

## Epidemiology

- Distension, bloating, and/or gassiness is a universal sensation, but typically spontaneously resolves
- Prevalence of bloating & distension in IBS patients is 66%-90% (more common with IBS-C)
- More common in women >>>men

## Definitions

**Abdominal Bloating** = sensation of trapped gas or feeling of pressure w/o visible distension

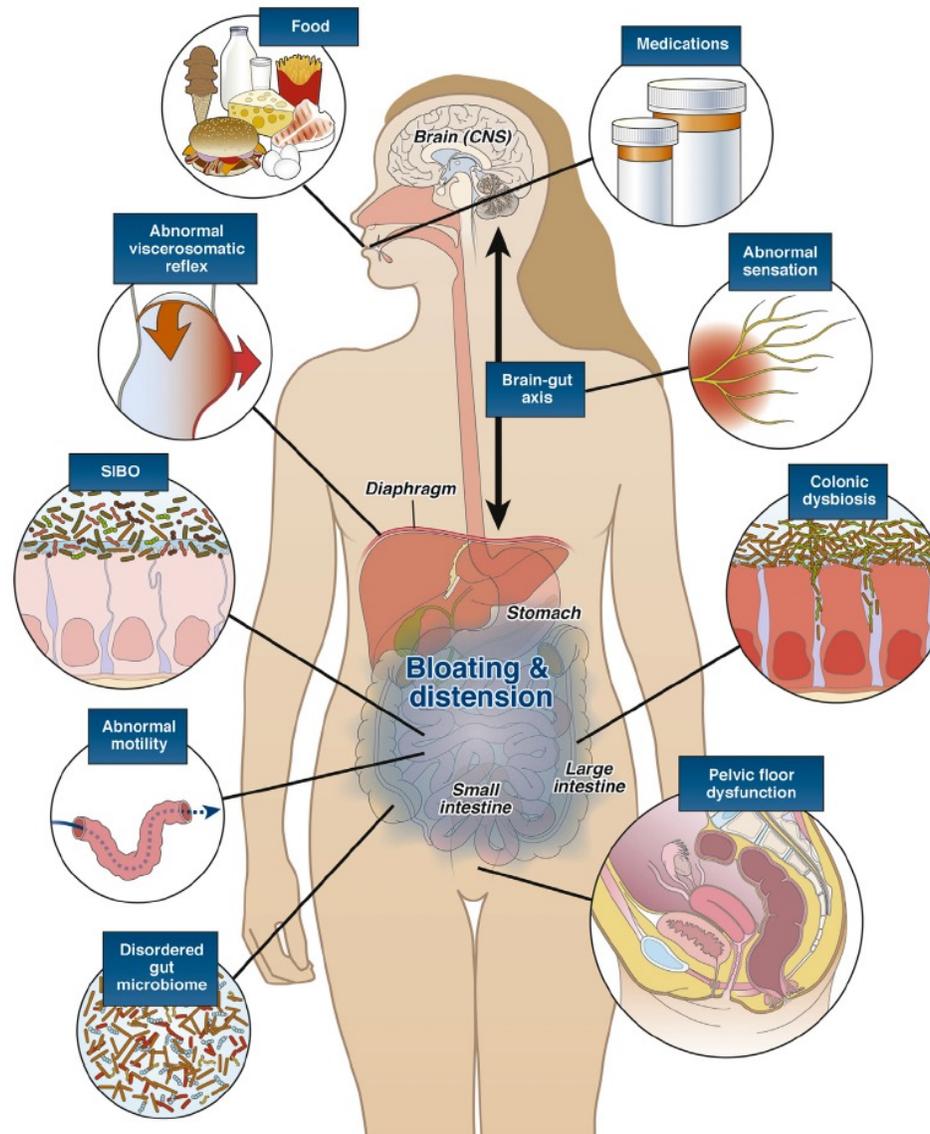
**Distension** = objective physical manifestation of an increase in abdominal girth

**Rome Criteria for Chronic Functional Abdominal Bloating & Distension (\*all criteria req for diagnosis\*)**

- Recurrent bloating and/or distension at least 1d/wk on avg
- Bloating and distension should be the predominant symptoms
- Patients should not meet criteria for IBS, functional constipation/diarrhea or post-prandial distress syndrome
- Symptom onset should have occurred in at least 6 months prior to dx
- Symptoms should be active within the preceding 3 months

## Pathophysiology

- Mechanisms for chronic abdominal bloating and distension are complex and multifactorial
- CT imaging has shown increases in luminal gas in only ~25% of those w/ functional GI disorder during a bloating episode
- Alterations in normal gas (CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, O<sub>2</sub> and CH<sub>4</sub>) production, absorption and excretion are key mechanisms of disease



## Common Causes of Chronic Bloating & Distension

### Organic/Pathologic Etiologies

- Small Intestinal Bowel Overgrowth (SIBO)
- Lactulose/Fructose/Carbohydrate Intolerance
- Celiac Disease
- Prior GEJ surgery (Fundoplication, Bariatric surgery)
- Gastroparesis
- Chronic Gastric Outlet Obstruction
- Ascites
- GI or GYN Malignancy
- Hypothyroidism
- Adiposity
- Small Intestinal Diverticulosis
- Chronic Intestinal Pseudo obstruction (CIPO)

### Disorders of Gut-Brain Interaction

- Irritable Bowel Syndrome
- Chronic Idiopathic Constipation
- Pelvic Floor Dysfunction
- Functional Dyspepsia
- Functional Bloating
- Abdomino-phrenic Dyssynergia

## Diagnosics and Testing

**H&P:** Careful H&P; detailed surgical and medication hx. Emphasis on timing of symptoms and dietary habits.

### Breath Tests (BT)

**Lactose Intolerance:** Absorptive capacity based upon brush border enzyme activity

- BT → 25gm of lactose. ↑ of ≥20 ppm of H<sub>2</sub> or 10ppm CH<sub>4</sub> w/ symptoms. Specificity (98%) and Sensitivity (78%)

**Fructose Intolerance:** absorptive capacity in small intestine is limited

- BT → 25gm (variable) of fructose given. ↑ of ≥20 ppm of H<sub>2</sub> or 10ppm CH<sub>4</sub> w/ symptoms.

**SIBO:** Gold standard for testing is jejunal fluid culture (invasive and costly)

- BT → 25gm lactulose given. ↑ of ≥20 ppm of H<sub>2</sub> or 10ppm CH<sub>4</sub> w/ in 90mins or sustained ↑ of 10ppm. Glucose test positive if ↑ of 12ppm of H<sub>2</sub> or baseline ↑ of >20ppm or H<sub>2</sub> or CH<sub>4</sub>.

**EGD:** In those w/ alarm features and/or to r/o GOO, FD, gastroparesis

**4hr Scintigraphy Gastric Emptying Study:** R/o gastroparesis

**Single-Photon-Emission CT (SPECT):** Assess for aberrant gastric accommodation

**Anorectal Function Testing:** HRAM (high-resolution anal rectal manometry) and defecography in patients with constipation bloating and abnormal DRE

## Treatment

**Diet:** ↓ artificial sweeteners, Low FODMAP diet in IBS pts ↓ bloating/distension. Referral to dietician.

**Probiotics:** Some strains ↓ symptoms, but studies are small & inconsistent

**Antibiotics:** Rifaximin in IBS pts is best studied. ↓ symptoms and ↓ H<sub>2</sub> in BT's

**Antispasmodics:** Smooth muscle relaxants ↓ symptoms of abdominal distension; Simethicone + Pinaverium bromide ↓ bloating

**Secretagogues:** IBS-C treatments in appropriate patients ↓ bloating/distension

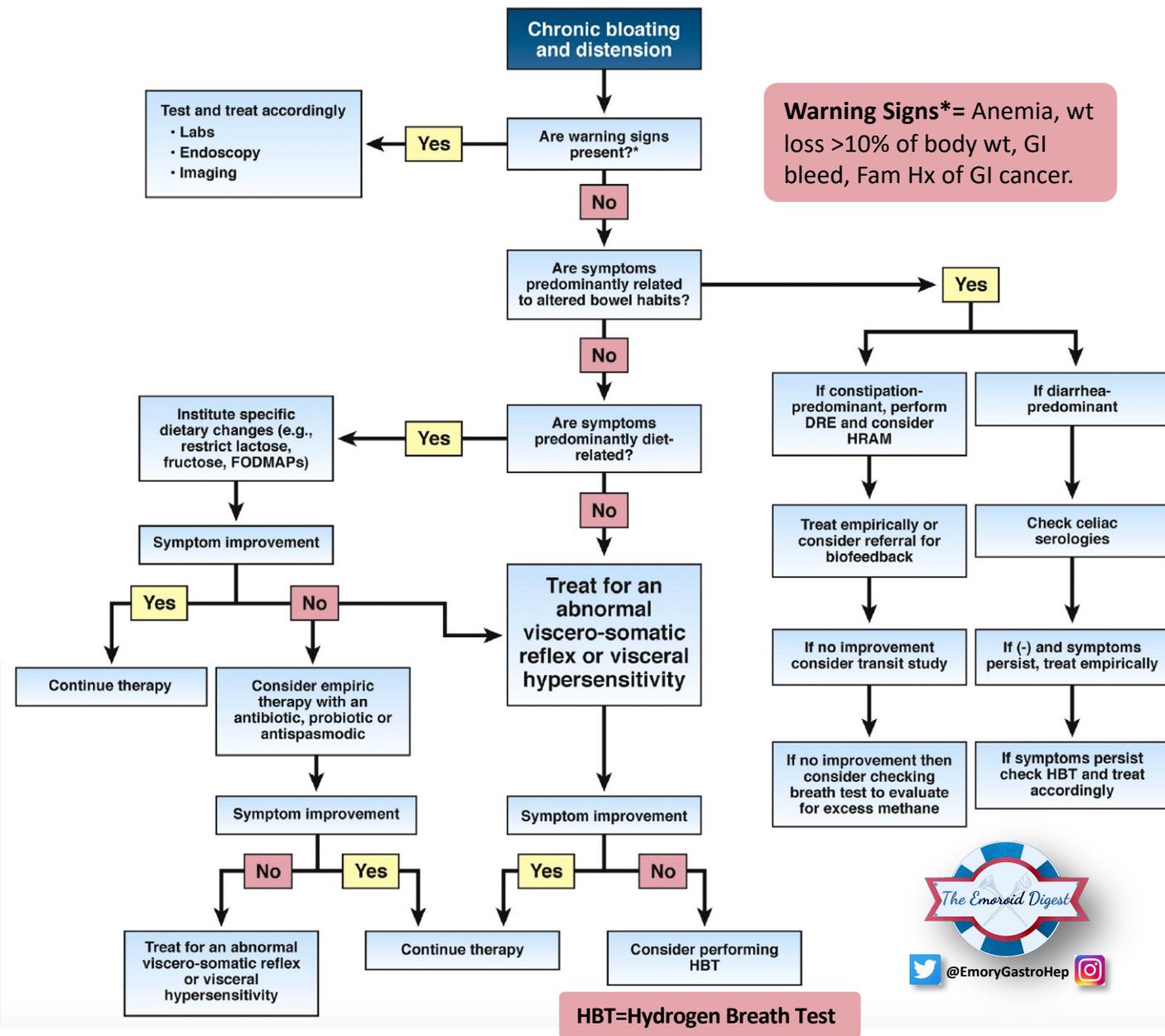
**Prokinetics:** Tegaserod/Prucalopride shown ↓ bloating symptoms in studies

**Neuromodulators:** SSRI's, Buspirone, amitriptyline led to ↓ bloating

**Biofeedback:** Beneficial in those w/ pelvic dyssynergia & pelvic outlet obstruction

**Complementary & Alternative Medicine:** Limited data; Iberogast, hypnotherapy, and peppermint oil (180mg TID) are options

## Treatment Algorithm for Bloating and Distension



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