Example of Classroom Presentation Demonstrating the Scrambled Methodology

Developed by Kevin Emmons and Joseph Cipriano

(Note: Saving as a PDF has altered some formatting, availability of videos/animations, and dynamic highlighting in cases; this does not reflect the classroom experience.)

Case-Based and Unfolding Case Studies:

- Real-world patient cases serve as the foundation for discussion, guiding students through progressive clinical reasoning exercises.
- Cases unfold dynamically, requiring students to assess new information, refine their differential diagnoses, and determine appropriate nursing actions.

Active Learning with Decision-Making Integration:

- Lecture bursts introduce key concepts in short, focused segments before students apply them in case-based scenarios.
- Questioning explores the clinical significance of assessment findings, laboratory values, and diagnostic results.
- Interactive exercises, such as matching nursing priorities, medication management, and intervention sequencing, promote critical thinking.

NGN-Style (Next-Generation NCLEX) Questions:

- Includes bow-tie questions, case-based prioritization, and matrix multiple-choice items, simulating NCLEX-style decision-making.
- Reinforces real-world application, preparing students for both licensure exams and clinical practice.

Multimodal Learning Strategies:

- Visual elements such as pathology diagrams, treatment algorithms, and stepwise intervention charts reinforce complex concepts.
- Videos and linked resources provide deeper insights into procedures such as colonoscopy preparation, bowel obstruction management, and colorectal cancer screening.

Interactive Classroom Implementation:

- Students highlight findings, discuss trends, and justify decisions, fostering deep engagement.
- Socratic questioning challenges students to defend their rationale, reinforcing clinical judgment and prioritization skills.

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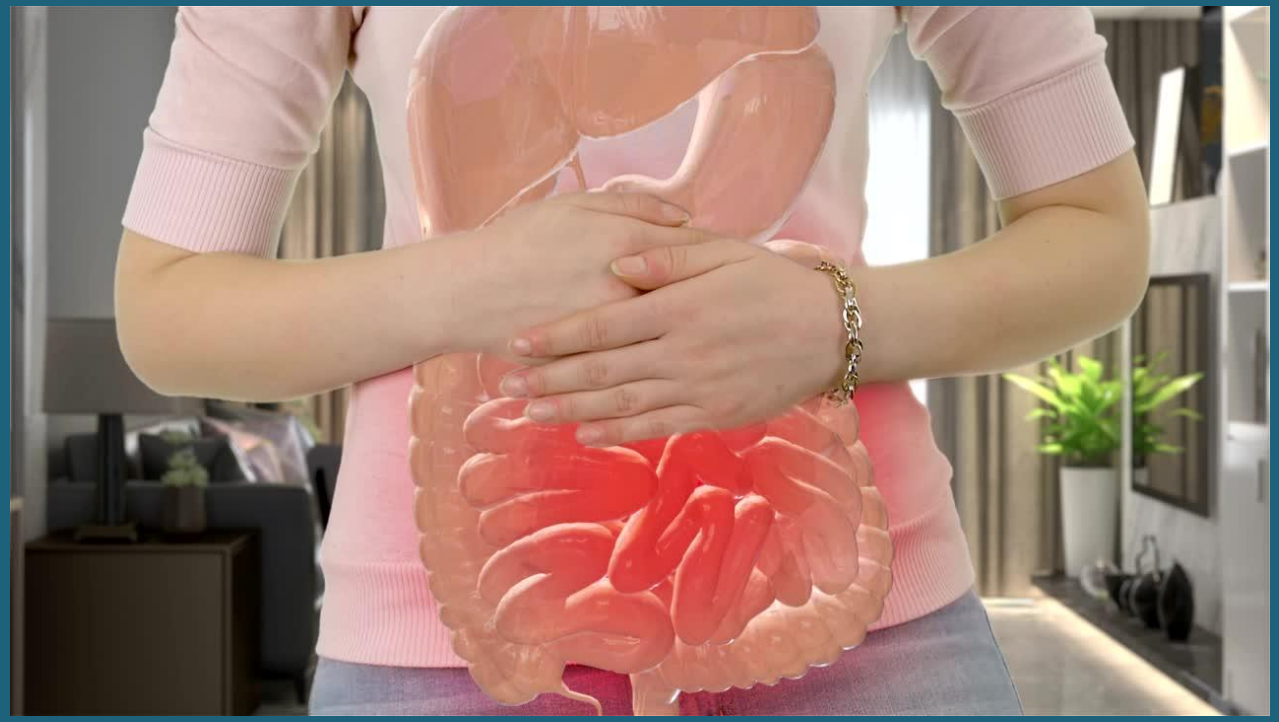
HEALTH AND ILLNESS IN ADULT POPUALTIONS

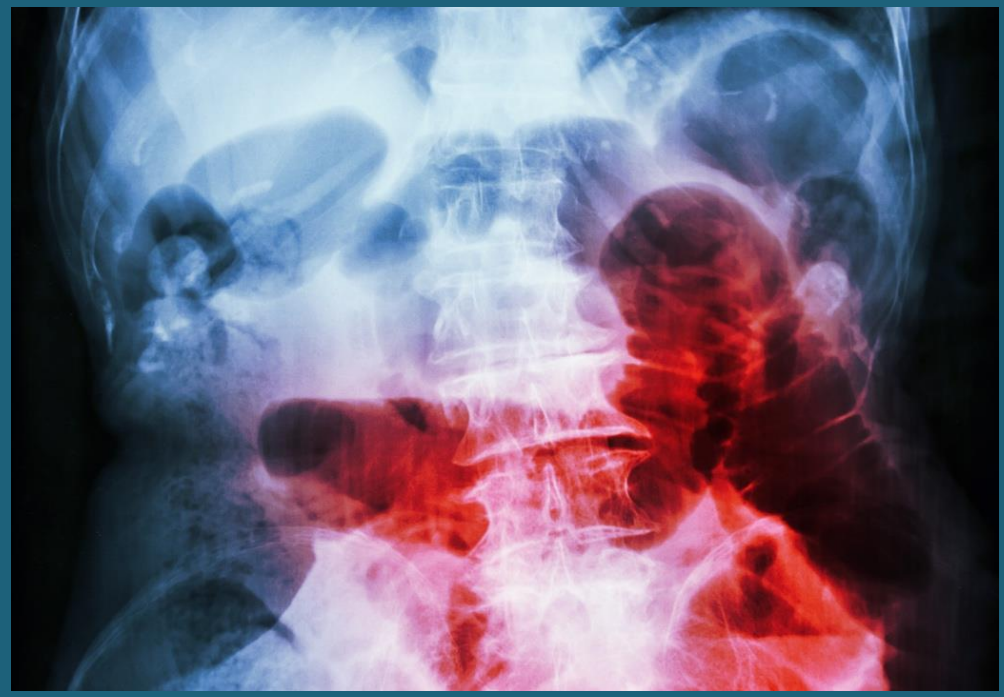


Gastrointestinal Case Studies

Dr. Kevin Emmons and
Dr. Joseph Cipriano

Topics Covered

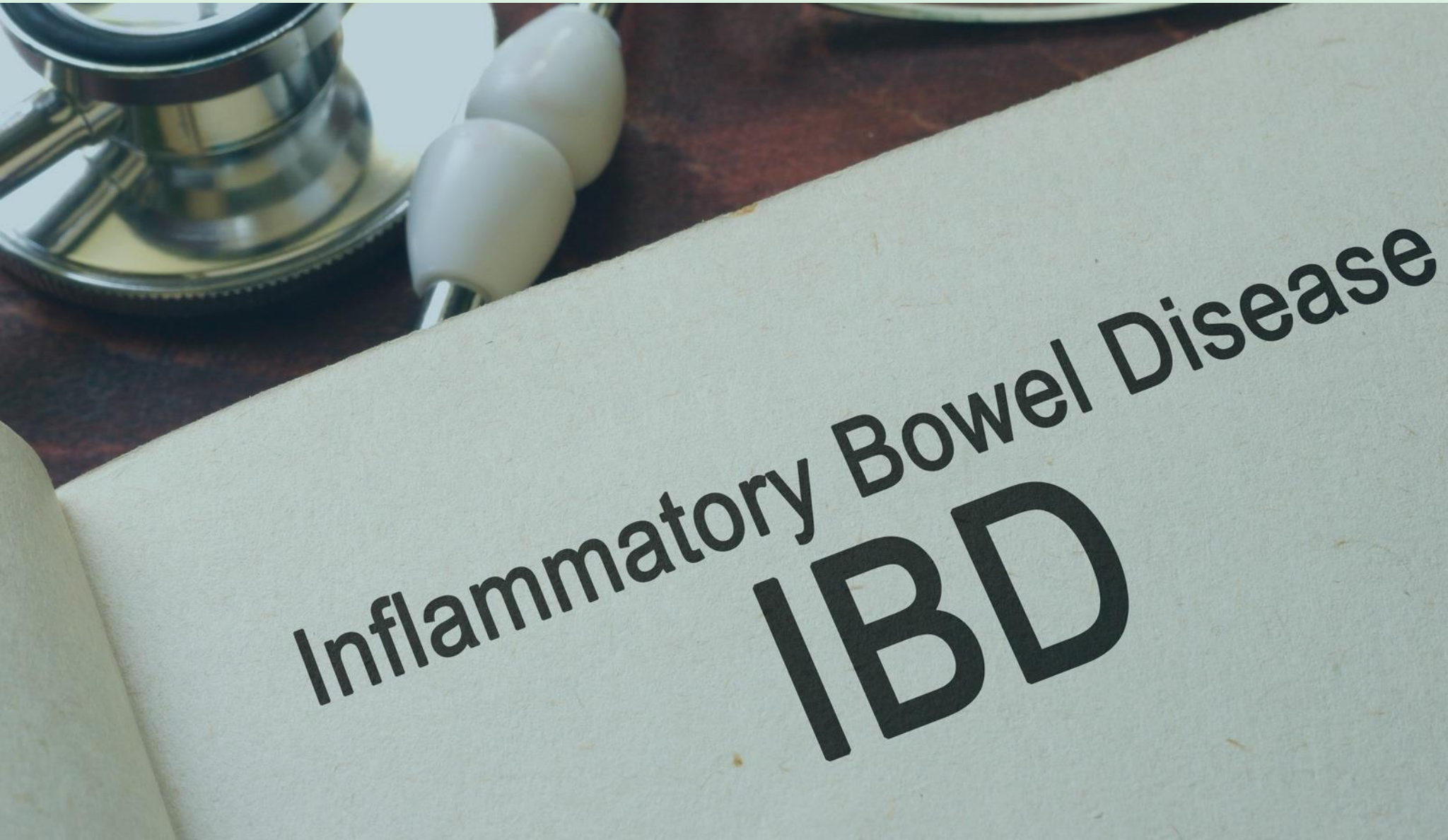
- Inflammatory Bowel Disease (IBD)
  - Crohn's Disease
  - Ulcerative Colitis
- Irritable Bowel Syndrome (IBS)
- Celiac disease
- Appendicitis
- Colon Cancer
- Diverticulitis
- Bowel Obstruction



Class Objectives

- **Irritable Bowel Syndrome (IBS):** Identify, differentiate, and manage IBS subtypes by assessing client-specific risk factors and evaluating nursing interventions for effectiveness.
- **Malabsorptive Disorders (e.g., Celiac Disease):** Recognize risk factors and signs of malabsorptive disorders, implement risk reduction strategies, and evaluate client adherence and response.
- **Inflammatory Bowel Disease (IBD):** Distinguish Crohn's disease from ulcerative colitis, prioritize nursing interventions to manage complications, and assess outcomes for improved client care.
- **Acute Abdominal Conditions:** Recognize and prioritize symptoms of acute abdominal conditions, implement timely interventions, and evaluate client progress to enhance decision-making in emergencies.
- **Colorectal Cancer with Ostomy Care:** Identify risk factors and signs of colorectal cancer, prioritize assessments (screening Guidelines) and preventive strategies, implement nursing interventions for both cancer management and ostomy care, and evaluate client outcomes to optimize adaptation and improve quality of life.

CASE 1



Grant H., a 26-year-old male, presents to the Emergency Department with a 3-month history of abdominal pain and watery, bloody stools. In the past 48 hours, he has experienced up to 12 bowel movements per day. Grant reports significant fatigue, requiring frequent naps, and occasional dizziness upon standing quickly. He denies any vomiting and reports no recent travel, changes in diet, or new restaurants.

Personal/Social History: Grant lives alone in his apartment and recently passed his APN boards, awaiting credentialing for a new job. He denies smoking and occasionally drinks 2 to 3 beers on weekends with friends.

PMH: DENIES

PSH: denies

Current Medications: Multivitamin daily

IDENTIFY PERTINENT POSITIVE AND NEGATIVE CLINICAL FINDINGS

Grant H. 26 M DOB 08/01/19XX MRN: 5001923 ED07

Allergies: NKDA Attending: Emmons, K. **Full Code**

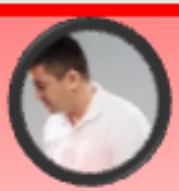
Time	Temp	BP	Heart Rate	Respirations	SpO_2	O_2 Source	Pain
1100	98.6 F oral	108/64	116	16	95%	Room Air	3/10 lower left quadrant pain

	Nursing Assessment
HEENT	**Head**: Normocephalic. **Eyes:** PERRLA, **Ears:** light reflex present, TM intact **Throat/Mouth:** mucous membranes dry, no ulcerations
CV	S1/S2 Tachycardia , +2 radial pulses bilaterally, no edema
Respiratory	clear bilaterally, AP Ratio 2:1, Symmetrical rise and fall of chest
GI	Soft, non-distended, left lower quadrant pain with and without palpation
MS	BUE & BLE 5/5, no deformities, moves all limbs purposefully, DTR intact
Neuro	A&O x4. Cranial Nerves II-XII grossly intact

Nursing Notes:

1100- Nurse BSN, RN

Pt here for abdominal pain and bloody watery stools x3 months. Pt was found to be tachycardic on exam with constant pain to the left lower abdominal quadrant. Not increased with palpation and no rebound tenderness. GU exam deferred until Provider Emmons examines the patient. Patient resting in the bed with call light in reach.



Grant H. 26 M DOB 08/01/19XX MRN: 5001923 ED07

Allergies: NKDA Attending: Emmons, K. **Full Code**

Provider Notes:

1130 Dictating Provider: Emmons, K.

HPI: 26 y/o male presents to the ED abdominal pain and bloody, watery stools x 3months. Pt reports stool frequency is 10 to 12 times per day and reports tenesmus. Pt endorses dizziness, suspect anemia, and/or dehydration. **ROS:** denies oral mucosal ulcerations, shortness of breath, chest pain or palpitations, renal calculi or history of autoimmune disorders **PE:** AA&Ox4 Tachycardic on exam, ***Lungs***: clear to auscultation bilaterally, ***Cardiac:*** S1/S2, tachycardia ***GI:*** soft with tenderness to the LLQ, no CVA tenderness, no rebound tenderness. **GU:** DRE was unremarkable for mass, or internal hemorrhoids.

Plan: Admit to medical surgical unit. Obtain the following:

CBC, BMP, ESR, CRP, Stool Culture....

Available Lab Results:

1. Highlight the abnormal values

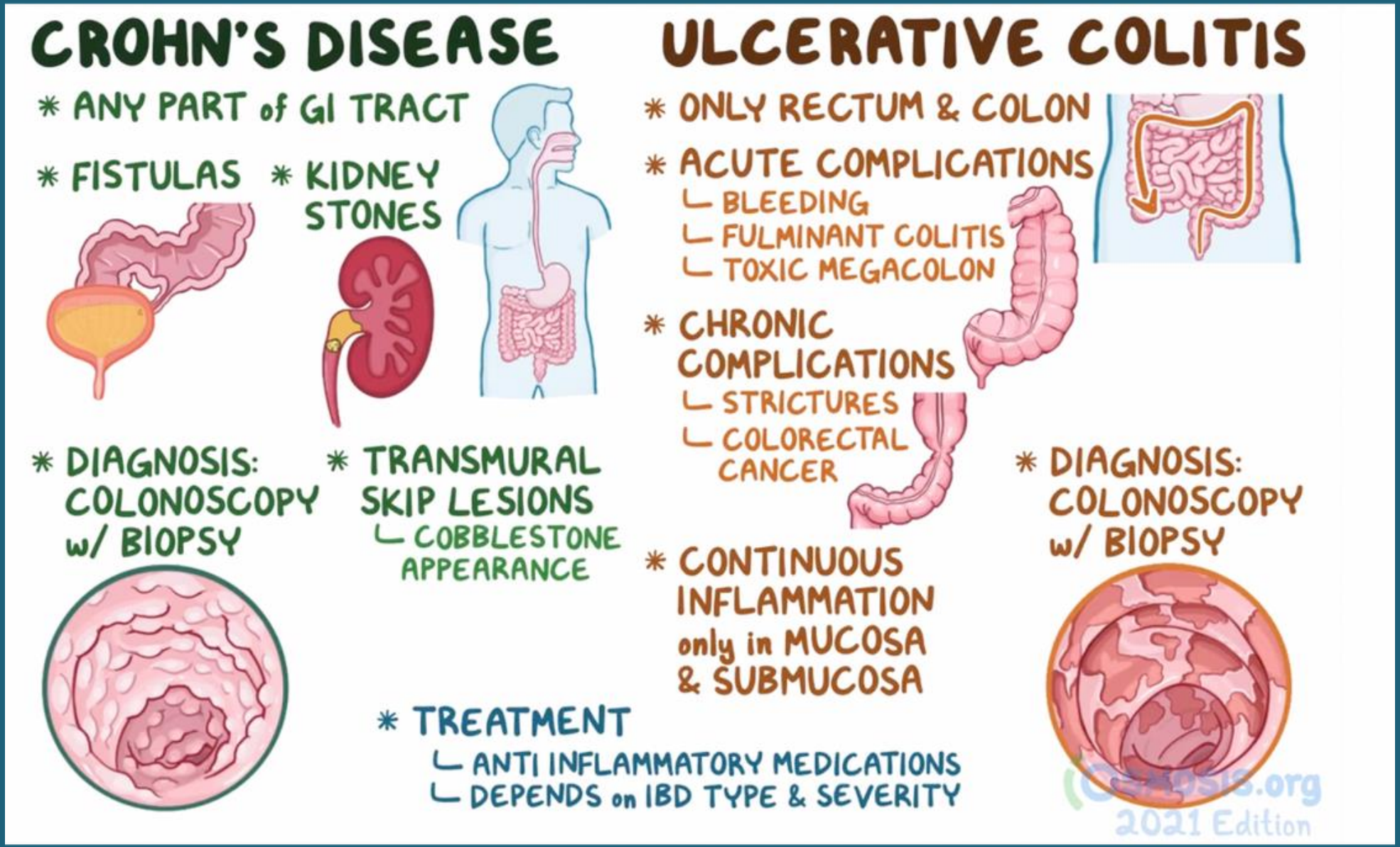
2. Analyze the clinical significance

	Current	Reference Range
Hemoglobin	10.7 g/dL	Males: 14–17.3 g/dL
		Females: 11.7–15.5 g/dL
Hematocrit	31%	Males: 42–52%
		Females: 36–48%
WBCs	6700	4,500–11,00 cells/mm3
Platelets	195,000	150,000–450,000 mm3
Sodium	142	135–145 mEq/L
Potassium	3.1	3.5–5.0 mEq/L
Calcium	9.1	8.2–10.2 mg/dL
Glucose	72	70 to 99 mg/dL
BUN	26	8 to 21 mg/dL
Creatinine	0.7	0.5 to 1.2 mg/dL

	Current	Reference Range
Albumin	3.0 g/dL	3.4 -5.4 g/dL
ESR	31 mm/hr	0-15 mm/hr
CRP	15 mg/L	8-10 mg/L
Stool Culture	Negative	Negative

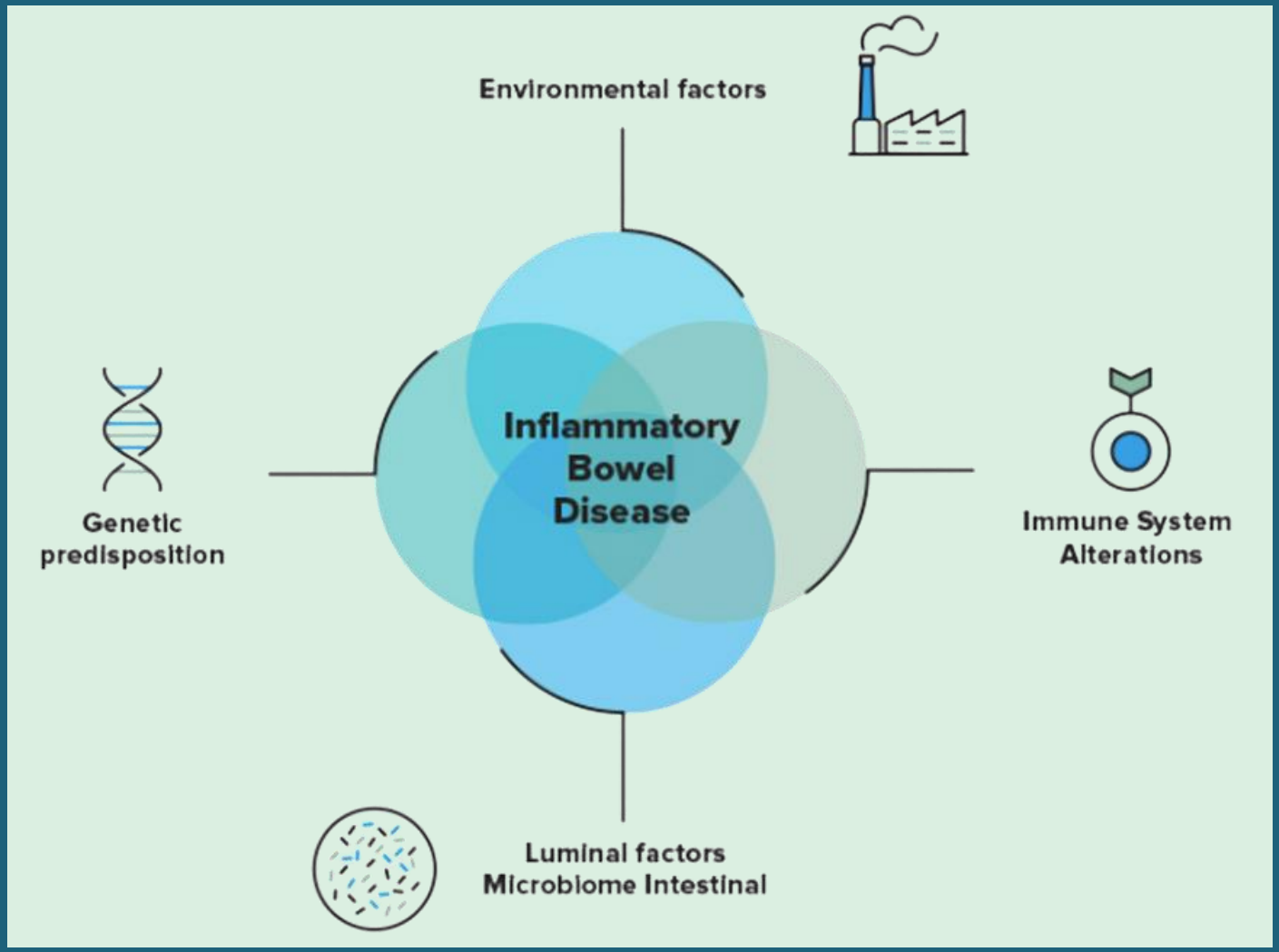
Clustering of Common Signs & Symptoms of IBD

Sign/Symptoms	Crohn's Disease	Ulcerative Colitis
Occurs anywhere in the GI tract	✓	
Involved the rectum and Colon		✓
Transmural Distribution	✓	
Mucosa and Submucosa Distribution		✓
More commonly watery, Bloody stools		✓
Strictures and obstruction	✓	
Tenesmus		✓
Weight loss	✓	
Fistula formation	✓	
Increased risk for colorectal cancer		✓



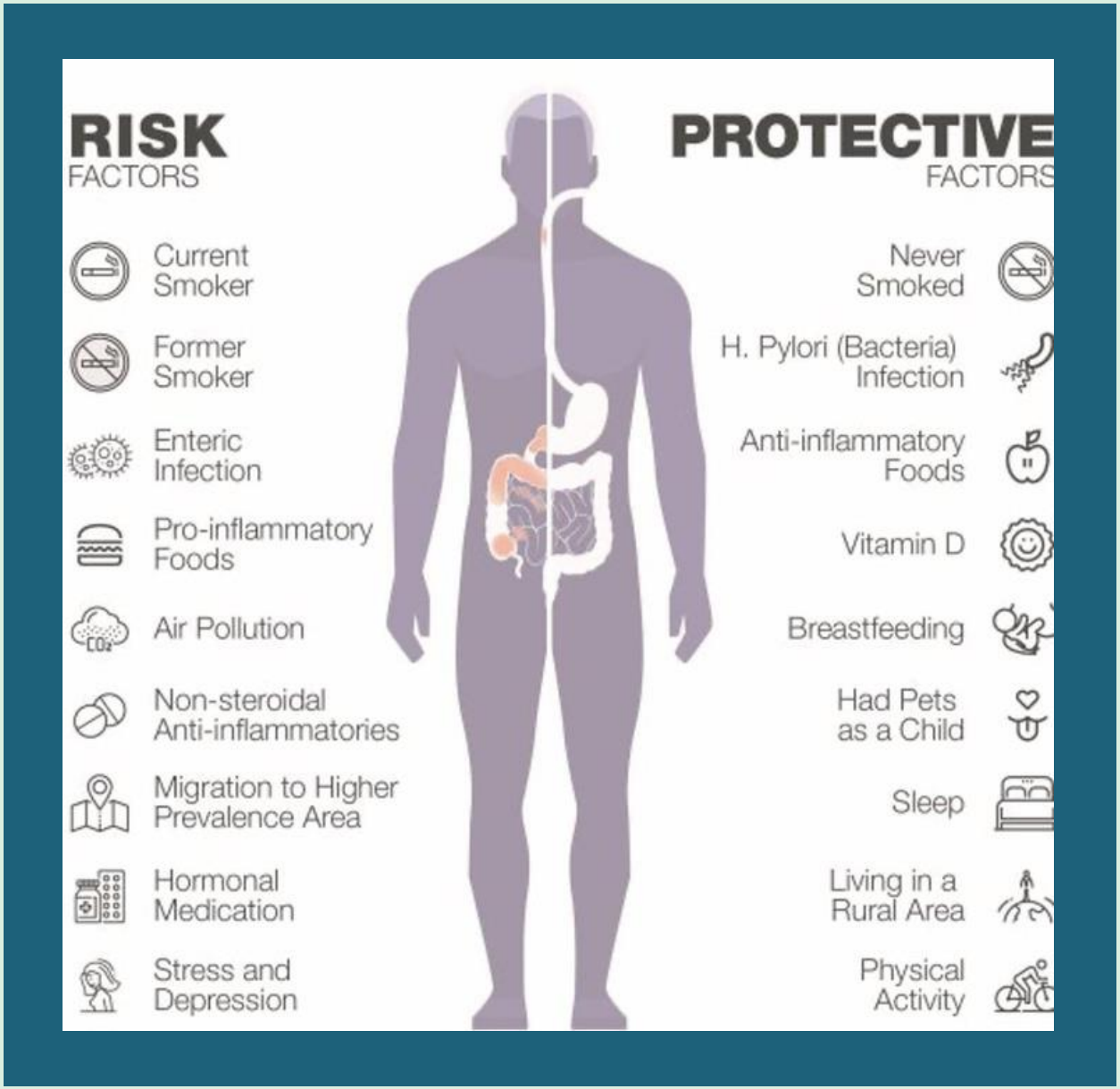
Osmosis. (2021). *Inflammatory bowel disease: Crohn's disease and ulcerative colitis* [Image]. Osmosis. Retrieved from https://www.osmosis.org/learn/Inflammatory_bowel_disease

Risk Factors for IBD



Hospital Clínic de Barcelona. (n.d.). *Inflammatory bowel disease: Causes and risk factors.* Hospital Clínic de Barcelona. Retrieved from https://www.clinicbarcelona.org/en/assistance/diseases/inflamatory-bowel-disease/causes-and-risk-factors

Modifiable Risk Factors For IBD



Cancer Care Foundation of India. (n.d.). *Risk factors.* Cancer Care Foundation of India. Retrieved from https://ccfindia.org/risk.php

NURSING PRIORITIES FOR IBD

Choose the appropriate priority complication from box 1 and match it with the likely cause from box 2.

The nurse reviews the chart and determines that the client is at the highest risk for developing [Box 1] due to [box 2].

Box1: Complication	Box2 : Cause
infection	inflammation
dehydration	perforated bowel
malnutrition	diarrhea
ineffective coping	chronic disease

ANSWERS

- infection: perforated bowel
- dehydration: diarrhea
- malnutrition: inflammation
- ineffective coping: chronic disease

Knowledge Check

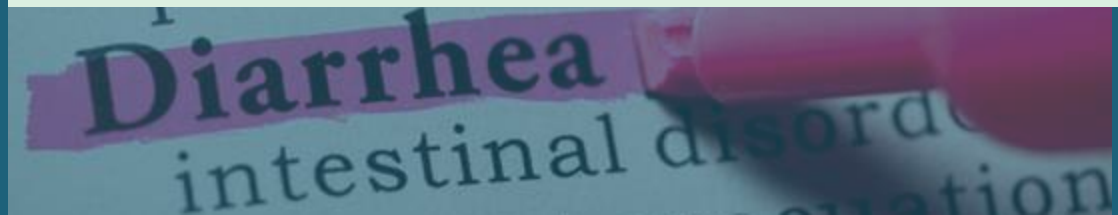
The nurse is creating a plan of care to maintain skin integrity for Grant due to frequent diarrhea. Which of the following should be included?

a)Soak in a sitz bath for 60 minutes after each bowel movement

b)Administer a soap suds enema to clear out the remaining stool in the colon

c)Cleanse with an antimicrobial scrub and vigorously dry

d)Wipe perianal area with warm water or gentle wet wipe and apply barrier cream.



Analyze the clinical significance

Knowledge Check

1. Choose the best options

2. Analyze the clinical significance

The nurse is providing education to Grant about the diagnostic colonoscopy scheduled for tomorrow morning. Which of the following will be included?

a)"You will be given bowel prep Polyethylene Glycol (PEG) 3350 to drink to evacuate your bowels. This will allow for an unobstructed view of your colon."

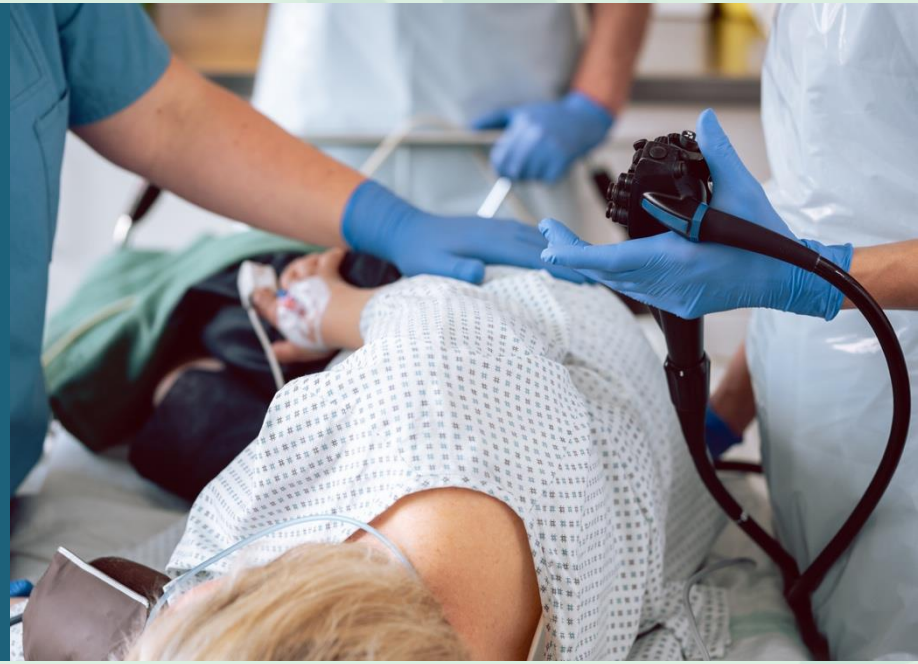
b)"You will be on a clear liquid diet up to 4 hours prior to your procedure."

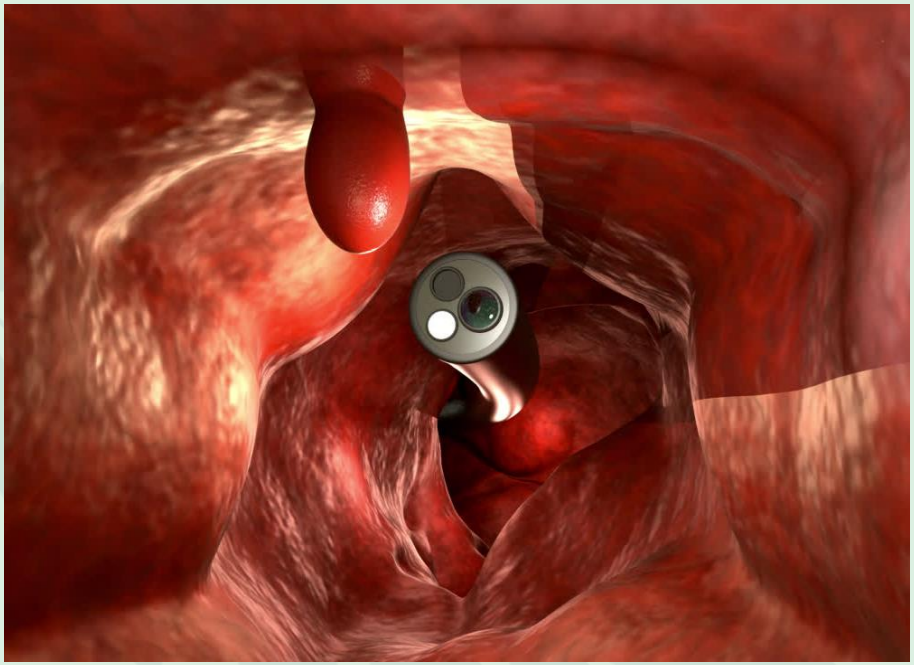
c)"You may drink red Gatorade, purple grape juice or orange Pedialyte to keep you hydrated since you will have frequent bowel movements with the bowel prep."

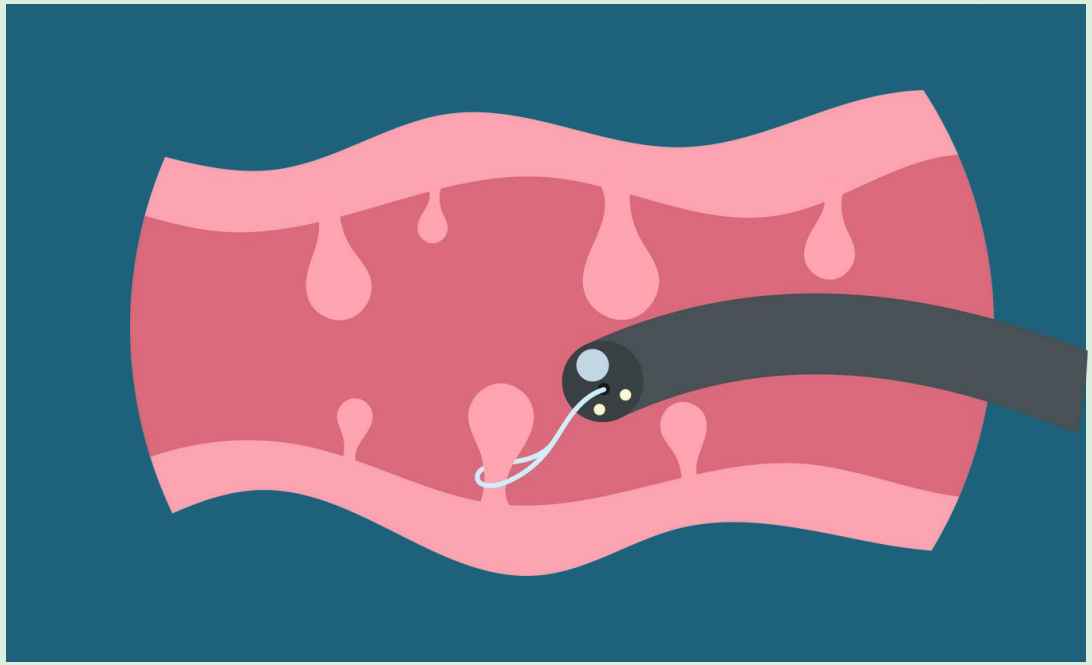
d) "Any medications that increase your risk of bleeding will be held prior to the procedure."

Colonoscopy

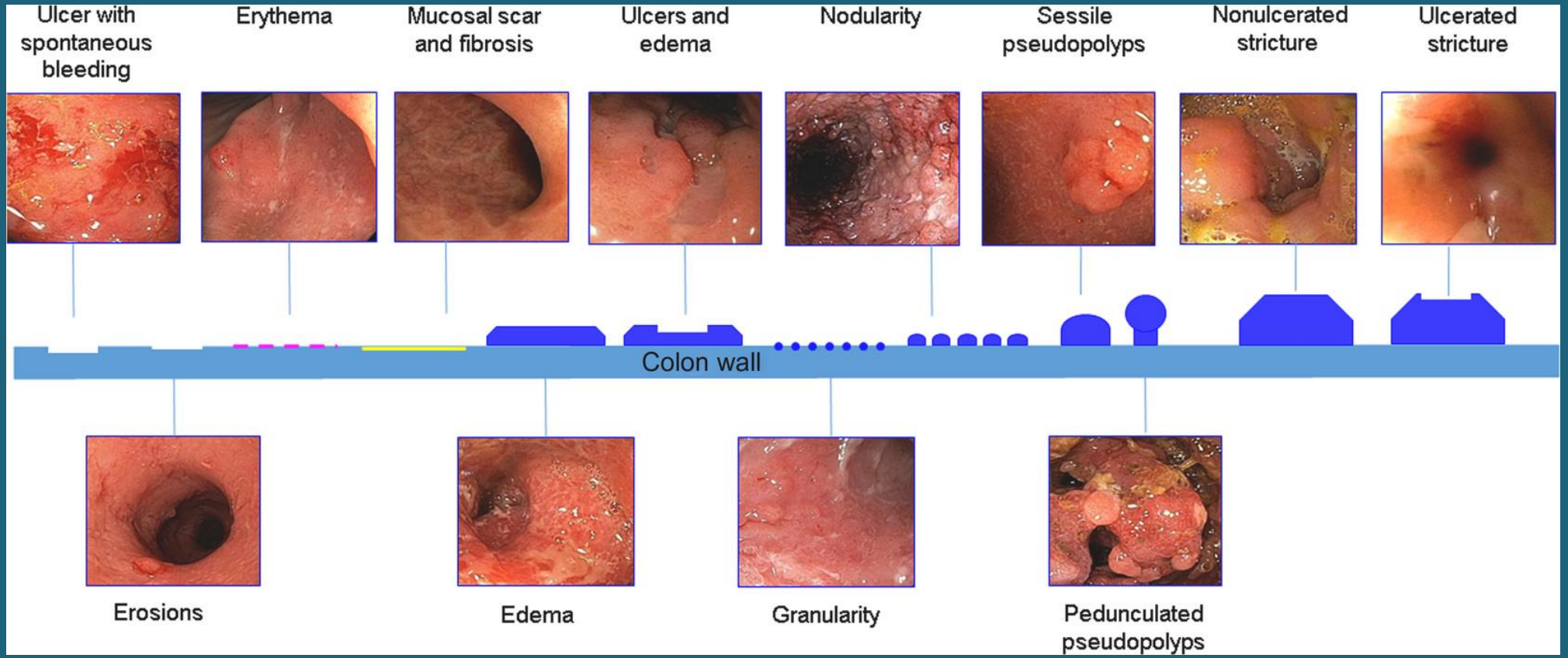
Colonoscopy Video





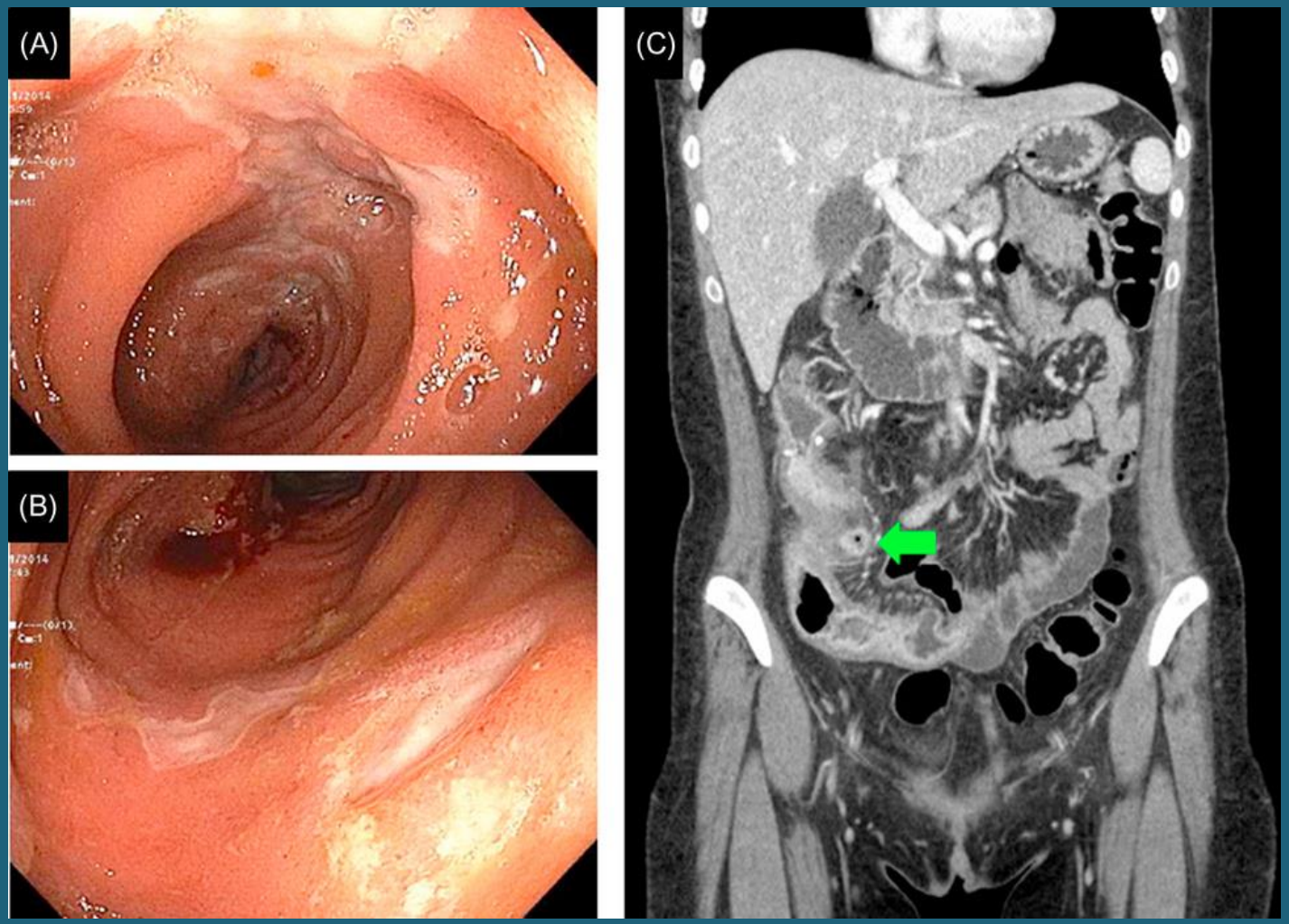


FINDINGS IN ULCERATIVE COLITIS



Shen, B. (2020). *Ulcerative colitis.* In B. Shen (Ed.), *Atlas of Endoscopy Imaging in Inflammatory Bowel Disease* (pp. 111–128). Academic Press. https://doi.org/10.1016/B978-0-12-814811-2.00009-8

CROHN'S DISEASE: TRANSMURAL INFLAMMATION AND FISTULA



Radiopaedia. (n.d.). *Intestinal Fistula.* Radiopaedia.org.

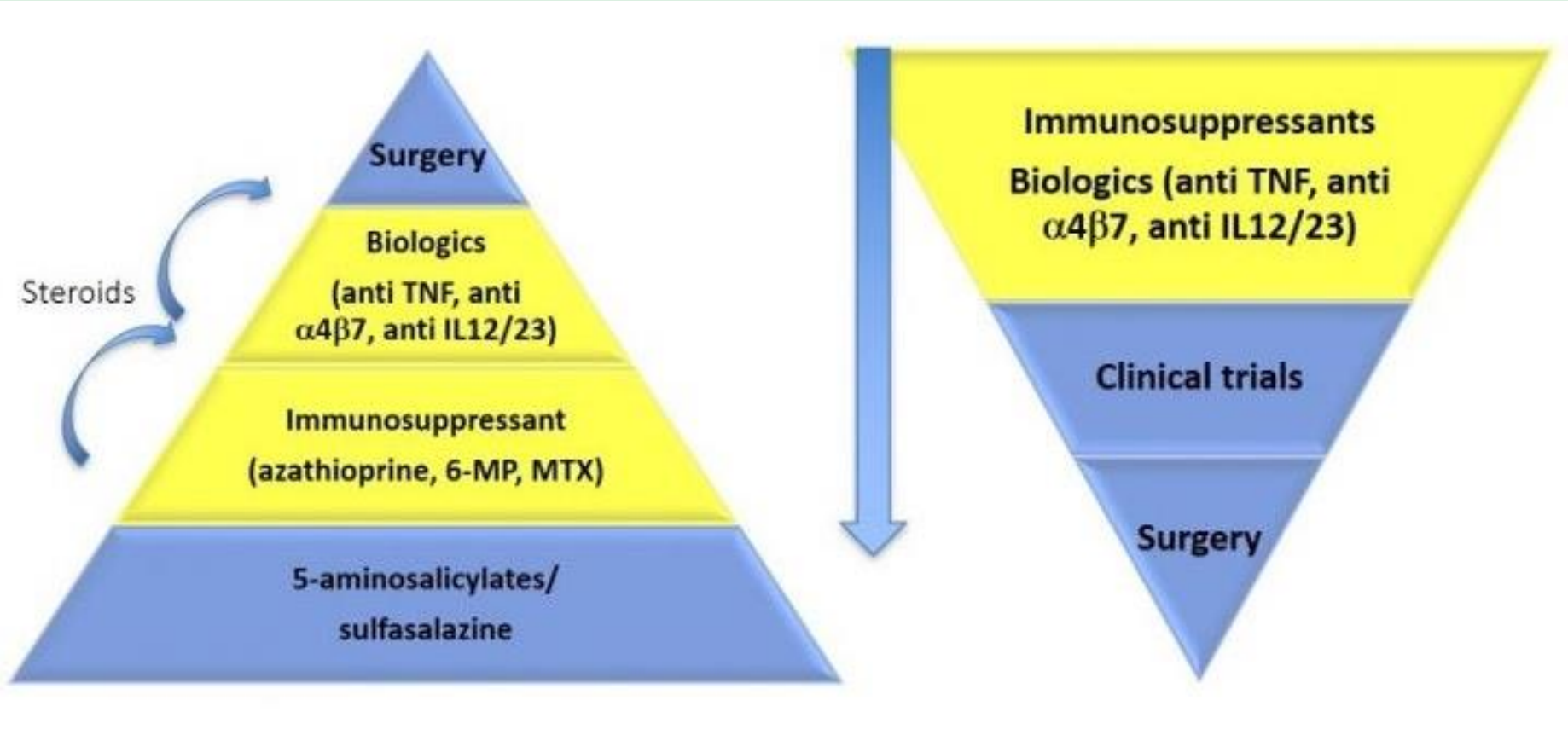
Match (drag and drop) the medication used to treat IBD with its appropriate mechanism of action.

Medication
Sulfasalazine or Mesalamine
Dexamethasone
Biologics: infliximab (Remicade)
Loperamide (Imodium)

Medication	Actions
	Decrease inflammation but should be given for short periods of time during exacerbations and tapered appropriately because of long-term side effects. These medications are effective in achieving remission but not maintaining.
	Block production of prostaglandins and leukotrienes to decrease inflammation. May be given orally or rectally to reduce inflammation
	Provide symptomatic relief of diarrhea and bowel rest. These medications must be used with caution because they can cause colon dilation
	Alter a person's immune response. One type can inhibit an inflammatory protein called tumor necrosis factor (TNF alpha).

Medication Managment Approaches

Step Up Approach ***Top Down Approach***

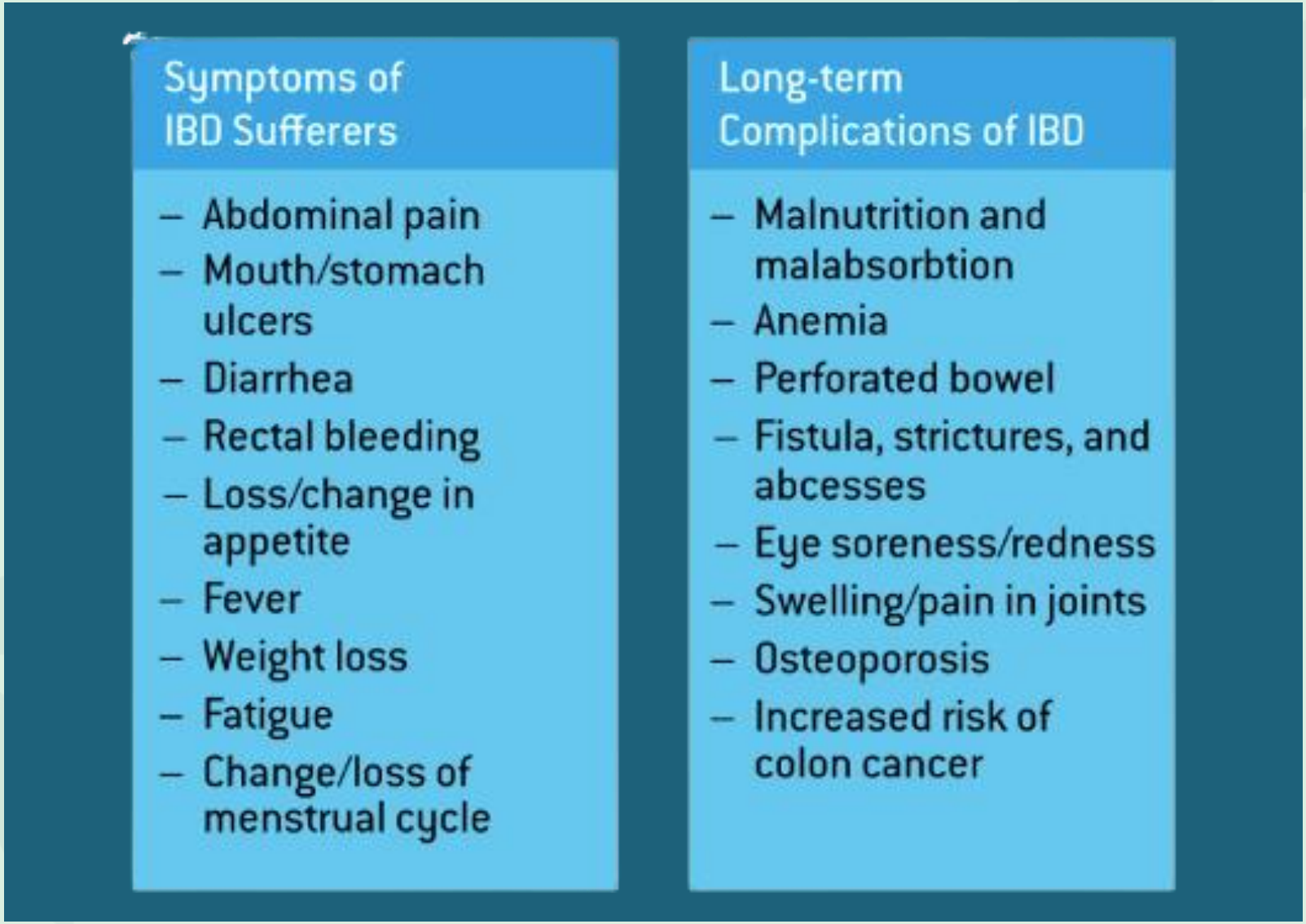


Multi-disciplinary care for IBD: Approach to medical therapy for IBD. Retrieved, from https://mcibd.ca/ibd-medications/

The nurse is performing discharge teaching about dietary modifications for clients with IBD. Identify which of the following are indicated or contraindicated during a flare.

Food	Indicated	Contraindicated
Carbonated Drinks		✗
Salmon	✓	
Alcohol		✗
Nutrient dense shakes	✓	
Cabbage		✗
Coffee		✗
Eggs	✓	

NURSING CARE FOCUSED ON ADDRESSING AND REDUCING COMPLICATIONS OF IBD



IBD is not IBS

IBD:

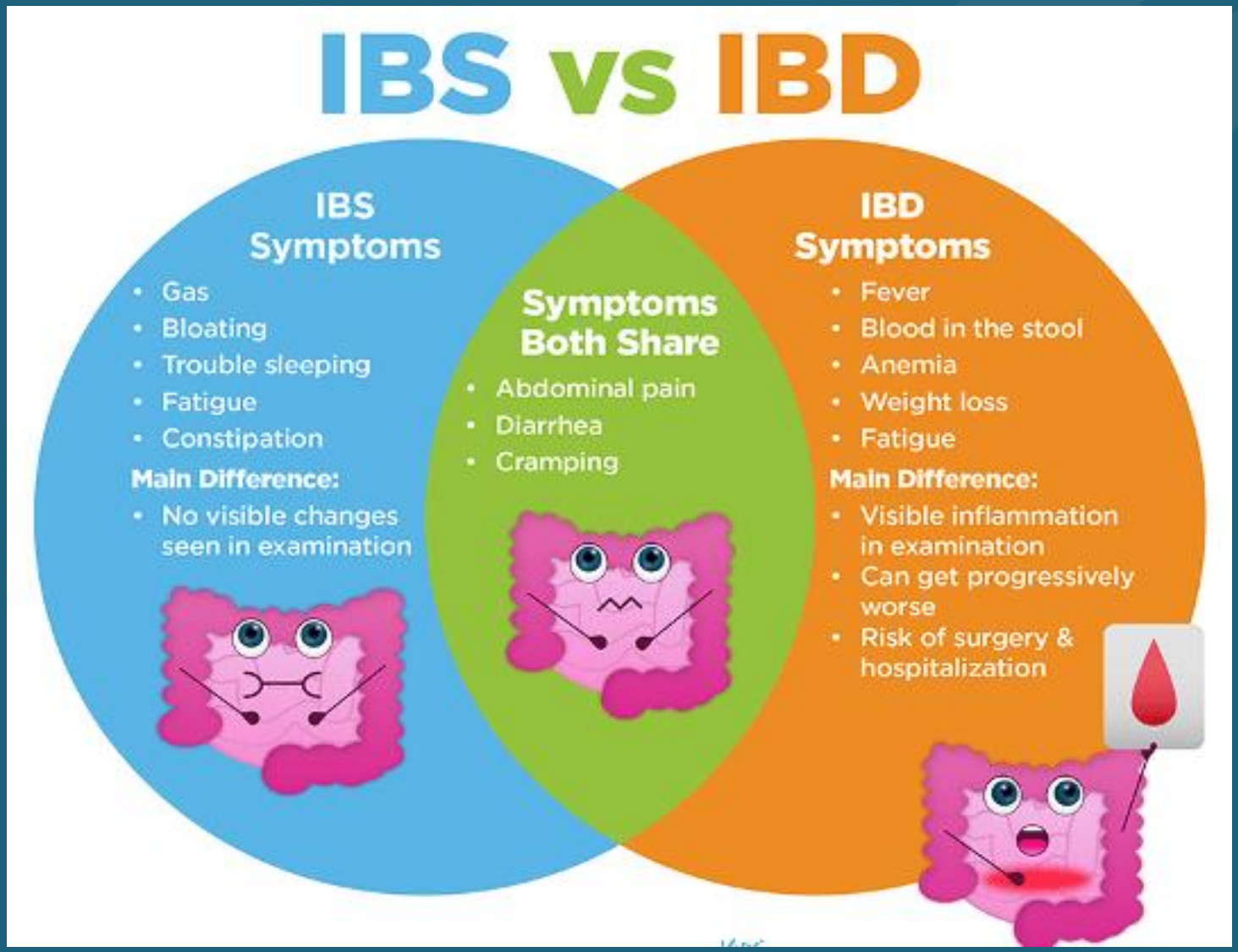
- Chronic inflammatory diseases involving the GI tract, including Crohn's disease and ulcerative colitis.
- Immune cells cause inflammation and ulceration in the lining of the intestines, which can lead to frequent and/or urgent bowel movements, abdominal pain, diarrhea, or bleeding.
- In IBD, the GI tract is damaged. Symptoms can be different for everyone and depend on the type of IBD and where the inflammation is located in the GI tract.

VS.

IBS:

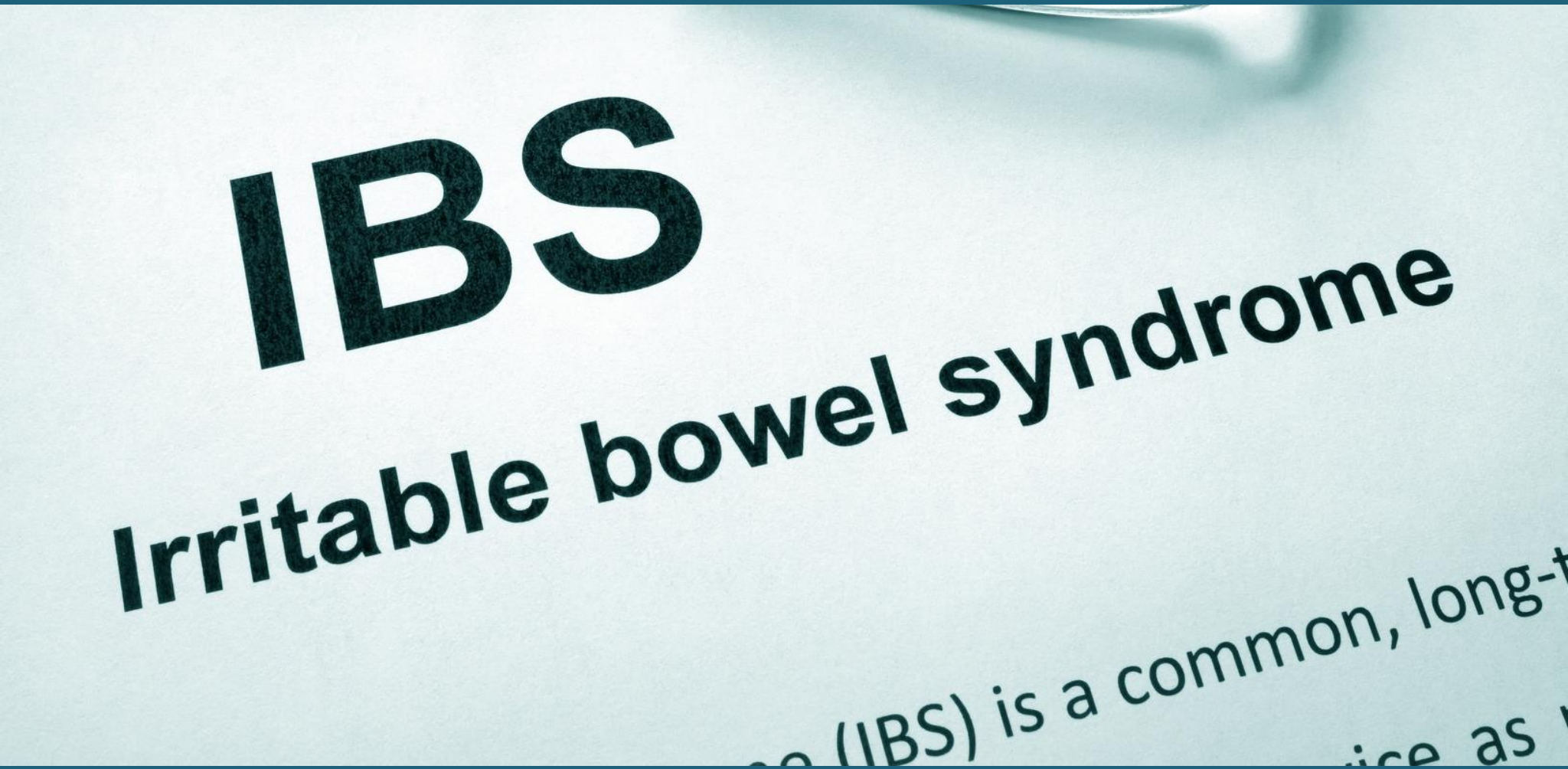
- Functional GI disorder that causes recurrent abdominal pain and changes in bowel movements.
- Symptoms may include bloating, constipation, diarrhea, or mixed diarrhea with constipation.
- Patients with IBS have these symptoms without damage to the GI tract.
- Endoscopy and radiology tests do not show inflammation.

IBD vs. IBS: Understanding the Differences and Overlaps



University of Chicago Medicine. (n.d.). *Pediatric irritable bowel syndrome and pediatric inflammatory bowel disease: What's the difference?* Retrieved [date], from https://www.uchicagomedicine.org/forefront/gastrointestinal-articles/pediatric-irritable-bowel-syndrome-ibs-vs-pediatric-inflammatory-bowel-disease-ibd

CASE 2



Sarah M., a 31-year-old female, presents to her primary care provider with a 6-month history of diarrhea and mucus in her stools. She reports left lower quadrant abdominal pain that improves after bowel movements. Sarah expresses increasing anxiety about going out in public due to the unpredictability of her bowel movements. She denies blood in her stools, constipation, and fever.

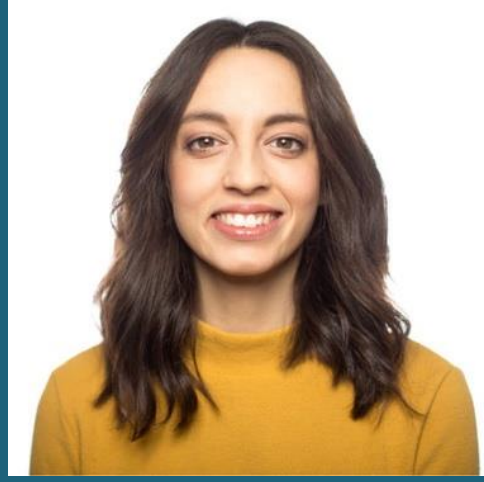
Personal/Social History: Sarah lives with a roommate and previously worked as a social worker for child protective services. She recently took a leave of absence from work due to her bowel symptoms and rising anxiety levels. To manage her anxiety, she occasionally takes walks to a nearby coffee shop.

PMH: GERD, ANXIETY

PSH: denies

Current Medications: OMEPRAZOLE 20MG DAILY
BUSPIRONE 7.5MG BID

IDENTIFY PERTINENT POSITIVE AND NEGATIVE CLINICAL FINDINGS



Sarah M. 31 F DOB 03/15/19XX MRN: 801367 Exam Room 2

Allergies: NKDA Attending: Cipriano, J. CC: Diarrhea

Time	Temp	BP	Heart Rate	Respirations	SpO_2	O_2 Source	Pain
0900	98.6 F oral	116/76	74	14	96%	Room Air	4/10 LLQ abdominal pain/ cramping

	Nursing Assessment
HEENT	**Head**: Normocephalic, **Eyes:** PERRLA, **Ears:** light reflex present, TM intact **Throat/Mouth:** mucous membranes moist, no ulcerations
CV	S1/S2, +2 radial pulses bilaterally, no edema
Respiratory	clear bilaterally, AP Ratio 2:1, Symmetrical rise and fall of chest
GI	Soft, non-distended, reports LLE abdominal pain. Diffuse with palpation
MS	BUE & BLE 5/5, no deformities, moves all limbs purposefully, DTR intact
Neuro	A&O x4. Cranial Nerves II-XII grossly intact

Nursing Notes:

0900- Nurse BSN, RN

Pt here for abdominal pain and diarrhea. Reports abdominal pain and cramping which is relieved with bowel movements. Pt has a weight loss of 12 lbs over the last 6 months.

Analyze the clinical significance of these findings

Sarah M. 31 F DOB 03/15/19XX MRN: 801367 Exam Room 2

Allergies: NKDA Attending: Cipriano, J. CC: Diarrhea

Provider Notes:

0900 Dictating Provider: Cipriano, J.

HPI: Sarah M., a 31-year-old female, presents with complaints of chronic diarrhea and mucus in her stools, along with intermittent abdominal pain and cramping that is relieved by bowel movements. She reports unintentional weight loss and has been avoiding her regular diet due to pain and diarrhea.

Plan: Diagnostic workup is necessary, including imaging, laboratory tests, and stool sample analysis, to identify the underlying cause of her altered bowel habits. Differential diagnoses to consider include IBS, celiac disease, inflammatory bowel disease, and infectious colitis, which remain on the differential and require further investigation.

What are you thinking?
The importance of:

- Pattern Recognition,
- Enhancing Early Detection & Intervention
- Nursing Prioritization & Decision-Making
- Effective Communication & Documentation

Cluster Signs & Symptoms Relevant to Each Disease Process

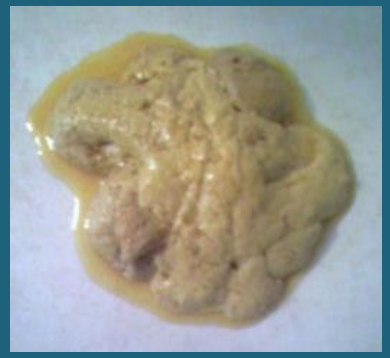
Diseases Processes:

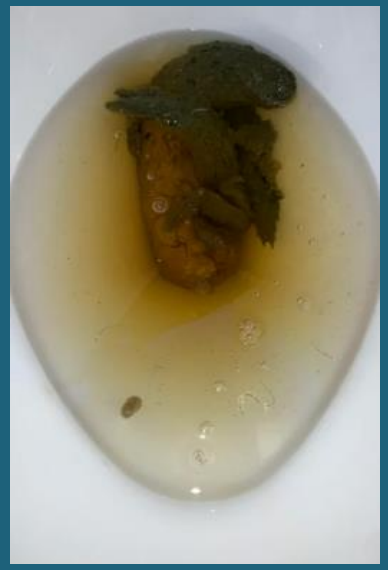
Irritable Bowel Syndrome
Celiac Disease

Signs & Symptoms:

- Diarrhea
- Flatus
- Abdominal Spasms
- Weight Loss
- Increased bleeding tendency
- Abdominal Pain
- Steatorrhea
- Flatulence
- Fatigue
- Constipation

Organizing Signs and Symptoms: Forming a Clinical Constellation



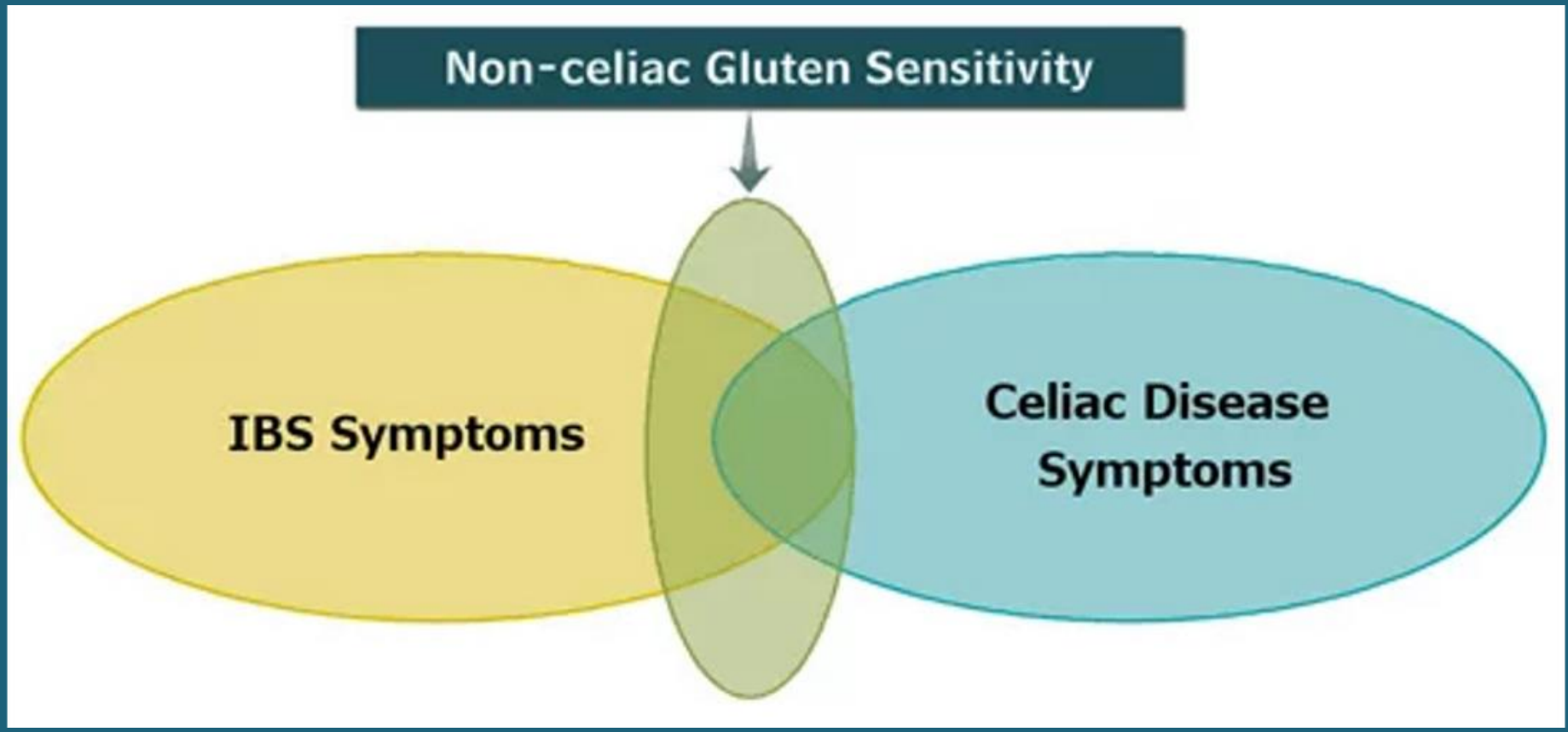


IRRITABLE BOWEL SYNDROME

- Diarrhea
- Abdominal Spasms
- Flatus
- Abdominal Pain
- Constipation
- Weight loss

CELIAC DISEASE

- Steatorrhea
- Weight loss
- Flatulence
- Increased bleeding tendency
- Abdominal Pain
- Fatigue

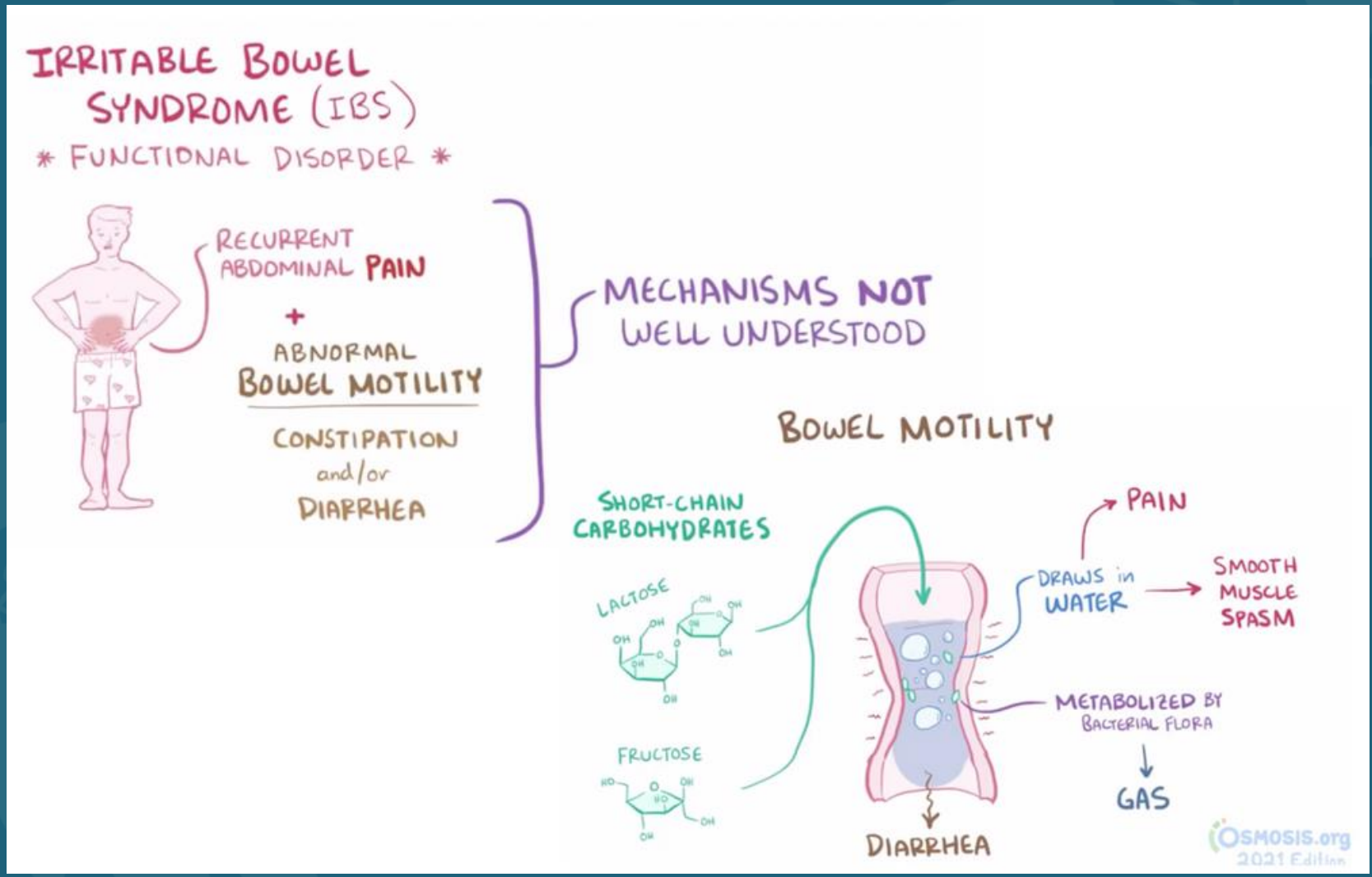


OVERLAP BETWEEN IBS AND CELIAC SYMPTOMS

While IBS and Celiac Disease are distinct conditions, they share similar gastrointestinal symptoms. Non-Celiac Gluten Sensitivity represents individuals who experience symptoms triggered by gluten but do not have the autoimmune markers or intestinal damage seen in Celiac Disease.

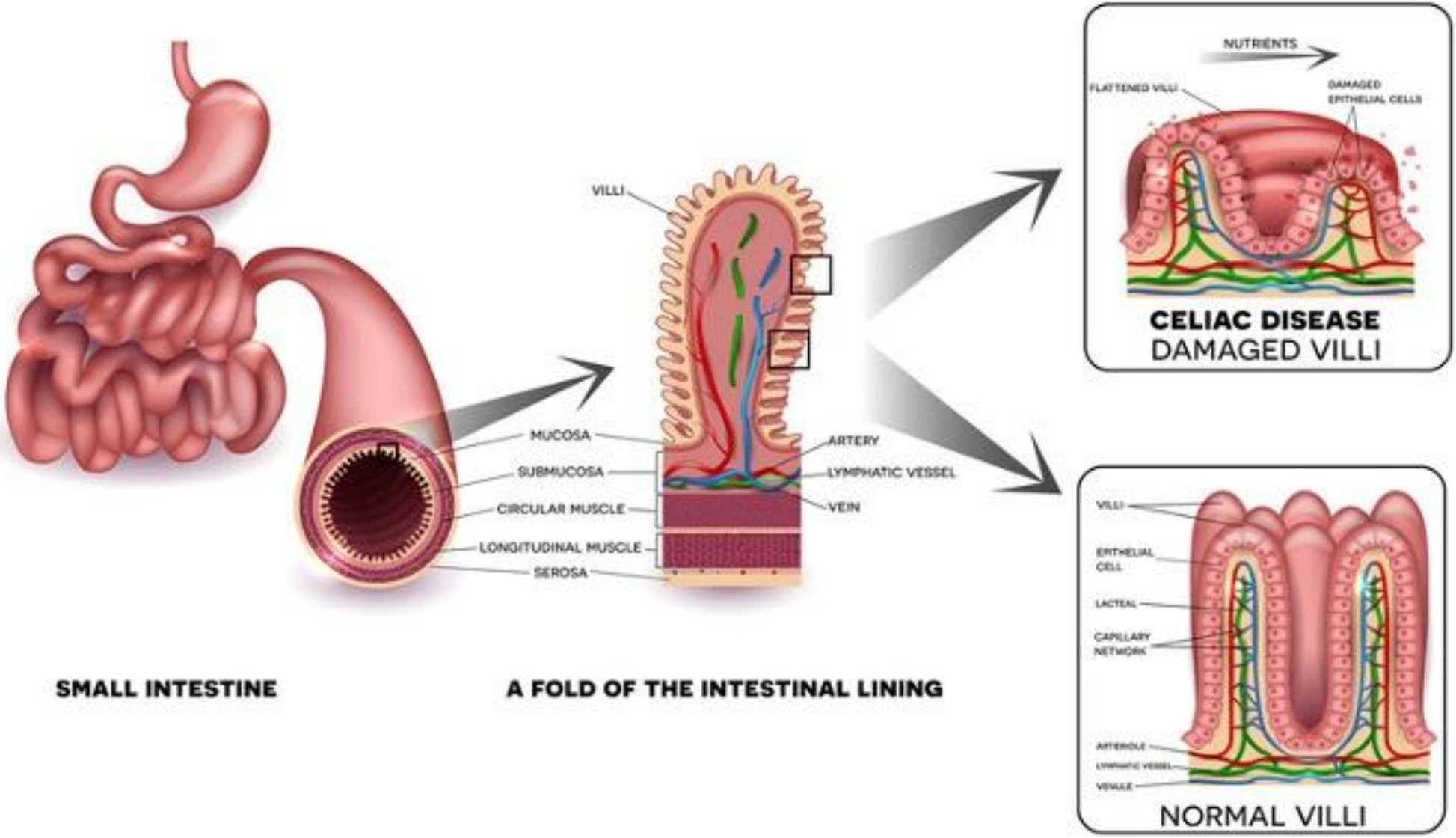
Verdu, E. F., Armstrong, D., & Murray, J. A. (2009). Between celiac disease and irritable bowel syndrome: the “no man's land” of gluten sensitivity. *Official journal of the American College of Gastroenterology| ACG*, *104*(6), 1587-1594.

IBS: A Functional Disorder



https://www.osmosis.org/learn/Irritable_bowel_syndrome

Celiac: Immune Response & Malabsorption



https://www.shutterstock.com/image-illustration/celiac-disease-detailed-anatomy-healthy-damaged-419305741

DESCRIBE THE SIGNIFICANCE OF THESE LAB RESULTS

	Current	Reference Range
Hemoglobin	13.1 g/dL	Males: 14–17.3 g/dL
		Females: 11.7–15.5 g/dL
Hematocrit	38.1%	Males: 42–52%
		Females: 36–48%
WBCs	8800	4,500–11,00 cells/mm3
Platelets	276,000	150,000–450,000 mm3
ESR	0	0-15 mm/hr
CRP	1	< 10 mg/L
Anti-tTG	0	< 7 U/mL
Stool Culture	Negative	Negative

Knowledge Check

The nurse is providing education to Sarah regarding her work up. Which of the following is the best statement by the nurse regarding IBS?

a)"A colonoscopy in an IBS client will show inflammation to the walls of the colon, but no granulomas like in Crohn's Disease."

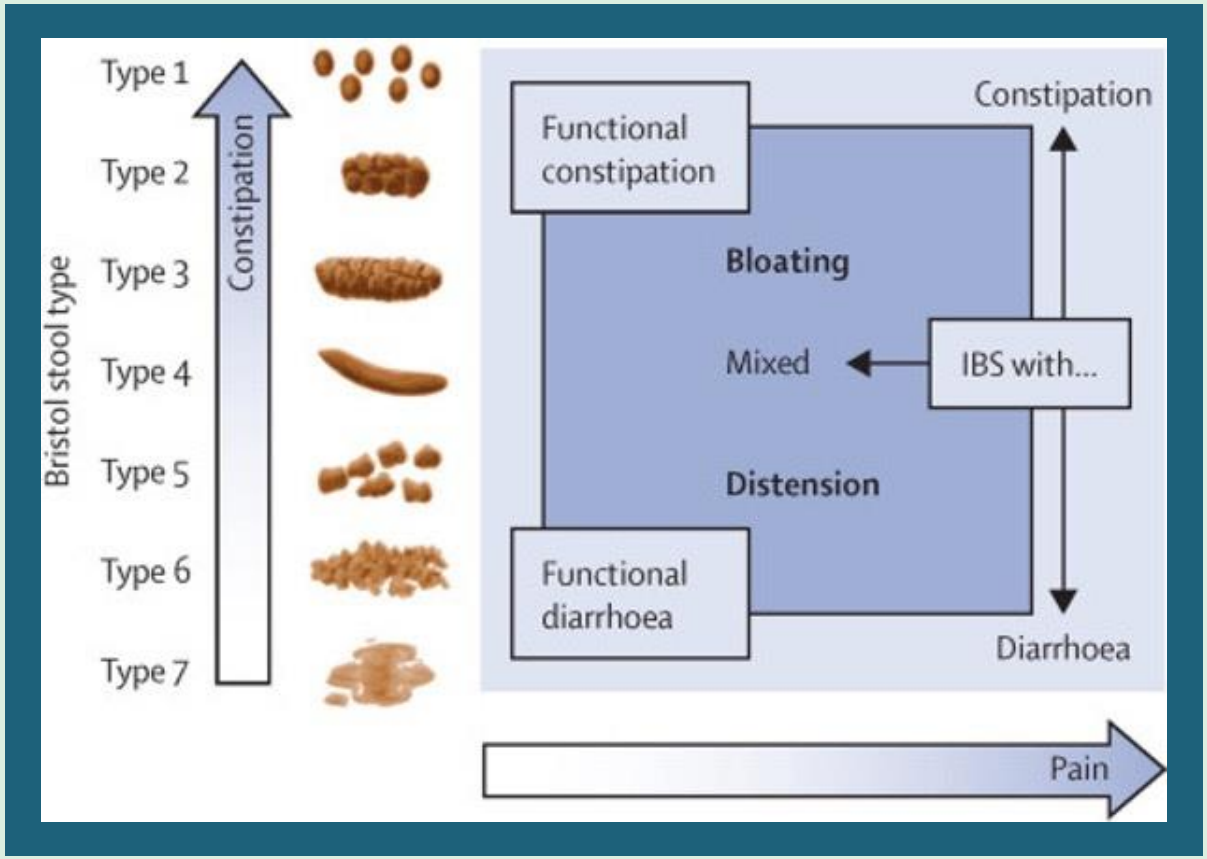
b)"Stool cultures with colonization of clostridium difficile will be present in clients with IBS ."

c) "A negative colonoscopy along with the Rome IV criteria will indicate IBS."

d)"Laboratory testing positive for Antinuclear antibody (ANA) and erythrocyte sedimentation rate (ESR) will indicate IBS ."

Determine the significance

IBS DIAGNOSIS



Rome IV Criteria

The patient must have had recurrent abdominal pain or discomfort at least 1 day per week in the last 3 months associated with two or more of the following:

Improvement with defecation

Onset associated with a change in frequency of stool

Onset associated with a change in form (appearance) of stool

Drossman, D. A. (2016). *Functional gastrointestinal disorders: What's new for Rome IV? The Lancet Gastroenterology & Hepatology, 1*(1), 6–8. https://doi.org/10.1016/S2468-1253(16)30022-X

Multiple Matrix Medication Chart
Match the medication with the targeted IBS symptom

Medication	General Abdominal Pain	IBS-C	IBS-D
Dicyclomine	✓		
Loperamide			✓
Linaclotide		✓	
Rifaxmin			✓
Fluoxetine	✓		
Lubiprostone		✓	
Diphenoxylate hydrochloride			✓
Amitriptyline	✓		
Alosetron			✓

Knowledge Check

Sarah stated to the nurse, “I’ve been trying to following a gluten free diet because I read on the internet that can help with stomach problems.” Which of the lab tests that the provider ordered is the most sensitive test for Celiac ?

a)Antinuclear antibody (ANA)

b)Erythrocyte sedimentation rate (ESR)

c)Gluten blood levels

d)Antitissue transglutaminase antibody (anti-tTG)

Dietary Modifications for Celiac Disease

Food	Indicated	Contraindicated
Potatoes	✓	
Rye		✗
Wine	✓	
Beer		✗
Pizza		✗
Quinoa	✓	
Barley		✗

Discharge Instructions

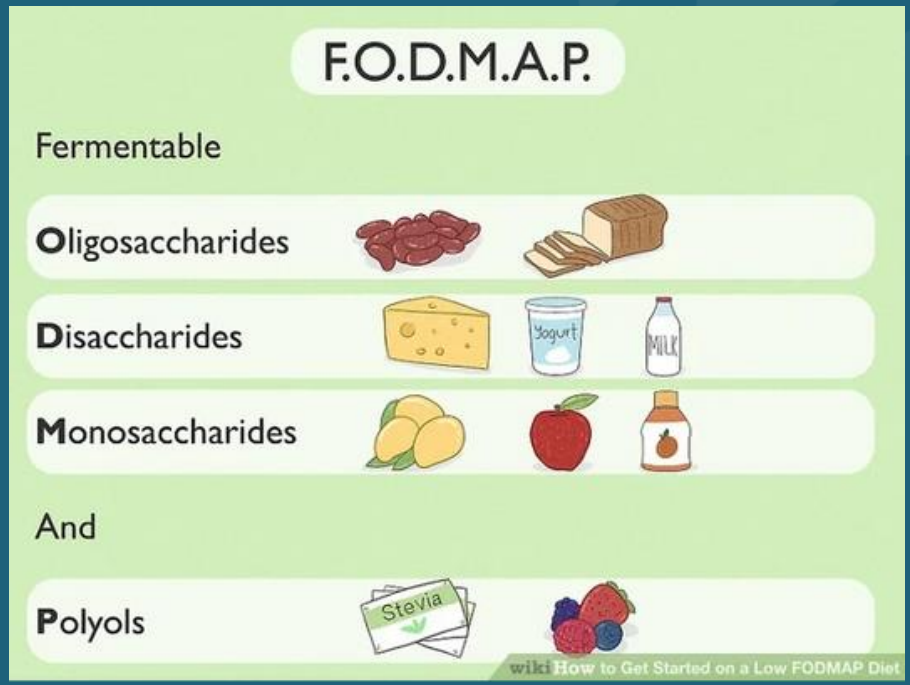
Discuss the Significance of Each Recommendation

Sarah's colonoscopy was negative. Her workup indicates she likely has IBS-D. Complete the following discharge instructions.

- Schedule an appointment with a mental health professional to explore options for managing anxiety symptoms.
- ~~Limit alcohol and beer intake to 2 to 3 drinks per day~~
- If recommended by her provider, take peppermint, ginger, or chamomile tea for symptom relief
- Follow a low FODMAP diet
- Take dicyclomine for spasms
- ~~Use only sorbitol sweetener~~

Low FODMAP Diet

FOOD	EAT	AVOID
Vegetables	lettuce, carrot, cucumber & more	garlic, beans, onion & more
Fruits	strawberries, pineapple, grapes & more	blackberries, watermelon, peaches & more
Proteins	chicken, eggs, tofu & more	sausages, battered fish, breaded meats & more
Fats	oils, butter, peanuts & more	almonds, avocado, pistachios & more
Starches, cereals & grains	potatoes, tortilla chips, popcorn & more	beans, gluten-based bread, muffins & more



https://thegidocs.com/low-fodmap-diet/

CASE 3

Kiyana W. is a 55-year-old female who presented to the emergency room with complaints of bright red blood per rectum (BRBPR). She was admitted to the medical-surgical unit for further evaluation. Kiyana reports an unintentional weight loss of 20 pounds over the past three months. She has also noticed a change in her bowel habits, describing a sensation of incomplete emptying, stools that are slightly darker in color, and a pencil-like shape. The BRBPR appears as streaking on the stool, which started one day ago and has caused her concern.

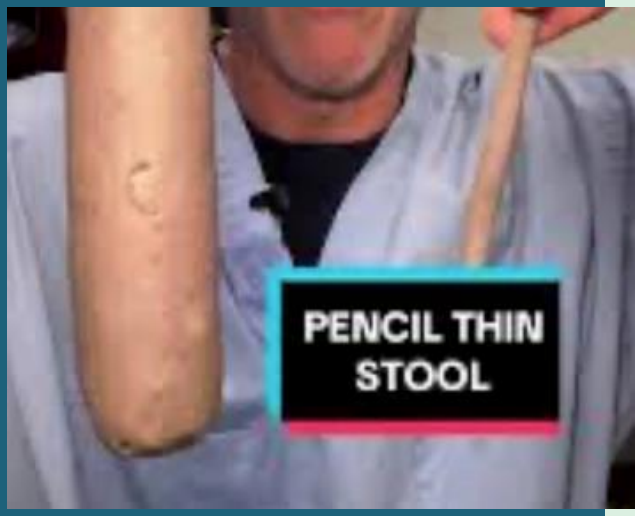
Personal/Social History: Kiyana has worked at a local grocery store for 25 years. She has a preference for eating steak and does not enjoy fish. She has a 35-year history of smoking.

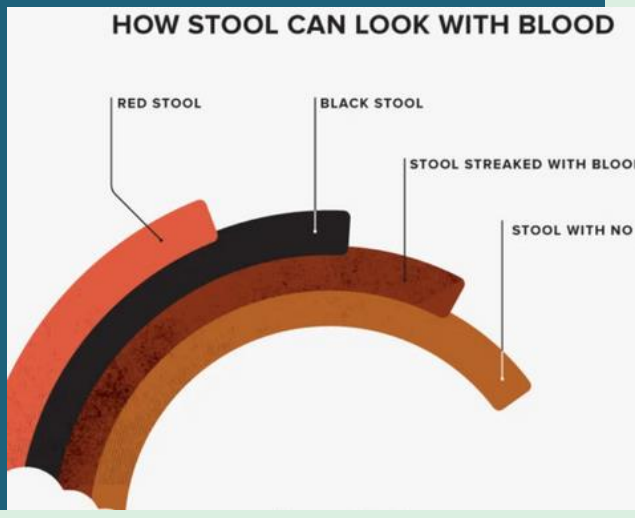
PMH: T2DM, HYPERLIPIDEMIA, HTN

PSH: denies

Current Medications:
- AMLODIPINE 10MG QD
- CHLORTHALIDONE 25MG QD
- METFORMIN 1000MG BID
- INSULIN GLARGINE 40UNITS AT HS
- GLIPIZIDE 5MG QD
- ATORVASTATIN 40MG QHS

IDENTIFY PERTINENT POSITIVE AND NEGATIVE CLINICAL FINDINGS





Kiyana W. 55 F DOB 09/27/19XX MRN: 110076 7E08

Allergies: NKDA Attending: Emmons, K. Full Code

Time	Temp	BP	Heart Rate	Respirations	SpO_2	O_2 Source	Pain
1415	97.6 F oral	106/68	98	18	99%	Room Air	0/10

	Nursing Assessment
HEENT	**Head**: Normocephalic, **Eyes:** PERRLA, **Ears:** light reflex present, TM intact **Throat/Mouth:** mucous membranes moist, no ulcerations
CV	S1/S2, +2 radial pulses bilaterally, no edema
Respiratory	clear bilaterally, AP Ratio 2:1, Symmetrical rise and fall of chest
GI	Soft, non-distended, + bowel sounds in all 4 quadrants
MS	BUE & BLE 5/5, no deformities, moves all limbs purposefully, DTR intact
Neuro	A&O x4. Cranial Nerves II-XII grossly intact

Nursing Notes:

1415- Nurse BSN, RN

Received pt from the ED at 1350. Pt admitted due to reports of rectal bleeding and 20lb unintentional weight loss. Reports her blood pressure is typically higher and is being managed with medications. She denies lightheadedness or orthostasis. Pt's labs were drawn in the ED, pending results. Pt is NPO currently for possible Colonoscopy with GI surgery. Stool sample collected with no obvious BRB but appears very dark brown.

Identify Relevant Findings and Discuss the Clinical Significance

	Results	Reference Range
Hemoglobin	11.8 g/dL	Males: 14–17.3 g/dL
		Females: 11.7–15.5 g/dL
Hematocrit	36.0%	Males: 42–52%
		Females: 36–48%
RBC	3.7 million/mm	Males: 4.21 – 5.81 million/mm
		Female: 3.61 – 5.11 million/mm3
WBCs	9,400 cell/mm3	4,500–11,00 cells/mm3
Platelets	330,200 mm3	150,000–450,000 mm3
MCV	80 µm3	Males: 78–100 µm3
		Females: 78–102 µm3
MCH	26 pg/cell	25–35 pg/cell
Iron	32mcg/dL	30–160 mcg/dL
FIT	Positive	Negative

Knowledge Check

The nurse correctly identifies which of the following are risk factors for Colorectal Cancer? Select all that apply.

a)African American Race

b)Smoking History

c)History of Diabetes

d)Diet high in red meat

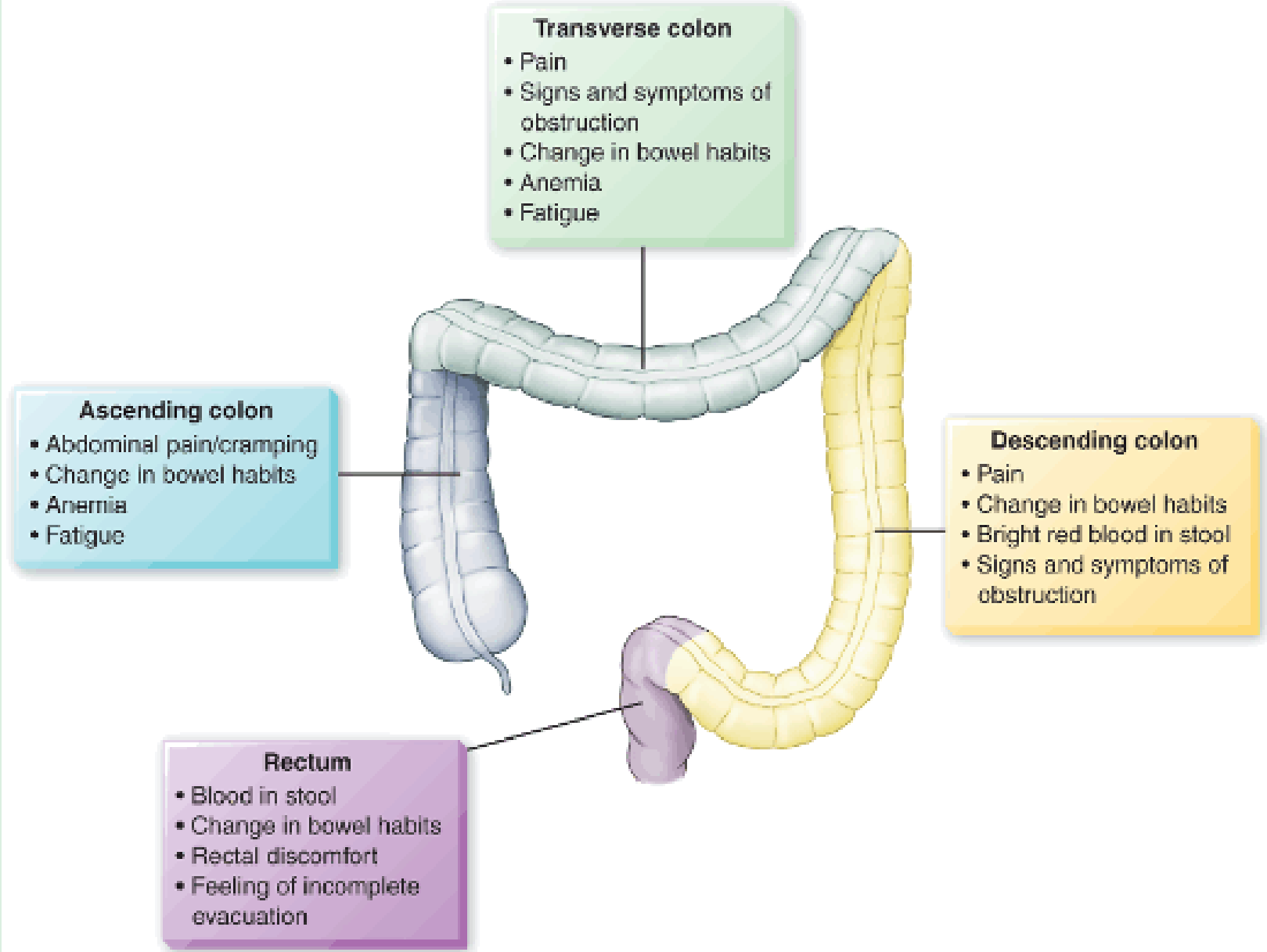
e)History of Inflammatory Bowel Disease

Identify the impact of culture, SDOH, and other factors that can increase the risk for colorectal cancer

Multiple Matrix Colorectal (CRC) Risk Factors

Risk Factors	Modifiable	Non-Modifiable
Smoking	✓	
Male Gender		✓
Type 2 Diabetes	✓***	
Excessive Alcohol Use	✓	
High Consumption of Red Meats	✓	
African American		✓
Obesity	✓	
Ulcerative Colitis		✓
Low intake of Fruits/ Vegetables	✓	
Physical Inactivity	✓	
Over age 50		✓
Family history of polyps		✓

Signs & Symptoms of Colorectal Cancer



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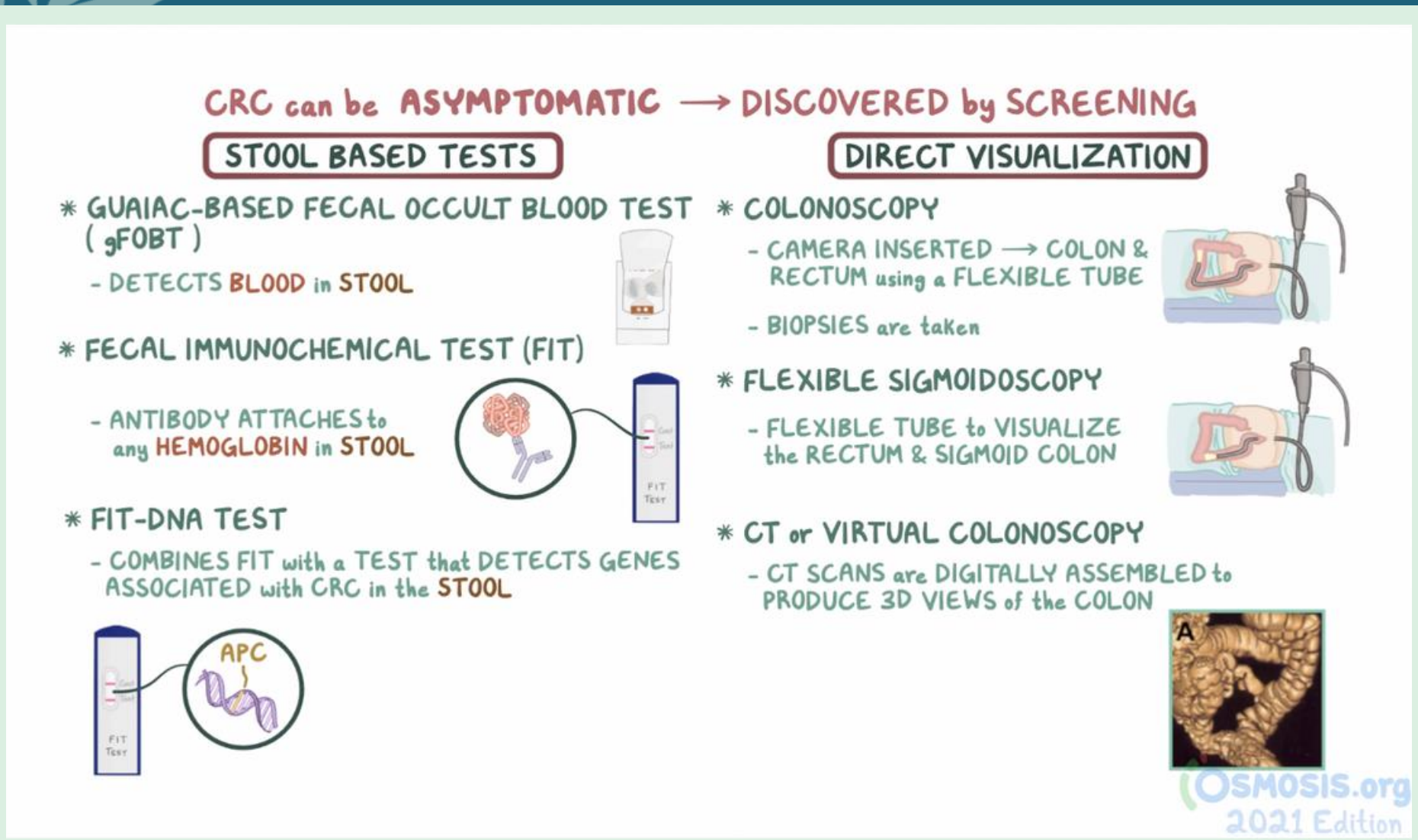
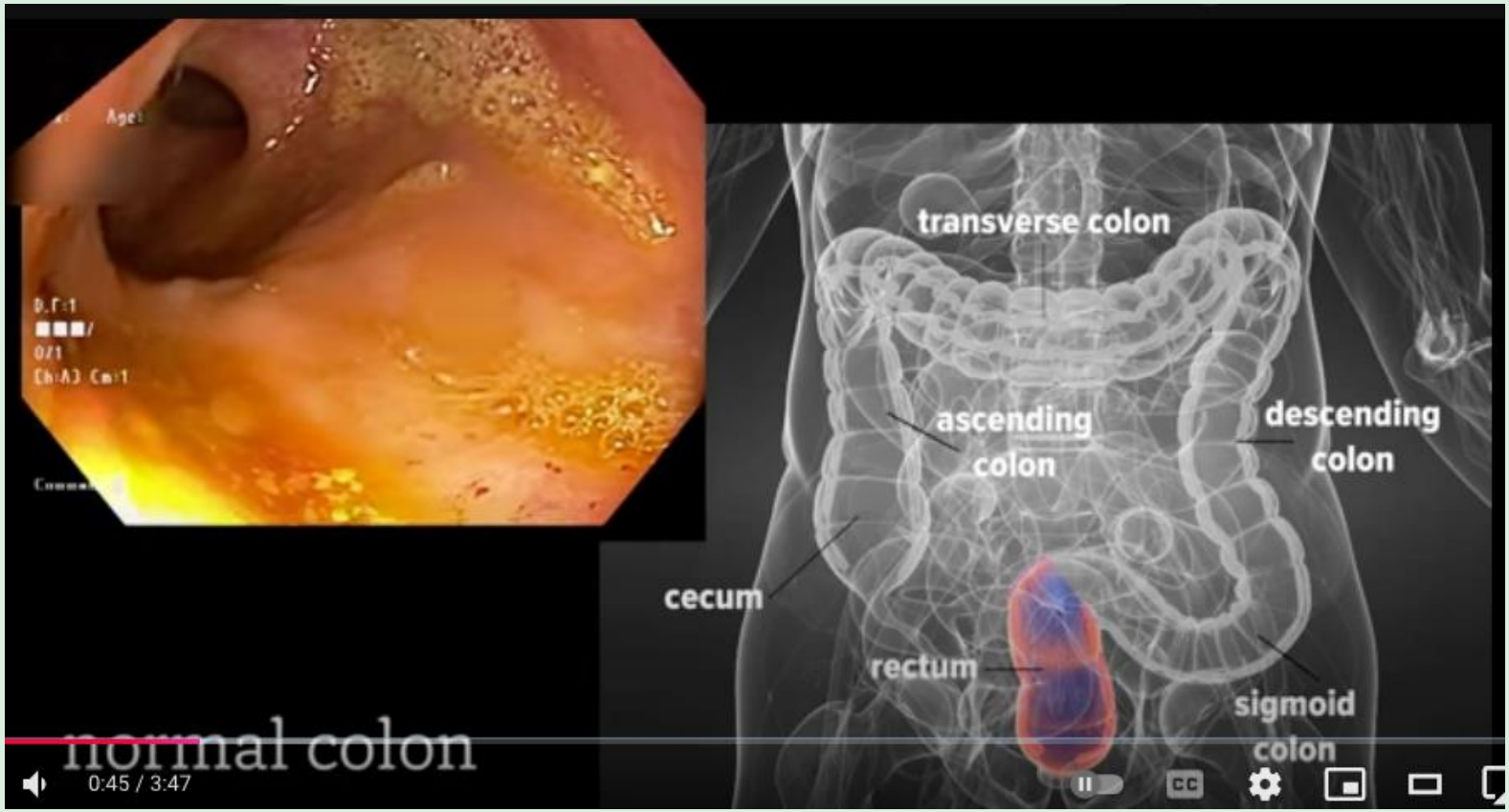
CRC Diagnostic Tests



Osmosis. (n.d.). *Colorectal cancer: Clinical practice.* Osmosis. Retrieved from https://www.osmosis.org/learn/Colorectal_cancer:_Clinical_practice

Colonoscopy: Gold Standard

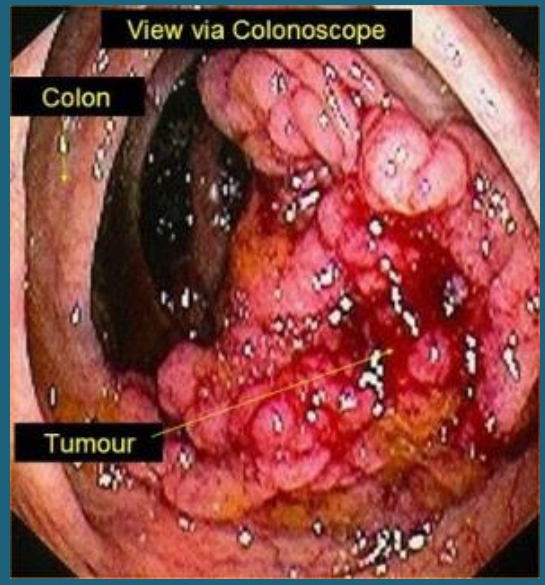


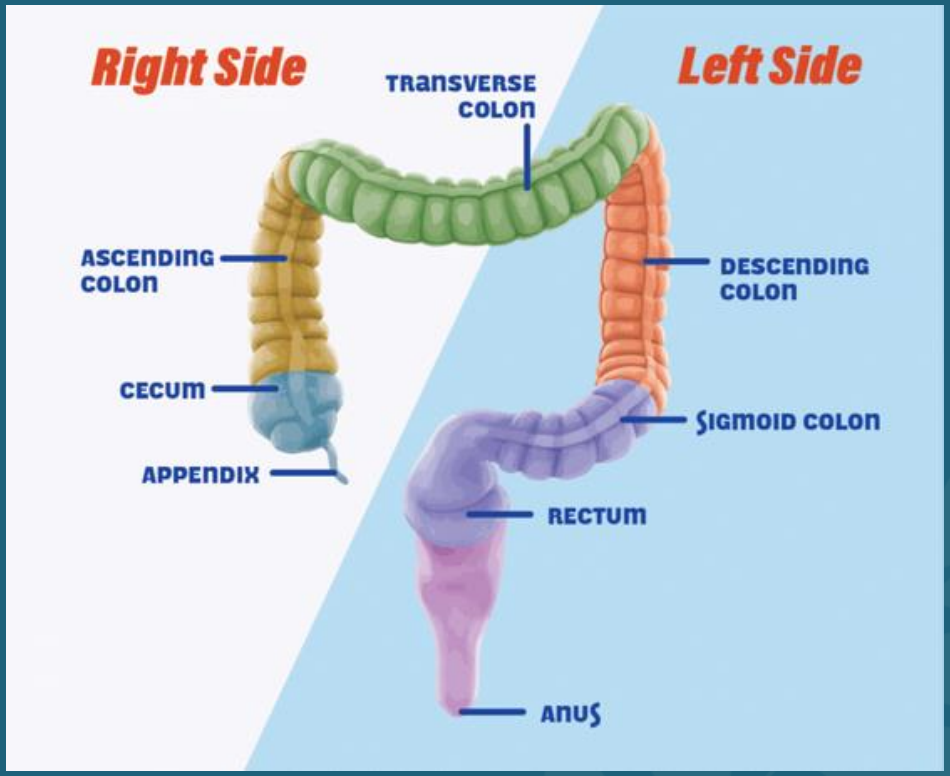
Video

https://www.youtube.com/watch?v=xCmnWsAqMlw

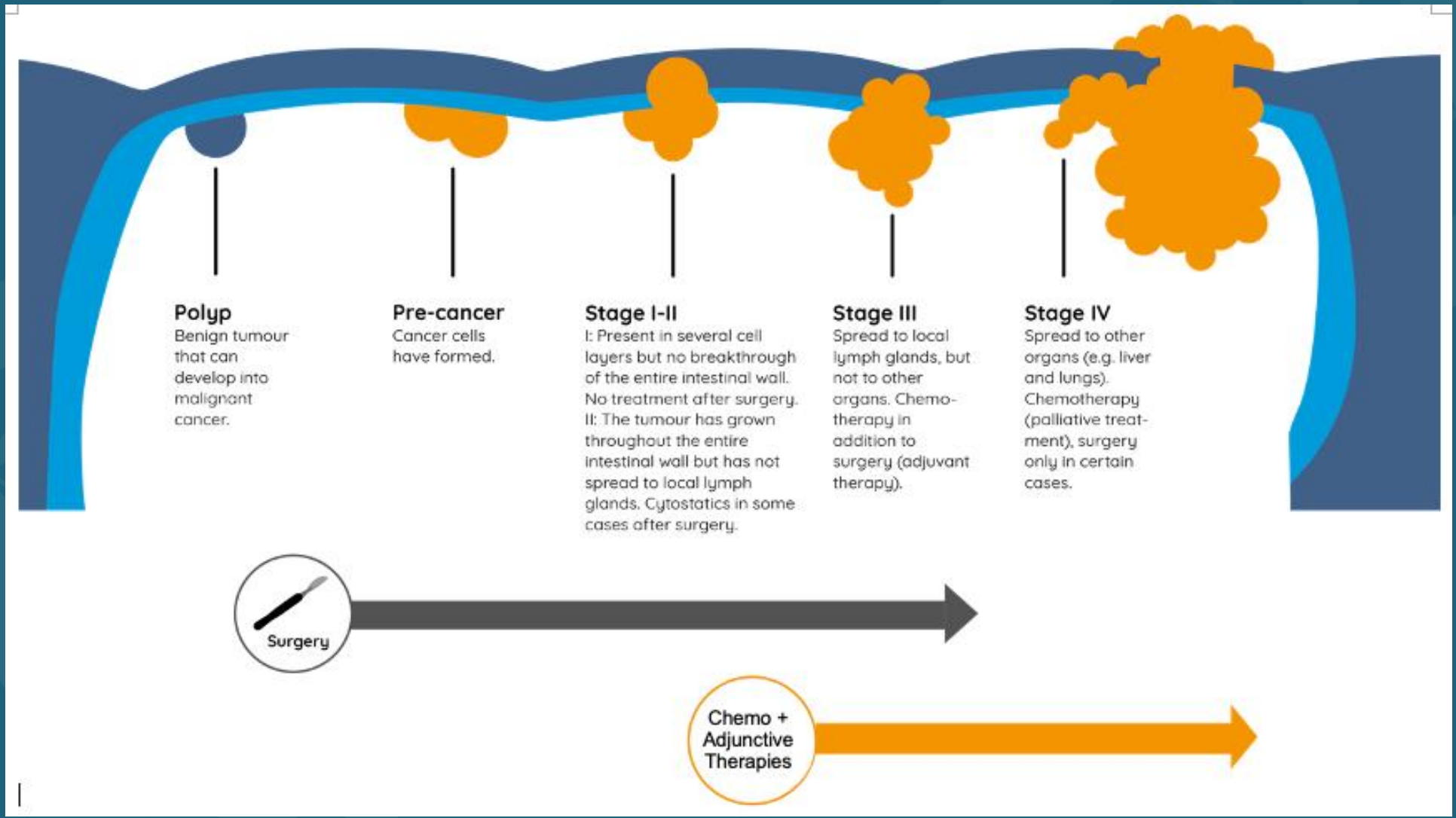
Kiyana underwent a colonoscopy, which revealed a 12.5 cm tumor located in the sigmoid colon.

The colorectal surgery team is planning a colon resection with temporary ostomy placement to allow for healing, and Kiyana has consented to the procedure. The oncology team has also evaluated Kiyana and advised her that, following surgery, she will undergo outpatient chemotherapy.





TREATMENT OF COLORECTAL CANCER



Isofol Medical. (n.d.). *Colorectal cancer treatment.* Retrieved from https://isofolmedical.com/about-colorektalcancer/treatment/

National Cancer Institute: CRC Treatment

Stage (TNM Staging Criteria)	Treatment Options
Stage 0 Colon Cancer	Surgery
Stage I Colon Cancer	Surgery
Stage II Colon Cancer	Surgery, Adjuvant chemotherapy (under clinical evaluation)
Stage III Colon Cancer	Surgery, Clinical trials
Liver Metastasis	Surgery, Neoadjuvant chemotherapy, Local ablation, Adjuvant chemotherapy, Intra-arterial chemotherapy, Clinical trials
Stage IV and Recurrent Colon Cancer	Surgery, Systemic therapy, Immunotherapy, Clinical trials

Outcomes Evaluation

The nurse evaluates Kiyana for response to her treatments. What are expected outcomes and potential complications for the following:

Surgical Resection of the Bowel

- Expected outcomes
- Potential Complications

Chemotherapy

- Expected outcomes
- Potential Complications

Knowledge Check

Kiyana's sister is visiting in the room and asks the nurse for recommendations on colon cancer screening. Which of the following is the correct response by the nurse?

a) Starting at age 45 a FOBT yearly and a colonoscopy every 2 years

b) Starting at age 55 an FOBT yearly and a flexible sigmoidoscopy every 5 years

c) Starting at age 40 an FOBT every 2 years and a colonoscopy every 10 years

d) Starting at age 45 a FOBT yearly and a colonoscopy every 10 years

CRC Screening Guidelines

USPSTF and ACS

Stool-based Tests

- High-sensitivity guaiac fecal occult blood test (HSgFOBT)
- Fecal immunochemical test (FIT) every year
- Stool DNA-FIT every 1 to 3 years

Visual (structural) exams of the colon and rectum

- Computed tomography colonography every 5 years
- Flexible sigmoidoscopy every 5 years
- Flexible sigmoidoscopy every 10 years + annual FIT
- Colonoscopy screening every 10 years
  - Considered gold standard for screening
  - Can detect 95% of cancers
  - Precancerous lesions such as polyps can be removed
  - Could be needed more often such as those with a history of CRC, previous polyp removal, those who have had radiation to the abdomen or pelvis, IBD, or certain genetic syndromes

Knowledge Check

Prior to Kiyana's ostomy which interdisciplinary team member should be consulted to complete the colostomy marking?

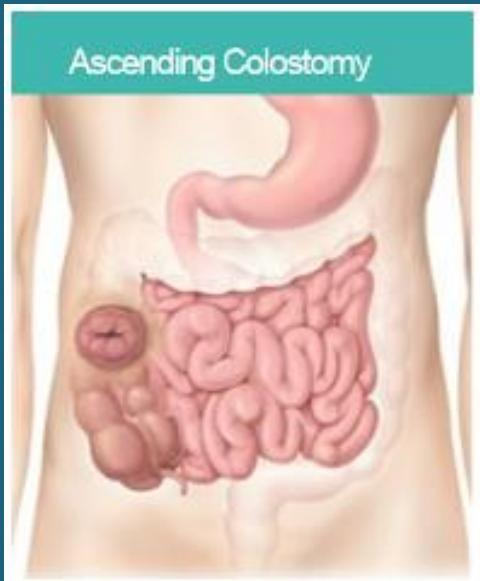
a)Plastic Surgery Resident

b) Oncology Attending

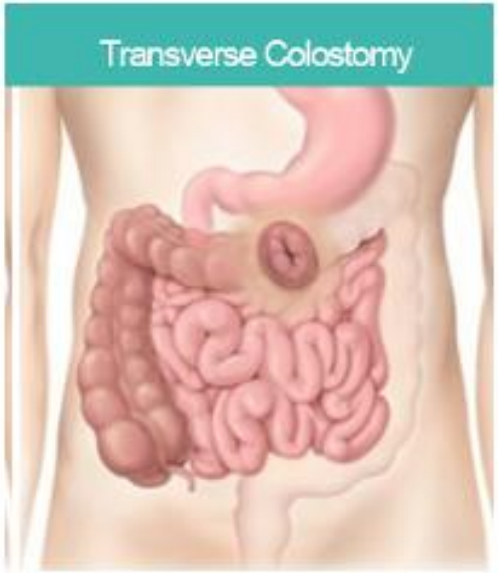
c) WOC Nurse

d) Rehabilitation APN

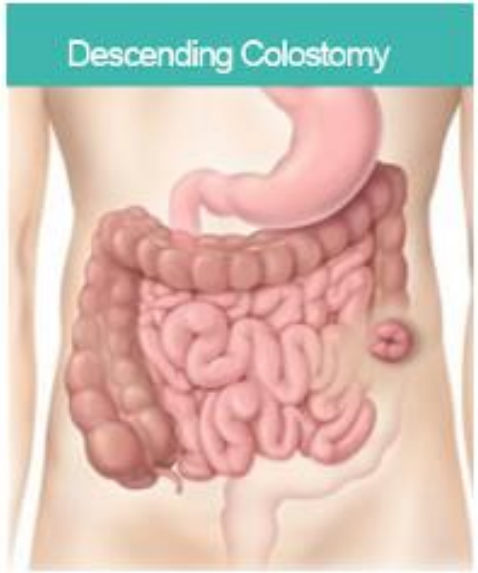
Correctly identify the consistency of the effluent in the ostomy bag based on the location of the fecal diversion.



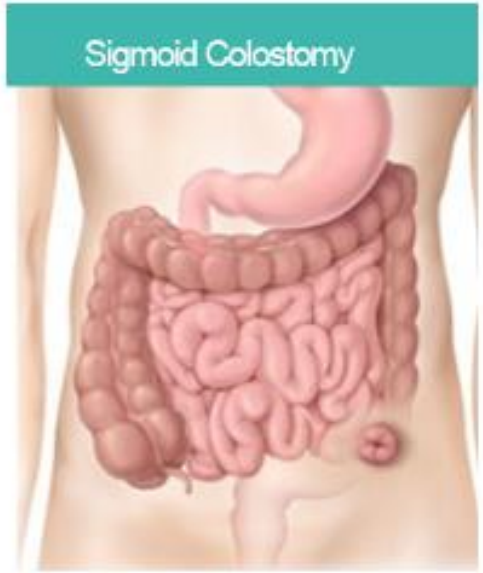
Semiliquid



Semiliquid to Semiformed

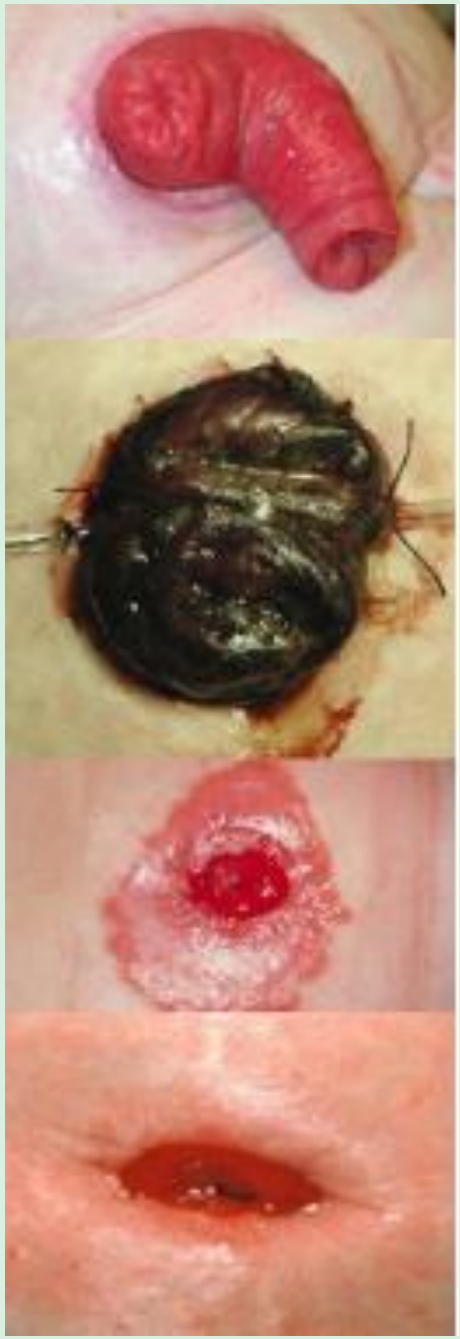


Semiformed



Formed

Identify Stoma Complications



Prolapse

Necrotic

Peristomal Irritation or fungal infection

Retracted Stoma

CASE 4

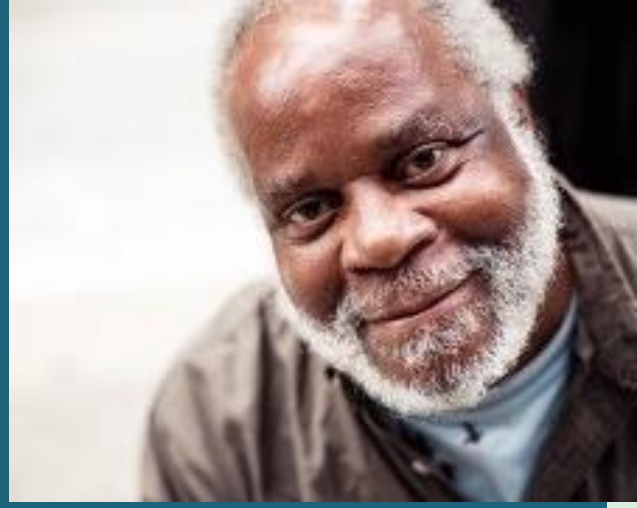
Michael R., a 63-year-old male, presents to the ED with complaints of abdominal pain and fever persisting for 24 hours. He reports using a heating pad on his abdomen and taking 1000 mg of acetaminophen every 6 hours, but his fever and pain have not improved. Michael denies cough, shortness of breath, vomiting, or diarrhea. He states his last bowel movement was 3 days ago and mentions experiencing hard stools over the past few weeks.

Personal/Social History: Michael is divorced and lives in a single-family home. He works as a delivery driver, spending 8 to 10 hours per day in his car, which leads him to frequently eat fast food. He denies smoking and alcohol abuse.

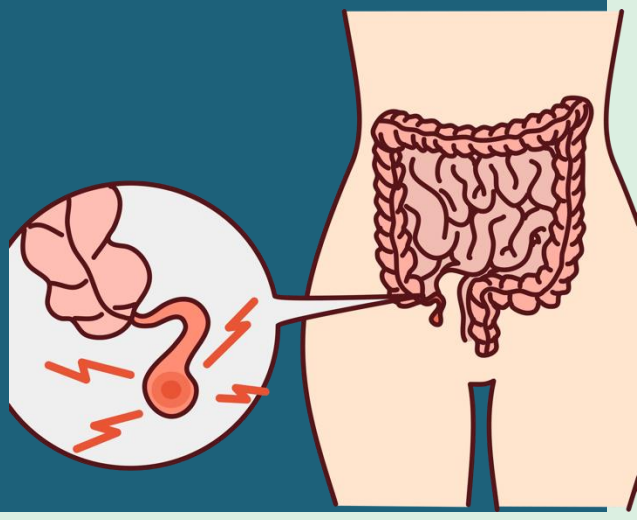
PMH: HTN

PSH: Right Rotator Cuff Repair

Current Medications:
- AMLODIPINE 10MG QD



IDENTIFY PERTINENT POSITIVE AND NEGATIVE CLINICAL FINDINGS



Michael R. 63 M DOB 07/11/19XX MRN: 1180653 ED14

Allergies: Sulfa Attending: Emmons, K. Full Code

Time	Temp	BP	Heart Rate	Respirations	SpO_2	O_2 Source	Pain	BMI
0845	101.2 F oral	120/76	102	16	98%	Room Air	10/10 LLQ	33

	Nursing Assessment
HEENT	**Head:** Normocephalic, **Eyes:** PERRLA, **Ears:** light reflex present, TM intact **Throat/Mouth:** mucous membranes moist,
CV	S1/S2, Tachycardic +2 radial pulses bilaterally, no edema
Respiratory	Clear bilaterally, AP Ratio 2:1, Symmetrical rise and fall of chest
GI	Distended abdomen with pain upon palpation to the LLQ
MS	BUE & BLE 5/5, no deformities, moves all limbs purposefully, DTR intact
Neuro	A&O x4. Cranial Nerves II-XII grossly intact

Nursing Notes:

0900- Nurse BSN, RN

Pt presented to the ED with complaints of LLQ pain and fever over the last 24 hours unrelieved with OTC medications. Pt reports last BM was 3 days ago. Upon PE abdomen is distended with localized pain to the LLQ. STAT labs drawn in the presence of fever. Provider Emmons to see the patient.

The importance of:

- Pattern Recognition,
- Enhancing Early Detection & Intervention
- Nursing Prioritization & Decision-Making
- Effective Communication & Documentation

What are you thinking?

Cluster Signs & Symptoms relevant to each disease process.

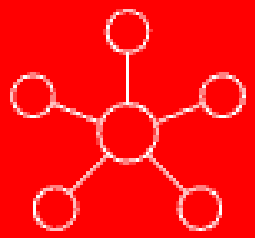
Diseases Processes:

Diverticulitis
Appendicitis

Signs & Symptoms:

- Fever
- Leukocytosis
- LLQ Abdominal Pain
- Periumbilical Pain
- RLQ Pain
- Constipation
- Nausea
- Vomiting

Clustering Of Diseases



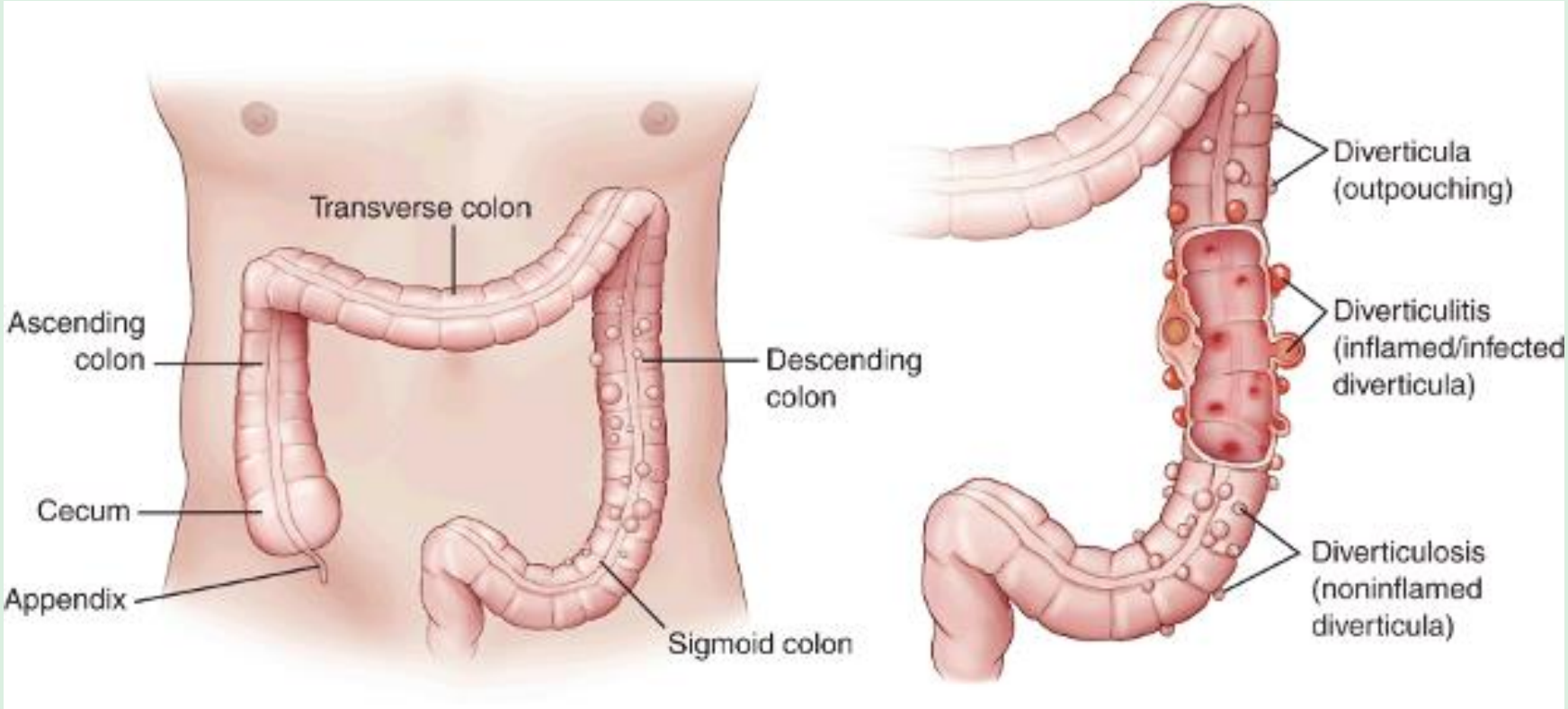
Diverticulitis

- FEVER
- LLQ Abdominal Pain
- Leukocytosis
- Constipation
- Nausea
- Vomiting

Appendicitis

- **FEVER**
- **PERIUMBILICAL PAIN**
- **LEUKOCYTOSIS**
- **RLQ PAIN**
- **NAUSEA**
- **VOMITING**

DIVERTICULAR DISEASE



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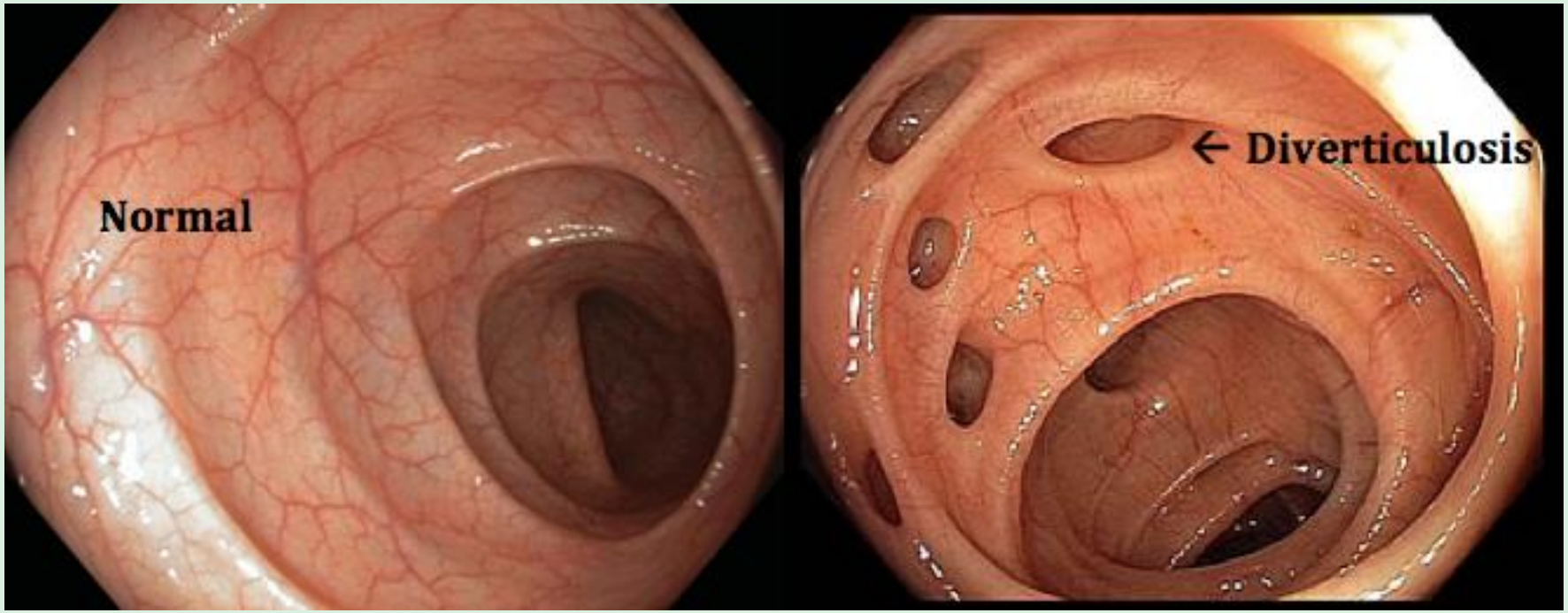
DIVERTICULAR DISEASE



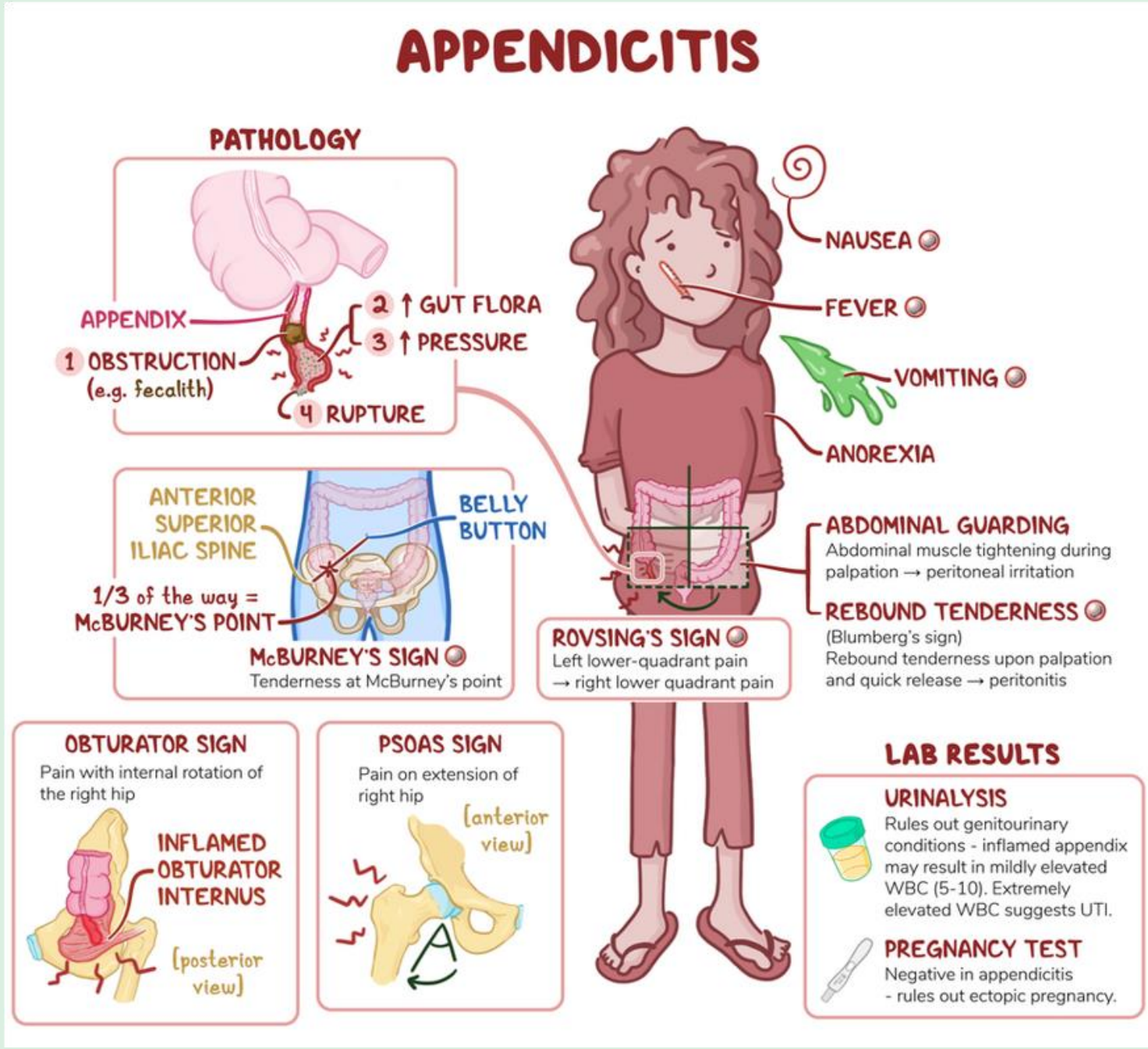
Medbullets. (n.d.). *Diverticulosis*. Retrieved, from https://step2.medbullets.com/gastrointestinal/120178/diverticulosis

Knowledge Check

The nurse is conducting a focused physical assessment on Michael. Which of the following physical assessment techniques would indicate the presence of acute appendicitis? Select all that apply.

a)Kernig Sign
b)Rebound tenderness at McBurney's Point
c)Chvostek Sign
d)Rovsing Sign
e)Phalen Test

Relate the Pathophysiology to the Physical Assessment Findings



Osmosis. (n.d.). *Appendicitis.* Retrieved, from https://www.osmosis.org/learn/Appendicitis

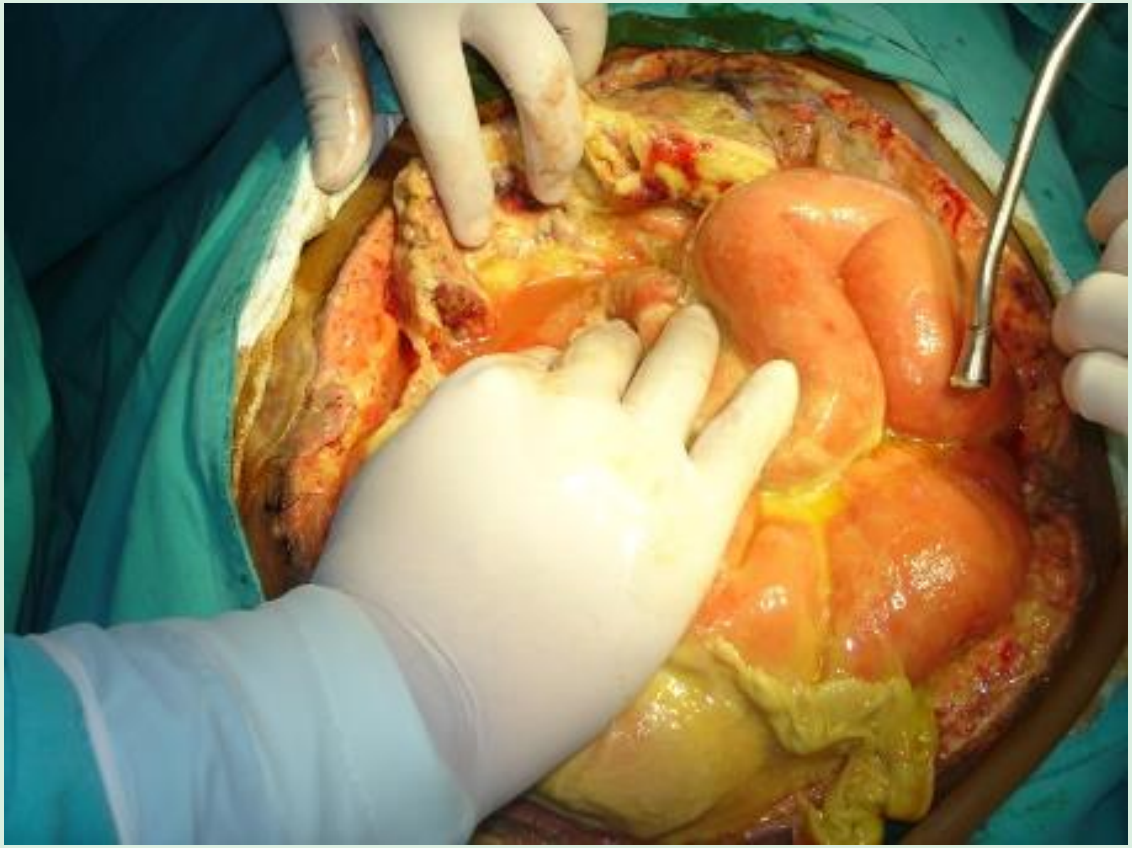
Knowledge Check

The nurse knows if a client with appendicitis suddenly reports a relief of pain and/or a change in blood pressure, the client is at increased risk for which of the following?

a)Dehydration
b)Nothing. This is an expected finding in the healing process
c)Peritonitis
d)Hypervolemia

Describe other clinical manifestations related to this complication.

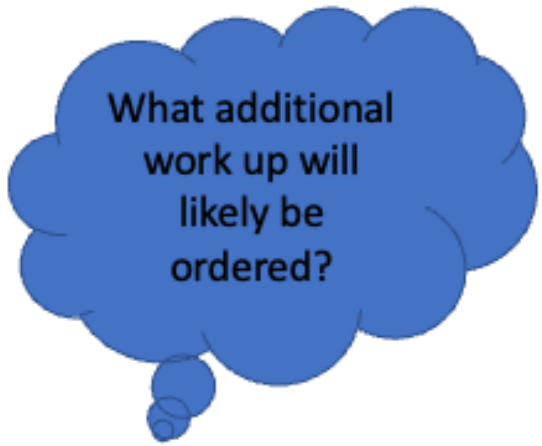
Peritonitis



Selected Reported Results: Highlight the abnormal values

	Current	Reference Range
Hemoglobin	16.2	Males: 14–17.3 g/dL
		Females: 11.7–15.5 g/dL
Hematocrit	36%	Males: 42–52%
		Females: 36–48%
WBCs	15,500	4,500–11,00 cells/mm3
Platelets	223,000	150,000–450,000 mm3
Sodium	140	135–145 mEq/L
Potassium	3.9	3.5–5.0 mEq/L
Calcium	8.7	8.2–10.2 mg/dL
Glucose	80	70 to 99 mg/dL
BUN	12	8 to 21 mg/dL
Creatinine	0.9	0.5 to 1.2 mg/dL

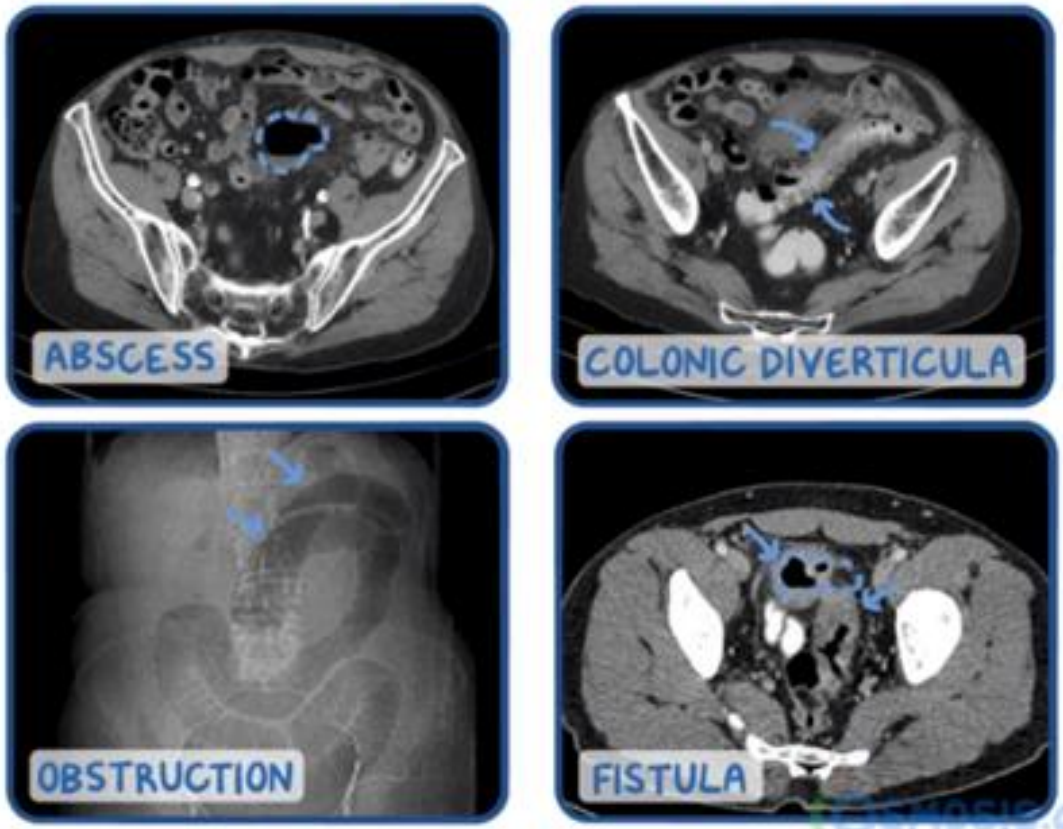
	Current	Reference Range
ALT	20	10-40 U/L
AST	15	10-30 U/L
Amylase	60	40-140 U/L
Lipase	50	0-160 U/L



MICHAEL HAD A CT SCAN COMPLETED AND WAS DIAGNOSED WITH ACUTE DIVERTICULITIS

DIAGNOSIS: ACUTE DIVERTICULITIS

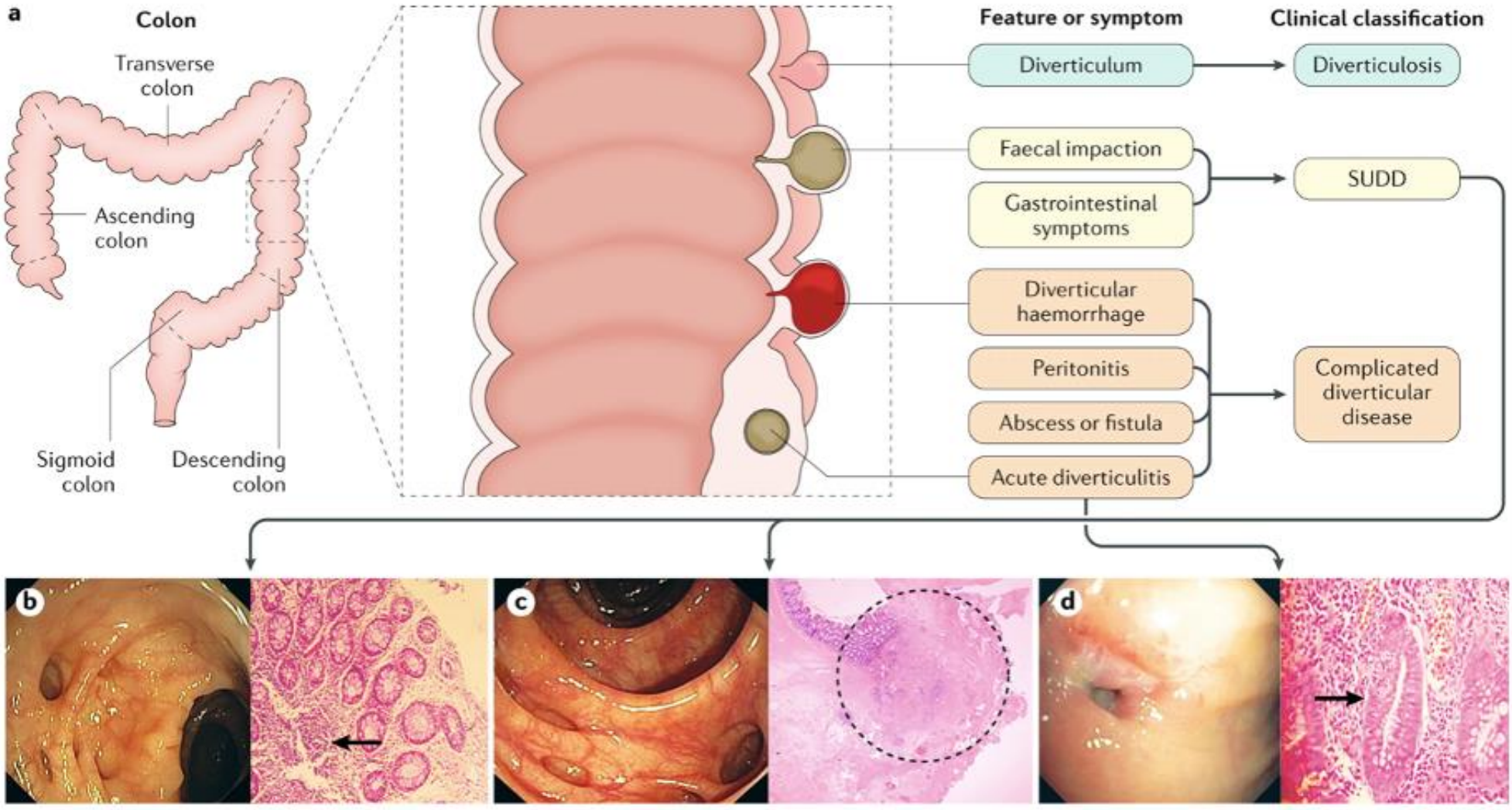
* CT SCAN
  - ~ COLONIC DIVERTICULA
    - BOWEL THICKENING
    - ↑ DENSITY in FAT
  - ~ ABSCESS
    - FLUID COLLECTION
  - ~ FISTULA
    - COLONIC THICKENING
    - THICKENED BLADDER
    - AIR COLLECTIONS
  - ~ PARTIAL BOWEL OBSTRUCTION
    - DILATED INTESTINAL LOOPS (w/ air-fluid levels)



The nurse correctly identifies which of the following orders are indicated or contraindicated for Michael's diagnosis of Acute Diverticulitis. If the order is indicated, identify what the nurse will be monitoring.

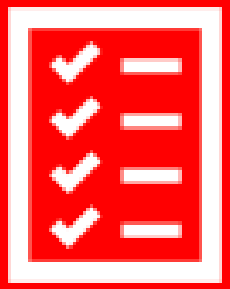
Orders	Indicated	Contraindicated	Monitoring
IV Fluids	✓		Fluid Volume Status
Laxative or Enema		✗	
NG Tube to Low Suction	✓		Low K + and Metabolic Alkalosis
IV Morphine	✓		Decrease in Pain and Respiratory Rate
IV Antibiotics	✓		Decrease in WBCs
High Fiber Diet			✗

Potential Complications



Tursi, A., Scarpignato, C., Strate, L. L., Lanas, A., Kruis, W., Lahat, A., Danese, S., & Elisei, W. (2020). Colonic diverticular disease. *Nature Reviews Disease Primers, 6*(20). https://doi.org/10.1038/s41572-020-0153-5

Discharge Instructions



George has completed 48 hours of IV antibiotics and his symptoms are resolving. Complete the following discharge instructions.

- ~~❑ Continue to follow a low fiber diet~~
- ❑ Make an appointment for outpatient colonoscopy
- ❑ Avoid straining, bending, lifting
- ❑ Weight reduction is advised
- ~~❑ Avoid nuts, popcorn or seeds~~
- ❑ Complete Oral Antibiotics as prescribed

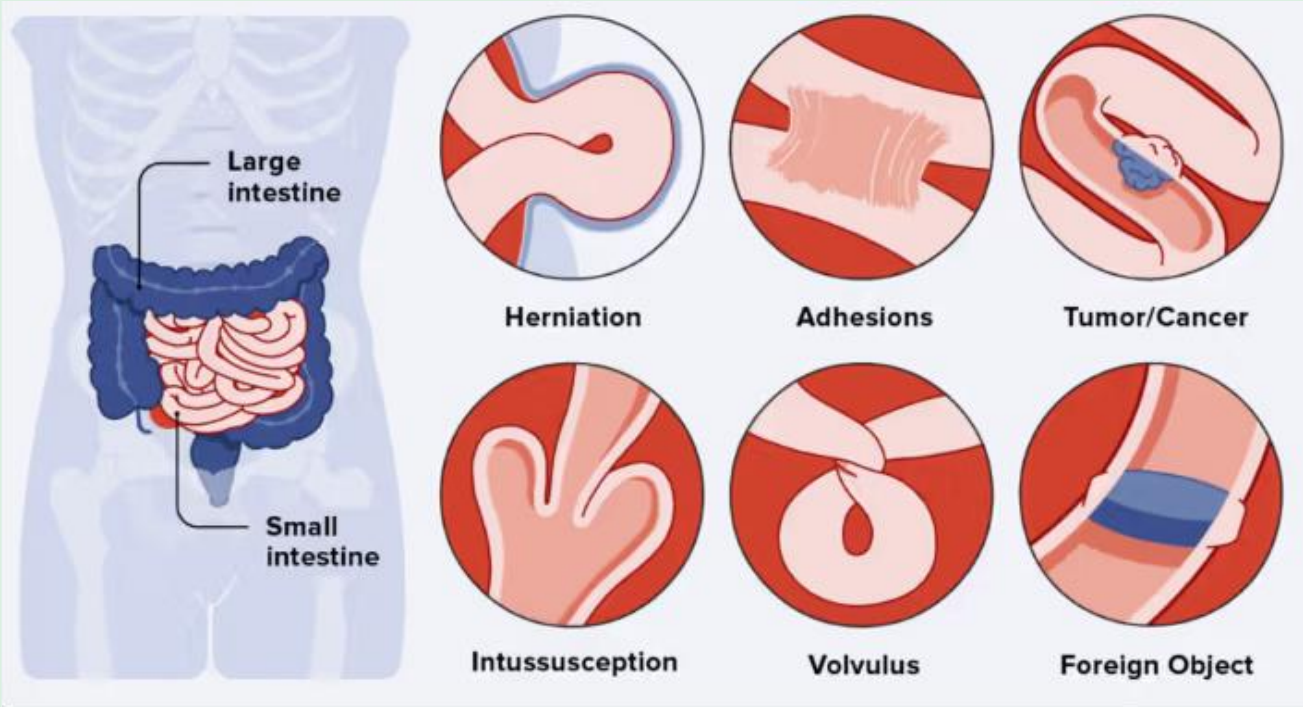
What is the relevance of each instruction?

Potential Severe Complication of Gastrointestinal Disorders: Bowel Obstruction

Types of Bowel Obstruction

Small Bowel Obstruction **(SBO)**

Large Bowel Obstruction **(LBO)**



https://www.medicalnewstoday.com/articles/324037

A blockage in the intestines that prevents the normal passage of contents through the digestive tract. It can be caused by mechanical factors (e.g., adhesions, tumors) or non-mechanical factors (e.g., paralytic ileus) and often results in symptoms such as abdominal pain, bloating, nausea, and vomiting.

Mechanical Obstruction:

- Adhesions (scar tissue from previous surgeries)
- Hernias (intestines trapped in the abdominal wall)
- Tumors (benign or malignant growths in the intestines)
- Intussusception (telescoping of one part of the intestine into another)
- Volvulus (twisting of the intestine)
- Impacted stool (severe constipation)

Non-Mechanical (Paralytic Ileus):

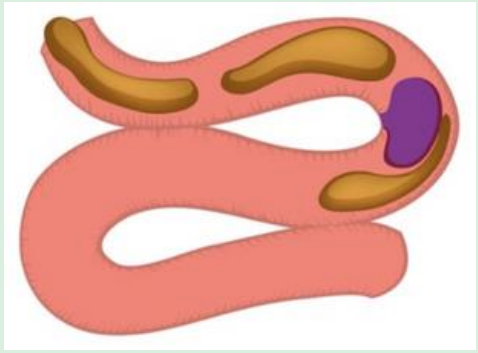
- Post-surgical ileus (temporary paralysis of the bowel)
- Electrolyte imbalances (e.g., low potassium)
- Infections (e.g., peritonitis)
- Medications (e.g., opioids, anticholinergics)

Vascular Causes:

- Mesenteric artery ischemia (decreased blood supply to the intestines

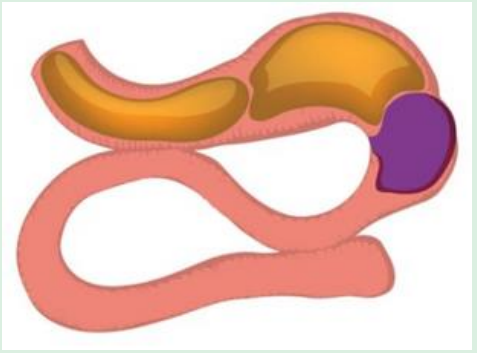
Partial Obstruction

A partial bowel obstruction partially blocks the intestine, allowing some air and fluid to pass, causing milder, gradually progressive symptoms like intermittent flatus and overflow diarrhea.



Complete Obstruction

A complete bowel obstruction fully blocks the intestine, preventing air and fluid passage, causing rapidly worsening symptoms, and often leading to obstipation (complete inability to pass stool or gas)



Subjective and Objective Findings

- Abdominal pain and distension
- Nausea and vomiting
- Absence of bowel movements and gas
- Bowel Sounds: Are increased and high-pitched in the early phases of bowel obstruction and decreased or absent in the later stages.

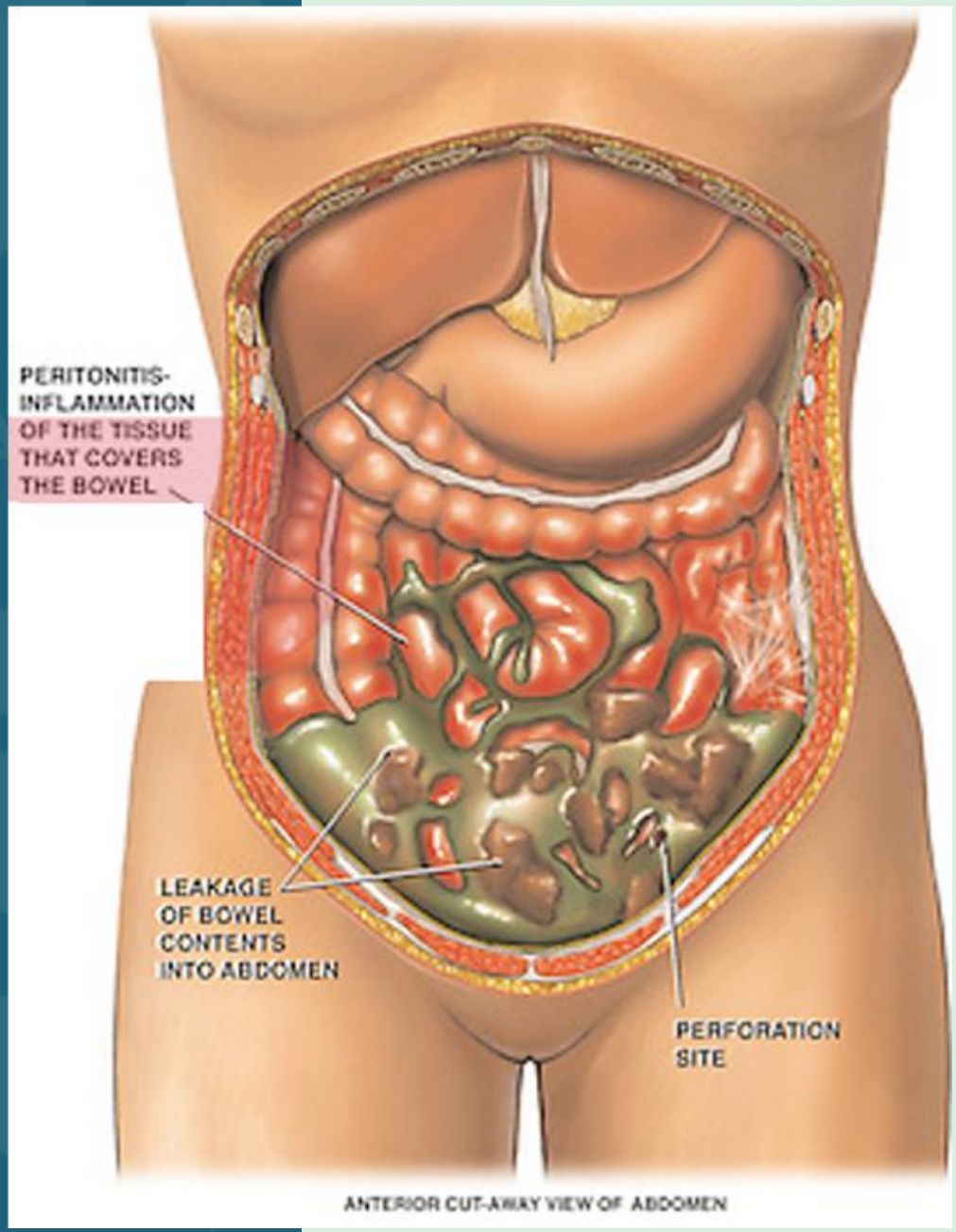
Laboratory Tests

- CMP
- CBC

Diagnostic Tests: Radiology

- X-ray
- CT
- MRI

Diagnosis/Prioritize Hypotheses



- *Fluid and electrolyte imbalance*
- *Risk of bowel perforation*
- *Peritonitis: Often sharp and localized, worsening with movement or touch, guarded abdomen, abdominal distention,*
- *Risk of infection and sepsis*

Planning and Implementing

Generate Solutions

- NPO (Nothing by Mouth)
- IV fluids and electrolyte replacement
- Potassium replacement due to loss through NG suction and vomiting
- Nasogastric tube for decompression
- Pain management

Take Action

- Implement NPO and NG tube placement
- Frequent oral care at least q4hrs
- Administer IV fluids and medications as ordered
- Monitor vital signs and abdominal status

Evaluate Outcomes

- Monitor for symptom improvement
  - Most small bowel obstructions resolve with medical treatment mentioned.
  - Complete obstructions, typically in the large bowel may require surgical intervention to remove a piece of bowel that has been damaged or ischemic
- Check lab values including electrolyte balance
- Assess for signs of complication
  - Perforation, bacteremia, sepsis, intra-abdominal abscess, pneumonia with aspiration, dehydration, electrolyte imbalances, and acid–balance disturbances.
  - Strangulated bowel, or a delay in treatment, mortality risk increases.
  - If untreated, complete bowel obstructions may lead to death within a few hours from hypovolemic or septic shock and vascular collapse.
- May require a temporary or permanent ostomy depending on the damage to the bowel and the likelihood of it healing