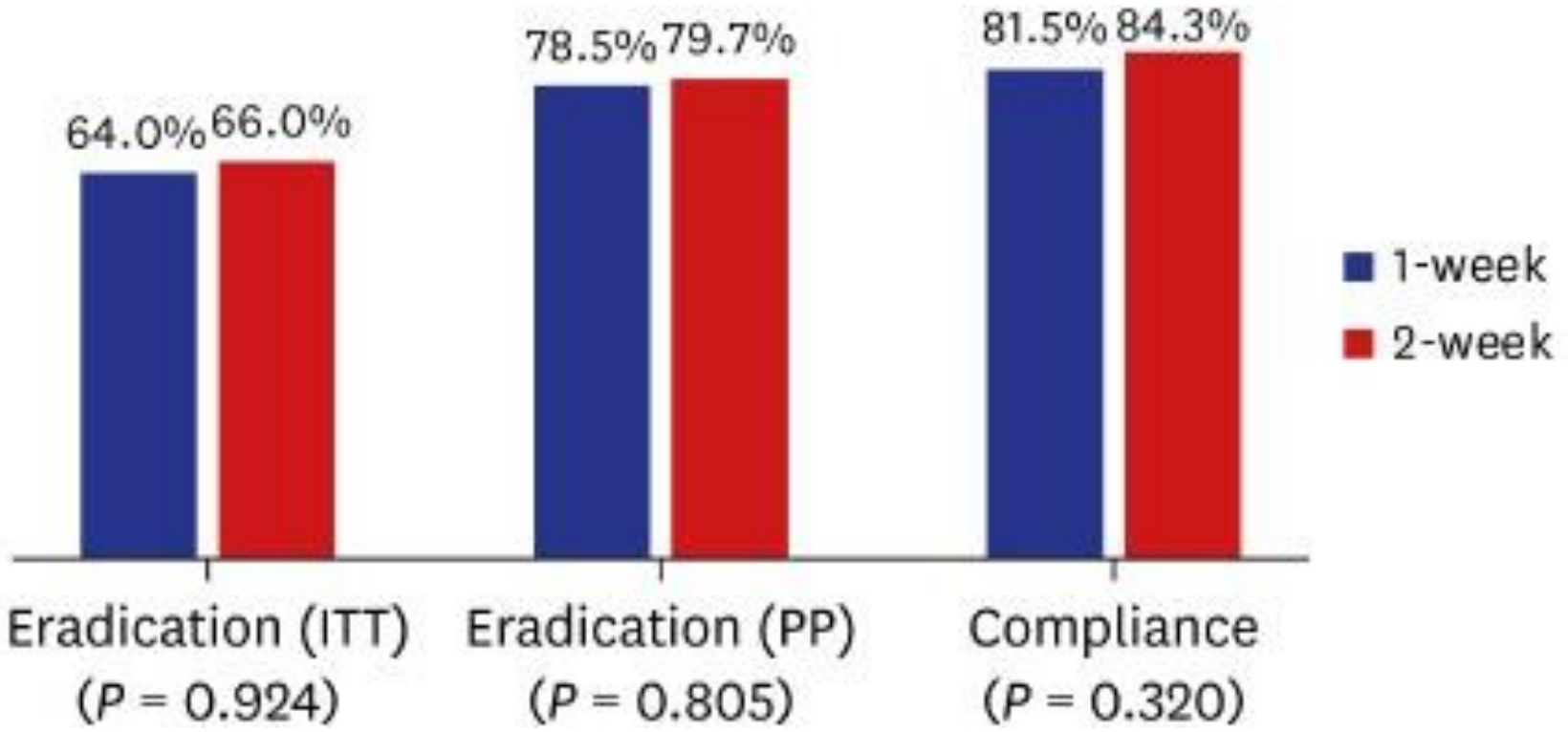
“Is treatment for 14 days more effective?”



Kim TH, Park JM, Cheung D, Oh J. *J Korean Med Sci.* 2020

Case Two

- 24 year old NZ European female
- Longstanding tendency to constipation
- Nine month history:
  - Intermittent abdominal bloating
  - Constipation with occasional loose bowel motions
    - One BM every three days
- No weight loss, bleeding symptoms, nocturnal defecation
- Mother has “bowel issues”
- Normal examination

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Routine Investigations

- Blood Tests:
  - Normal FBC/Iron studies/Renal and Liver Function Tests
  - Coeliac Serology normal
  - TFT's/Ca^{2+} normal

- Stool sample:
  - Microscopy and culture normal

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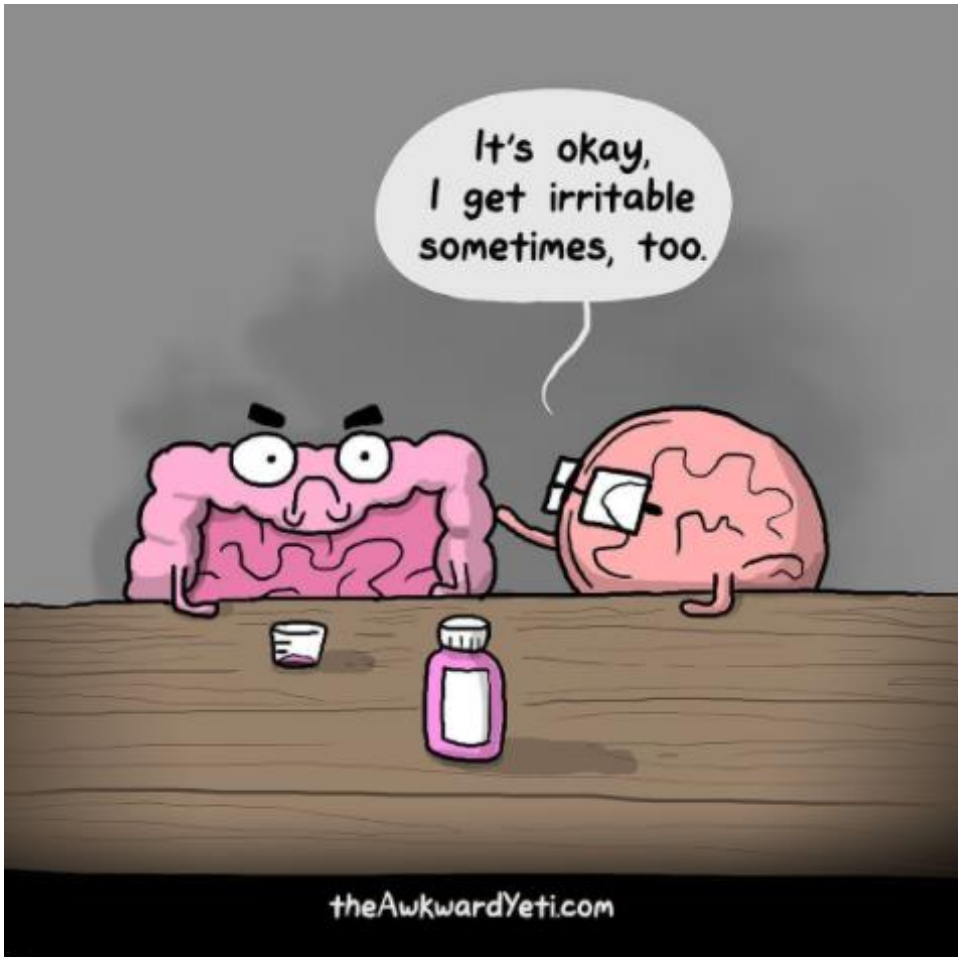
Likely Diagnosis??



Tests to differentiate IBS from IBD?

Faecal Calprotectin

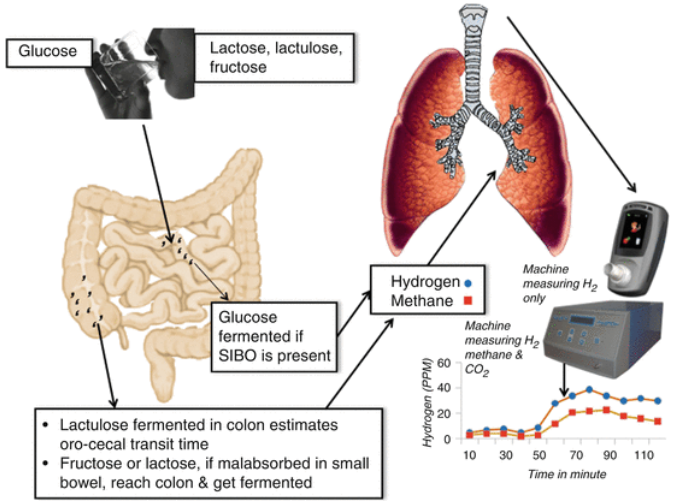
- Neutrophil-derived protein
- Marker of intestinal inflammation
- <50mcg/g normal
- >150mcg/g suggestive of active IBD
  - Sensitivity 93%, Specificity 94%
- Also positive in infection/NSAID use
- 3-5 day turnaround

Endoscopy

- Direct visualisation
- Histology to exclude microscopic disease
- Polypectomy
- Reassurance

Intolerance Breath Testing

- Lactose
- Fructose
- Guide dietary intervention



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Practical Tips for IBS Management

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Practical Tips for IBS Management

- Specific management depends on subtype
  - IBS-C
  - IBS-D
  - IBS-Bloating
- Education and reassurance for all
- Individualise management
- Aim to ameliorate symptoms and improve quality of life

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Practical Tips for IBS Management

- **IBS-C:**
  - Adequate water intake
  - Fibre supplementation
    - Psyllium
    - Weak evidence (NNT 6)
    - Start with low dose
  - Laxatives
    - Docusate/Laxsol
    - Molaxole

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Practical Tips for IBS Management

➢IBS-D:

- Dietary modification
  - Avoid triggering foods
    - Caffeine
    - Lactose
- Antidiarrheal agents
  - Loperamide
    - RCT evidence (!)
    - No effect on abdominal pain or bloating
- Bile acid sequestrants
  - Colestipol
    - Bile acid malabsorption in 50%
    - Stimulate colonic secretion and motility
    - Treatment exacerbate bloating/flatulence

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Practical Tips for IBS Management

- IBS-Bloating:
  - Dietary modification
    - Exclusion of gas producing foods
    - Avoid Fibre supplements
    - Low-FODMAP diet

What are FODMAPs?

- Fermentable short-chain carbohydrates
- Usually poorly absorbed
- Osmotically active in the intestinal lumen
- Rapidly fermented leading to bloating and pain

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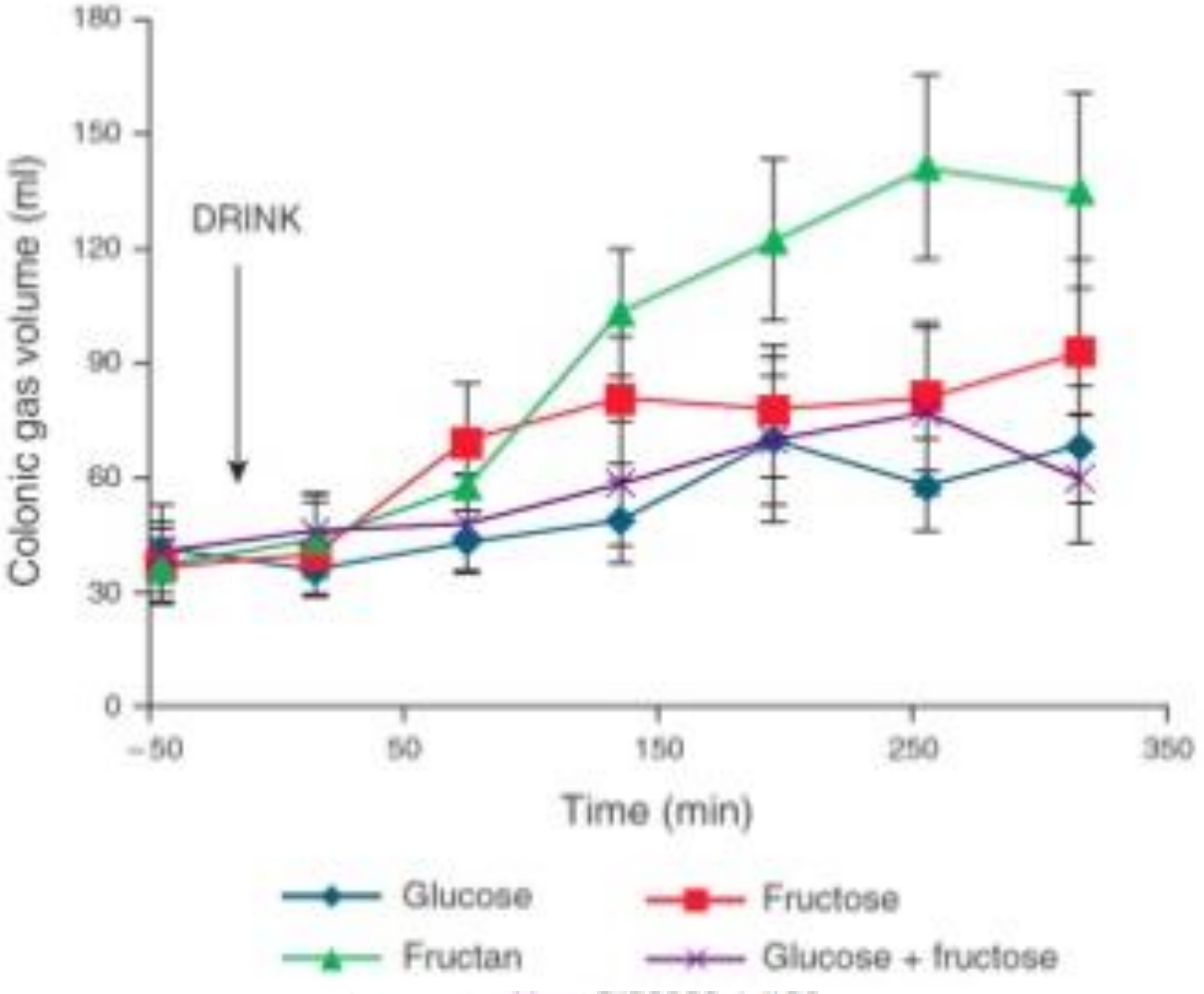
Colonic Gas Production



Murray et al. 2013 AJG

Low FODMAP Diet

- Diet low in FODMAP containing foods
- High quality data (10 RCTS)
- Improvement in bloating and pain in up to 80% of IBS patients
  - No improvement in Diarrhea
- Usually for 6-8 weeks then gradual reintroduction
- Dietician supervision recommended

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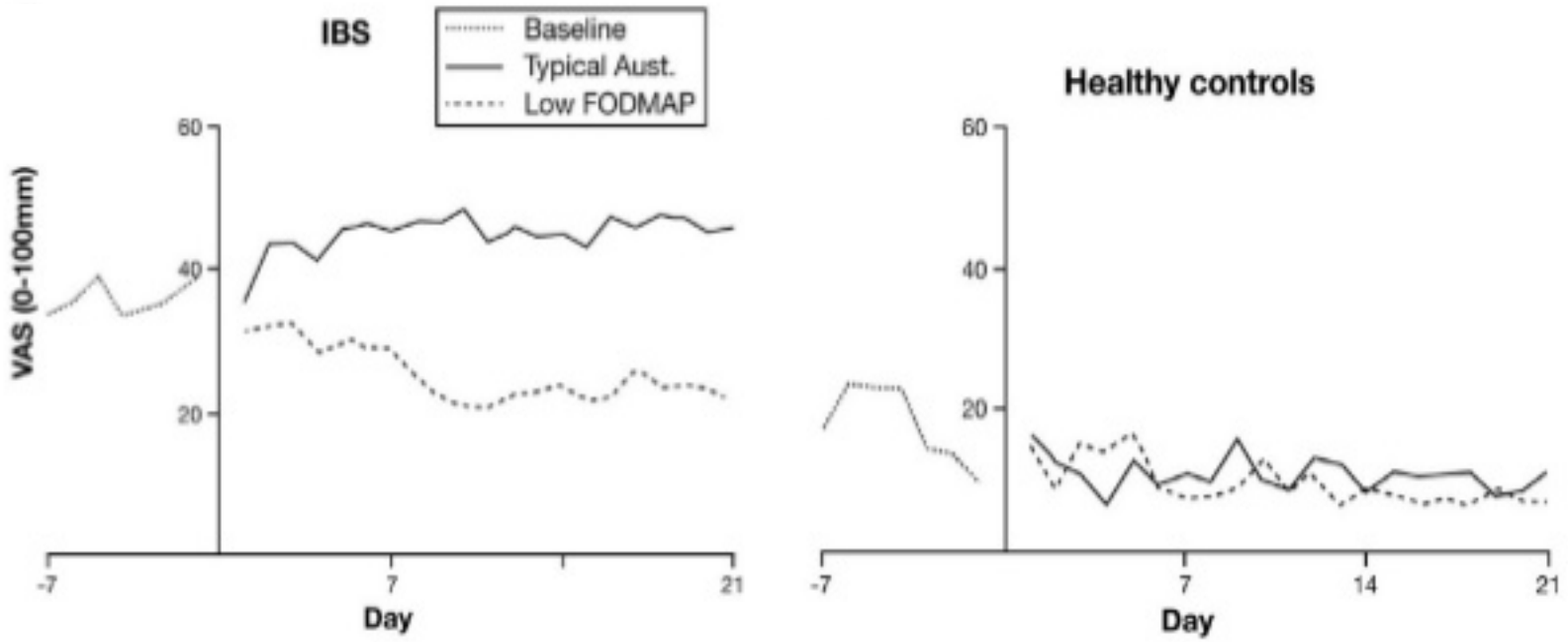
Low FODMAP Diet



Halmos et al. 2014 Gastroenterology

Foods suitable on a low-fodmap diet

fruit

fruit
banana, blueberry, boysenberry, canteloupe, cranberry, durian, grape, grapefruit, honeydew melon, kiwifruit, lemon, lime, mandarin, orange, passionfruit, pawpaw, raspberry, rhubarb, rockmelon, star anise, strawberry, tangelo

Note: if fruit is dried, eat in small quantities

vegetables

vegetables
alfalfa, bamboo shoots, bean shoots, bok choy, carrot, celery, choko, choy sum, endive, ginger, green beans, lettuce, olives, parsnip, potato, pumpkin, red capsicum (bell pepper), silver beet, spinach, squash, swede, sweet potato, taro, tomato, turnip, yam, zucchini

herbs
basil, chili, coriander, ginger, lemongrass, marjoram, mint, oregano, parsley, rosemary, thyme

grain foods

cereals
gluten-free bread or cereal products

bread
100% spelt bread

rice

oats

polenta

other
arrowroot, millet, psyllium, quinoa, sorgum, tapioca

milk products

milk
lactose-free milk*, oat milk*, rice milk*, soy milk*

*check for additives

cheeses
hard cheeses, and brie and camembert

yoghurt
lactose-free varieties

ice-cream substitutes
gelati, sorbet

butter substitutes
olive oil

other

tofu

sweeteners
sugar* (sucrose), glucose, artificial sweeteners not ending in '-ol'

honey substitutes
golden syrup*, maple syrup*, molasses, treacle

*small quantities

Eliminate foods containing fodmaps

excess fructose

fruit
apple, mango, nashi, pear, tinned fruit in natural juice, watermelon

sweeteners
fructose, high fructose corn syrup

large total fructose dose
concentrated fruit sources, large serves of fruit, dried fruit, fruit juice

honey
corn syrup, fruisana

lactose

milk
milk from cows, goats or sheep, custard, ice cream, yoghurt

cheeses
soft unripened cheeses eg. cottage, cream, mascarpone, ricotta

fructans

vegetables
artichoke, asparagus, beetroot, broccoli, brussels sprouts, cabbage, eggplant, fennel, garlic, leek, okra, onion (all), shallots, spring onion

cereals
wheat and rye, in large amounts eg. bread, crackers, cookies, couscous, pasta

fruit
custard apple, persimmon, watermelon

miscellaneous
chicory, dandelion, inulin, pistachio

galactans

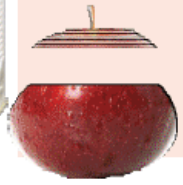
legumes
baked beans, chickpeas, kidney beans, lentils, soy beans

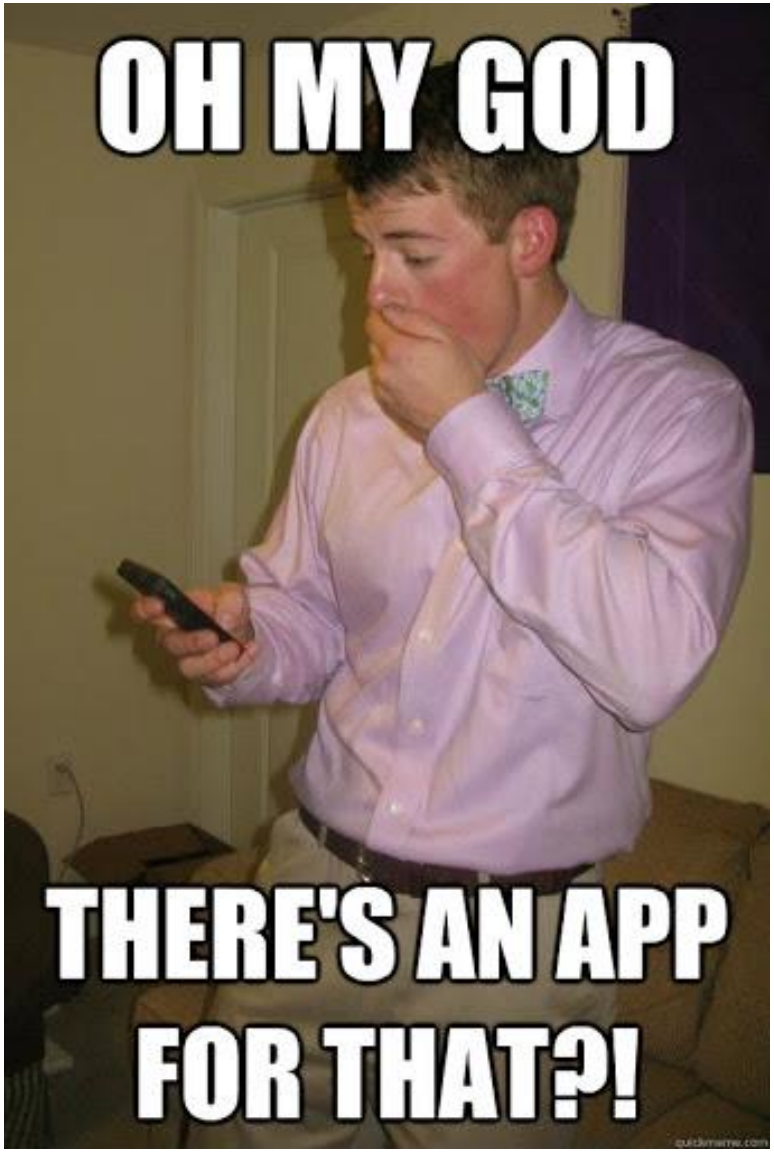
polyols

fruit
apple, apricot, avocado, blackberry, cherry, longon, lychee, nashi, nectarine, peach, pear, plum, prune, watermelon

vegetables
cauliflower, green capsicum (bell pepper), mushroom, sweet corn

sweeteners
sorbitol (420)
mannitol (421)
isomalt (953)
maltitol (965)
xylitol (967)




OH MY GOD
THERE'S AN APP
FOR THAT?!

MONASH University

Your complete on-the-go guide to the FODMAP Diet

With the Monash University FODMAP Diet app you'll have easy access to recommendations about the foods you should eat – and those you should avoid – at every meal.

Download on the App Store | GET IT ON Google Play | available at amazon appstore

Practical Tips for IBS Management

➢ Pain management:

- Visceral Hypersensitivity
- Antispasmodic Agents
  - Hyoscine 20mg QID/PRN
  - Mebeverine 135mg TDS
- Antidepressants
  - Greatest evidence for TCAs
  - Additional benefit in IBS-D
  - Amitriptiline 10mg nocte (uptitrate as required)
  - Data for SSRIs inconsistent

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Practical Tips for IBS Management

➢ Psychological Therapies:

- Brain-Gut axis significant factor in IBS pathophysiology
- Increasing evidence for:
  - Cognitive Behavioral Therapy
  - Gut-directed hypnotherapy

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Useful IBS Resources

Health A-Z / I / Irritable bowel syndrome

Irritable bowel syndrome (IBS)

AAA PRINT

Overview | FODMAPs | Medicines | Apps | Clinicians

Irritable bowel syndrome (IBS) is a common gut condition, with symptoms including cramping, bloating, diarrhoea and constipation. Diet and lifestyle changes can improve your symptoms a lot.

Key points

1. IBS is a chronic (ongoing) gastrointestinal (gut) condition. IBS is not the same as inflammatory bowel disease (IBD), which mainly refers to two long-term serious conditions, Crohn's disease and ulcerative disease.
2. IBS can be uncomfortable but is usually harmless. Symptoms include bouts of abdominal (tummy) discomfort and pain, bloating and changeable bowel habits from diarrhoea (runny poo) to constipation (hard poo).
3. IBS affects 1 in 7 people and is more common in women than men, and in those aged under 50.
4. Changing to a low-FODMAP diet improves symptoms in 3 out of 4 people. Keeping active and managing stress can also help.
5. If dietary and lifestyle changes don't help, there are medications to help relieve specific symptoms.

What causes IBS?

The exact cause of IBS is still not certain. However, there is emerging evidence that changes in your gut bacteria and inflammation of your immune system may play a role in its development.

In particular, factors that contribute to IBS are thought to be:

Resources

Support

Bladder and bowel health support groups

Mobile Apps

Irritable bowel syndrome apps

Brochures

Trouble going to the loo?
Health Navigator Charitable Trust NZ, 2019

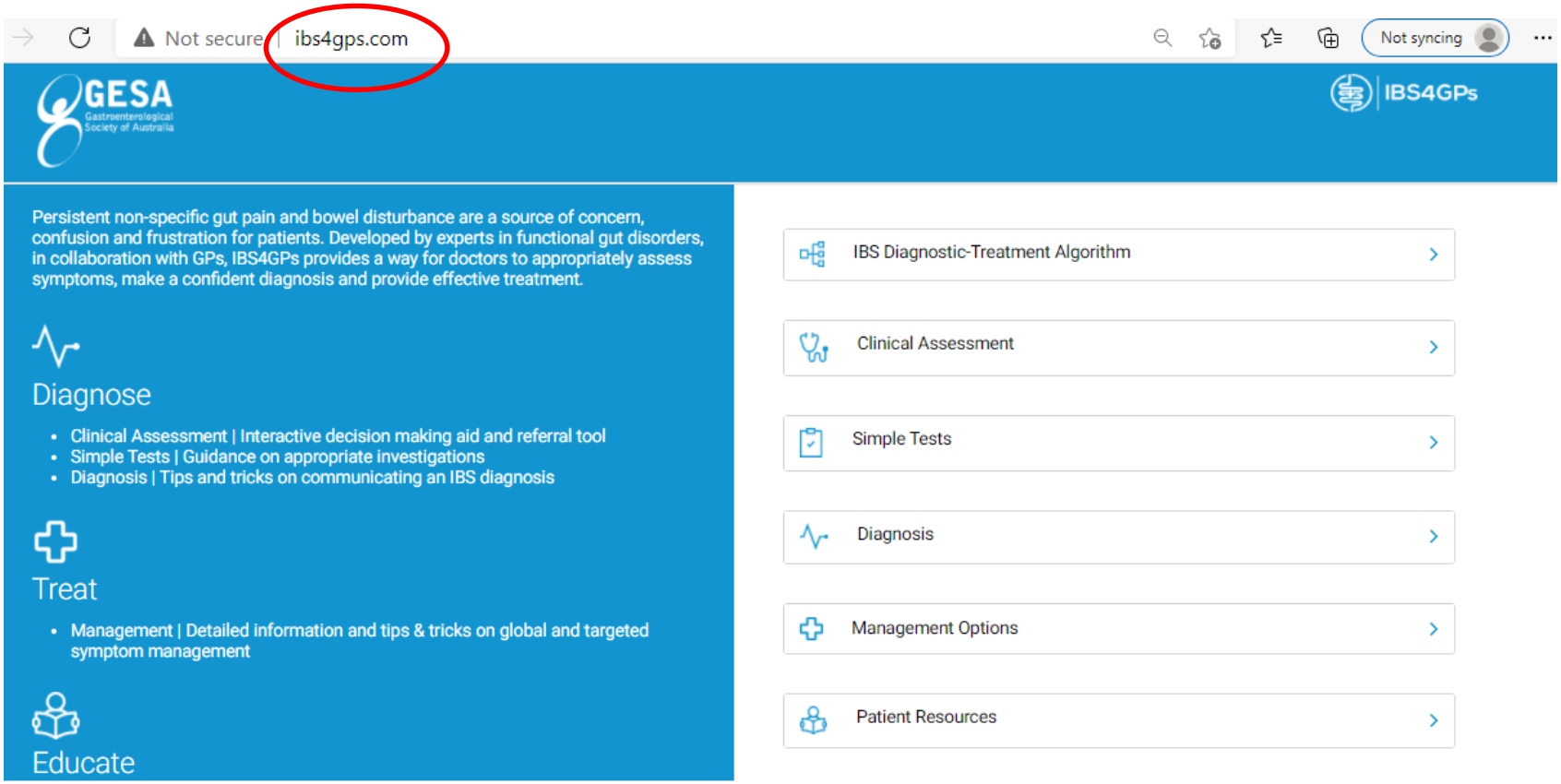
Common foods containg FODMAPs
Health Food Media, NZ

Reviewed by

Dr Derek Luo is a consultant gastroenterologist at Counties Manukau Health and has also been in private practice since 2011. He has a broad interest in general gastroenterology and hepatology and has a sub-specialty interest in pancreatic and hepatobiliary disease.

Health Navigator NEW ZEALAND

Useful IBS Resources



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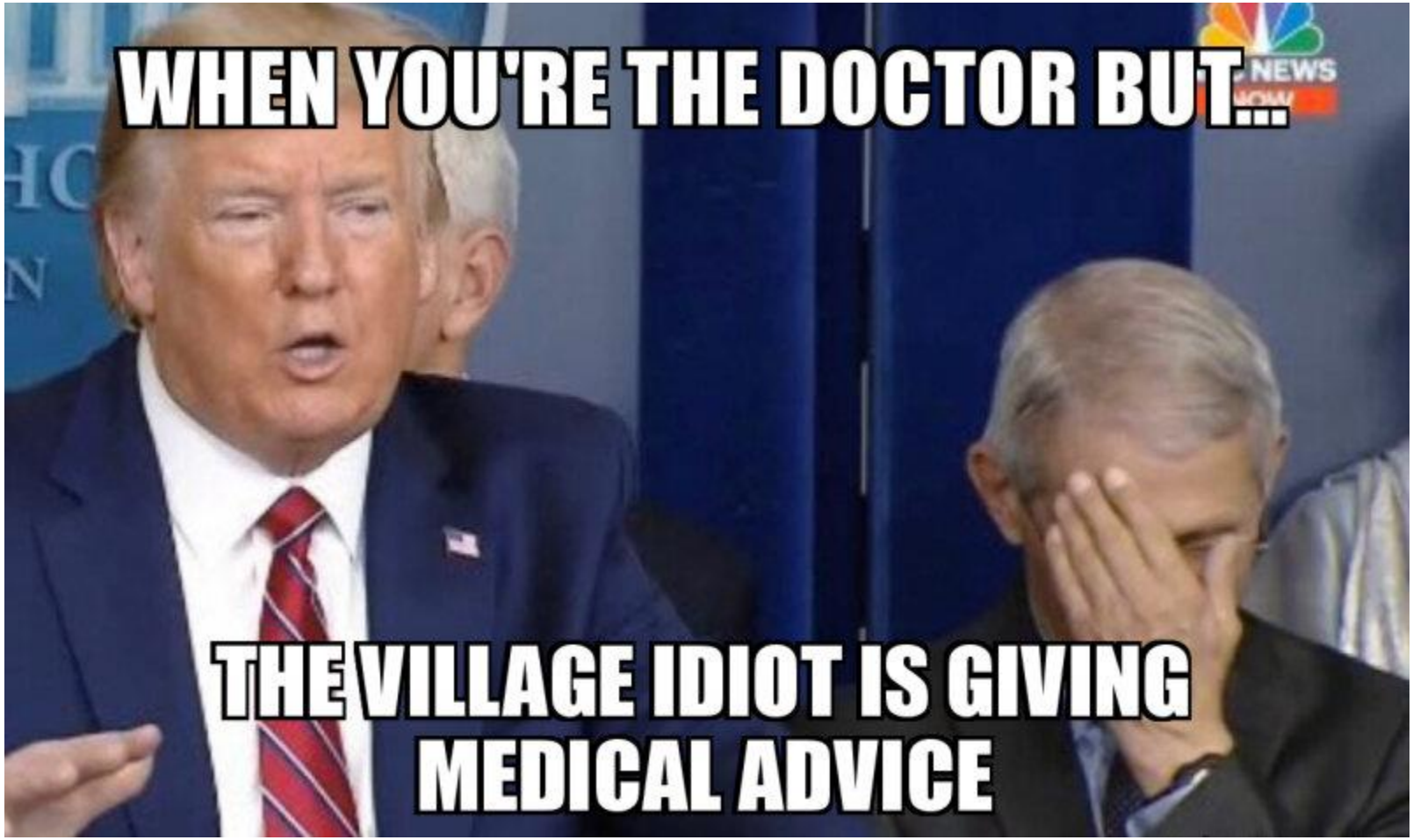
WHEN YOU'RE THE DOCTOR BUT...
THE VILLAGE IDIOT IS GIVING MEDICAL ADVICE

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