



# Approach to Abdominal Pain

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# Why is this important?

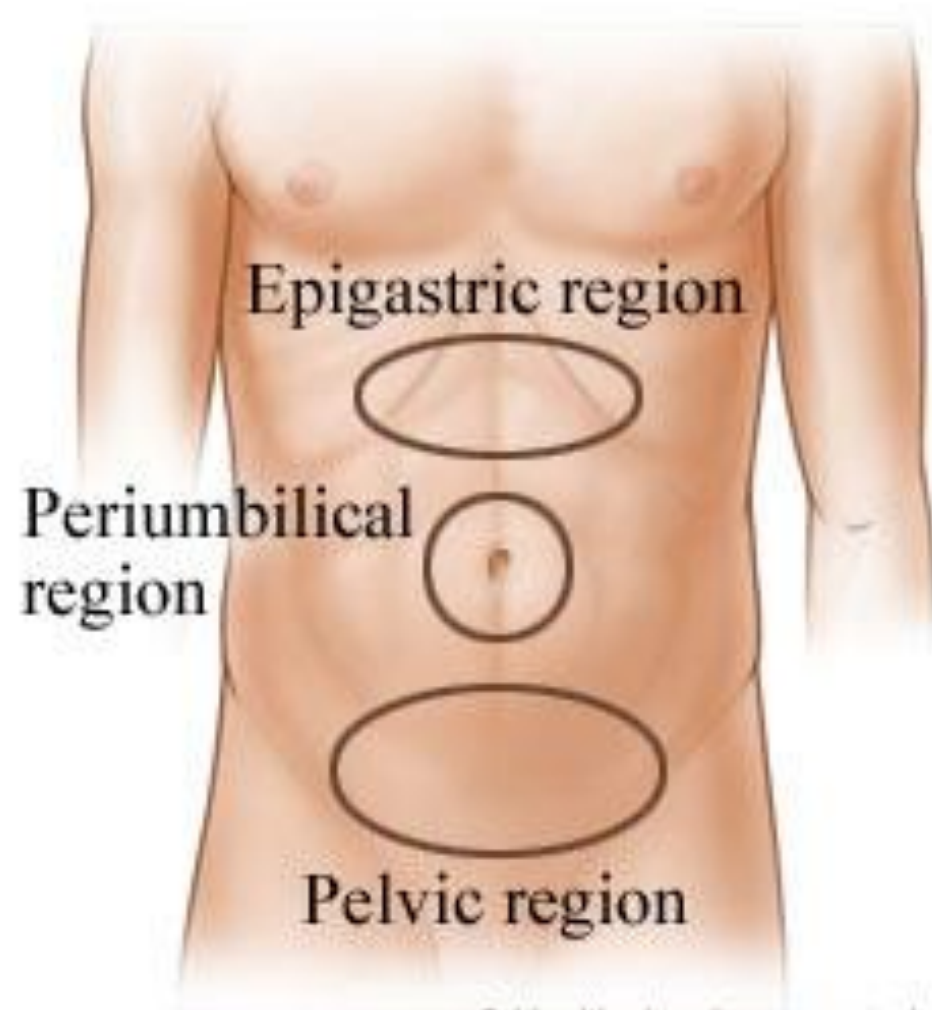
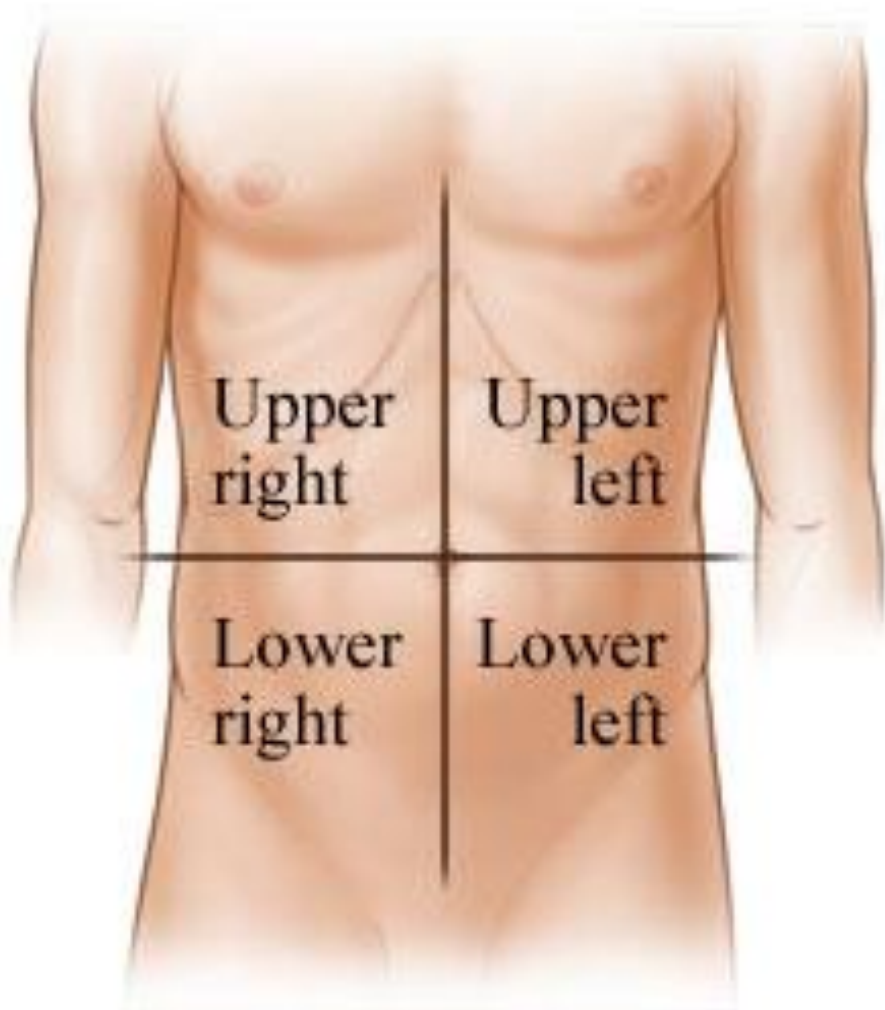
- Abdominal pain is one of the most common reasons for outpatient and ER visits
- A lot can happen in the abdomen and you need an organized approach

# Just a few diagnoses to ponder...

- Esophagitis
- GERD
- Gastric ulcer
- Gastritis
- Duodenal ulcer
- Duodenitis
- Gastric outlet obstruction
- Bowel obstruction
- Intussusception
- Bowel perforation
- Cancer
- Hepatitis
- Splenic infarct
- Splenic abscess
- Mesenteric ischemia
- Somatization
- IBS
- Crohn's disease
- Ulcerative colitis
- Gastroenteritis
- Familial Mediterranean fever
- Acute intermittent porphyria
- Appendicitis
- AAA rupture
- Esophageal spasm
- Diverticulitis
- Ectopic pregnancy
- Pelvic inflammatory disease
- Fitz-Hugh-Curtis
- HSV
- Abdominal epilepsy
- Endometriosis
- Vitamin D deficiency
- Adrenal insufficiency
- Pancreatitis
- Cholangitis
- Cholecystitis
- Choledocholithiasis
- Incarcerated hernia
- UTI
- Nephrolithiasis
- Abdominal migraine
- Celiac artery compression syndrome
- Uterine pathology
- HIV
- Hemophilia
- Sickle cell disease
- Trauma
- Pneumonia
- Subdiaphragmatic abscess
- Myocardial infarction
- Pericarditis
- Prostatitis
- Idiopathic inflammatory disorders
- Epiploic appendagitis
- Hereditary angioedema
- Painful rib syndrome
- Wandering spleen syndrome
- Abdominal wall pain
- Leukemia
- HSP
- Lead poisoning

# So how do we organize this?

- Location
- Acute v. chronic
- Type of pain



# Acute abdominal pain

- Generally present for less than a couple weeks
  - Usually days to hours old
  - Don't forget about the chronic pain that has acutely worsened
- More immediate attention is required
- Surgical v. nonsurgical

# Chronic abdominal pain

- Generally present for months to years
- Generally not immediately life threatening
- Outpatient work-up is prudent



# Types of Pain

Mechanism	Cause	Innervation	Nature	Location
Visceral	Inflammation, ischaemia, neoplasia and distension of either the wall of a hollow viscus, or the capsule of a solid intra-abdominal organ.	Afferent nerves from either side of the spinal cord	Colicky, cramp-like dull and burning, often with associated autonomic symptoms of nausea, vomiting, pallor and sweating.	Poorly demarcated; usually midline via autonomic fibres in the wall or capsule. Regional localisation to foregut, midgut and hindgut structures
Parietal/somatic	Inflammation (bacterial or chemical) of the parietal peritoneum	Mediated by segmental nerves associated with specific dermatomes	Sharp aggravated by movement, coughing and breathing	Precise location to the structure of origin
Referred	Infection, infarction, embolism, irritation; shares common embryological origin	Peripheral nerves sharing a common central pathway	Dull, aching perceived near the surface of the body; skin hyperalgesia. Increased muscle tone	Localised to a site distant to organ that is the source of pain



# Approach to the patient

- History is **THE MOST IMPORTANT** part of the diagnostic process
  - Location, quality, severity, radiation, exacerbating or alleviating factors, associated symptoms
    - Visceral v. peritoneal
  - A good thorough medical history (including sexual and menstrual)
  - A good thorough social history, including alcohol, drugs, domestic abuse, stressors, travel etc.
  - Family history is important (IBD, cancers, etc)
  - **MEDICATION INVENTORY**

# Approach to the patient

- Physical exam
  - Vitals (incl postural), general appearance
  - A good thorough medical exam
    - Jaundice, signs of chronic liver disease, CVAT
  - Abdominal exam
    - Look, listen, feel
    - Know a few tricks
  - DRE
  - Pelvic exam, GU
  - MSK exam

# Approach to the patient

- Labs
  - CBC, lytes, BUN, Cr, coags
  - Amylase and lipase, LFTs
  - UA
  - bHCG
  - Lactate, CRP/ESR
  - Tox screen
  - H. pylori serology
  - FOBT

# Approach to the patient

- Imaging
  - Plain films (KUB, UGI)
  - CT
  - Ultrasound
  - MRI
  - Angiography
  - POCUS!!!
- Endoscopy
  - EGD
  - Colonoscopy
  - ERCP/EUS



# Surgical abdomen

- This is the first thing to be considered in acute abdominal pain
  - Early identification is a must as prognosis worsens rapidly with delay in treatment
- Important to get surgeons involved early if this is even mildly suspected
- This is a **clinical** diagnosis

# Surgical abdomen

- Presentation is usually bad
  - Fevers, tachycardia, hypotension
  - VERY tender abdomen, possibly rigid
- Presentation can vary with other demographic and medical factors
  - Advanced age
  - Immunosuppression

# Surgical abdomen

- Peritonitis
  - Often signals an intraabdominal catastrophe
    - Perforation, big abscess, severe bleeding
  - Patient usually appears ill
  - Exam findings
    - Rebound, rigidity, tender to percussion or light palpation, pain with shaking bed



# Chronic Abdominal Pain

- Most common presentation in family medicine!

Most common differential:

- Constipation
- PUD/GERD/Gastritis
- Menstrual/Ovarian/Endometriosis
- Functional abdominal pain/IBS
- Hernia

# Constipation

1. Presence of  $\geq 2$  of the following for at least 3 months (with symptom onset at least 6 months prior to diagnosis):
  - Straining for  $>25\%$  of defecations
  - Lumpy/hard stools  $>25\%$  of defecations
  - Sensation of incomplete evacuation  $>25\%$  of defecations
  - Sensation of anorectal obstruction/blockage  $>25\%$  of defecations
  - Manual maneuvers to facilitate  $>25\%$  of defecations (eg, digital evacuation, support of the pelvic floor)
  - $< 3$  defecations/week
2. Loose stools are rarely present without the use of laxatives
3. There are insufficient criteria for IBS.

# Etiology-Idiopathic

- Normal colonic transit (psychogenic)
- Colonic inertia
- Outlet delay
- Dyssynergic defecation
- Megacolon or megarectum

# Etiology – Secondary Causes (further investigation)

## Causes of secondary constipation

Cause	Example
Organic	Colorectal cancer, extraintestinal mass, postinflammatory, ischemic, or surgical stenosis
Endocrine or metabolic	Diabetes mellitus, hypothyroidism, hypercalcemia, porphyria, chronic renal insufficiency, panhypopituitarism, pregnancy
Neurological	Spinal cord injury, Parkinson's disease, paraplegia, multiple sclerosis, autonomic neuropathy, Hirschsprung disease, chronic intestinal pseudo-obstruction
Myogenic	Myotonic dystrophy, dermatomyositis, scleroderma, amyloidosis, chronic intestinal pseudo-obstruction
Anorectal	Anal fissure, anal strictures, inflammatory bowel disease, proctitis
Drugs	Opiates, antihypertensive agents, tricyclic antidepressants, iron preparations, antiepileptic drugs, anti-Parkinsonian agents (anticholinergic or dopaminergic), barium
Diet or lifestyle	Low fiber diet, dehydration, inactive lifestyle

# Management

- Education
- Behaviour modification
- Dietary changes: fluids, fiber (20-35gm/d, dietary +/- supplements)
- Remove offending medications where possible
- Oral vs. suppository vs. enema
- Disimpaction (chemical, manual, surgical)

# IBS – ROME IV Criteria

Abdominal pain at least 4 days per month over at least 2 months associated with *one or more* of the following:

1. Related to defecation
2. A change in frequency of stool
3. A change in form (appearance) of stool
4. In children with abdominal pain and constipation, the pain does not resolve with resolution of the constipation (children in whom the pain resolves have functional constipation, not IBS)
5. After appropriate evaluation, the symptoms cannot be fully explained by another medical condition



# IBS

## Diagnostic criteria for IBS subtypes (Figure 11-11, FM 12)

Predominant bowel habits are based on stool form on days with at least one abnormal bowel movement.\*

**IBS with predominant constipation (IBS-C):**  $> \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 1 or 2 and  $< \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 6 or 7. *Alternative for epidemiology or clinical practice: Patient reports that abnormal bowel movements are usually constipation (like Type 1 or 2 in the picture of BSF, see Figure 2A).*

**IBS with predominant diarrhea (IBS-D):**  $> \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 6 or 7 and  $< \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 1 or 2. *Alternative for epidemiology or clinical practice: Patient reports that abnormal bowel movements are usually diarrhea (like Type 6 or 7 in the picture of BSF, see Figure 2A).*

**IBS with mixed bowel habits (IBS-M):**  $> \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 1 or 2 and  $> \frac{1}{4}$  (25%) of bowel movements with Bristol stool types 6 or 7. *Alternative for epidemiology or clinical practice: Patient reports that abnormal bowel movements are usually both constipation and diarrhea (more than 1/4 of all the abnormal bowel movements were constipation and more than 1/4 were diarrhea, using picture of BSF, see Figure 2A).*








**IBS Unclassified (IBS-U):** Patients who meet diagnostic criteria for IBS but whose bowel habits cannot be accurately categorized into 1 of the 3 groups above should be categorized as having IBS-U. *Alternative for epidemiology or clinical practice: Patient reports that abnormal stools (both diarrhea and constipation) are rare.*

For clinical trials, subtyping based on at least 2 weeks of daily diary data is recommended, using the "25%-rule".

\*IBS subtypes related to bowel habit abnormalities (IBS-C, IBS-D and IBS-M) can only be confidently established when the patient is evaluated off medications used to treat bowel habit abnormalities.



# Bristol Stool Chart

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

# Laxatives

- **Bulk forming laxatives (eg psyllium)**

Absorb liquid in the intestines and swell to form a soft, bulky stool. The bowel is then stimulated normally by the presence of the bulky mass.

- **Surfactants (softeners) (eg docusate)**

Encourage BMs by helping liquids mix into the stool and prevent dry, hard stool masses.

- **Lubricants (mineral oil)**

Encourage BMs by coating the bowel and the stool mass with a waterproof film which keeps moisture in the stool. The stool remains soft and its passage is made easier.

- **Osmotic agents (eg PEG 3350, lactulose, Mg, glycerin)**

Encourage BMs by drawing water into the bowel from surrounding body tissues. This provides a soft stool mass and increased bowel action.

- **Stimulant laxatives (eg senna, bisacodyl)**

Increase the muscle contractions that move along the stool mass.

- **Other (eg. Relistor)**

# Dyspepsia

- Rome III criteria:  $\geq 1$  of the following:
- Postprandial fullness
- Early satiation (inability to finish a normal sized meal)
- Epigastric pain or burning

## Differential:

- PUD, GERD, biliary, abdominal wall, malignancy, gastroparesis, pancreatitis, medications and substances, metabolic, ischemia, systemic (DM, thyroid, CTD)

# Red Flags (need for endoscopy)

- Symptom onset after age 50 (esp if male, Caucasian, smoker, >10 yrs symptoms re: Barrett's)
- GI blood loss/anemia
- Weight loss
- Early satiety
- Dysphagia
- Persistent vomiting or symptoms refractory to standard therapy

# Investigation and Management

- Identify and eliminate aggravating factors (etoh, tobacco, ASA/NSAIDs, steroids, stress)
- Patient education re: diet and lifestyle factors
- Bloodwork (?H. pylori [vs urea breath or fecal antigen], ?celiac), imaging (double contrast UGI), endoscopy
- Treatment (PUD/GERD): H<sub>2</sub>RA, PPI, H. pylori eradication when positive

# Rectal Bleeding

- Melena vs. BRBPR
- Differential of BRBPR: hemorrhoids, anal fissures, polyps, proctitis, rectal ulcers, malignancy
- Red flags: new pain or change in nature of chronic pain, pain awakening at night, altered bowel function (frequency, caliber or consistency), constitutional symptoms, anemia, palpable lymphadenopathy, personal or family hx bowel disease



# Colon Cancer Check Screening Recommendations

- Average risk: recommend FIT q2 years for asymptomatic people 50-74 without a family hx of colorectal cancer. [Abnormal FIT: c-scope within 8 weeks].
- Ages 50-74 without a family hx of colorectal cancer who choose to be screened with flex sigmoidoscopy should be screened q10 years.
- Increased risk: asymptomatic people get screened with c-scope if a family hx of colorectal cancer (1 or more first-degree relatives) beginning at 50 or 10 years earlier than the age their relative was diagnosed, whichever occurs first.