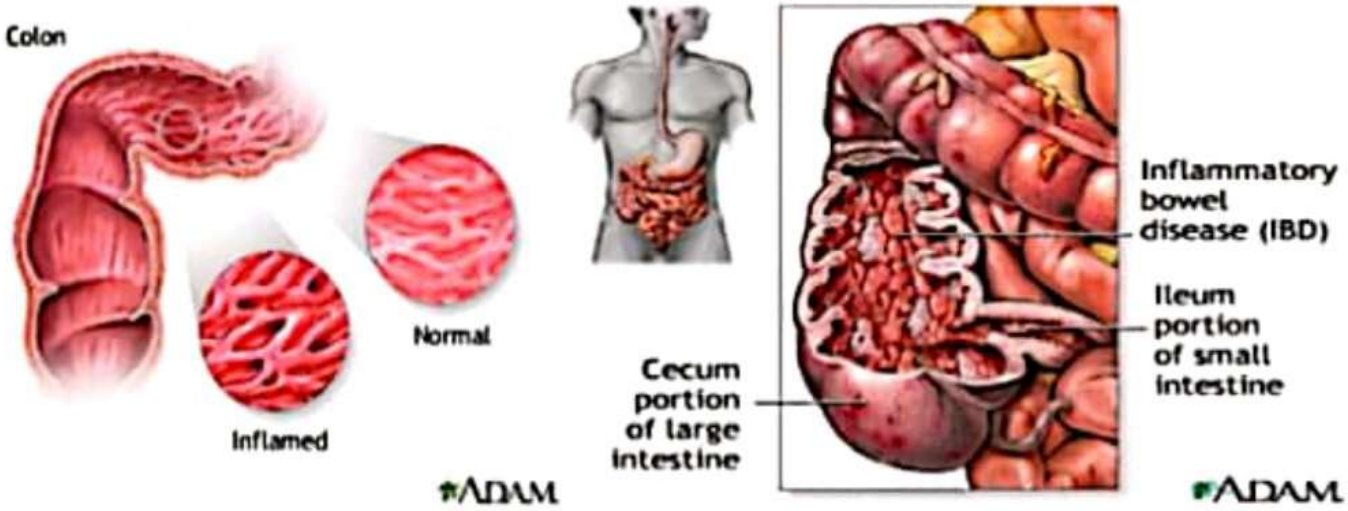
Introduction

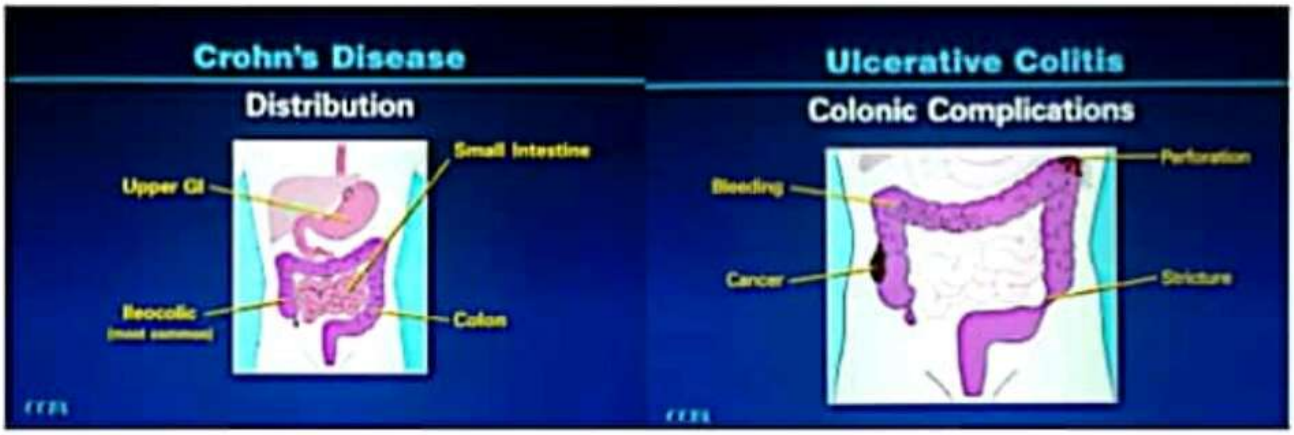
- Inflammatory bowel disease (IBD) represents a group of intestinal disorders that cause prolonged inflammation of the digestive tract.
- It is a spectrum of chronic idiopathic inflammatory condition.

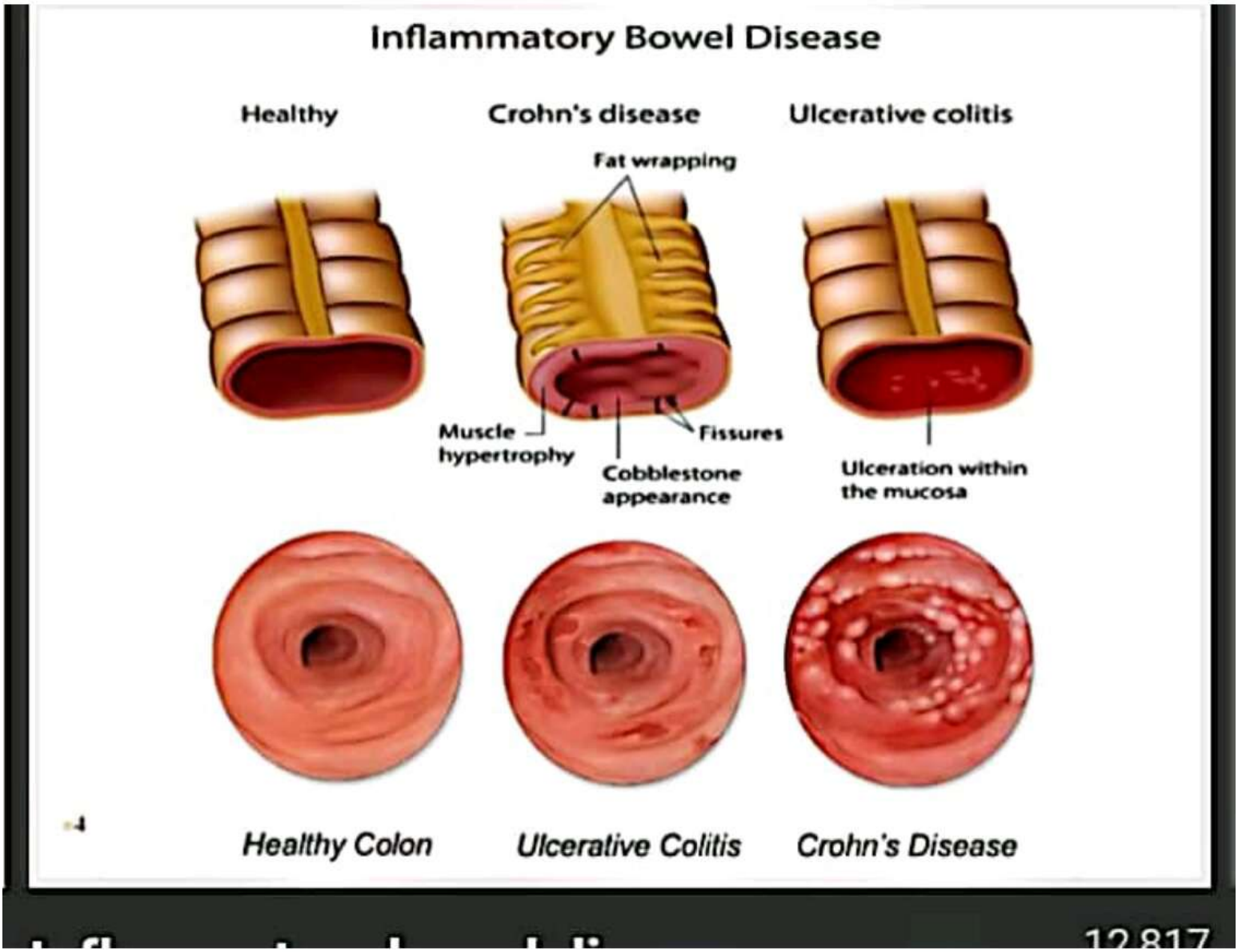


Classification

Ulcerative colitis: Ulcerative colitis is a disease that causes mucosal inflammation and sores (ulcers) in the lining of the large intestine (colon).

Chron's disease: Crohn's disease is a chronic, relapsing and remitting inflammatory disease of the gastrointestinal tract, affecting any site from mouth to anus.





Epidemiology

- In the United States, it is currently estimated that about 1 –1.3 million people suffer from IBD.
- Ulcerative colitis is slightly more common in males, while Crohn's disease is more frequent in women.
- Diet, oral contraceptives, perinatal and childhood infections, or atypical mycobacterial infections have been suggested, but not proven, to play a role in developing IBD.

Prevalence (number of existing cases per 100,000 population)	
Crohn's disease	**Ulcerative colitis**
26 to 199 cases per 100,000 persons[2]	37 to 246 cases per 100,000 persons[2]
201 per 100,000 adults[1]	238 per 100,000 adults[1]

Etiology

Infectious agents

- Viruses (Measles)
- Bacteria (Mycobacteria)

Genetics

Environmental factors

- Diet
- Smoking

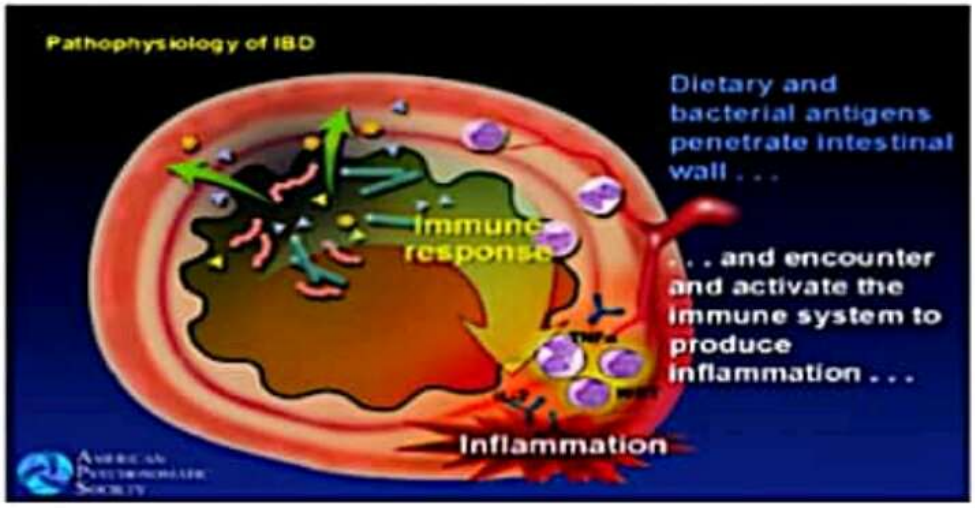
Psychological factors

- Stress
- Emotional or physical trauma

Pathophysiology

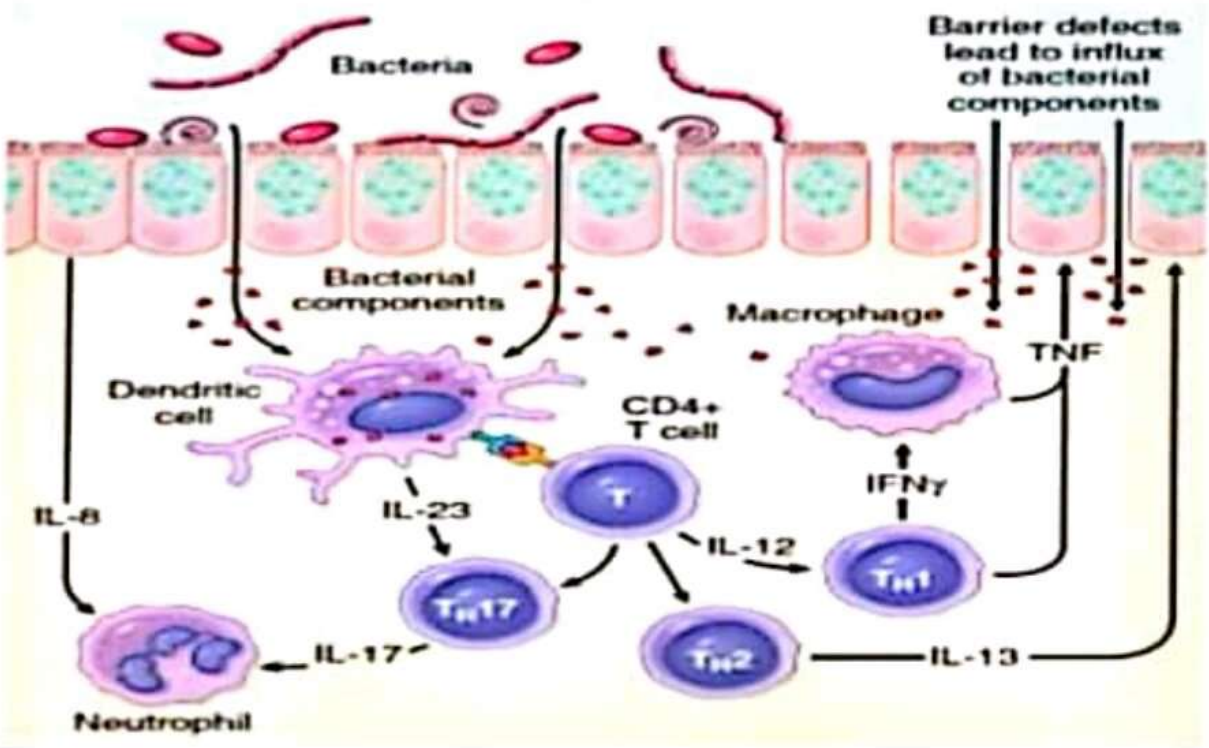
ALTERED MUCOSAL IMMUNE RESPONSE

- Dietary and bacterial antigens penetrate into the intestinal wall and activates the immune system.
- This causes increased production of pro-inflammatory mediators which will lead to inflammation of the mucosal layer.



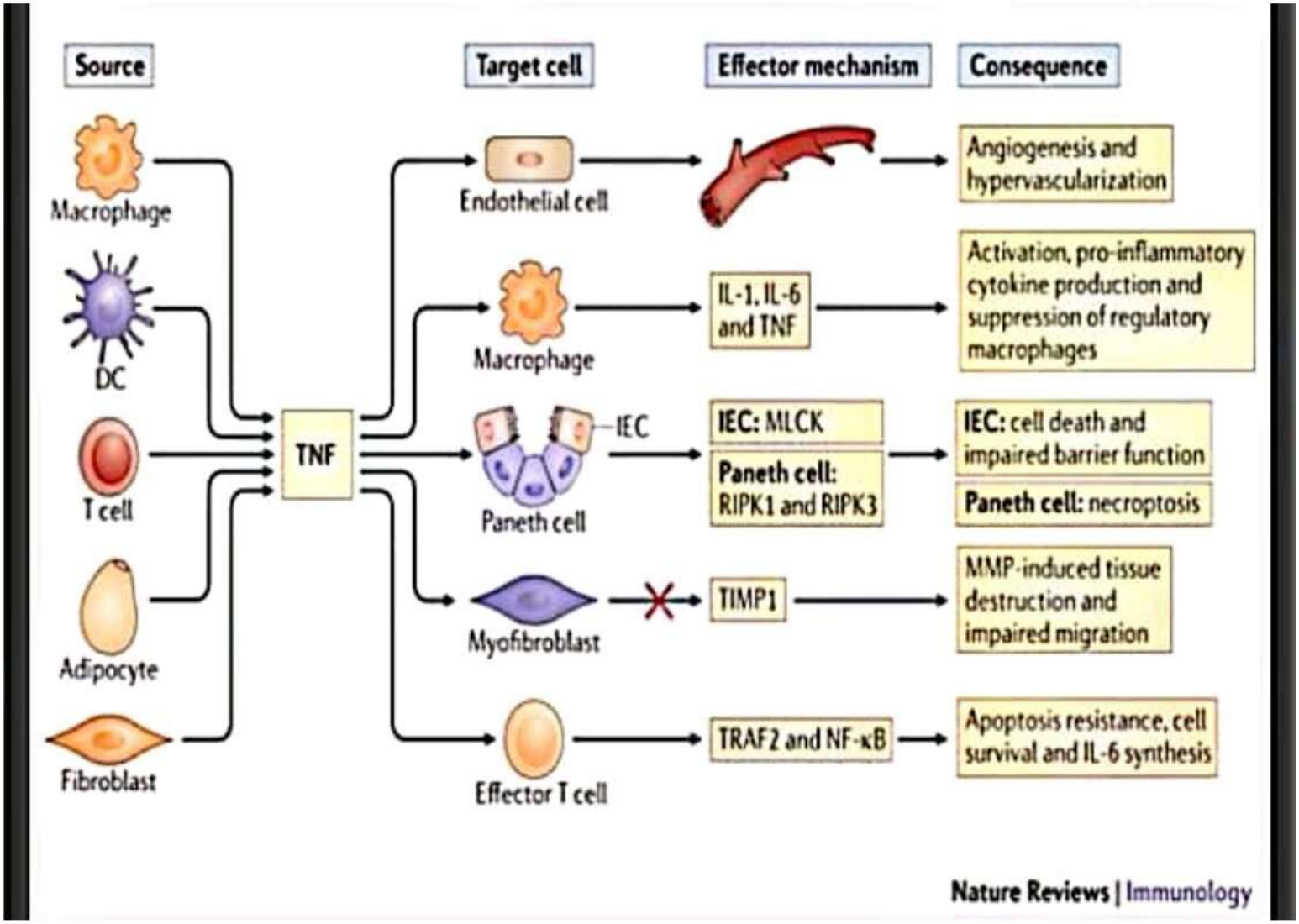
Pathophysiology

EPITHELIAL DEFECTS



Cont.

- Variety of epithelial defects have been described in Crohn's disease and Ulcerative Colitis.
- Defects in epithelial cells will lead to influx of bacterial components such as dendritic cells and macrophages which activates CD+4 cells.
- Activated CD+4 cells activate other inflammatory cells like B-cells and variable T-cells or recruit more inflammatory cells by stimulation of homing receptor on leucocytes and vascular epithelium.
- Inflammation in IBD is maintained by an influx of leukocytes from the vascular system into sites of active disease. This influx is promoted by expression of adhesion molecules (such as α 4-integrins) on the surface of endothelial cells in the microvasculature in the area of inflammation.



Clinical Manifestations

Clinical symptoms are same in both case.

- Diarrhoea
- Abdominal pain, cramping & bloating due to bowel obstruction
- Hematochezia : Blood in stool
- Low fever
- Decreased appetite
- Weight loss and anorexia
- Fatigue
- Arthritis

Diagnosis

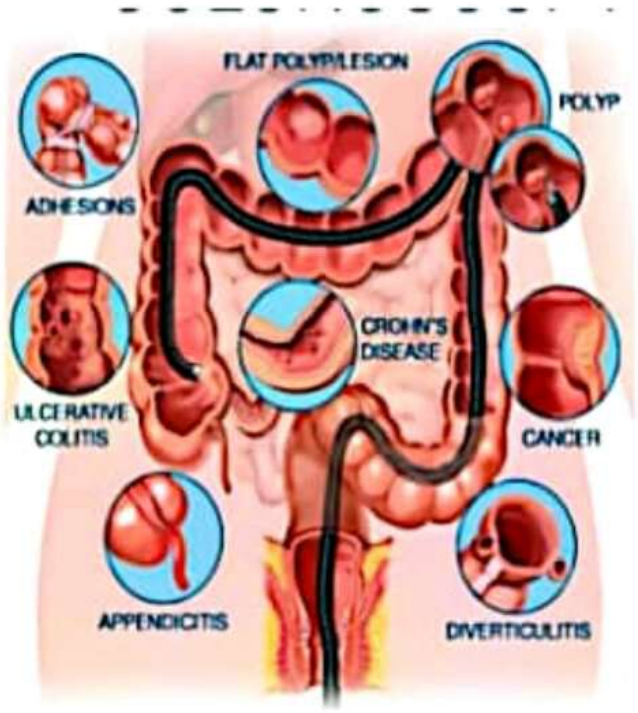
- Physical Examination
- Endoscopy
- Biopsy
- Radiology
- Blood Test

Physical Examination

- The main features to look for are: oral aphtosis, abdominal tenderness and masses, anal tags, fissure and fistulae, nutritional deficiency.
- An important feature in children is growth retardation.

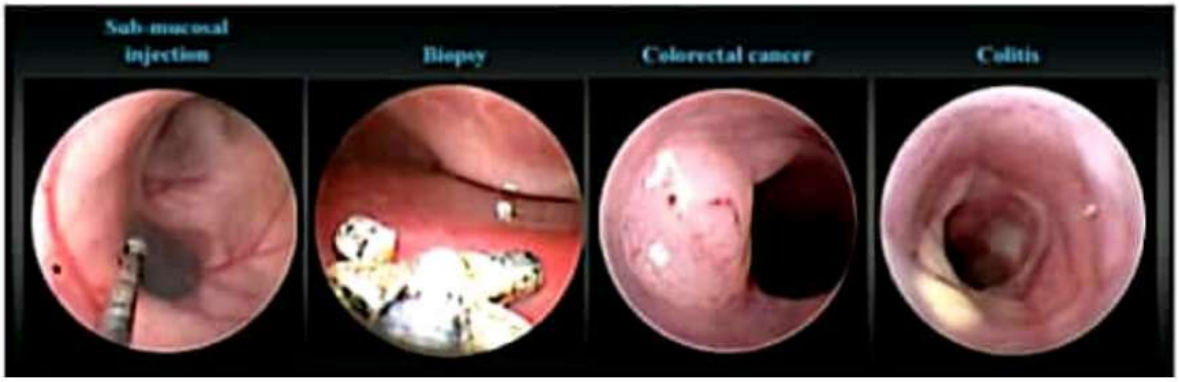
Endoscopy/ Colonoscopy/ Sigmoidoscopy

- Colonoscopy helps to determine the pattern and severity of colonic and terminal ileum inflammation and allows biopsies to be obtained.
- Endoscopic features are aphtous ulcers, deeper ulceration, postinflammatory polyps (which indicate previous severe inflammation), but always accompanied by intervening normal mucosa, which is an important differential feature between CD and UC .



Biopsy

- Rectal and colonic biopsies should be examined to find the nature of the inflammation (ulcerative colitis versus CD), collagenous colitis or microscopic inflammation if macroscopic appearance is normal, and infection.



Radiology

Barium enema

- Barium inserted into rectum
- Fluoroscopy used to image bowel
- Rarely used due to colonoscopy
- Useful for identifying colonic strictures or colonic fistulae

Barium Small bowel follow-through X-ray

- Barium sulfate suspension drink
- Fluoroscopic images of bowel taken over time
- Useful for looking for inflammation and narrowing of small bowel

Blood Test

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- Anemia may be present due to blood loss (iron deficiency), chronic inflammation or B12 malabsorption (macrocytic).
- Hypoalbuminemia suggests severe disease with denutrition. The best markers of inflammation severity are elevation of the C-reactive protein and platelet count.
- Anti-saccharomyces cerevisiae antibodies (ASCA) are positive in 50-60% of CD patients while anti-neutrophil polynuclear antibodies (ANCA) are positive in 50-60% of UC patients.

	Crohn's disease	Ulcerative colitis
Terminal ileum involvement	Commonly	Seldom
Colon involvement	Usually	Always
Rectum involvement	Seldom	Usually
Involvement around the anus	Common	Seldom
Bile duct involvement	No increase in rate of primary sclerosing cholangitis	Higher rate
Distribution of Disease	Patchy areas of inflammation (Skip lesions)	Continuous area of inflammation
Endoscopy	Deep geographic and serpiginous (snake-like) ulcers	Continuous ulcer
Depth of inflammation	May be transmural, deep into tissues	Shallow, mucosal
Fistulae	Common	Seldom
Stenosis	Common	Seldom
Autoimmune disease	Widely regarded as an autoimmune disease	No consensus
Cytokine response	Associated with T_h17	Vaguely associated with T_h2
Granulomas on biopsy	May have non-necrotizing non-peri-intestinal crypt granulomas	Non-peri-intestinal crypt granulomas not seen
Surgical cure	Often returns following removal of affected part	Usually cured by removal of colon
Smoking	Higher risk for smokers	Lower risk for smokers