

# Gastroenterology and Hepatology

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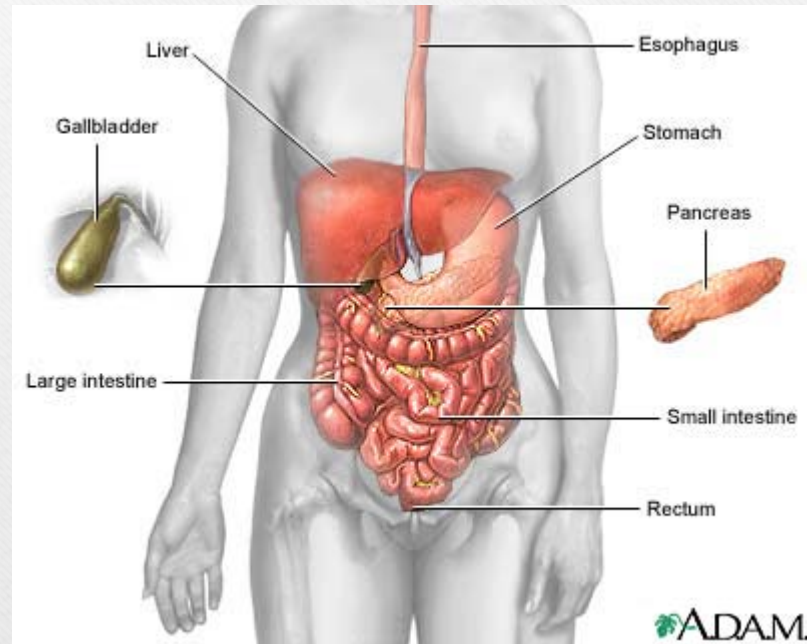
# Overview

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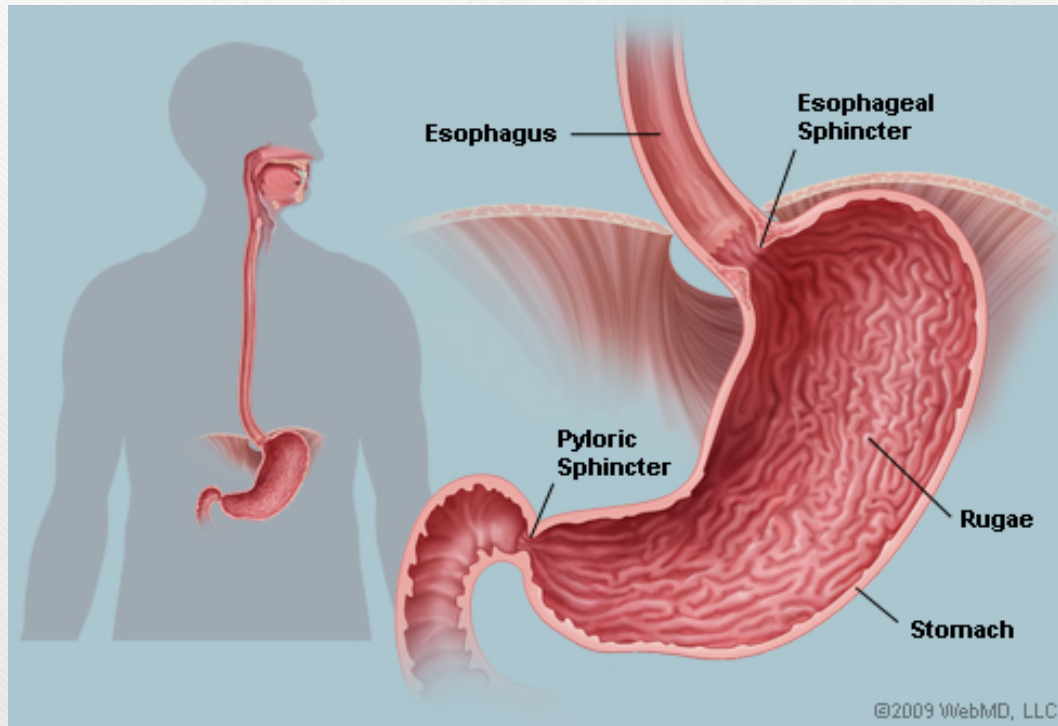
- Anatomy of the gastrointestinal system
- Upper intestinal diseases
- Small intestinal diseases
- Colonic diseases
- Pancreatic diseases
- Hepatic and biliary diseases

# Overview of Intestinal Anatomy

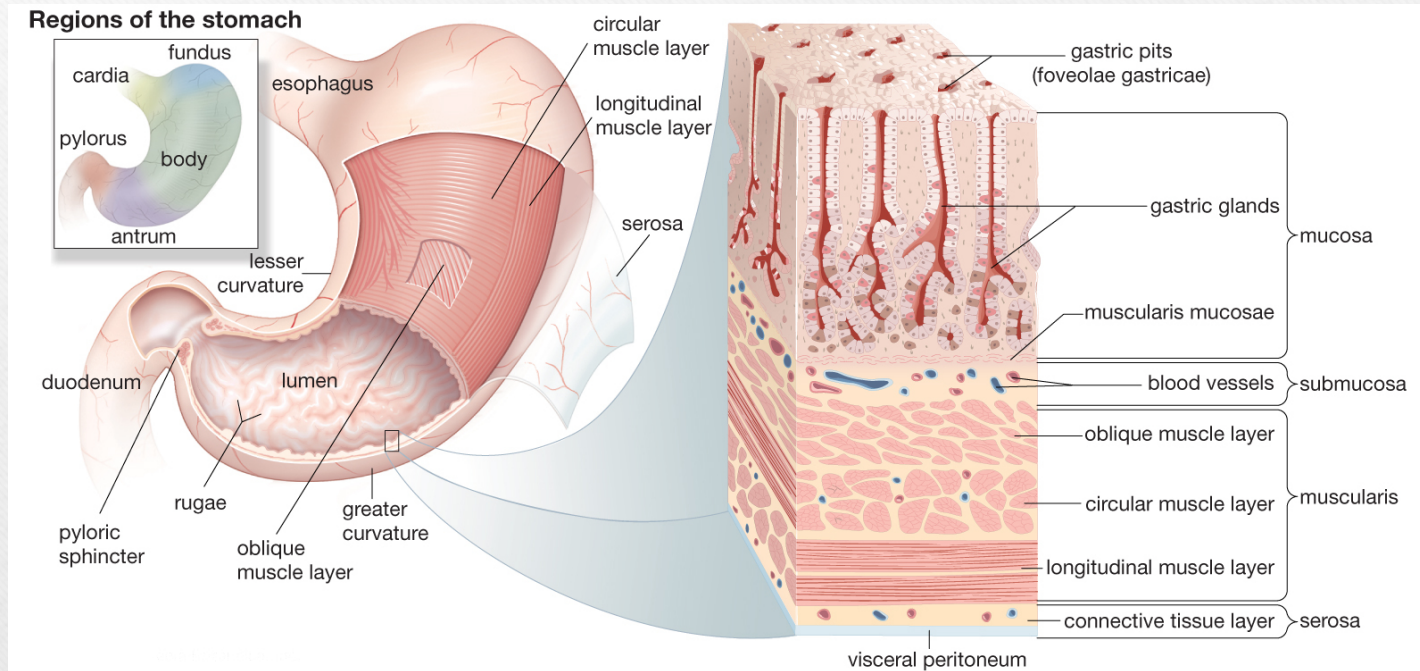
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# Upper Intestine

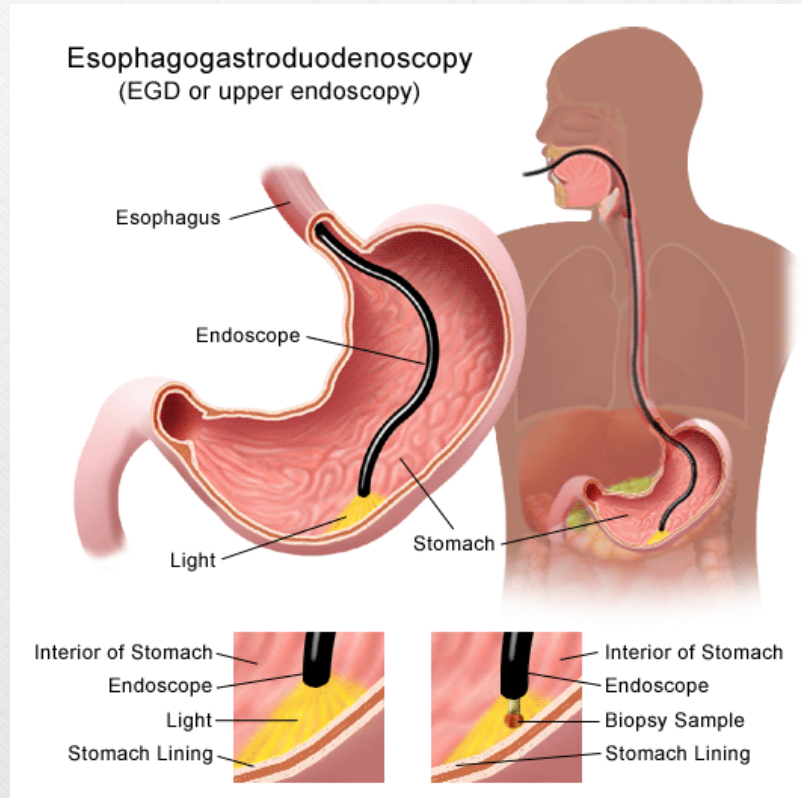


# Gastric anatomy up-close



# Endoscopy

- What is it?
- Who needs it?
- What do we find?
- Prep
- Sedation
- Recovery



# Esophageal Disorders

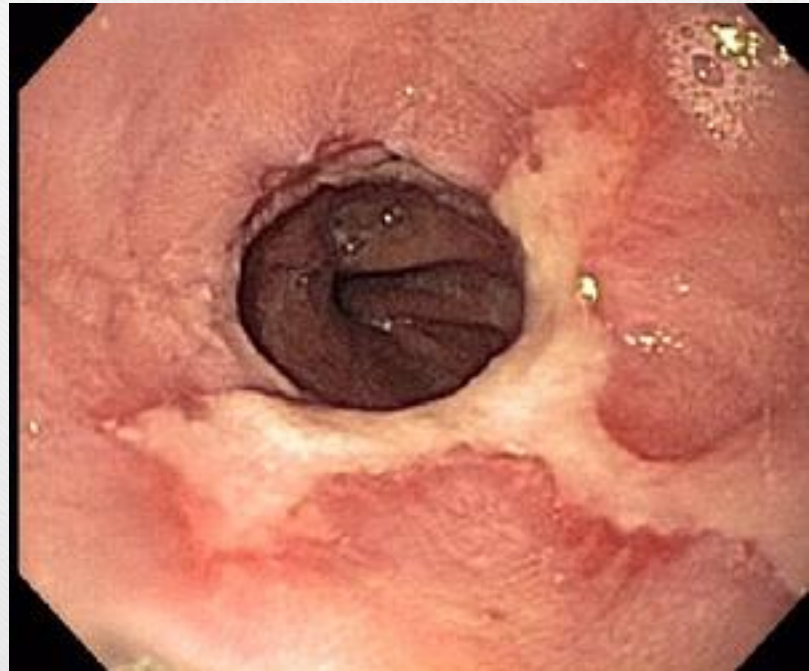
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- Gastro-esophageal reflux disease (GERD)
- Barrett's esophagus
- Hiatal hernia
- Eosinophilic esophagitis
- Esophageal cancer

# GERD (gastro-esophageal reflux disease)

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- What is GERD
- Symptoms
  - Typical
  - Atypical (laryngotracheal reflux)
- Red flags (weight loss, difficulty swallowing, bringing up blood)
- Diagnosis
- Causes
- Treatment
  - Lifestyle and diet
  - Medication
  - Surgery





# Barrett's Esophagus

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- What is Barrett's esophagus
- Risk factors (age, gender, Caucasian, smokers)
- Cancer progression (0.5%/year or 5% lifetime risk)
- Treatments - acid suppression, lifestyle/diet, surgery, RFA



# Hiatal Hernia

- What is hiatal hernia
  - Sliding
  - Paraesophageal
- Symptoms – same as reflux
- Treatment
  - Medications
  - Surgery



# Eosinophilic Esophagitis

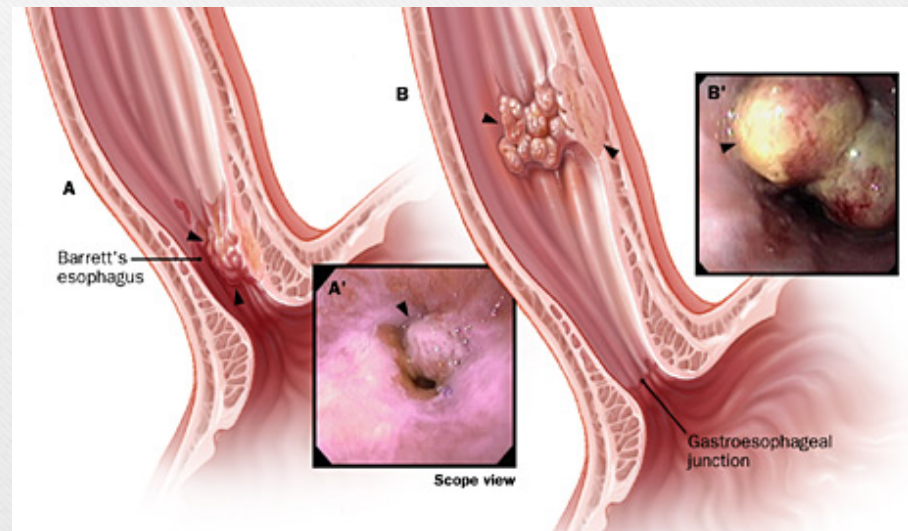
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- What is eosinophilic esophagitis
- Symptoms
  - Dysphagia
  - Chest pain
  - Heartburn
- Treatments - antacids, steroids, dilation, elimination diets



# Esophageal Cancer

- Causes
- Types
  - Adenocarcinoma
  - Squamous cell
- Symptoms
  - Dysphagia
  - Weight loss
  - Bleeding
  - Chest pain
  - New-onset heartburn
- Treatments – surgery, radiation, chemotherapy, stenting



# Gastric Diseases

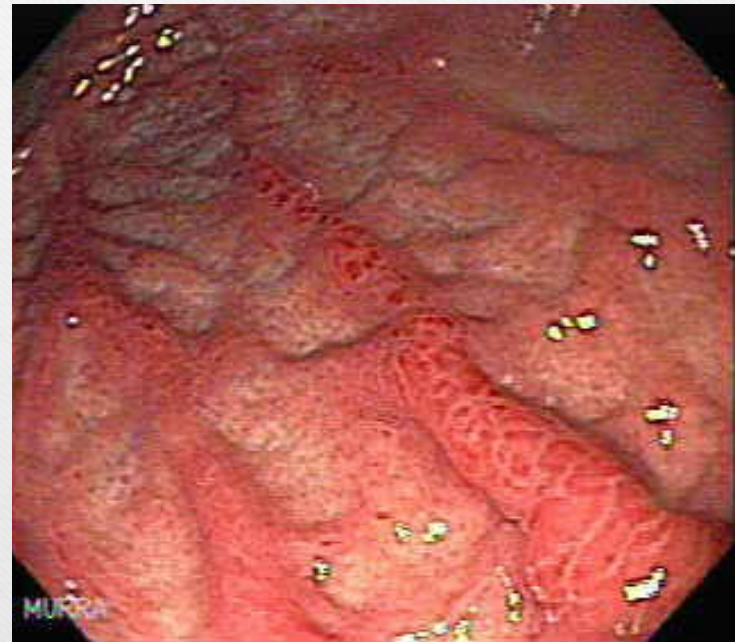
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- Gastritis
- Helicobacter pylori
- Gastric ulcer
- Gastric cancer

# Gastritis

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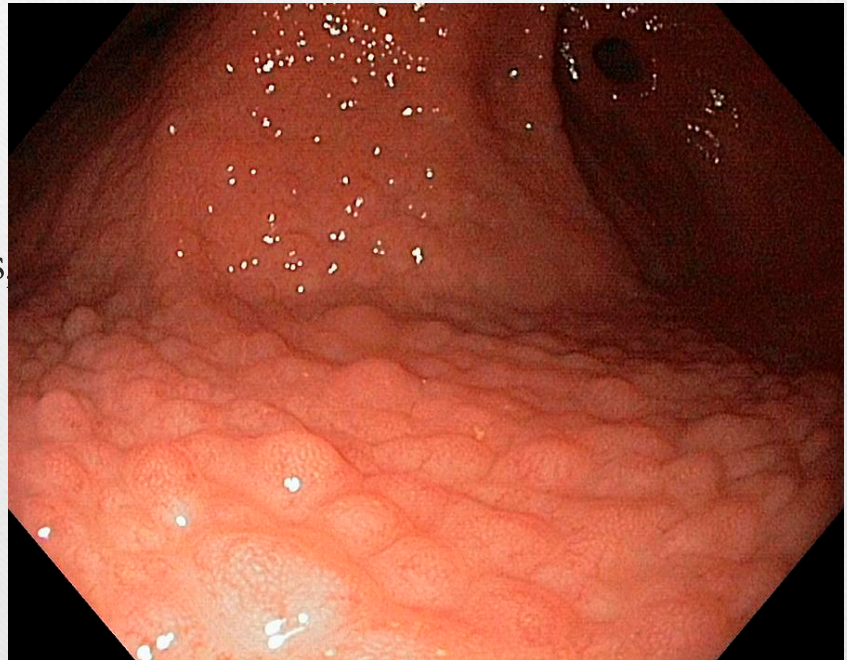
- What is gastritis
  - Acute
  - Chronic
- Causes – helicobacter pylori, NSAIDS, alcohol, autoimmune, severe stress
- Symptoms
  - Abdominal pain, bloating, nausea or vomiting, decreased appetite
- Treatment



# Helicobacter Pylori (h. pylori)

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- Cause – contaminated food or water
- Prevalence – 50% of world population (20% in US)
- Symptoms – same as gastritis, ulcers
- PUD/Gastric Cancer
- Diagnosis
- Treatment



# Peptic Ulcer

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- What is an ulcer
- Symptoms – fatigue, abdominal pain, bleeding, decreased appetite, dark stool
- Causes
  - Helicobacter pylori
  - NSAIDS
  - Gastric cancer
  - Severe stress
- Treatment

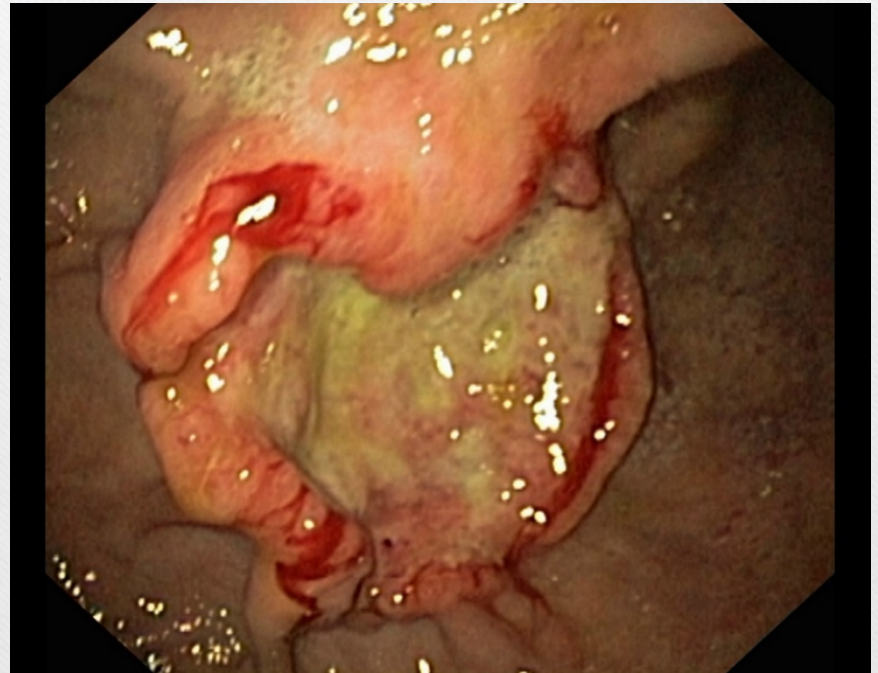




# Gastric Cancer

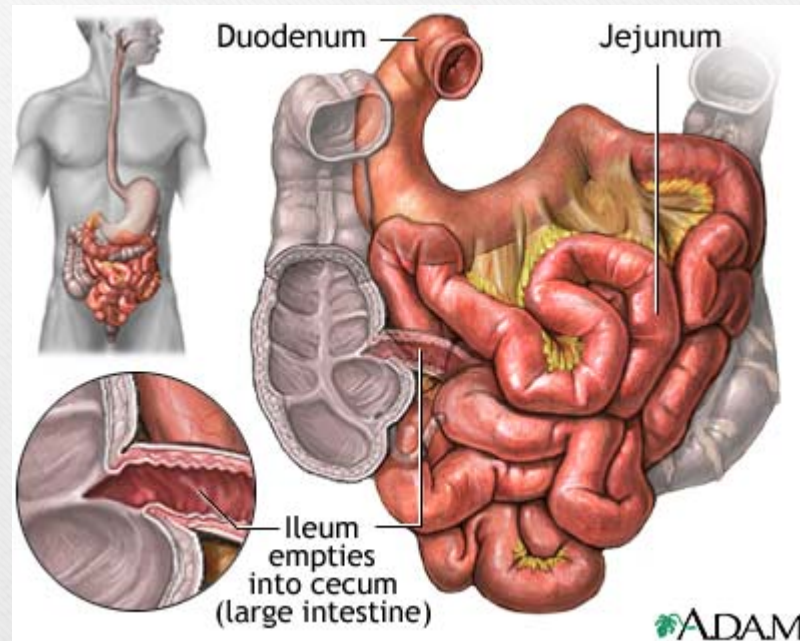
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- What is gastric cancer
- Symptoms – abdominal pain, weight loss, decreased appetite, bleeding, nausea or vomiting, dysphagia
- Causes
  - *Helicobacter pylori*
  - Family history/precancerous polyps
  - Atrophic gastritis
- Treatment – surgery, chemo, radiation, antibiotics for *helicobacter pylori*

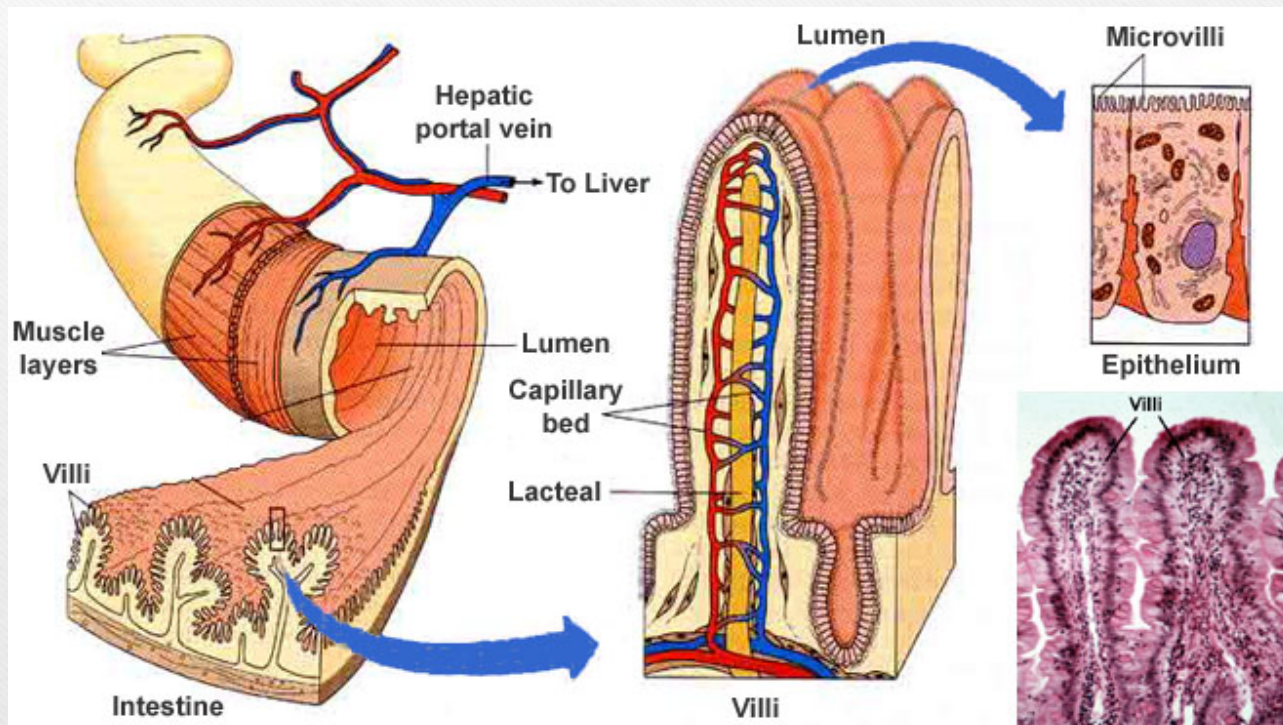


# Small Intestine

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# Small intestine up close



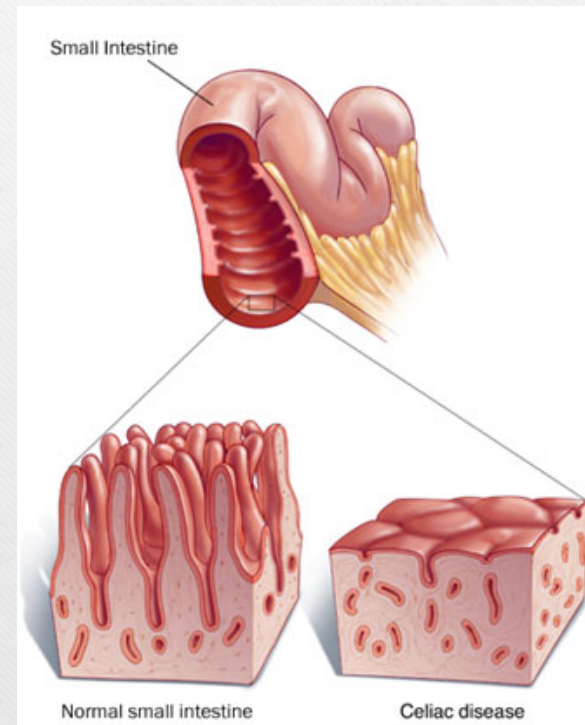
# Small Bowel Disease

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- Celiac disease
- Crohn's disease (inflammatory bowel disease)

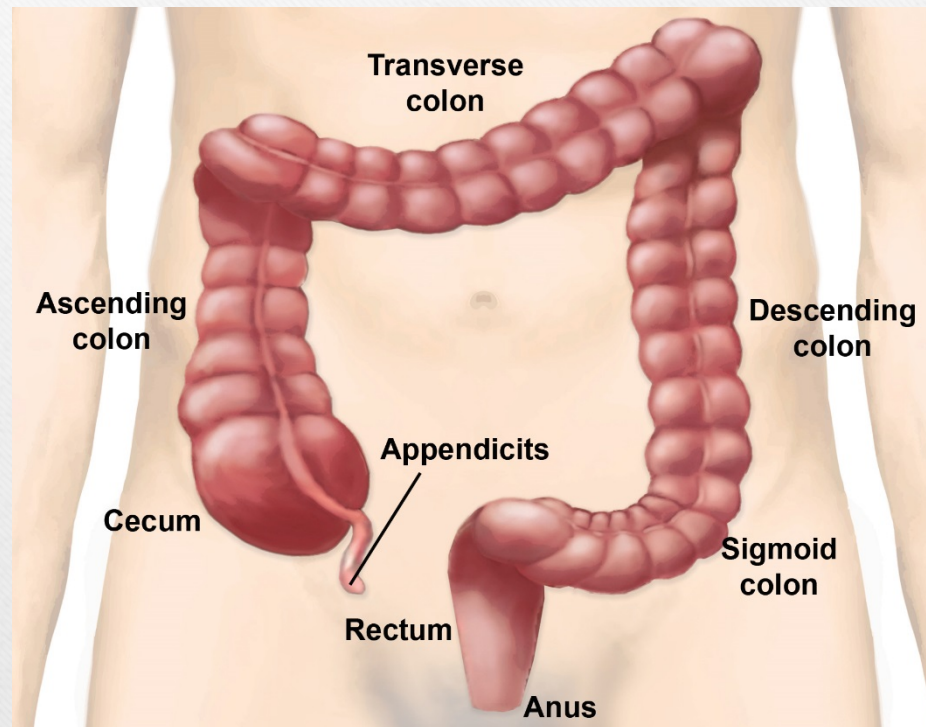
# Celiac Disease

- What is celiac disease
- Symptoms – diarrhea, bloating, weight loss
  - Osteoporosis
  - Iron deficiency anemia
  - Type I diabetes mellitus
  - Hypothyroid
  - Dermatitis herpetiformis
  - Nervous disorders
  - Liver disease
  - Infertility
- Diagnosis - Blood tests, endoscopy, capsule study
- Treatment



# Large Intestine (colon)

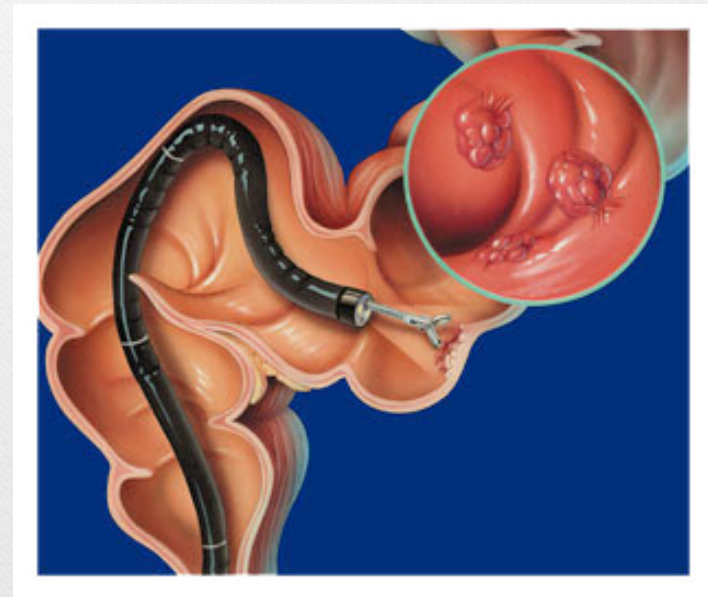
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# Colonoscopy

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- What is it?
- Indications – screening, bleeding/anemia, change in bowel pattern, polyp/cancer surveillance, abdominal pain, abnormal x-ray
- Preps



# Colonic Diseases

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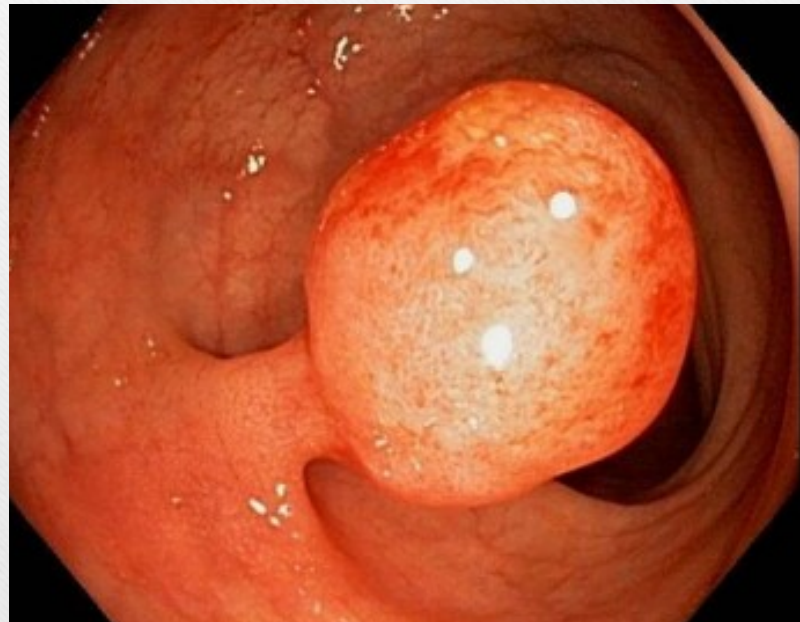
- Polyps
- Colon cancer
- Diverticular diseases
- Inflammatory bowel disease (Crohn's disease and ulcerative colitis)
- Constipation
- Diarrhea
- Hemorrhoids
- Irritable bowel syndrome



# Polyps

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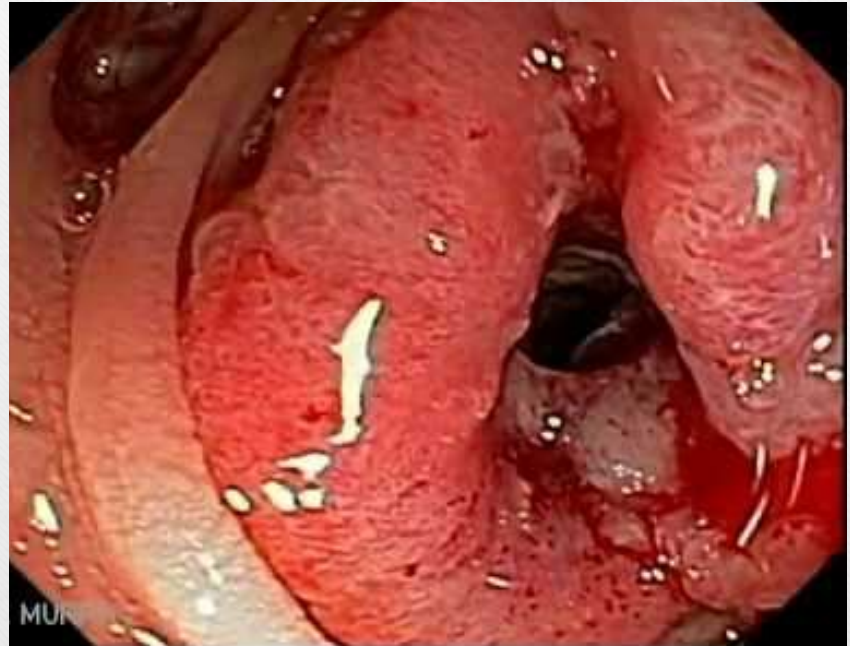
- Types – cancerous, pre-cancerous, hyperplastic (30-50% of adults)
- Symptoms
  - None
  - Bleeding
  - Change in bowel habits
- Risk factors – age, family history, red meat, low-fiber, cigarettes, obesity
- Treatment
- Prevention – NSAIDS/aspirin, calcium



# Colorectal Cancer

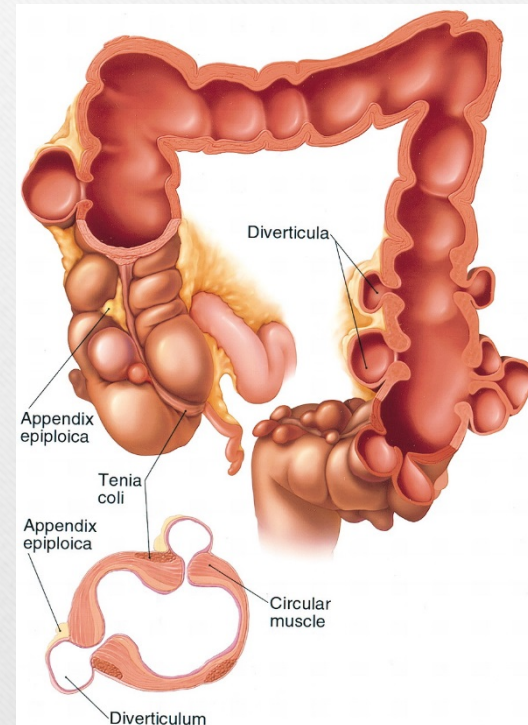
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- What is colorectal cancer
- Symptoms – weight loss, abdominal pain, anemia, change in bowel habits
- Diagnosis
- Prognosis/staging
- Treatment –surgery, chemo, radiation (rectal), surveillance



# Diverticular disease

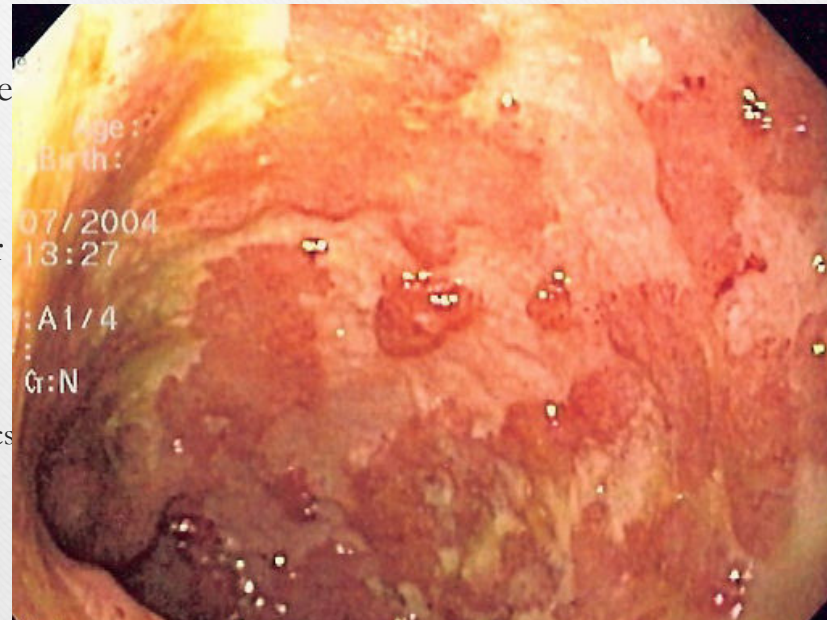
- Diverticulitis – simple vs complex (abscess, fistula, obstruction, peritonitis, sepsis)
- Symptoms – fever, lower abdominal pain
- Diagnosis - CT
- Diet?
- Treatments – antibiotics, surgery
- Diverticular bleeding



# Inflammatory bowel disease (IBD)

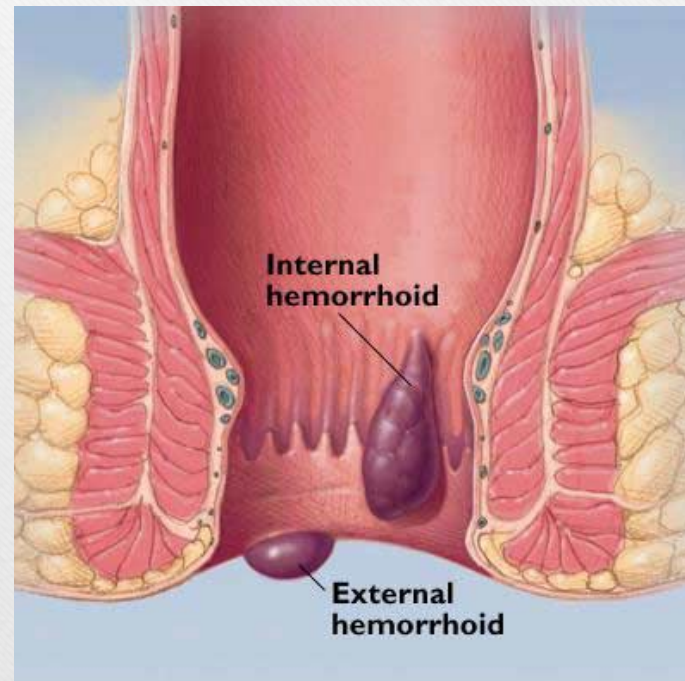
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- Ulcerative Colitis – localized to the colon
- Crohn's disease – usually small intestine and colon but can be anywhere in the GI tract (avoid smoking and NSAIDS)
- Symptoms – diarrhea, abdominal pain, weight loss, fever, fatigue, colon cancer
- Treatment
  - Anti-inflammatories (mesalamine)
  - Antibiotics
  - Immunosuppressants – steroids, biologics
  - 6MP (mercaptopurine)
  - Surgery



# Hemorrhoids

- What are they
- Symptoms – rectal pain, bleeding, itching, anal leakage, difficulty cleaning
- Causes – constipation/straining
- Treatments – fiber, laxatives, sitz baths, topicals, rubber band ligation, coagulation, sclerotherapy, surgery



# Constipation

- Definition – hard stool, infrequent, difficult to pass
- When to seek help – new-onset, symptoms greater than 3 weeks, severe, bleeding, weight loss
- Causes – low fluid intake, low fiber intake, medications, stress
- Problems – hemorrhoids, bloating/pain
- Treatments – behavioral changes, fluids, fiber, laxatives



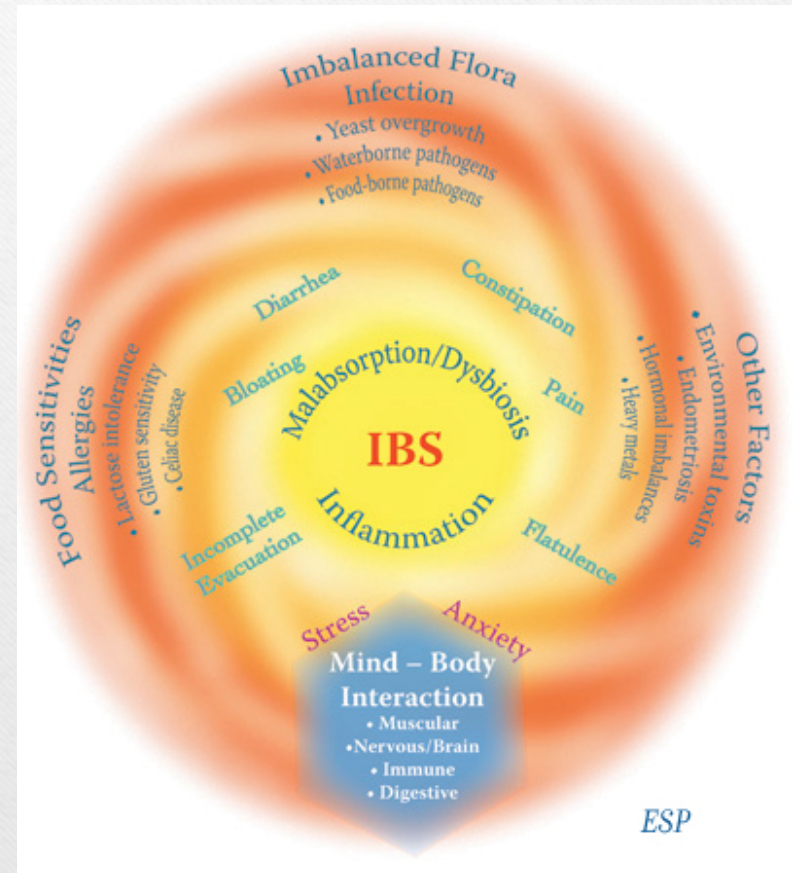
# Diarrhea

- Acute vs. chronic (>14 days)
- Causes – viruses, bacteria, pancreatic insufficiency, gallbladder, lactose intolerance, celiac disease, inflammatory bowel disease
- Clostridium difficile (c diff)
- Treatments – hydration, diet (BRAT), anti-diarrheals, antibiotics
- Prevention – hand washing, food handling



# IBS (irritable bowel syndrome)

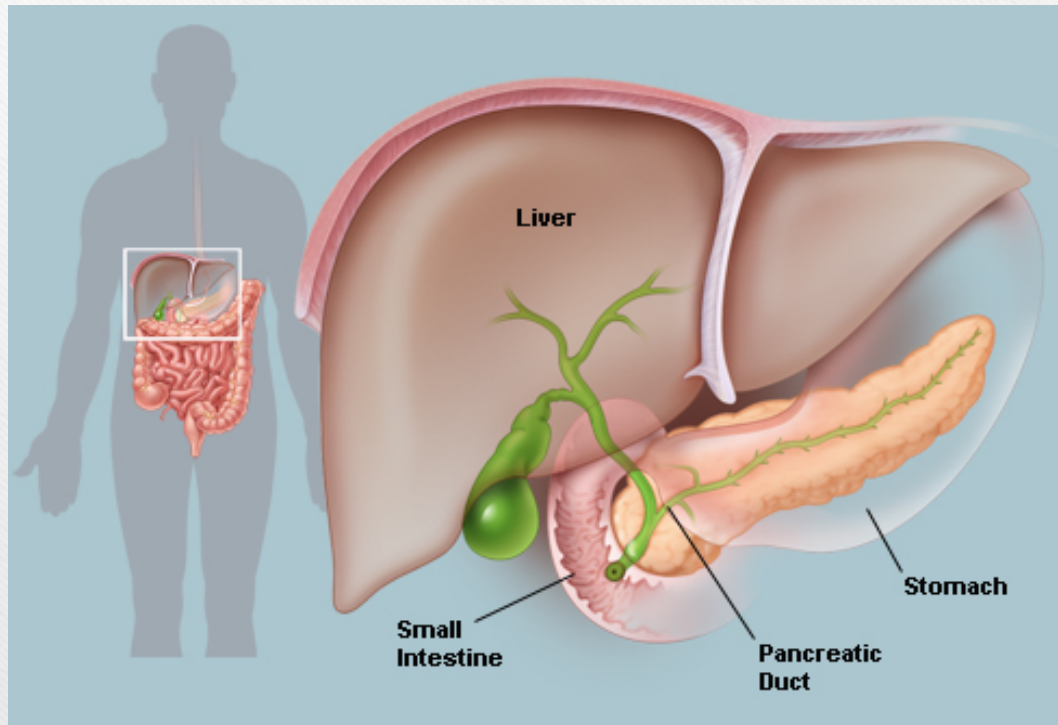
- What is irritable bowel syndrome
- Symptoms – altered bowel habits, abdominal discomfort, bloating
- Causes – spasm, food intolerance, post-infectious, stress, “visceral hyperalgesia”, bacterial imbalance
- Treatments – food diary, probiotics, fiber, psychosocial, medications (antispasmodics, laxatives, anti-diarrheals, Lotronex, antidepressants, anti-anxiety, antibiotics)





# Pancreas, Liver and Gallbladder

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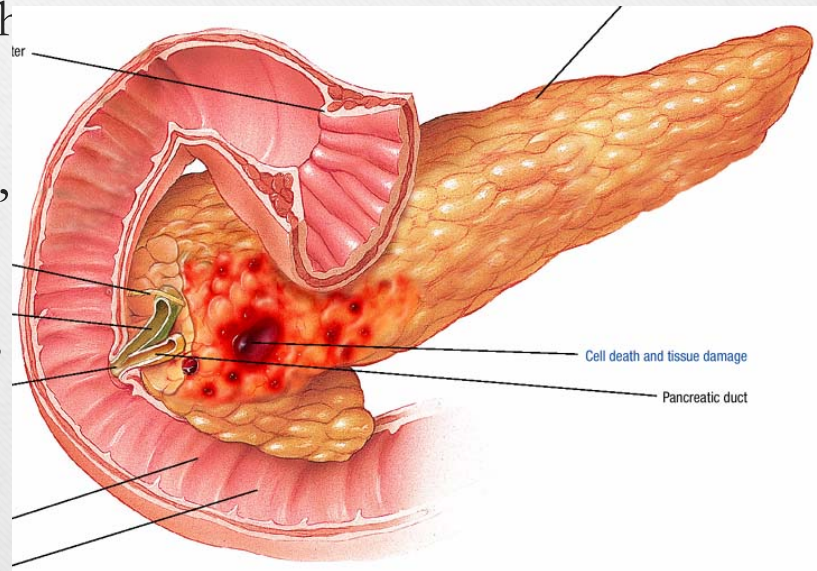
# Pancreatic Diseases

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- Pancreatitis
- Pancreatic cancer

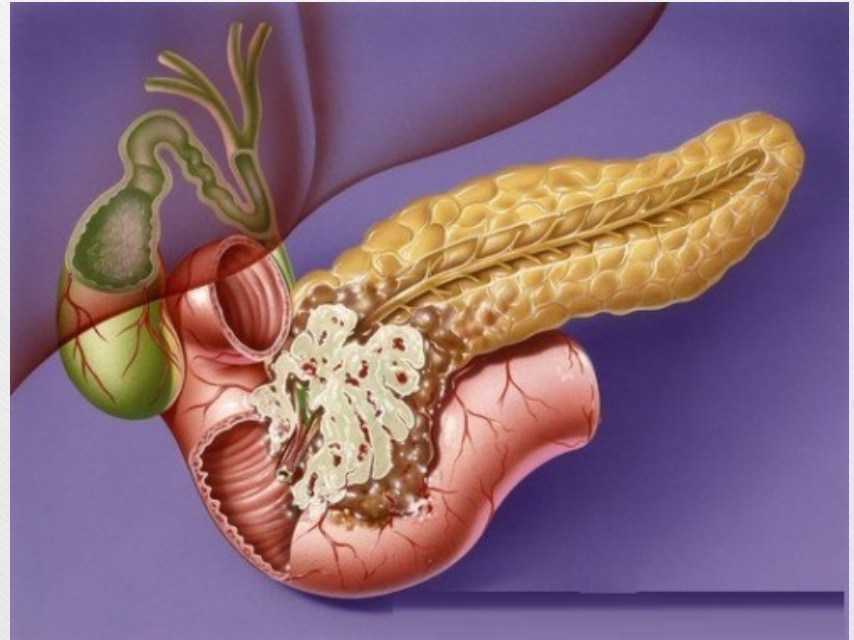
# Pancreatitis

- What is pancreatitis
- Causes – alcohol, gallstones, post-ERCP, medications, high triglycerides, autoimmune, idiopathic
- Symptoms – abdominal pain, nausea, vomiting
- Treatment – bowel rest/alternative feeding, IV fluids, ERCP, antibiotics, surgery, alcohol counseling



# Pancreatic Cancer

- Symptoms – upper abdominal pain, weight loss, jaundice, oily bowel movements
- Diagnosis – CT/MRI, ERCP, endoscopic ultrasound with fine needle aspiration, tumor markers
- Treatments – Whipple procedure, biliary stenting, chemotherapy



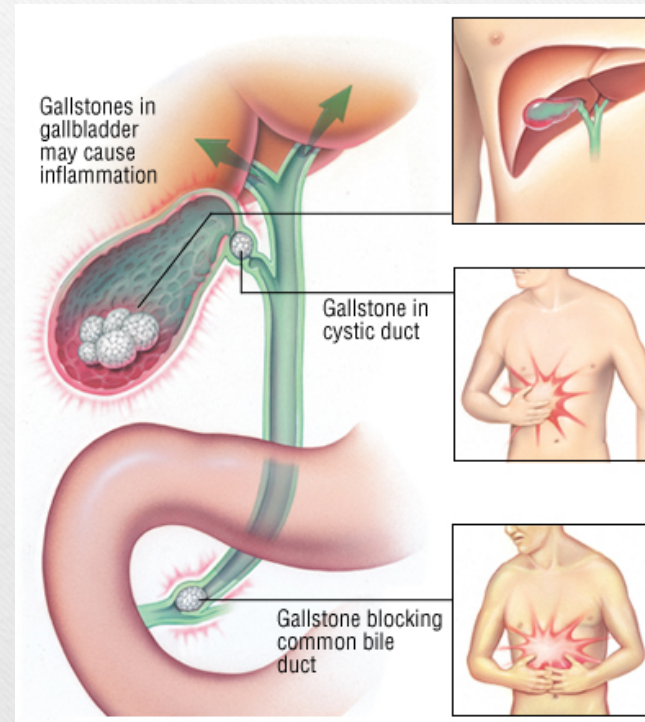
# Biliary and Liver Diseases

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- Gallstones
- Biliary dyskinesia
- Hepatitis
- Cirrhosis

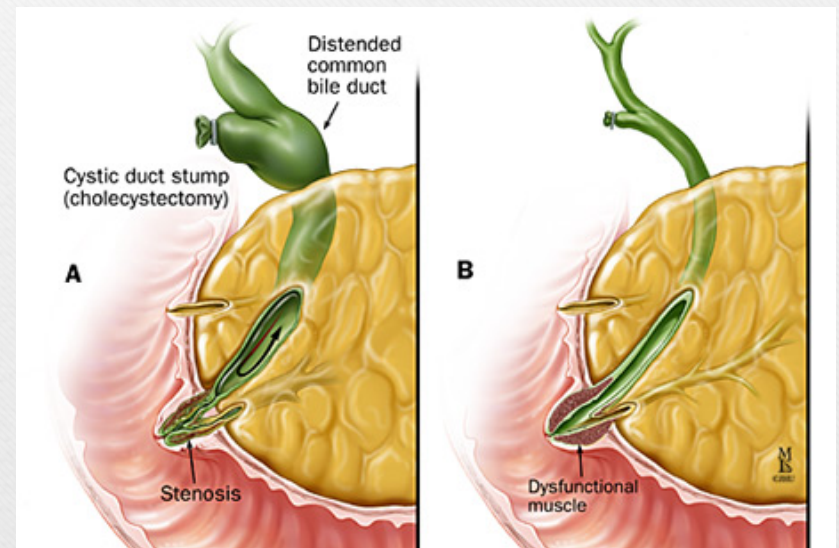
# Gallstones

- Causes – age, sex, pregnancy, rapid weight loss, diabetes mellitus, sickle cell disease
- Biliary colic
- Complications
  - Cholecystitis
  - Cholangitis/common duct stones
  - Pancreatitis
- Treatment
  - Antibiotics
  - ERCP
  - Surgery (Cholecystitis)
  - Bile acid pills (Urso)



# Biliary dyskinesia/sphincter of Oddi dysfunction

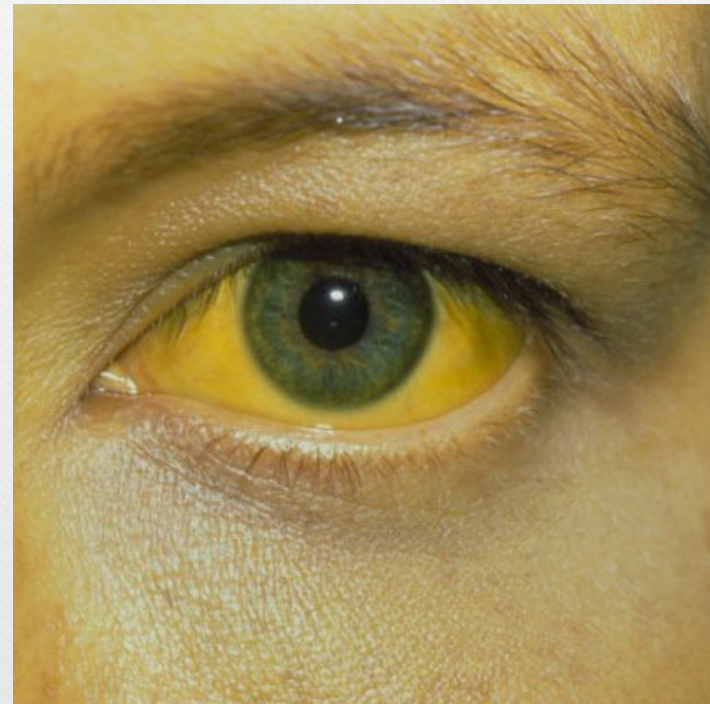
- Persistent pain after cholecystectomy
- Treatment is ERCP to cut through the muscle at the bottom of the common bile duct



# Hepatitis

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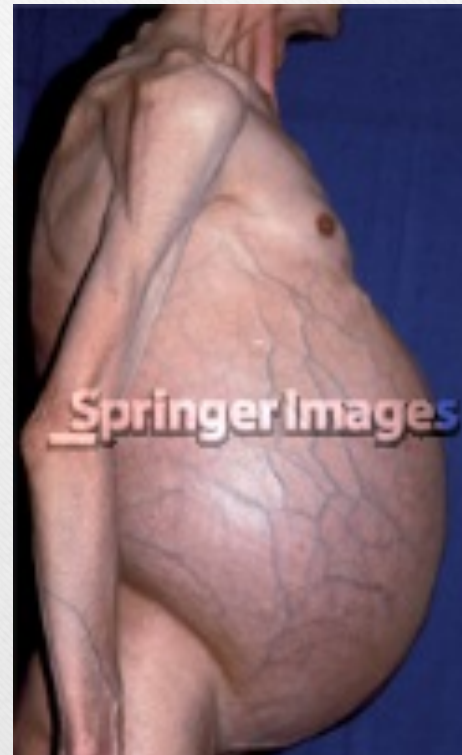
- Causes – acute vs. chronic
  - Alcohol
  - Viral (A, B, C)
  - Fatty liver (NASH)
  - Autoimmune
  - Medicines (Tylenol, antibiotics)
- Symptoms - none, jaundice, fever, RUQ pain, nausea, diarrhea, itching
- Treatment – time, medications, liver transplant, vaccination



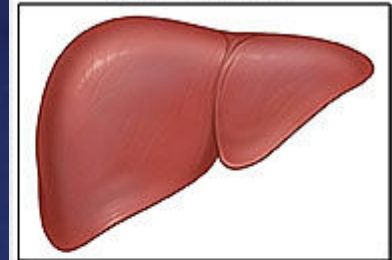


# Cirrhosis

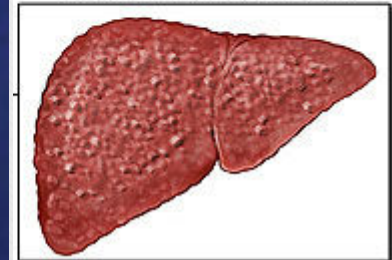
- Causes – alcohol, hepatitis B and C, non-alcoholic steatohepatitis
- Symptoms – compensated vs. decompensated
  - Ascites
  - Confusion (encephalopathy)
  - Easy bleeding (coagulopathy)
  - Esophageal bleeding
  - Jaundice
  - Itching
- Treatment
  - Symptom-based - paracentesis, TIPS, diet, medications, immunization, endoscopy
  - Liver transplant



Normal liver



Liver with cirrhosis



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Questions???