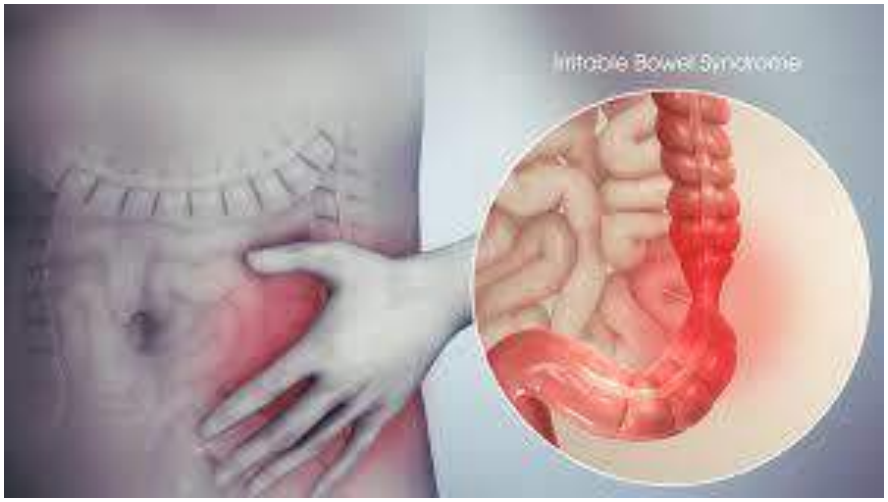
Irritable bowel syndrome (IBS)
RMH, 22nd August 2019



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Outline

- Introduction
- Pathophysiology
- Diagnosis
- Management
- Refferences

Introduction

- Irritable bowel syndrome (IBS) is “ a functional disorder of the gastrointestinal tract characterized by chronic abdominal pain and altered bowel habits. . ”

Introduction: Chronic abdominal pain

- cramping sensation with variable intensity and periodic exacerbations.
- The location and character of the pain can vary widely.
- The severity of the pain may range from mild to severe.
- The pain is frequently related to defecation
- Nocturnal pain is unusual

Introduction: Altered bowel habits

- diarrhea,
- constipation,
- alternating diarrhea and constipation
- normal bowel habits alternating with either diarrhea and/or constipation

Introduction: Symptoms

The Bristol stool form scale (BSFS)

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on the surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces; entirely liquid.

IBS subclassification

1. **IBS-C**

- Hard or lumpy stools ≥25% of bowel movements
- Loose (mushy) or watery stools <25% of bowel movements

2. **IBS-D**

- Loose (mushy) or watery stools ≥25% of bowel movements
- Hard or lumpy stools <25% of bowel movements

3. **IBS-M**

- Hard or lumpy stools ≥25% of bowel movements
- Loose (mushy) or watery stools ≥25% of bowel movements

4. **Un-subtyped IBS-U**

Red flags

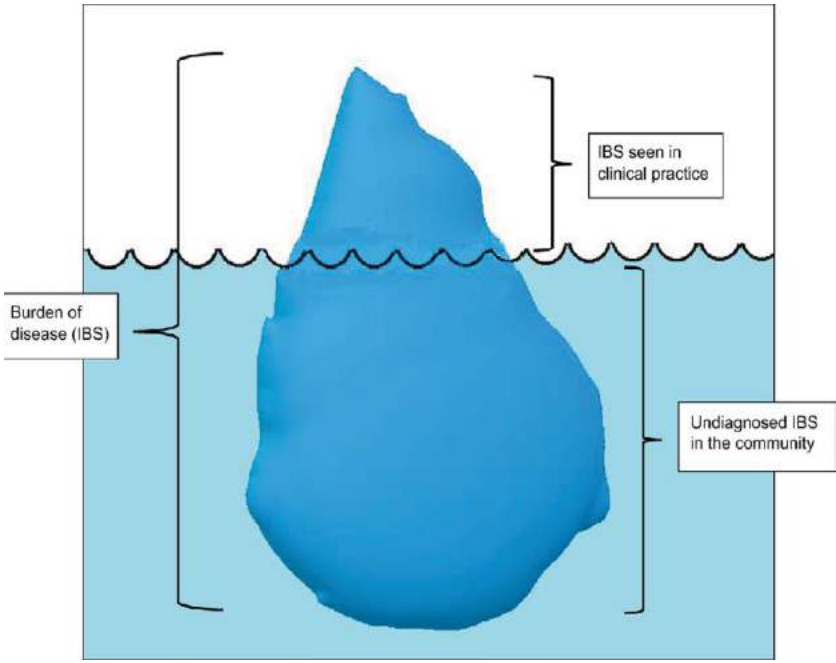
- Onset after 55 years
- Persistent anorexia & weight loss
- Persistent “fever”
- Pain – changing pattern or increasing after food

Red flags

- Awakened by pain &/or diarrhea at night
- Rectal bleeding, not just on wiping
- Stools “like malabsorption syndrome”
- P/E: palpable mass in the abdomen

IBS prevalence

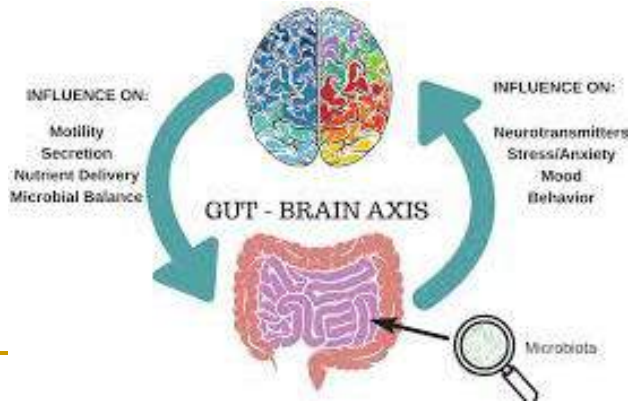
- Worldwide IBS prevalence at 10%-20% and the IBS incidence at 1%-2% per year.
- Europe 10–15%.
- China 5.7%
- Nigeria 26.1%- 33%.



IBS Pathophysiology

- There is no single definitive answer for the pathogenesis of IBS yet; **multifactorial** functional disorder:

- Altered GI motility
- Disturbed intestinal microbiota
- Visceral hyperalgesia
- brain-gut axis dysregulation (Psychopathology)



Introduction: Associated conditions

- Lactose intolerance
- Gluten intolerance
- Functional dyspepsia,
- Non-cardiac chest pain,
- Psychiatric disorders including major depression, anxiety, and somatization

AP&T Alimentary Pharmacology and Therapeutics

Lactose intolerance in irritable bowel syndrome patients with diarrhoea: the roles of anxiety, activation of the innate mucosal immune system and visceral sensitivity

J. Yang*,†, M. Fox‡,§, Y. Cong*, H. Chu*, X. Zheng*, Y. Long*, M. Fried‡,¶ & N. Dai*

Aim

To assess the role of psychological factors, immune activation and visceral sensitivity on the development of lactose intolerance (LI) in IBS-D patients.

Results

LI was more prevalent in IBS-D patients than HCs [25/55 (46%) vs. 3/18 (17%), $P = 0.029$]. IBS-D patients with LI had (i) higher levels of anxiety than those with LM ($P = 0.017$) or HCs ($P = 0.006$); (ii) increased mucosal MCs compared with LM ($P = 0.006$) and HCs ($P < 0.001$); (iii) raised serum TNF-α compared with LM ($P = 0.034$) and HCs ($P < 0.001$) and (iv) increased rectal sensitivity after lactose ingestion compared with LM ($P < 0.001$) or HCs ($P < 0.001$). Severity of abdominal symptoms after lactose ingestion was associated with the increase in visceral sensitivity after lactose intake ($r = 0.629$, $P < 0.001$), MCs ($r = 0.650$, $P < 0.001$) and anxiety ($r = 0.519$, $P < 0.001$).

Gluten intolerance

Review

The Overlapping Area of Non-Celiac Gluten Sensitivity (NCGS) and Wheat-Sensitive Irritable Bowel Syndrome (IBS): An Update

Table 2. Summary of studies examining the role of gluten and wheat in IBS.

Lead Author	Country	Year	Patients	Outcome
Wahnschaffe [83]	Germany	2001	102 IBS-D without CD	Stool frequency significantly improved in patients HLA DQ2/DQ8 + ve
Wahnschaffe [84]	Germany	2007	145 IBS-D without CD	HLA-DQ2 predicted response to GFD
Biesikierski [85]	Australia	2010	34 NCGWS	Significant reduction in symptoms in GFD group
Carroccio [25]	Italy	2012	920 patients with IBS	70 patients wheat-sensitive and 206 food sensitivities
Vazquez-Roque [86]	USA	2012	45 patients with IBS-D	Increased intestinal permeability in patients receiving gluten
Vazquez-Roque [87]	USA	2013	45 patients with IBS-D	Reduction in stool frequency in patients on GFD
Biesikierski [80]	Australia	2013	37 NCGWS on GFD	Patients responded to reduction in FODMAPs during run-in but no difference between GFD and gluten-containing arms
Fritscher-Ravens [26]	Germany	2014	36 patients with food-sensitive IBS 13/36 GFD after positive wheat challenge in CLE	All patients improved significantly on the GFD for at least one year
Aziz [88]	UK	2015	40 patients with IBS-D	70% had reduced symptomology with GFD for 6 weeks
Di Sabatino [89]	Italy	2015	59 self-reported NCGWS	4 g of gluten per day for 1 week increased overall clinical symptoms compared with placebo in ($p = 0.034$)
Shahbazkhani [90]	Iran	2015	72 patients with IBS (Based on Rome III criteria)	Worsening of intestinal symptoms with gluten compared to placebo
Zanini [91]	Italy	2015	35 NCGWS on a GFD	Given either and containing or gluten-free flour. 34% symptomatic with gluten-containing flour, 49% symptomatic with gluten-free flour, 17% no response
Zanwar [92]	India	2016	60 patients with IBS (Based on Rome III criteria)	GFD for 4 weeks. Significant reduction in visual analogue scales (VAS) of symptomology
Elli [93]	Italy	2016	140 patients enrolled	14% of patients shown to have symptomatic response to gluten on repeat challenge
Barmeyer [94]	Germany	2017	34 patients with IBS	34% responded to a GFD and continued on a GFD at 1 year

Diagnosis: The Rome IV criteria (2016)

- Recurrent abdominal pain for > 1 day/week during the previous 3 months
- At least two of the following features:

— Related to defecation

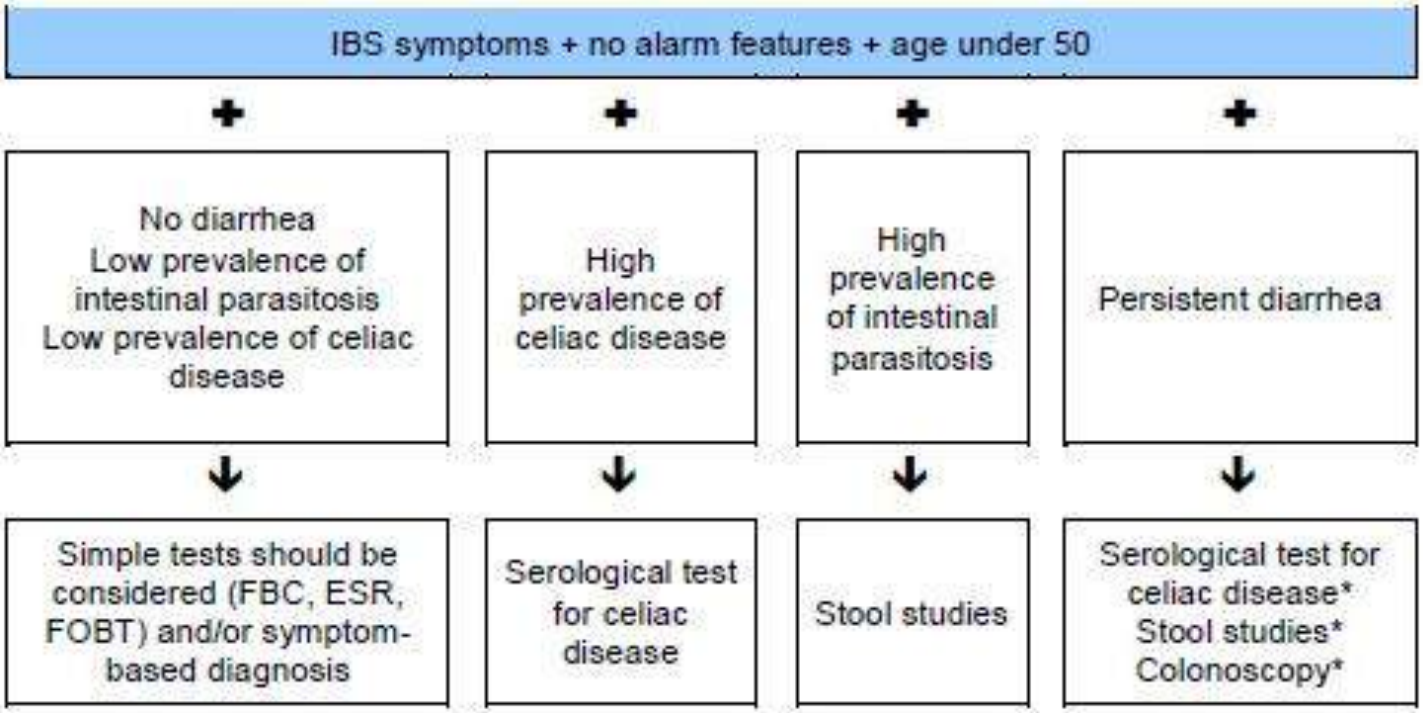
— Association with a change in stool frequency

— Association with a change in stool form

Differential diagnosis

- Acute or chronic diarrhea due to protozoa or bacteria
- Small-intestinal bacterial overgrowth (SIBO)
- Inflammatory bowel disease
- Colorectal carcinoma
- Diverticulitis
- malabsorption syndrome

IBS Diagnostic investigations



IBS Management:

Nonpharmacological recommendations:

- Identifying and exploring the patient's concerns..
- Reducing avoidance behavior.
- General guidance on diet and activity
- Some probiotics provide global relief of symptoms in IBS.

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REVIEW

Diet in irritable bowel syndrome: What to recommend, not what to forbid to patients!

Diet

- Low FODMAP diet may be beneficial to IBS-C.

  FODMAP(**F**ermentable **O**ligosaccharides, **D**isaccharides, **M**onosaccharidesand **P**olyols): rapidly fermentable, short-chain carbohydrates, present in apples, pears, mango, lactose, fructose sweeteners, etc.

- Fibers and bulking agents in IBS-C (psyllium, methyl-cellulose and polycarbophyl.)

IBS FOOD PYRAMID

FRIED FOOD AND PROCESSED FOOD

FATS, SWEETS, CAFFEINE ALCOHOL SPICY FOODS consume in moderation

- Limit total fat intake[C] to maximum 50 g/day. Choose healthy fats, like olive oil.
- Choose healthy sweets, like dark chocolate (30 g/serving/day). If on low FODMAP diet,[B] choose products sweetened with sugar or artificial sweeteners not ending in "-ol".
- Restrict intake of alcohol[C], caffeine[D], and spicy foods[C], if they trigger digestive problems.
- Limit caffeine intake to no more than 400 mg/day.
- Limit alcohol intake to 1 standard drink/day for women and no more than 2 standard drinks/day for men.[C] Have at least 2 alcohol free days/week.

MILK & DAIRY PRODUCTS 2-3 servings/day

- 1 serving = 200–250 mL of milk / 200–250 g of yogurt / 80-100 g of fresh cheese / 30-50 g of hard cheese.
- If on lactose-free diet[D] and/or low FODMAP diet,[B] choose: lactose-free milk, rice milk, almond milk, lactose-free yoghurt, hard cheeses (e.g., Cheddar, Parmesan, Swiss, Brie, Camembert).

MEAT, FISH, EGGS, LEGUMES, SOY, NUTS & SEEDS 2-3 servings/day

- 1 serving = 100–125 g of meat / 125–150 g of fish / 60-80 g of eggs 60-80 g of legumes / 20-30 g of nuts and seeds.
- If on low FODMAP diet,[B] reduce the intake of legumes to 2-3 servings/week and 50 g/serving. Choose canned legumes or those that have been boiled and drained.
- If on low FODMAP diet,[B] limit the intake of nuts and seeds to 10-15 g/serving and choose almonds, hazelnuts, walnuts, peanuts, pumpkin seeds, macadamia, pecan, pine nuts.

FRUITS 2-3 servings/day

- Limit to 80 g/serving. Allow 2-3 h between each serving.
- If on low FODMAP diet,[B] choose: banana, blueberry, grapefruit, grape, honeydew melon, kiwi, lemon, orange, raspberry, strawberry, pawpaw, star fruit, passion fruit.

VEGETABLES 3-5 servings/day

- 1 serving = 100-150 g.
- If on low FODMAP diet,[B] choose: carrot, cucumber, potato, eggplant, green beans, lettuce, spinach, chives, pumpkin, bell pepper, spring onion (green only), tomato, zucchini, bamboo shoots.

CEREALS AND CEREAL DERIVATIVES 6 servings/day

- 1 serving = 40-60 g of bread / 60-70 g of pasta or rice.
- If on low FODMAP diet[B] and/or gluten-free diet,[D] choose: wheat-free grains and products made with these (e.g., bread, pasta, crackers) spelt and spelt products, oats, corn, rice, quinoa.

HEALTHY EATING HABITS

- Have regular meals: breakfast, lunch, dinner + 2-3 snacks as appropriate.[D]
- Avoid missing meals or eating late at night.[D]
- Avoid large meals, take time to eat, sit down to eat, chew food thoroughly.[D]

REGULAR PHYSICAL ACTIVITY& GOOD HYDRATION

- Perform moderate physical activity, (e.g., yoga, walking, cycling, swimming), for at least 30 min/day, on 5 days of the week or more.
- Drink up to 1.5-3 L/day of fluids, especially water or other caffeine-free and alcohol-free non-carbonated drinks (e.g., herbal teas).

Probiotics

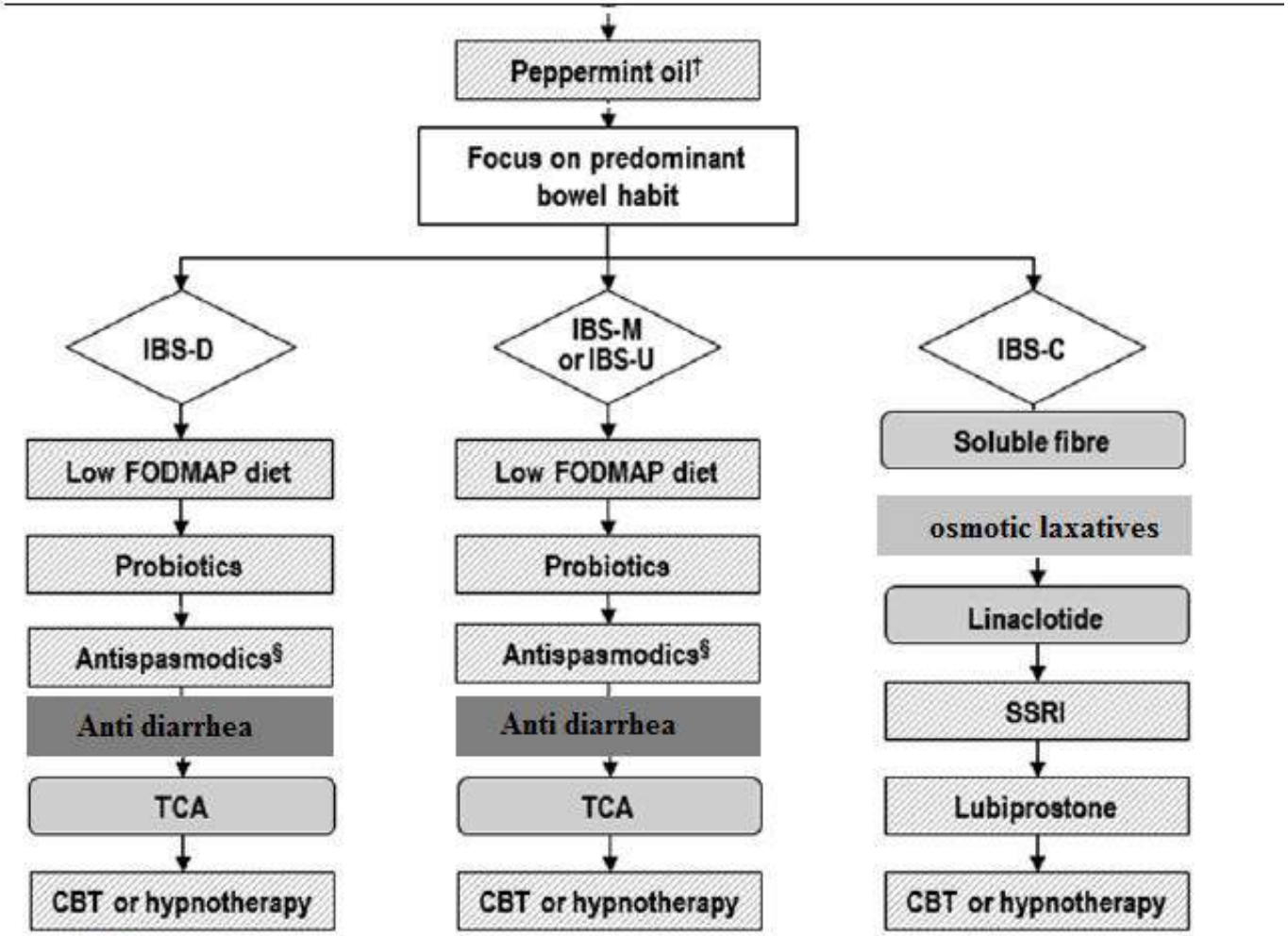
"*live microorganisms, which when taken in adequate amounts, confer a health benefit on the host*" WHO

- Lactobacillus
- Bifidobacterium

Role of probiotis in IBS

- Decrease visceral hypersensitivity
- augmentation commensal lactobacilli or bifidobacteria and the elimination of pathogens
- reduction in pathogen-related inflammation
- decrease immune-mediated activation
- modify neural traffic between the gut and the central nervous system
- Restore gut permeability (barrier integrity)
- accelerate colonic transit

IBS overall managment



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IBS PROGNOSIS

- For most patients with IBS, symptoms are likely to persist, but not worsen. Symptoms will deteriorate in a smaller proportion, and some patients will recover completely.

Positive physician's Approaches:

- Acknowledging the disease
- Educating the patient about IBS
- Reassuring the patient

IBS: Take home message

- IBS is a benign condition without benign effects.
- It is not known to be associated with IBD.
- It generates significant health-care costs.
- No universal pathophysiological substrate
- overlap with other conditions.
- **We should keep an open mind while managing IBS.**

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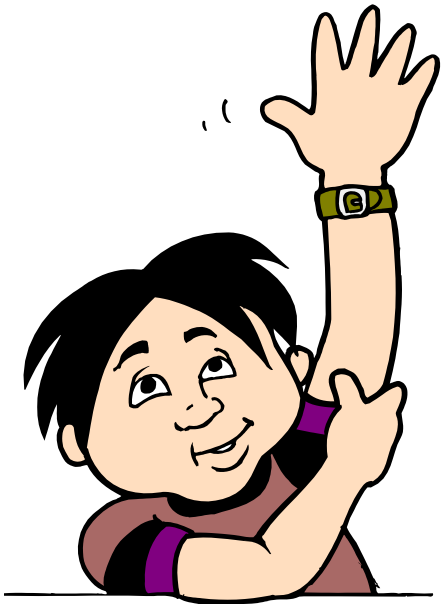
THANK YOU



Comments & Questions?