

# DIGESTIVE SYSTEM

Diseases and Disorders

DHO 8

# OBJECTIVES

- ▶ Discuss the diseases and disorders of the digestive system and related signs, symptoms, and treatment methods.
- ▶ Identify the following:

Appendicitis

Hepatitis A

Constipation

Gastroenteritis

Hernia

Ulcer

Cholecystitis

Hepatitis B

diarrhea

GERD

pancreatitis

ulcerative colitis

Cirrhosis

Hepatitis C

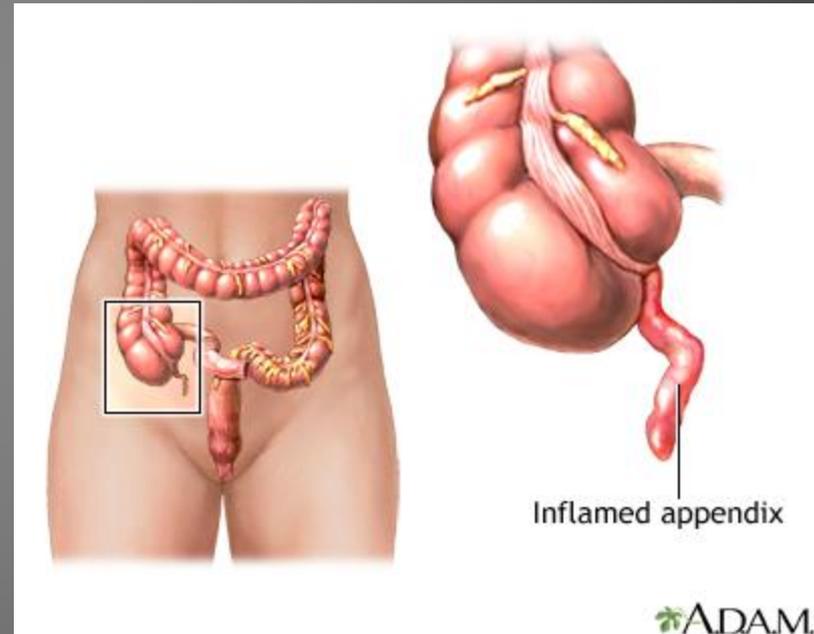
diverticulitis

hemorrhoids

peritonitis

# APPENDICITIS

- ▶ An acute inflammation of the appendix
- ▶ Usually caused by an obstruction and infection
- ▶ Appendix can rupture possibly causing peritonitis
- ▶ Treated with an Appendectomy (either open or laparoscopically)



# SIGNS AND SYMPTOMS

- ▶ Generalized abdominal pain, that later localizes at RLQ
- ▶ N/V
- ▶ Mild fever
- ▶ Elevated WBC count

## APPENDICITIS



**\*Diagnosis\***

- Clinical signs and symptoms
- ↑WBC
- Abdominal Sonogram
- Exploratory Lap

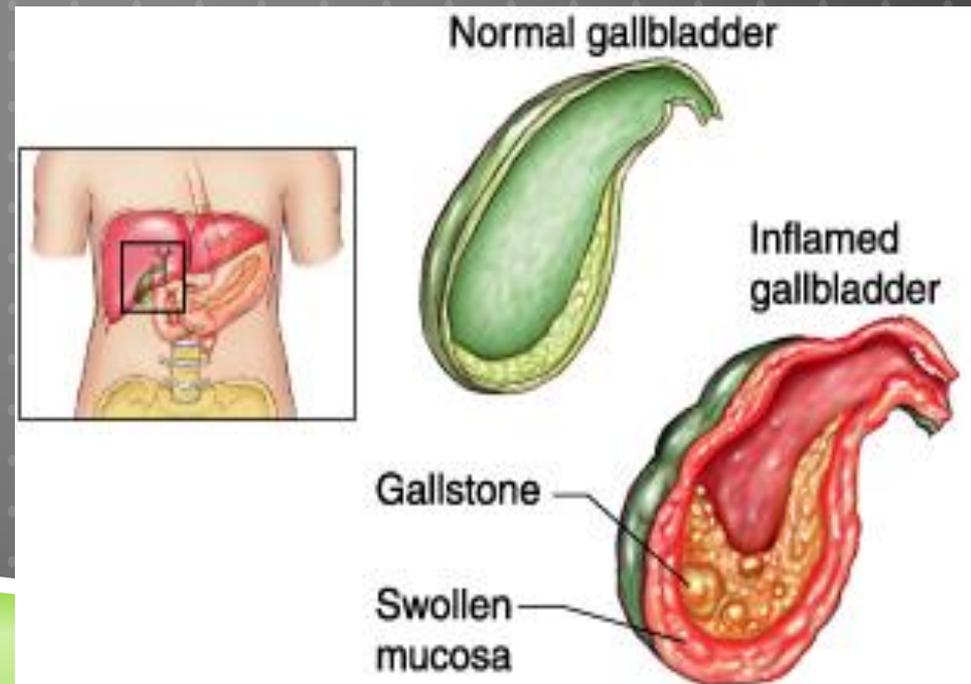
**Rebound Pain or Tenderness (RLQ) at McBurney's Point**

- Peak incidence 10-12 years
- Begins as dull, steady pain in periumbilical area...  
Progresses over 4-6 hours & localizes to right lower quadrant
- Low grade fever
- Nausea
- Anorexia
- Sudden pain relief may indicate rupture of appendix (Leads to peritonitis)

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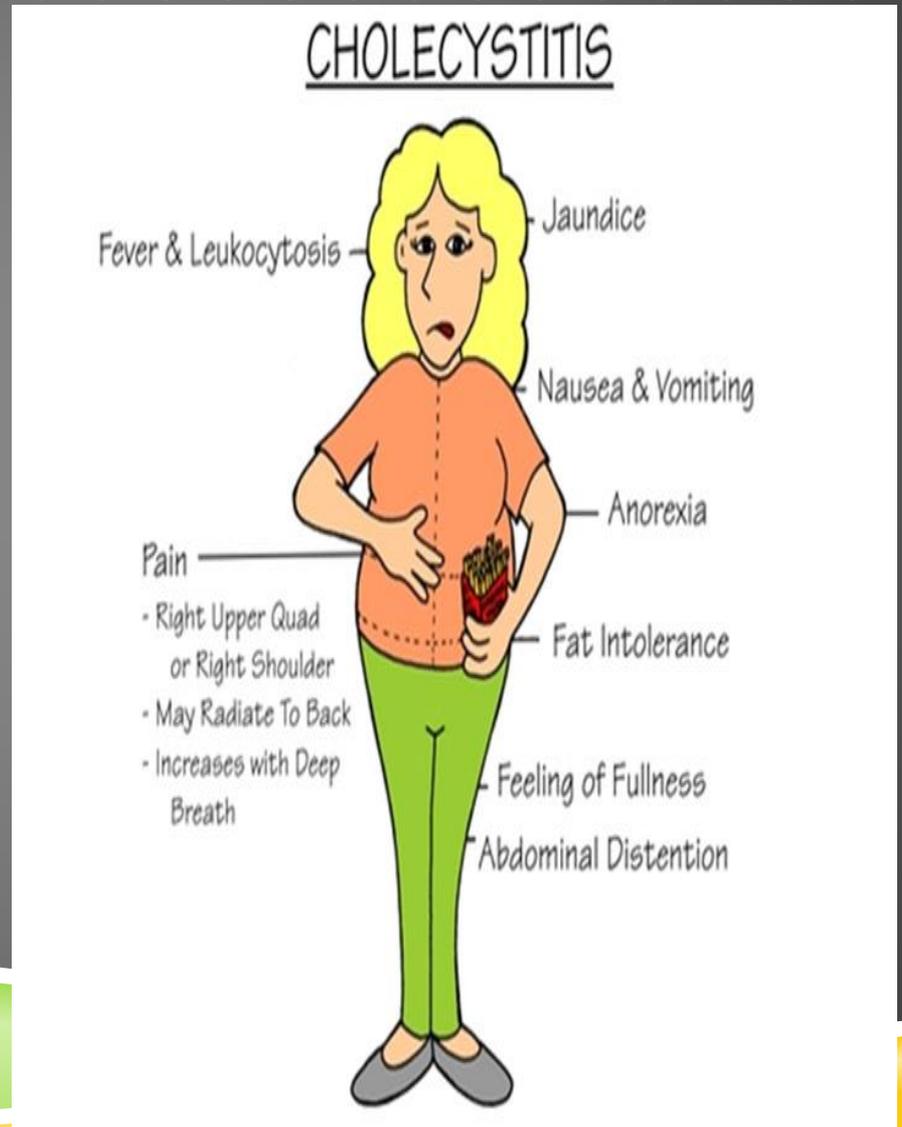
# CHOLECYSTITIS

- ▶ Inflammation of the gallbladder
- ▶ But, if gallstones form, it is cholelithiasis
- ▶ Gallbladder can rupture, esp if gallstones block the bile ducts.
- ▶ Treatments can be low-fat diet, lithotripsy (shock waves to shatter stones), and/or cholecystectomy



# SIGNS AND SYMPTOMS

- ▶ Symptoms occur after eating fatty foods
- ▶ Indigestion
- ▶ N/V
- ▶ Pain under rib cage, radiating to right shoulder



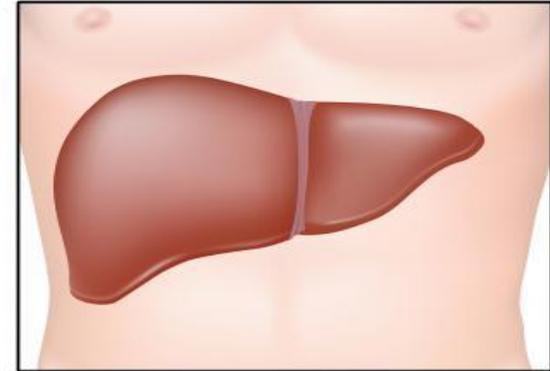
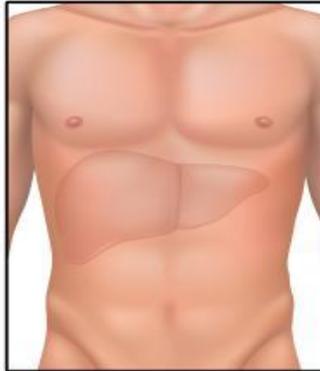
# CIRROHSIS

- ▶ Chronic destruction of liver cells with formation of fibrous, connective and scar tissue
- ▶ Can be caused by hepatitis, bile duct disease, chemical toxins, and malnutrition/alcoholism
- ▶ Treatment is directed at preventing further damage
- ▶ Prevent further damage by avoiding alcohol; proper nutrition, vitamins, diuretics, rest, infection prevention, and exercise
- ▶ Can have liver transplant

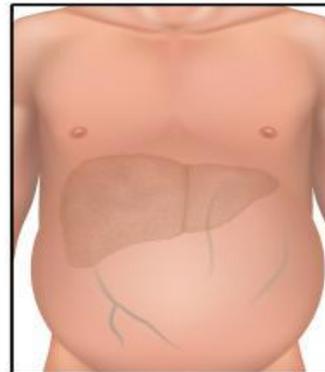
# SIGNS AND SYMPTOMS

- ▶ Liver enlargement
- ▶ Anemia
- ▶ Indigestion
- ▶ Nausea
- ▶ Edema in legs and feet
- ▶ Hematemesis
- ▶ Nose bleeds
- ▶ Jaundice
- ▶ Ascites

## Cirrhosis



healthy liver



hepatic cirrhosis

# SIGNS AND SYMPTOMS WITH LIVER FAILURE

- ▶ Cirrhosis can lead to liver failure
- ▶ Disorientation
- ▶ Hallucinations
- ▶ Hepatic coma
- ▶ Death

Can have liver transplant



# CONSTIPATION

- ▶ Fecal material stays in the colon too long and causes excessive absorption of water
- ▶ Feces becomes hard, dry, and difficult to eliminate
- ▶ Can be caused by poor bowel habits, chronic laxative use (causes lazy bowels), diet low in fiber, certain digestive diseases, use of opioid pain medications and diuretics
- ▶ Treatment included high fiber diet, fluids, and exercise. Probiotics for gastric motility, stool softeners to make stool easier to pass. Severe cases need manual disimpaction (digital manipulation).

I haven't pooped in a week.

I'm going to die.



# DIARRRHEA

- ▶ Frequent watery stools
- ▶ Caused by infection, stress, diet, irritated colon, toxic substances
- ▶ Can be very dangerous in children d/t excessive fluid loss
- ▶ Treatment is to eliminate the cause, adequate fluid intake, and modify your diet
- ▶ Anti-motility agents can slow movement of stool and probiotics can help with non-pathogenic flora



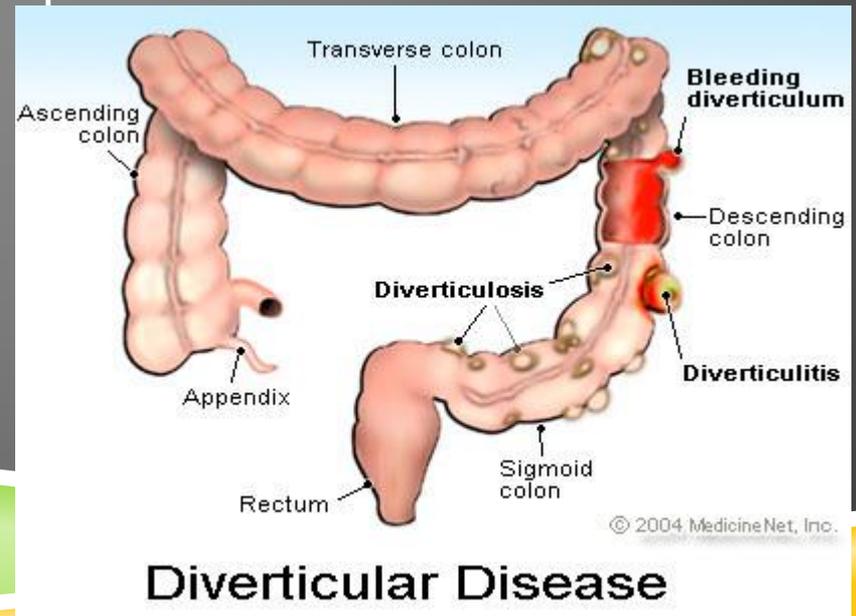
# DIARRHEA

- ▶ Clostridium difficile (C. diff) is an aggressive form of diarrhea
- ▶ Using high dose or multiple abx usually is cause
- ▶ Hospitalization and severe illness are risk factors
- ▶ S/S: frequent watery stools, abdominal cramping, dehydration, weight loss, and with severe-organ failure and death.
- ▶ Trx: d/c current abx and start a different abx, probiotics, and hydration
- ▶ FMT (fecal microbiota transplantation) is more effective and less costly than abx

My Vrspot: What does your poo say about you?

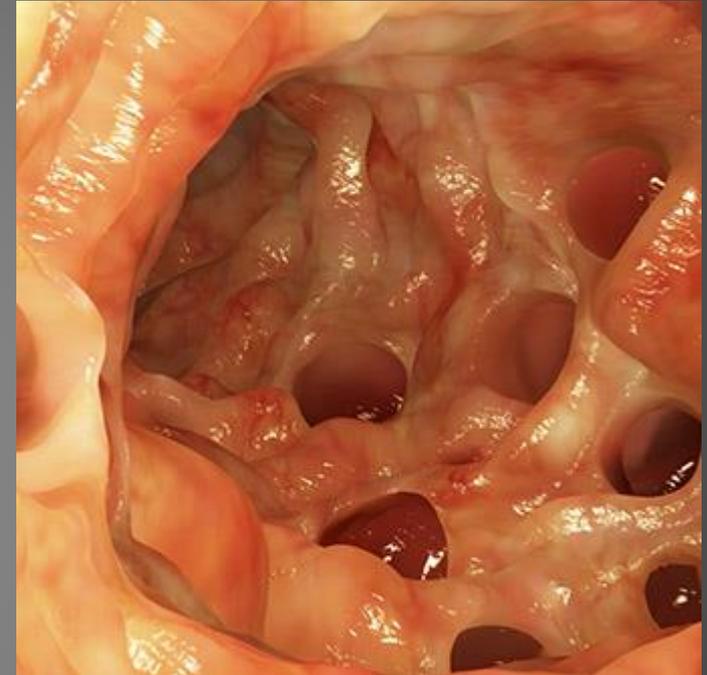
# DIVERTICULITIS

- ▶ An inflammation of the diverticula (sacs that form in the intestine as mucosal lining pushes thru muscle)
- ▶ Can be caused by trapped fecal matter and bacteria
- ▶ Diverticula can abscess or rupture, causing peritonitis
- ▶ Treatment includes antibiotics, stool softeners, pain meds, probiotics, high fiber diet, sx to remove affected part



# SIGNS AND SYMPTOMS

- ▶ Varies with the amount of inflammation
- ▶ Abdominal pain
- ▶ Irregular bowel movements
- ▶ Flatus
- ▶ Constipation or diarrhea
- ▶ Abdominal distention
- ▶ Low grade fever
- ▶ n/v



**Picture of Diverticulitis**



[View More](#)

# END DAY 1

- ▶ Watch videos on Vrsport: cholecystitis, gall stones, diverticular disease, diverticulosis
- ▶ Lab for skills: G-tube and NG tube

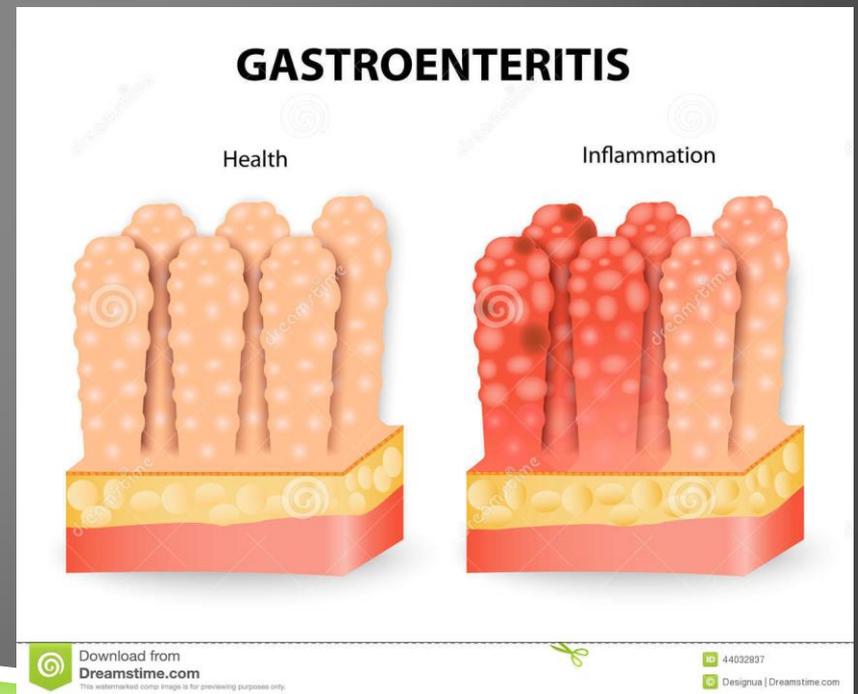
How to Insert NG Tube

G Tube Feeding

Giving Meds thru G Tube

# GASTROENTERITIS

- ▶ Inflammation of mucous membrane that lines the stomach and intestinal tract
- ▶ Can be caused by food poisoning, infection, toxins
- ▶ Treatment is rest and increased fluid intake
- ▶ If severe, abx, IVF, antiemetics, and medications to slow peristalsis
- ▶ Probiotics may be helpful for prevention



# SIGNS AND SYMPTOMS

- ▶ Abdominal cramping
- ▶ n/v
- ▶ Fever
- ▶ Diarrhea



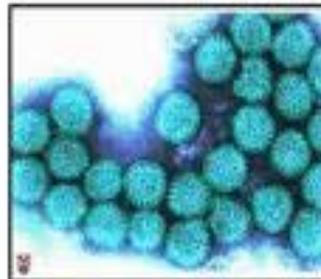
## Causes of Gastroenteritis

### ▶ Viral: (60% of cases)

Rota virus, Norwalk virus  
Adenovirus , Enteroviruses

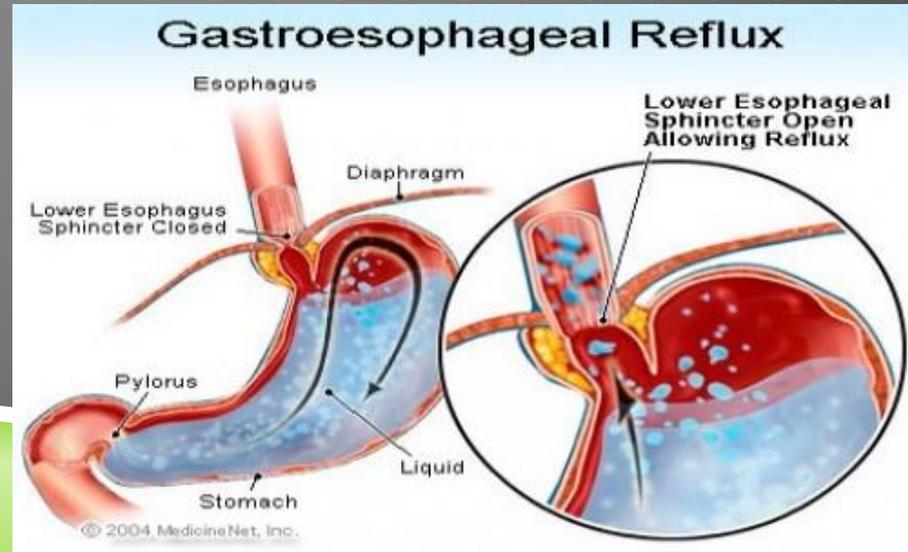
### ▶ Criteria:

- Age less than 2 years.
- common in winter.
- associated with URTI.
- pyrexia < 38.5C



# GERD

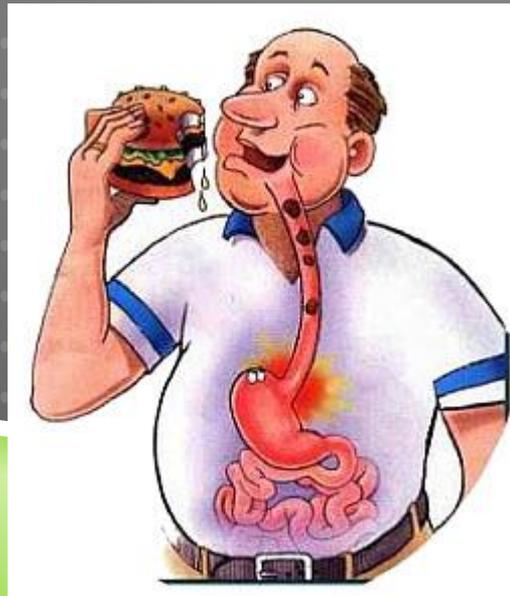
- ▶ Gastroesophageal reflux disease
- ▶ Chronic digestive disease
- ▶ Happens when stomach acid flows back (reflux) into your esophagus thru the lower esophageal sphincter (becomes weak and opens on its own or does not close)
- ▶ Reflux causes irritation, inflammation, and damage to the lining of esophagus



# GERD

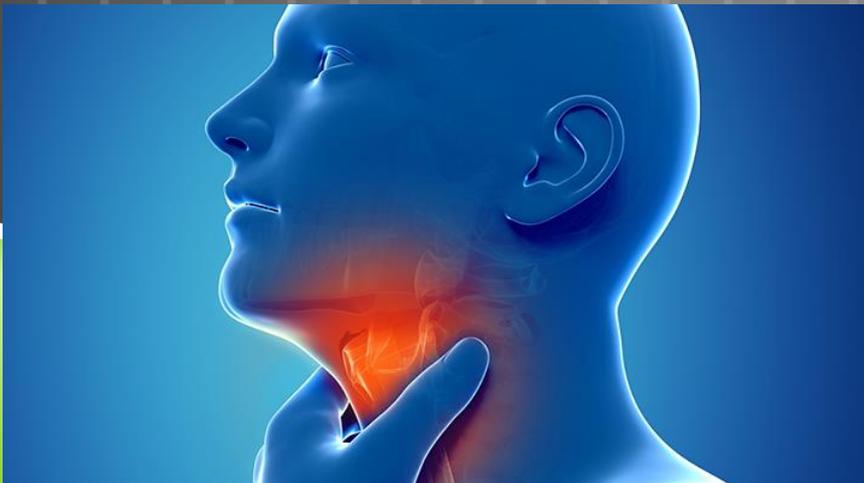
Risk Factors include:

- Obesity
- Pregnancy
- Hiatal hernia
- Smoking



# SIGNS AND SYMPTOMS

- ▶ Chest burning or pain aka Heartburn
- ▶ Dysphagia
- ▶ Sour taste in mouth
  
- ▶ DX with GERD if signs and symptoms
  - ✓ occur at least twice each week



# TREATMENT FOR GERD

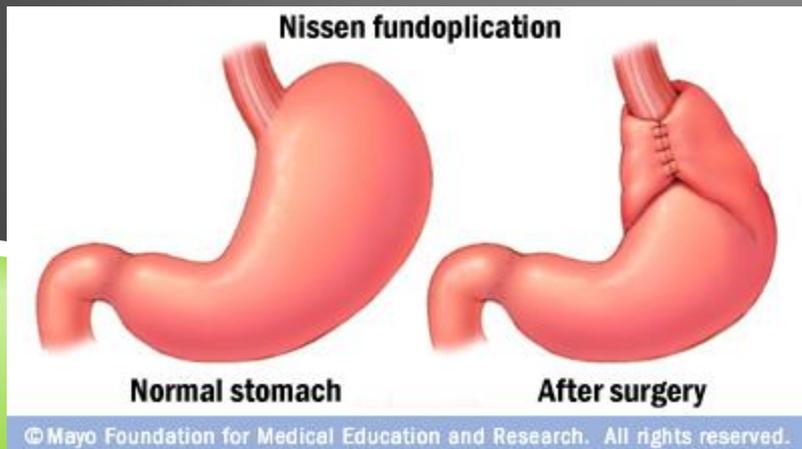
## Lifestyle changes:

- ▶ **Losing weight**; excess weight puts pressure on your abdomen, pushing up your stomach and causing acid to back up into your esophogus
- **Loose-fitting clothes**; tight clothes around your waist put pressure on your abdomen and lower esophogeal spincter (aka cardiac spincter)
- **Eat smaller meals**
- **Stay upright after eating**; wait at least 3 hours after eating to lie down or go to bed

# TREATMENT FOR GERD

## Medications:

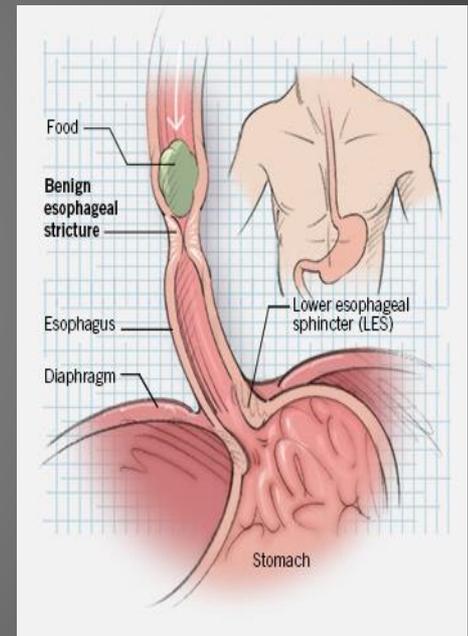
- To neutralize stomach acid
- To reduce or block stomach acid production
- Prokinetics used to strengthen sphincter and speed gastric emptying
- If not successful, Nissen fundoplication surgery (laparoscopic procedure)-tightens the sphincter by wrapping the upper stomach around it



# SECONDARY ISSUES GERD

Chronic inflammation of the lining of the esophagus can cause:

- Scar tissue to form and create esophageal strictures (they narrow the esophagus and make it difficult for food to pass thru)
- Esophageal ulcers (open sores) that bleed
- Tissue changes can lead to Barrett's esophagus, a precancerous condition



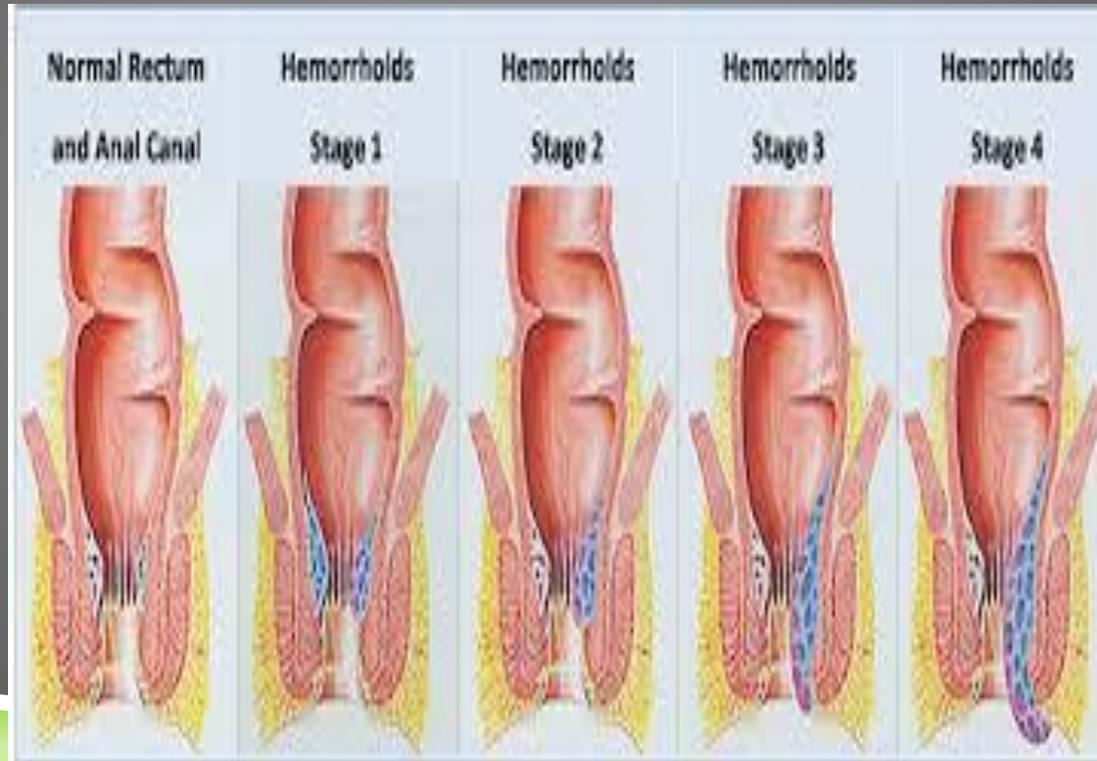
# HEMORRHOIDS

- ▶ Painful dilated or varicose veins of rectum and/or anus
- ▶ Caused by straining to defecate, constipation, pressure during pregnancy, insufficient fluid intake, laxative abuse, prolonged sitting or standing
- ▶ Signs and symptoms may be pain, itching, and bleeding in rectal area
- ▶ Treatment includes high fiber diet, increased fluids, stool softener, sitz baths, warm moist compresses; creams or medicated pads containing witch hazel or hydrocortizone
- ▶ Rubber band ligation-small rubber band around hemorrhoid and cuts off blood supply.
- ▶ Sclerotherapy used by injecting solution that shrinks it
- ▶ May need hemorrhoidectomy



# SIGNS AND SYMPTOMS

- ▶ Pain
- ▶ Itching
- ▶ bleeding



# HEPATITIS

- ▶ Viral inflammation of the liver
- ▶ Several types but main are A, B, C
- ▶ Vaccines for A and B (HBV recommended for health care workers)
- ▶ Treatment methods included rest and diet high in protein and calories, and low in fat
- ▶ Liver transplant may be needed

# HEPATITIS A

- ▶ Aka infectious hepatitis
- ▶ Highly contagious
- ▶ Transmitted in food or water contaminated by the feces of an infected person
- ▶ Most benign and usually self-limiting
- ▶ Vaccine available

## HEPATITIS A FACTS

**1** Is a viral infection of the liver spread when faecal matter enters the mouth

**2** May last several weeks and can be debilitating but most people recover completely

**3** Preventable with careful hand washing, keeping toilets and bathrooms clean, avoiding infected water sources

**SYMPTOMS INCLUDE**

nausea vomiting

**SPREAD BY**

direct contact food & beverages cups & spoons

and any other objects handled by the infected person

Source: <http://www.medicalinfotourism.com>

# HEPATITIS B

- ▶ Aka serum hepatitis
- ▶ Transmitted by body fluids
  - Blood and Serum
  - Saliva and breastmilk
  - Semen and Vaginal secretions
- ▶ More serious than type A
- ▶ Can lead to chronic hepatitis or cirrhosis
- ▶ HCW receive the vaccine

## Jammi Hepatitis B-Aware

Spread through....

Hepatitis B

**Don't  
let it  
defeat  
you.**



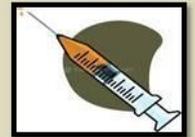
Blood transfusions



Sexual Contact  
with an infected  
person



Tattoo or  
acupuncture with  
unclean needles  
or instruments



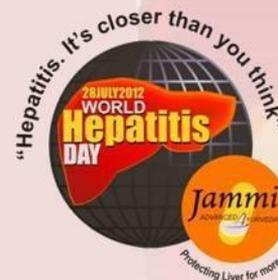
Shared needles  
during drug use



Shared razors,  
toothbrushes &  
nail clippers

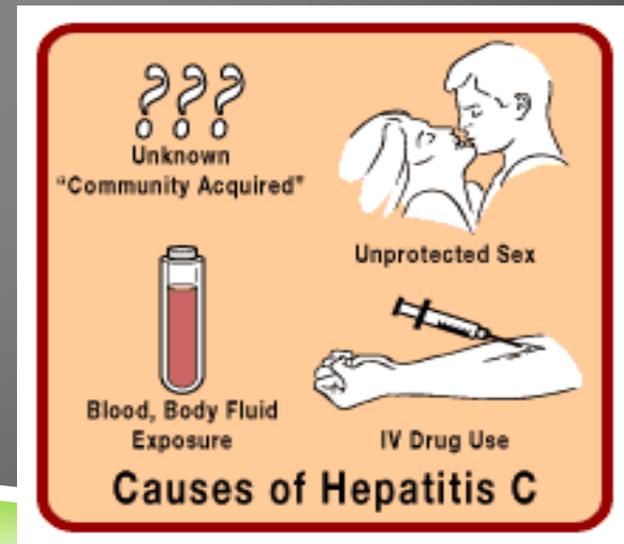
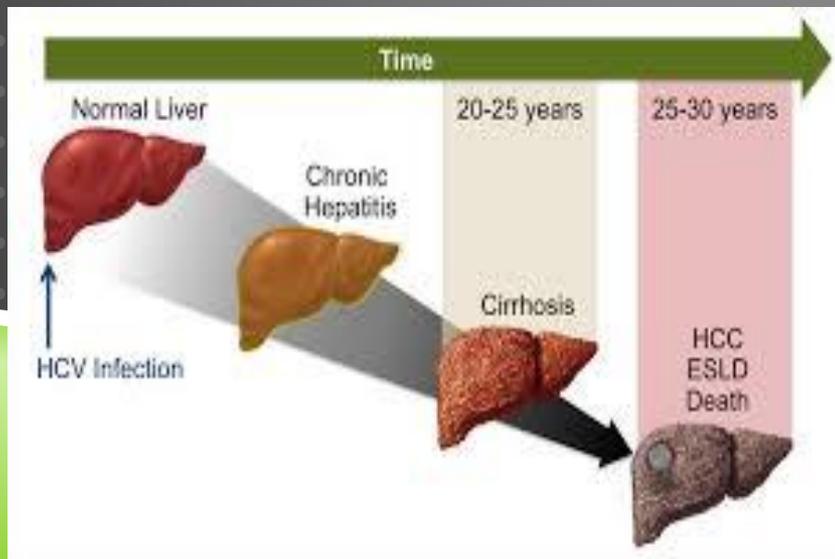


Direct contact  
with infected  
blood



# HEPATITIS C

- ▶ Also spread through contact with blood or body fluids
- ▶ Transmission includes sharing needles with drugs, getting stuck by sharp, or passing from mother to infant during birth
- ▶ More likely to progress to chronic hepatitis, cirrhosis, or both
- ▶ No vaccine, but currently using anti-viral agents (DAA's) as an effective treatment such as teleprevir and boceprevir



# SIGNS AND SYMPTOMS OF HEPATITIS

- ▶ Fever
- ▶ Anorexia
- ▶ n/v
- ▶ Fatigue
- ▶ Dark-colored urine
- ▶ Clay-colored stool
- ▶ Myalgia
- ▶ Enlarged liver
- ▶ jaundice



# END DAY 2

- ▶ Watch Vrsport videos: Understanding GERD, Hep A & B, Hemorrhoids
- ▶ To lab for skills: colostomy

A quick explanation of colostomies

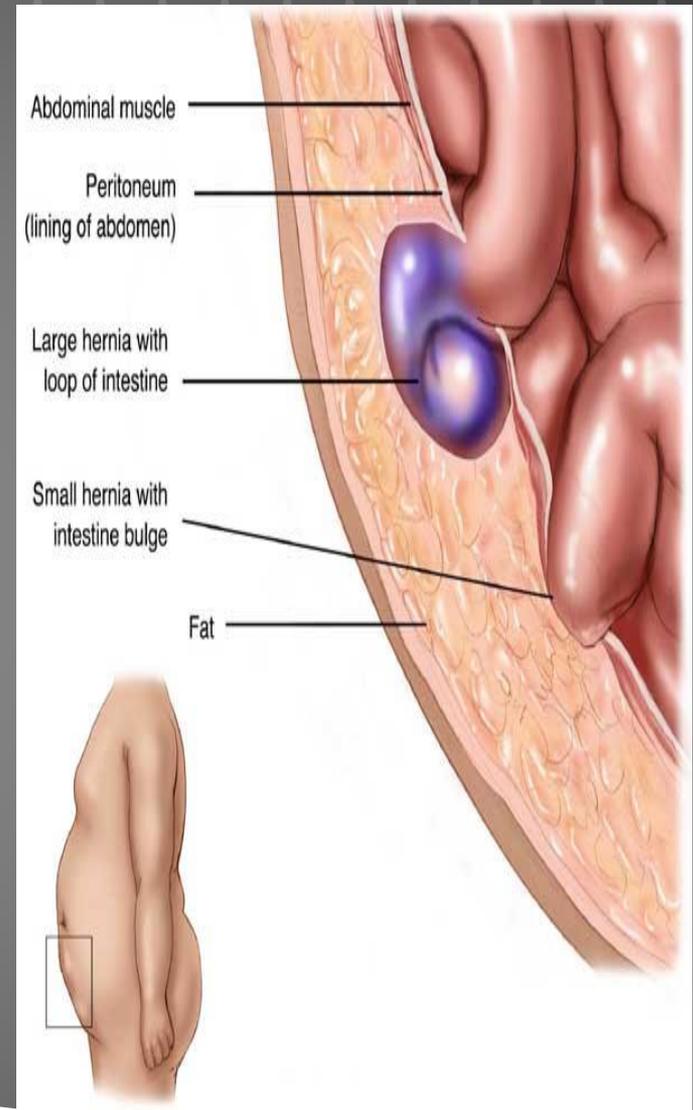
Colostomies explained

Ostomy care

Nursing skills ostomies

# HERNIA

- ▶ A rupture
- ▶ Occurs when an internal organ pushes through a weakened area or natural opening in a body wall
- ▶ Treatment may include a bland diet, small frequent meals, staying upright after eating, and surgical repair
- ▶ If the hernia cannot be pushed back into place (reduced), herniorrhaphy (sx repair) performed



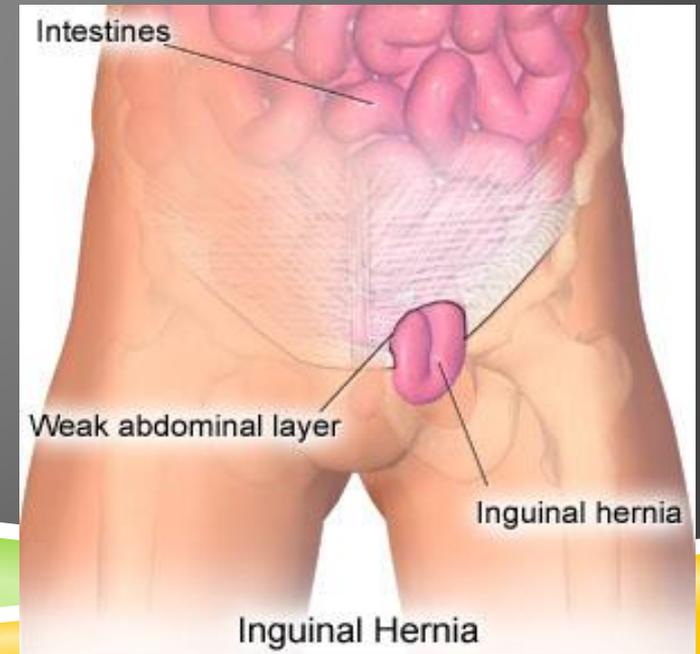
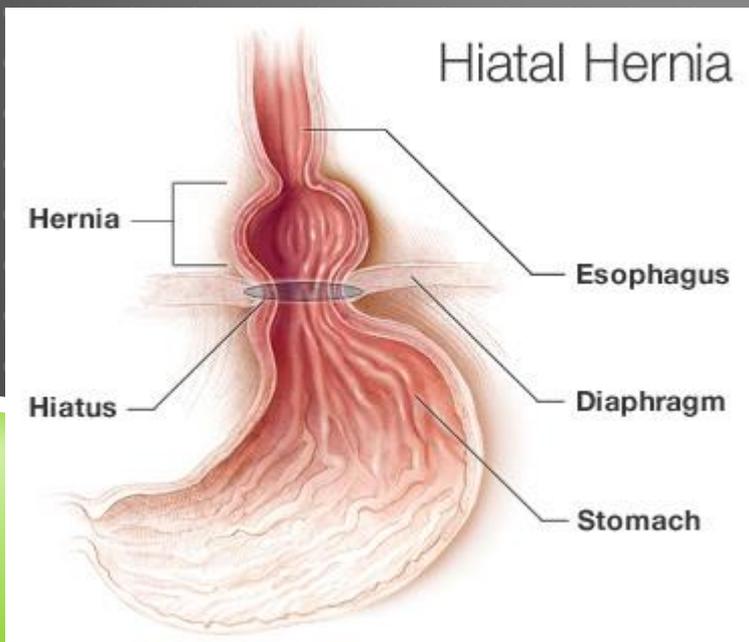
# TYPES OF HERNIAS

## ▶ Hiatal hernia

- Stomach protrudes through the diaphragm and into the chest cavity through the opening for the esophagus (hiatus!)

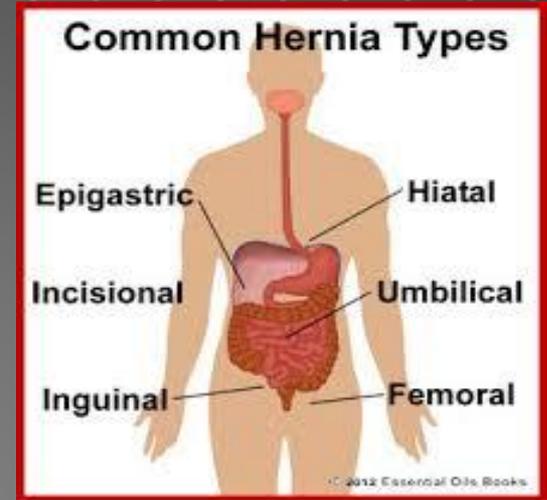
## ▶ Inguinal hernia

- Section of the small intestines protrudes through the inguinal rings of the lower abdominal wall



# SIGNS AND SYMPTOMS

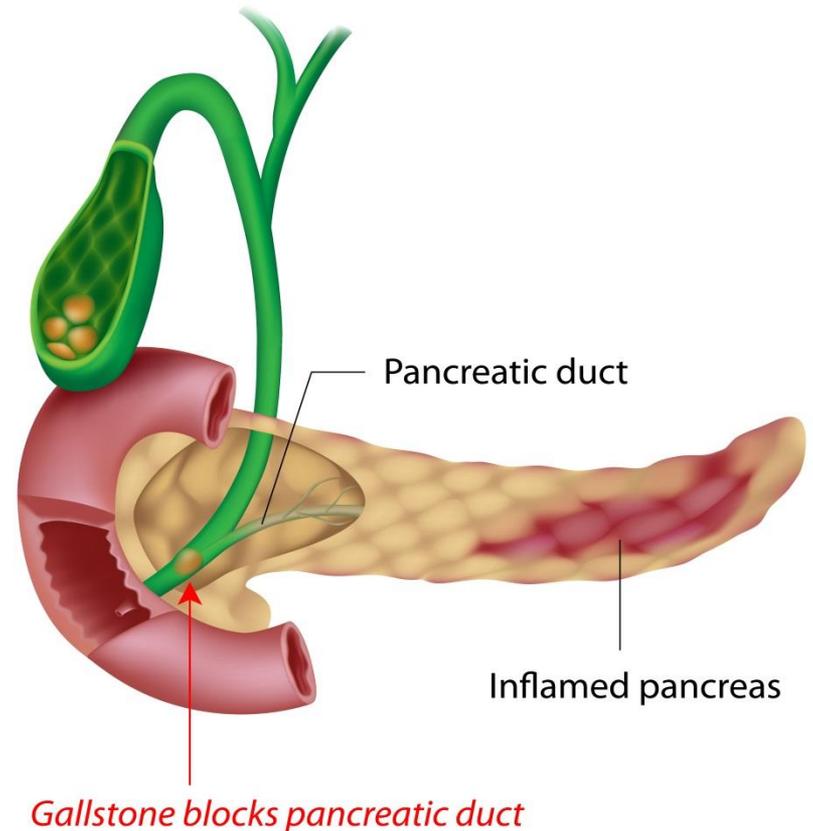
- ▶ Heartburn
- ▶ Stomach distention
- ▶ Chest pain
- ▶ Difficulty swallowing



# PANCREATITIS

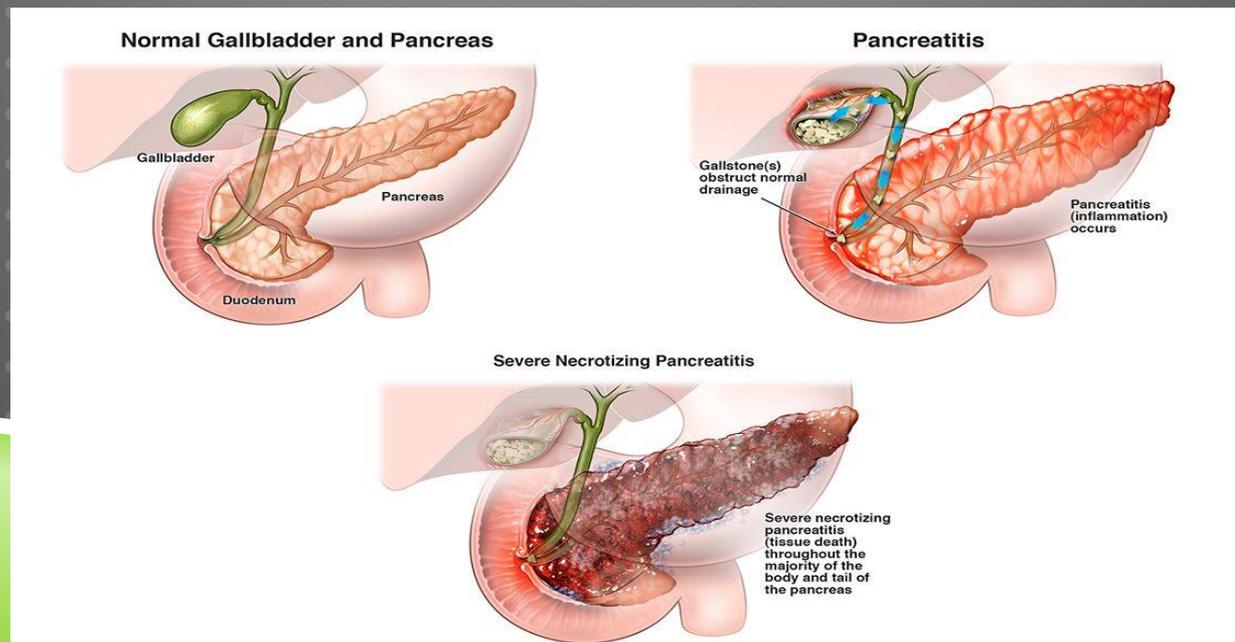
- ▶ Inflammation of the pancreas
- ▶ Pancreatic enzymes begin to digest the pancreas itself!!
- ▶ In turn, the pancreas becomes necrotic, inflamed, and edematous.
- ▶ If the damage includes the blood vessels in the pancreas, hemorrhage and shock can result.

## Acute Pancreatitis



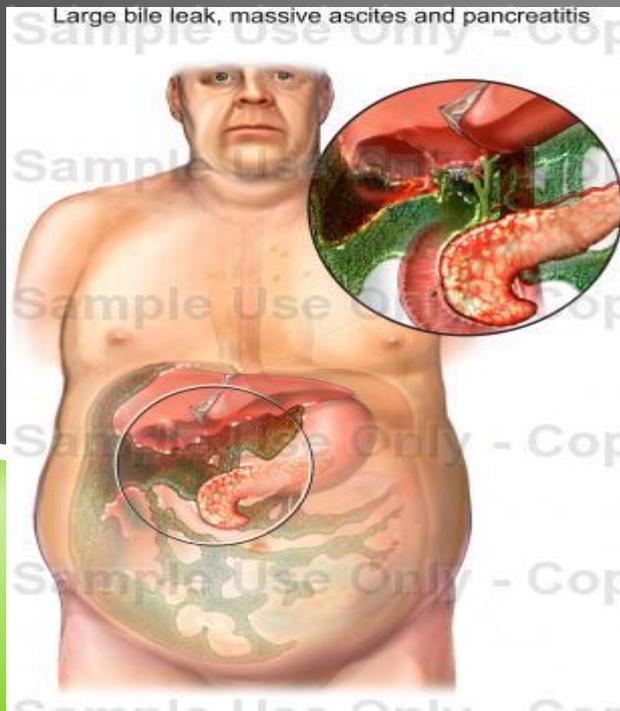
# PANCREATITIS

- ▶ Most common cause is gallstones blocking the pancreatic duct
- ▶ Can be caused by too much alcohol
- ▶ Also can have idiopathic, or unknown cause
- ▶ Treatment depends on the cause; cholecystectomy if gallstones. If cause is alcoholism or unknown, pain meds and nutritional support is needed.
- ▶ Idiopathic or alcoholic pancreatitis has poor prognosis and results usually in death.



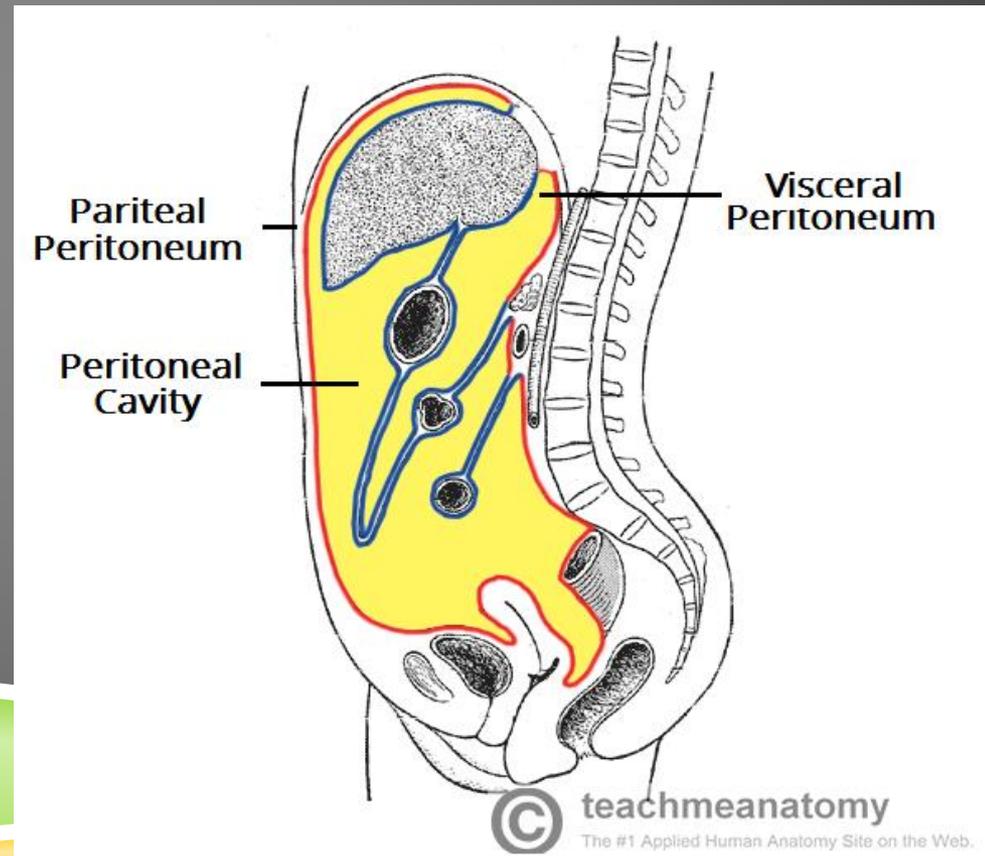
# SIGNS AND SYMPTOMS

- ▶ Severe abdominal pain that radiates to the back
- ▶ n/v
- ▶ Diaphoresis
- ▶ Jaundice



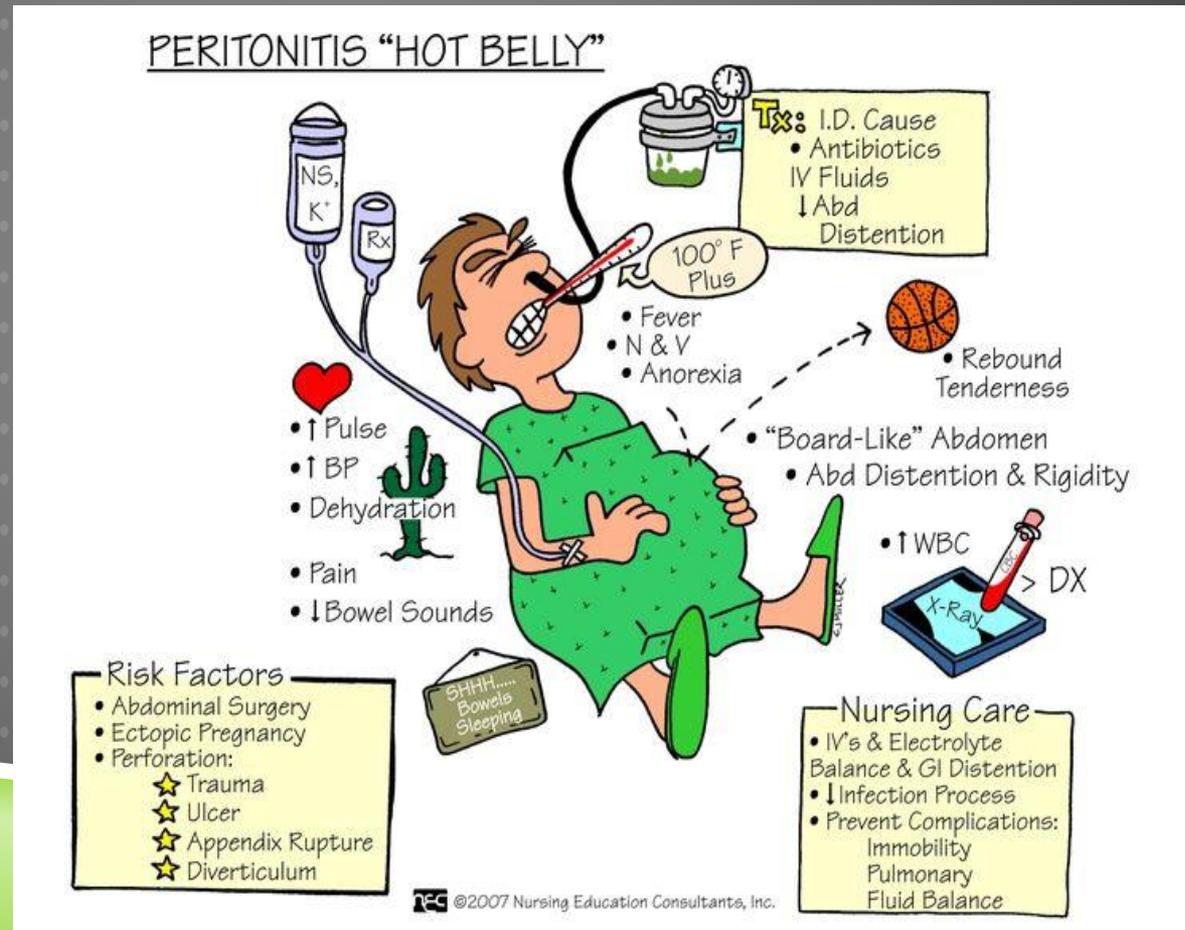
# PERITONITIS

- ▶ Inflammation of abdominal peritoneal cavity
- ▶ Usually caused by intestinal rupture and contents enter the peritoneal cavity
- ▶ Additional causes are ruptured appendix or gallbladder
- ▶ Treatment includes antibiotics and surgical repair of the damaged intestines



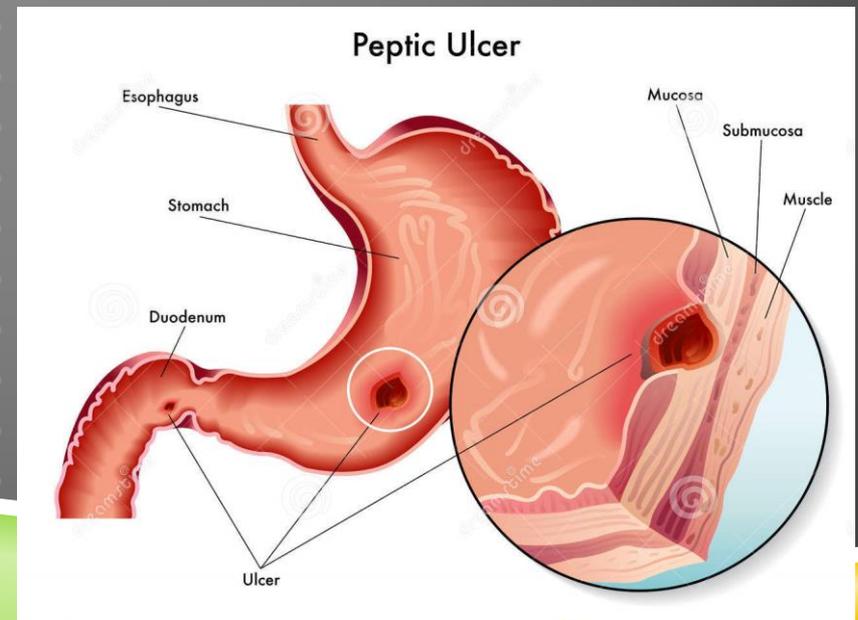
# SIGNS AND SYMPTOMS

- ▶ Abdominal pain and distention
- ▶ Fever
- ▶ n/v



# ULCER

- ▶ An open sore on the lining of the digestive tract
- ▶ Several types of ulcers:
  - Peptic ulcers r/t pepsin (enzyme of protein digestion)
    - Gastric ulcers are located in the stomach
    - Duodenal ulcers are located in the duodenum
- ▶ Major cause can be *h. pylori*, bacteria that burrow into stomach membrane, allowing stomach acids and digestive juices to create an ulcer



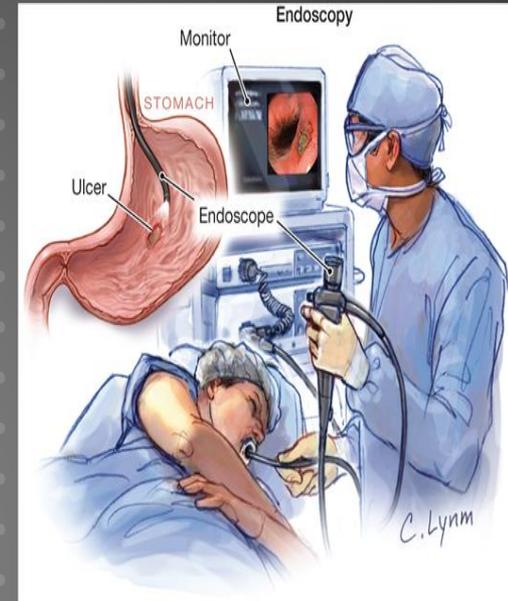
# ULCER

- ▶ Treatment includes antacids, bland diet, decreased stress, and avoiding gastric irritants such as alcohol, fried food, tobacco, caffeine
- ▶ If confirmed *h. pylori*, treat with abx, pepto-bismol
- ▶ In addition, proton pump inhibitor (PPI) such as Prilosec prescribed
- ▶ Can have surgery to remove affected area

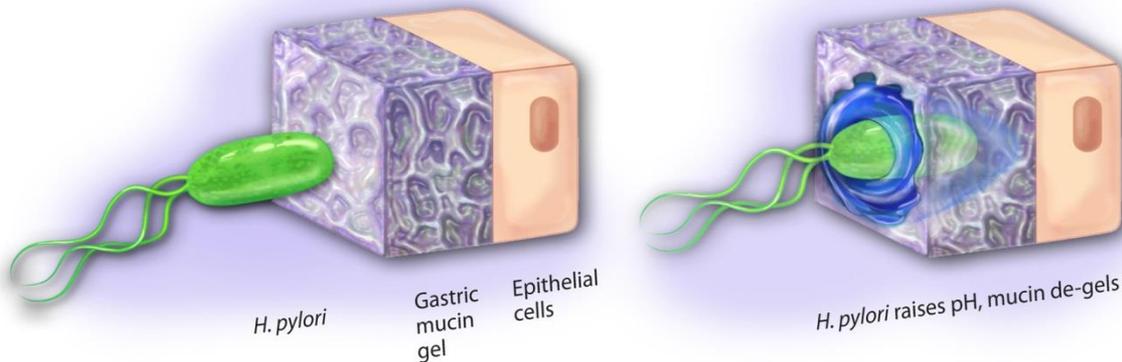


# SIGNS AND SYMPTOMS

- ▶ Burning pain
- ▶ Indigestion
- ▶ Hematemesis (bloody vomit)
- ▶ Melena (dark, tarry stool)

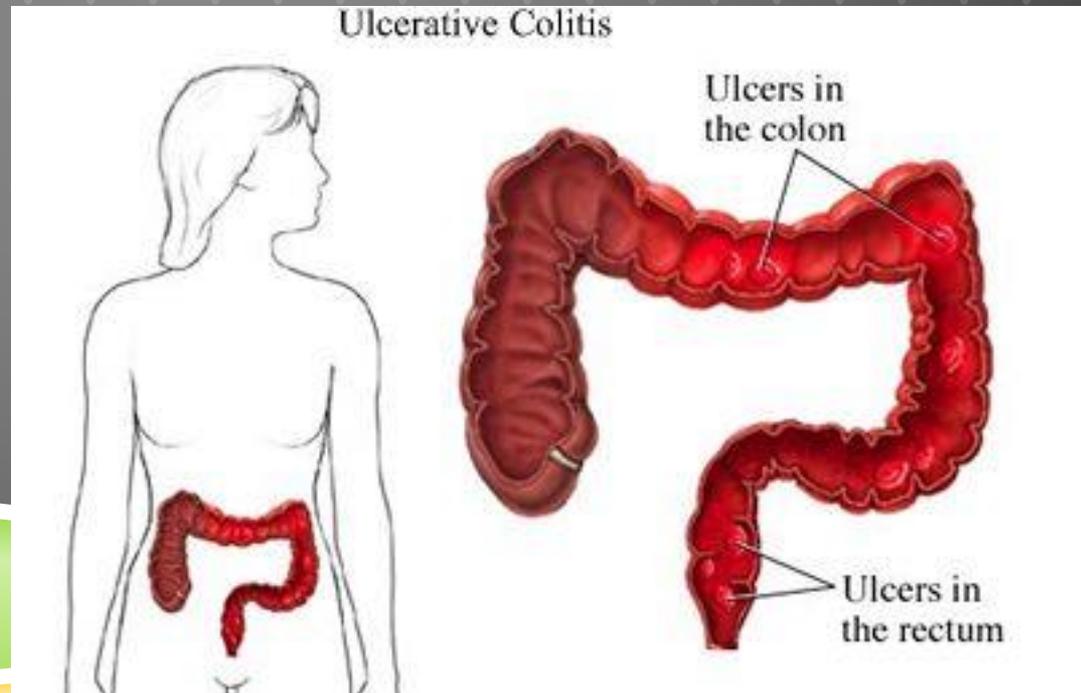
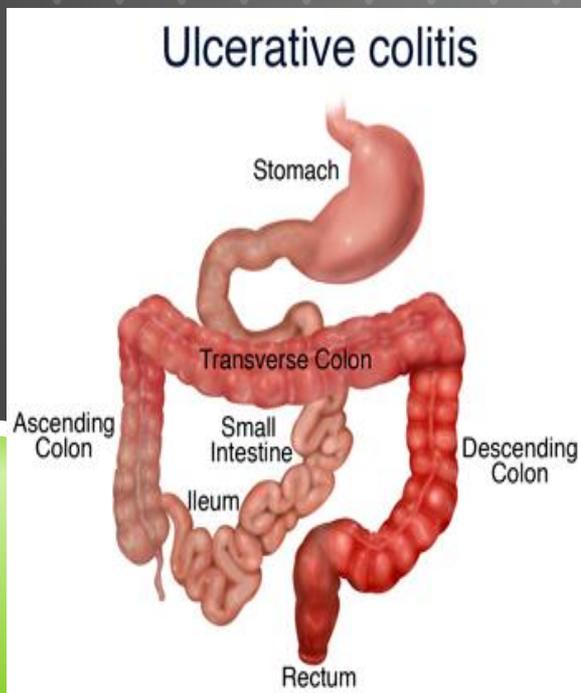


## *H. PYLORI* CROSSING MUCUS LAYER OF STOMACH



# ULCERATIVE COLITIS

- ▶ Severe inflammation of the colon with formation of ulcers and abscesses
- ▶ Exact cause unknown, although autoimmune reaction possible
- ▶ Thought to be aggravated by stress, food allergy, or genetics
- ▶ Can have periods of remission and exacerbation



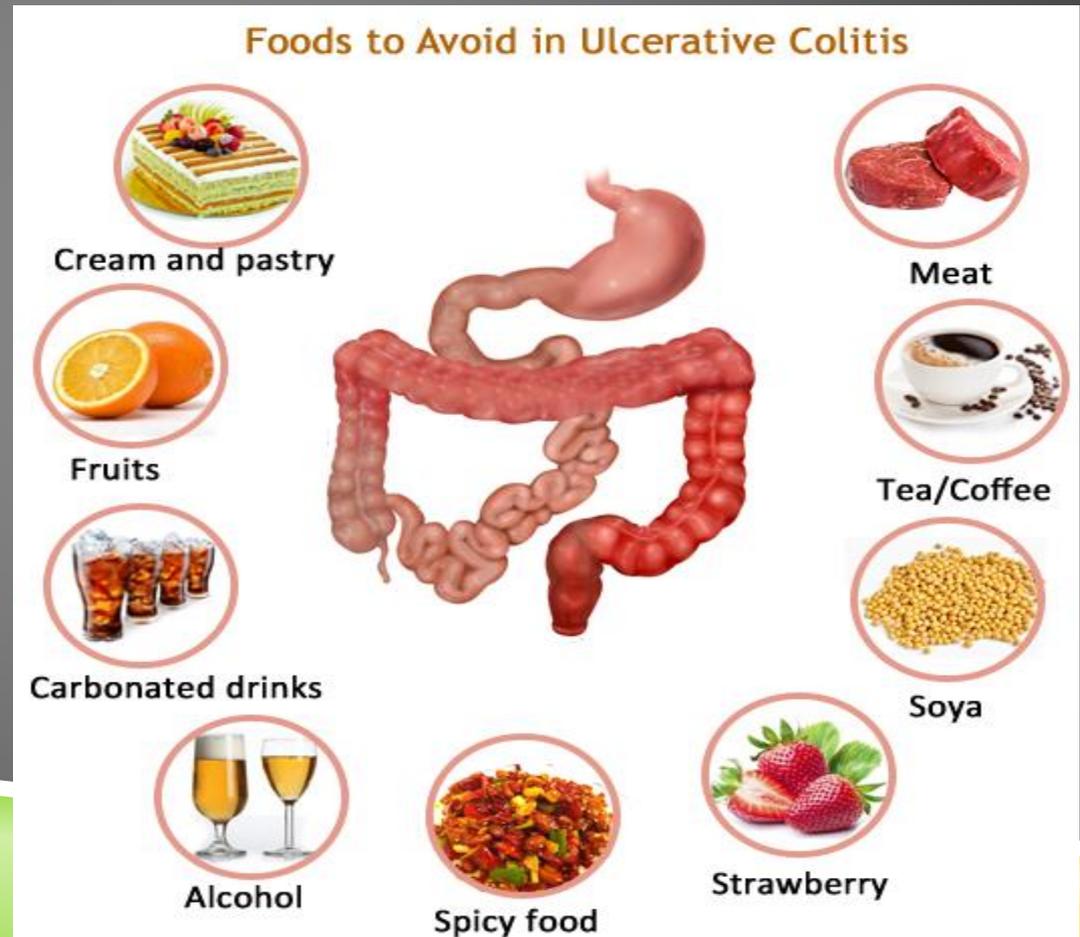
# ULCERATIVE COLITIS

- ▶ Treatment is directed at controlling inflammation with corticosteroids, immune system suppressors, reducing stress, pain relief, proper nutrition, and avoiding substances that aggravates the condition
- ▶ Treatment can also included surgical removal of the affected colon and creation of colostomy or another procedure called ileoanal anastomosis



# SIGNS AND SYMPTOMS

- ▶ Main symptom is diarrhea containing blood, pus, and mucous
- ▶ Weight loss
- ▶ weakness
- ▶ abdominal pain
- ▶ anemia
- ▶ anorexia



# END OF DAY 3

- ▶ Watch videos on Vrsport: repairing hernias, ulcers, what is ulcerative colitis
- ▶ To lab for skills: enemas

Addicted to coffee enemas

Nursing skills enemas