

## 🌟 Functional Gastrointestinal Disorders (FGIDs)

### 📌 General Definition

- **Functional disorder** = condition where **normal function is impaired**, but **no visible abnormality** is found by:
- Examination
- Dissection
- Microscope

### 📌 Definition of FGIDs

- "Functional" means the body's 1-**movement**, 2-**sensitivity of the nerves of the intestine**, 3- **brain control** of intestinal functions is abnormal.
- But **no structural abnormality** on:
- Endoscopy
- X-ray
- Blood tests

### 📌 Key Points

- Hyperfunction or hypofunction with **no visible damage**.
- FGIDs = **Diagnosis of Exclusion**.
- The most common GI disorders in the general populations

### 📊 Prevalence

FGIDs	Other GI Disorders
75%	25%

- About **1 in 4 people** in the U.S. have FGIDs.

### 📌 In relation to GI Problems Seen by Doctors

- FGIDs = ~40% of cases.

### 📖 Diagnosis: Rome Criteria

- Rome criteria = used to **categorize and diagnose** FGIDs.
- **Rome IV** is the updated version.

### 🔵 Esophageal FGIDs

- **1- Globus:**
- Feeling of lump or tightness in throat.
- **Not related to swallowing.** ( perfect swallowing , always found sensation )
- **2- Functional Chest Pain:**
- Chest pain from esophagus.
- Must **rule out cardiac chest pain** first.
- **3- Functional Heartburn:**
- Burning feeling **without GERD**, motility disorder or a structural explanation
- **Doesn't respond to PPI.**
- **4- Functional Dysphagia:**

- Feeling of difficulty swallowing with **no organic cause**. (brain gut interaction)
- **5- Reflux Hypersensitivity:**
- Even **small reflux** causes **big symptoms** ( more symptoms that other population)

### 🔥 Alarm Symptoms to Look For

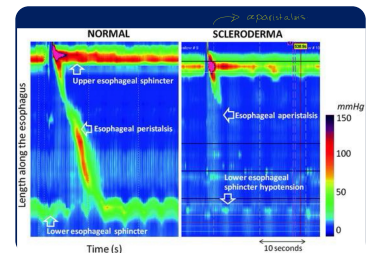
Alarm Features
Age $\geq 50$
Symptoms $\geq 5$ years <i>persistent</i>
Dysphagia, Odynophagia
Persistent vomiting
GI bleeding
Iron-deficiency anemia
Unexplained weight loss
Palpable mass or LNs
Family history of GI cancer
Chest pain

### 📌 Diagnostic Tools

- **Manometry** → Measures esophageal pressure.
- **24-hour pH Monitoring** → Measures reflux.

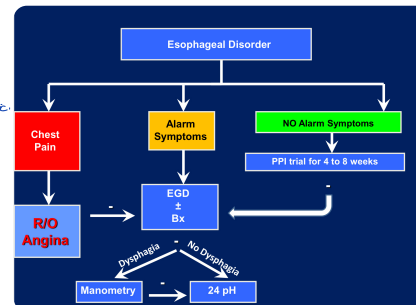
### 📌 24-Hour Esophageal pH Monitoring

- **Most accurate** for reflux pattern, frequency, duration.
- **Documents correlation** between reflux episodes and symptoms.
- **Sensitivity:** 77–100% (But **normal in 25% of esophagitis cases!**)
- **Specificity:** 85–100%
- **Best when diagnosis is still unclear.** ( when symptoms persist )



### 📌 Summary of Workup

- If chest pain → Rule out angina.
- If alarm symptoms → EGD  $\pm$  biopsy. *therapeutic and diagnostic*
- If no alarm symptoms → PPI trial 4–8 weeks.
- If symptoms persist:
- **With dysphagia** → Manometry
- **Without dysphagia** → 24-hour pH study



### 📌 Functional Dyspepsia

#### 📌 General Info

- AKA **Non-Ulcer Dyspepsia (NUD)**.
- 15–25% of general population.
- **Commonest cause of dyspepsia (60%)**.
- **30% of cases overlap with IBS.**
- **Most cases related to food**

#### 📌 Alarm Symptoms for Dyspepsia

(Similar to other GI alarms)

Alarm Symptoms
NSAIDs use

Age >55
Dysphagia, Odynophagia
Vomiting
Anorexia, weight loss
Hematemesis, Melena
Anemia
Epigastric mass, LNs
Jaundice
History of gastric surgery or PUD
Family history of GI cancer

📌 **Definition (Rome III) -> all the points must be applied to confirm the diagnosis**

- **Onset** ≥6 months ago
- **Duration** ≥3 months
- Must have 1 or more of:
- **Postprandial fullness** ) *postprandial type > 87%*
- **Early satiety**
- **Epigastric pain** ) *Epigastric type < 10%*
- **Epigastric burning**
- No evidence of structural disease by normal endoscopy.
- **Not explained by bowel changes.**

### 🦋 Pathophysiology of Functional Dyspepsia

Mechanism	Details
Dysmotility	Delayed gastric emptying, ↓ <b>compliance</b> , Accelerated emptying
Visceral Sensitivity	<b>Normal compliance</b> but early pain due to <b>lower threshold</b>
Duodenum	Hypersensitivity to <b>lipids or acid</b>
Infection	H. pylori, Gastroenteritis
Psychological Factors	Patients with psych disorders more prone

**Note:** They believe it's **multifactorial**.

### 🧩 Subtypes of Functional Dyspepsia

Subtype	Description	Response to
Postprandial Distress Syndrome (PDS)	<b>Meal-related</b> fullness & early satiety	± <b>Prokinetics (Domperidone)</b>
Epigastric Pain Syndrome (EPS)	<b>Meal-unrelated</b> epigastric pain & burning	± <b>PPI or H2RA</b>

### 📌 Management Approach

1. **First step:** → **Reassurance** (no approved medication so far).
2. **Second step:** → **Check H. pylori status:**
  - If positive → **Eradicate**.
3. **If No Response After Eradication:** → **Diagnosis becomes functional dyspepsia.**

### 📁 Treatment Options if No Response

Therapy	Mechanism
Antidepressants	Neuromodulation
PPI	Decrease gastric acid

Rome III sub-types	
Postprandial Distress Synd (PDS)	Epigastric Pain Synd (EPS)
Meal-related symp of post prandial fullness & early satiety → ± respond to <b>Prokinetics (Domperidone)</b>	Meal-unrelated symp of epigastric Pain & Burning → ± respond to <b>PPI/H2RA</b>
(1st) Reassurance (until now <b>NO</b> medication was approved)	
(2nd) H. Pylori Status	
⊕	⊖
AGA & ACG recommend: H. Pylori ⊕ eradication in NUD	↓
⊖ No Response	
minority of functional dyspepsia pts w/H. Pylori will benefit from eradication	
• <b>Antidepressants</b>	• <b>Antidepressants</b>
• <b>PPI (2-1 hr Only)</b>	• <b>PPI (2-1 hr Only)</b>
• <b>Prokinetics</b> (↑ Gastric Emptying)	• <b>Prokinetics</b> (↑ Gastric Emptying)
• <b>Sucralfate</b> (Placebo effect)	• <b>Sucralfate</b> (Placebo effect)
• <b>Sumatriptan</b> (5-HT <sub>2A</sub> agonist): Causes fundus relaxation & restore gastric accommodation	

Prokinetics	Speed up gastric emptying
Sucralfate	Placebo effect
Sumatriptan (5-HT agonist)	Fundus relaxation

### 🔵 Important Handwritten Notes

- If after eradication therapy of *H. pylori* the patient still has no response, then it's classified as **functional dyspepsia**.

### 🌟 Other Gastro-Duodenal FGIDs

#### 🔄 1. Cyclic Vomiting Syndrome (CVS)

##### 📌 Criteria (Rome III):

- **Stereotypical episodes:** same pattern every time
- **Duration:** episodes of **nausea & vomiting** lasting **< 1 week**
- **Frequency:** **≥3 episodes/year**
- **Asymptomatic between episodes:** patient feels **completely normal** in between

##### ! Diagnosis:

- **Diagnosis of exclusion**
- Rule out other causes of vomiting

##### ⚡ Associated with:

- **History or family history of migraines**

##### 💊 Treatment:

- **Tri-Cyclic Antidepressants (TCAs)** ➤ They help regulate gut-brain interaction and reduce frequency of episodes.

#### 🔄 2. Rumination Syndrome

##### 📌 Key Features:

- **Effortless, controlled regurgitation** of food after eating
- **No nausea**
- **Non-acidic content**
- The regurgitated food may be:
- **Re-swallowed**
- Or **spit out**

##### 🧠 Explanation:

- It's a **behavioral condition**, not a mechanical or acid problem.
- Patients usually **don't even realize** they're doing it — it becomes **habitual**.

##### 💊 Treatment:

- **Behavioral therapy:**
- Most effective = **diaphragmatic breathing** techniques ➤ This breaks the regurgitation pattern by engaging abdominal muscles properly during meals.

### 🟢 Irritable Bowel Syndrome (IBS)

#### 📌 IBS Alarm Symptoms

Alarm Symptoms
Age >50
Weight loss
Rectal bleeding
Change in bowel habits
Nocturnal symptoms

FHx of GI cancer or IBD
Anemia or biochemical abnormalities
Mass on exam

#### 📌 IBS Diagnosis (Rome III Criteria)

- Recurrent abdominal pain/discomfort  $\geq 1$  days/week in the last 3 months since 6 months
- Must have 2 or more:
- Improvement or worsens with defecation
- Onset associated with change in stool frequency
- Onset associated with change in stool form ( diarrhea or constipations)

#### 📖 IBS Etiology (Unclear)

Cause	Notes
Food intolerance ①	Mast cell activation
Post-infectious IBS ② <i>Food poisoning once and forever worse after that</i>	Inflammation after gastroenteritis ( increased permeability and persistent inflammation) , RF for post infections : 1- the duration of( <b>the strongest factor</b> ) 2- severity 3- cramping with initial infection
Psychological Disorders	Stress worsens symptoms
Age	IBS decreases with age

#### 📁 IBS Types

##### 1. 🟡 Constipation-Predominant IBS (C-IBS)

Feature	Details
Main Symptom	<b>Constipation</b>
Transit	<b>Slow colonic transit</b> (only ~25% of patients)
Other Problems	Hard, infrequent stools, straining

#### 🧠 Important Points:

- Only **some patients** have slow transit — most **still have normal colonic transit** but abnormal perception or motility.

##### 2. 🟠 Diarrhea-Predominant IBS (D-IBS)

Feature	Details
Main Symptom	<b>Diarrhea</b>
Transit	<b>Rapid colonic transit</b> (45% of patients)
Special Mechanism	↓ <b>Fibroblast Growth Factor 19 (FGF-19)</b> → less bile acid reuptake → <b>more bile acid reaches colon</b> → causes <b>cholerheic diarrhea</b> (~25% of D-IBS)

#### 🧠 Important Points:

- **Cholerheic diarrhea** = diarrhea from bile acids in colon.
- Possible association with **SIBO** (Small Intestinal Bacterial Overgrowth) (~10% of D-IBS patients):
- Some improve with **Rifaximin**, but only if SIBO is confirmed.

##### 3. 🟢 Mixed-Type IBS (M-IBS)

Feature	Details
Symptoms	<b>Alternating constipation and diarrhea</b>
Mechanism	Combination of both abnormal motility patterns

### 🧠 Important Points:

- Patients shift back and forth between diarrhea and constipation episodes.

### 📋 IBS Diagnosis of Exclusion

- Normal CBC, CRP, ESR
- Negative celiac screening (Anti-tTG)
- ± Thyroid tests → *Thyroid diseases can mimic it*
- ± Stool studies
- Negative fecal calprotectin (rule out IBD)

*All should be normal.*

### 🍴 FODMAPs in IBS

- **FODMAPs = Fermentable Oligo-, Di-, Mono-saccharides And Polyols.** (*unsweetened drops*)
- Advise patients to **restrict** these for symptom relief.

### 🔧 IBS Management

#### 1st Step:

- Define/eliminate food triggers (low FODMAP diet).
- Behavioral therapy.
- Manage psychological stress.

#### 2nd Step (Symptom-Directed):

Symptom	Management
Abdominal Pain	Antispasmodics, TCAs, SSRIs
Bloating	Probiotics ± Simethicone
Constipation	Fiber, Osmotic laxatives, ± Stimulant laxatives
Diarrhea	Bulk-formers, Opioids (Loperamide/Diphenoxylate)