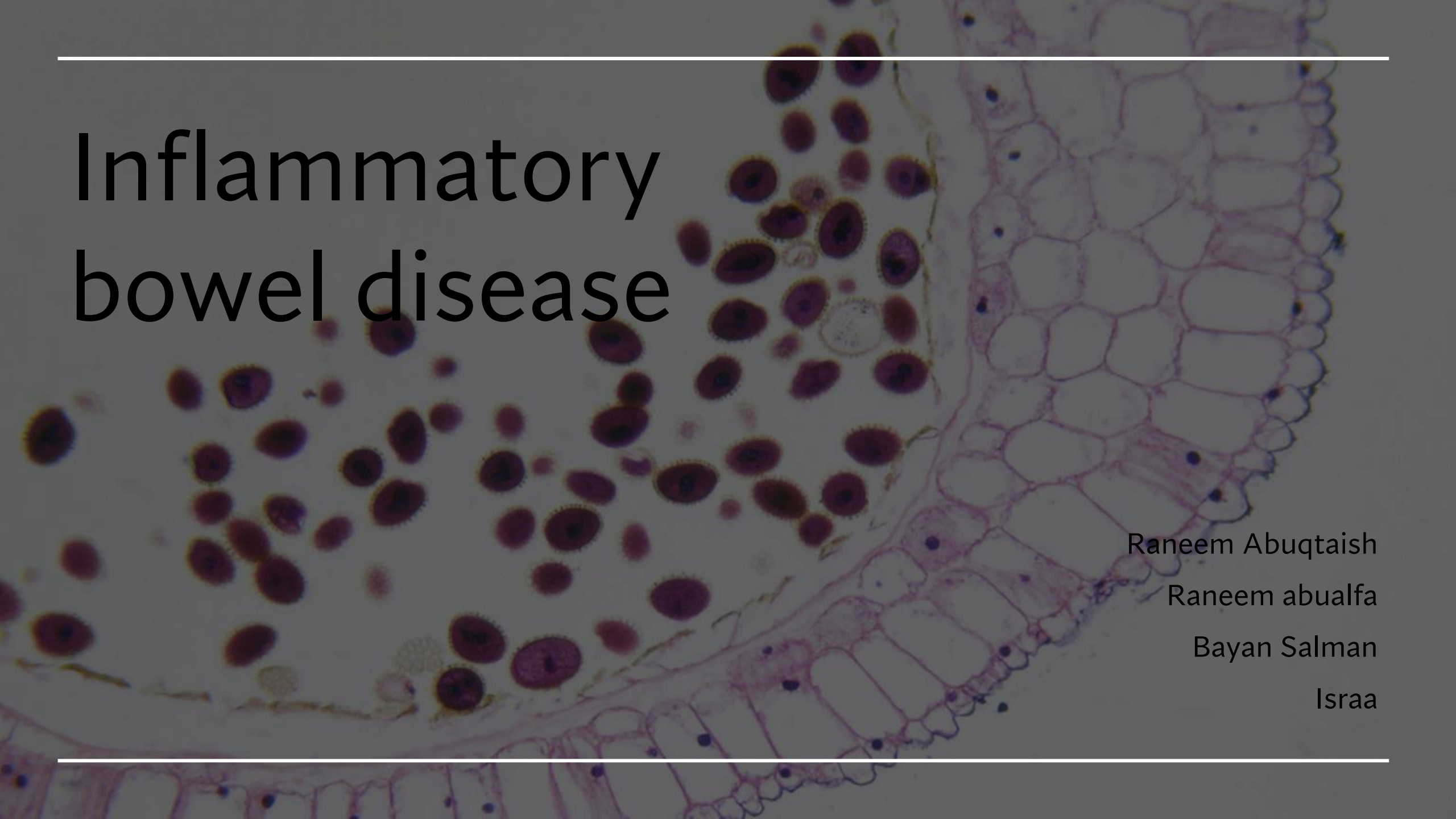

Inflammatory bowel disease

A microscopic image of intestinal tissue, likely from the colon, showing significant inflammation. The image displays a cross-section of the intestinal wall. The mucosal layer is thickened, and there is a dense infiltration of inflammatory cells, primarily lymphocytes and plasma cells, within the lamina propria. The crypts are distorted and shortened, and the surface epithelium shows signs of damage and ulceration. The overall appearance is consistent with inflammatory bowel disease, such as ulcerative colitis or Crohn's disease.

Raneem Abuqtaish

Raneem abualfa

Bayan Salman

Israa

Inflammatory Bowel Disease

This term represents a group of intestinal disorders that cause prolonged inflammation of the digestive tract.

Classification: ulcerative colitis, Crohn's disease

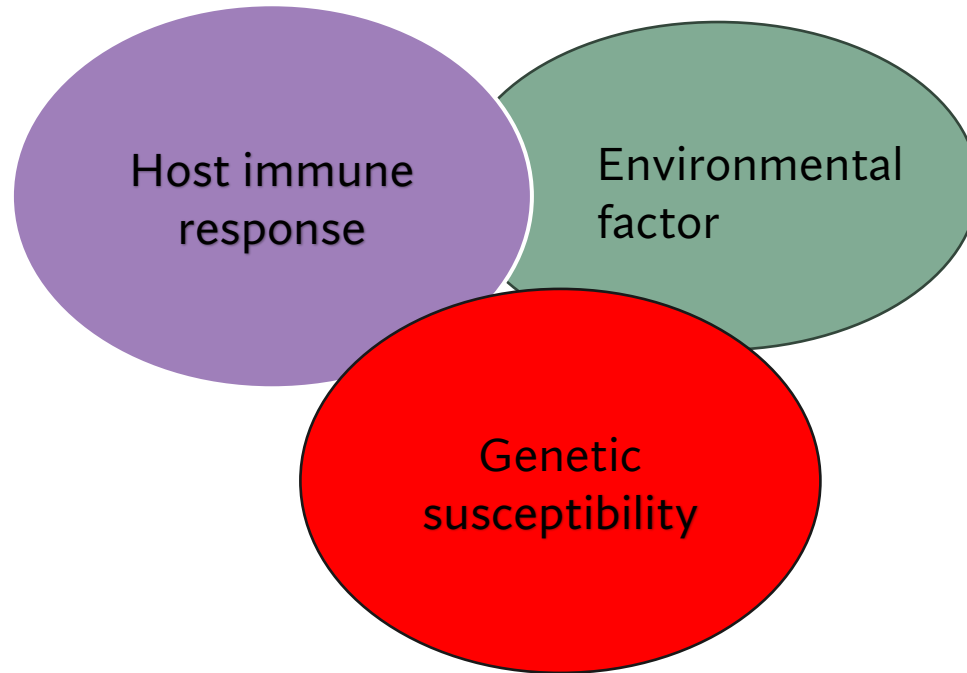
Crohn's disease (Regional enteritis) is more frequent in women.

Age: between the ages of 25 and 40 years

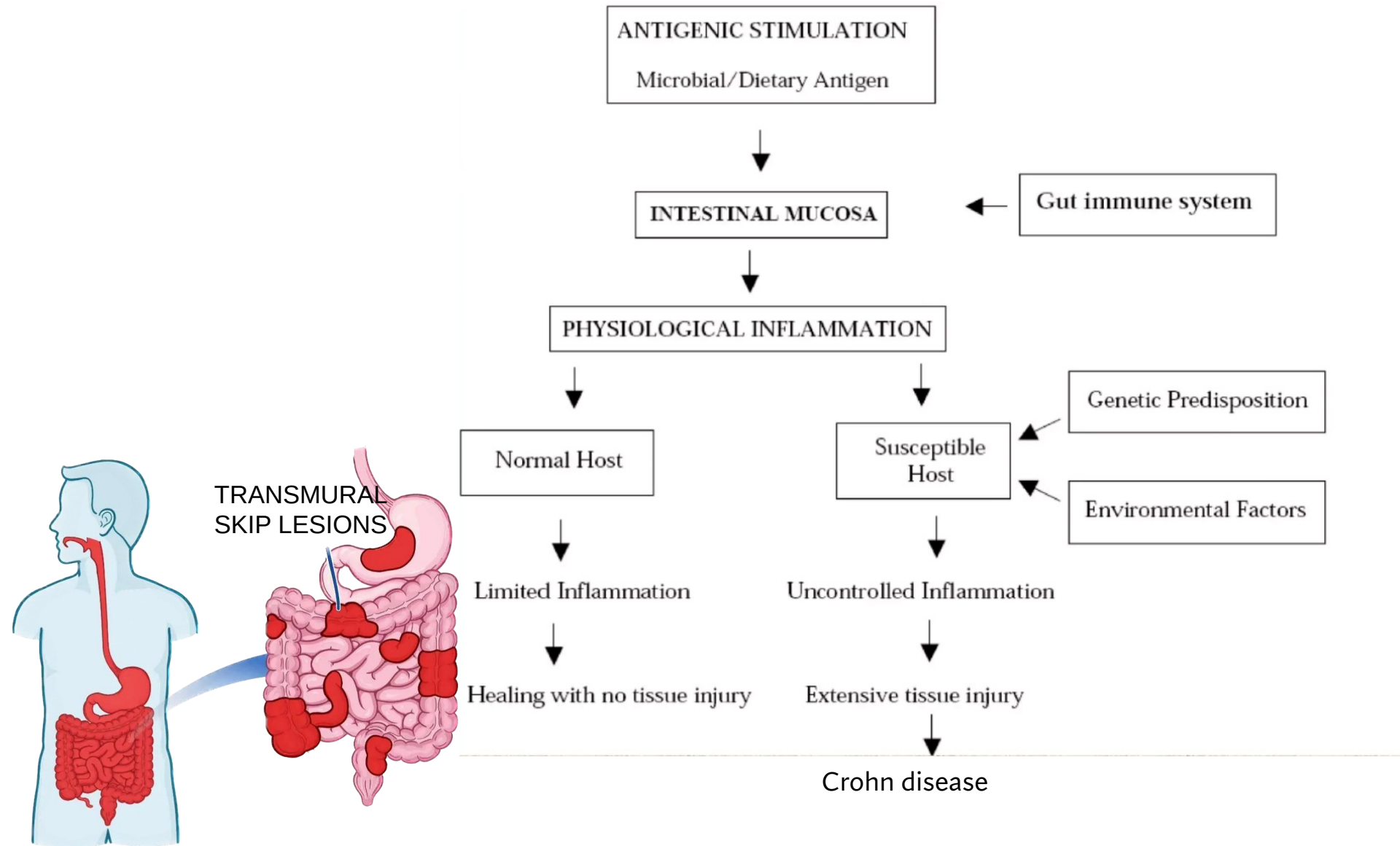
White > Black 3-5x more in eastern European (Ashkenazi) Jews

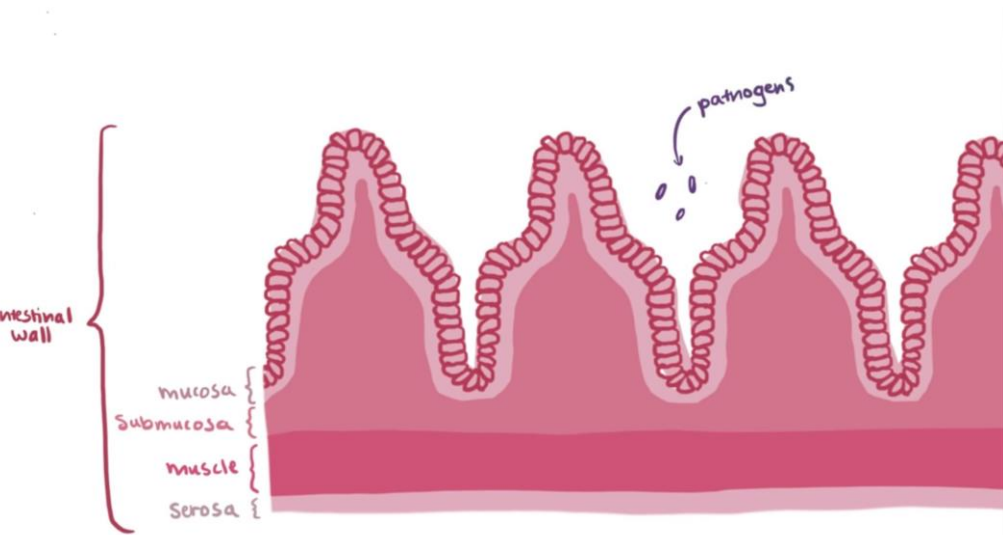
- Diet, oral contraceptives, perinatal and childhood infections, or atypical mycobacterial infections have been suggested, but not proven, to play a role in developing IBD.

The aetiology of Crohn's disease is unknown. There are many proposed pathogenic mechanisms, some of which are represented in this diagram.



A chronic, relapsing and remitting inflammatory disease of the gastrointestinal tract, affecting any site from mouth to anus.

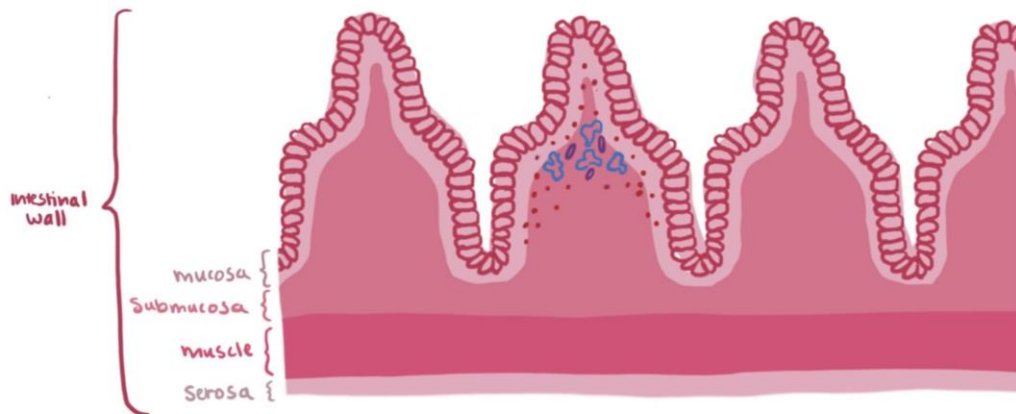




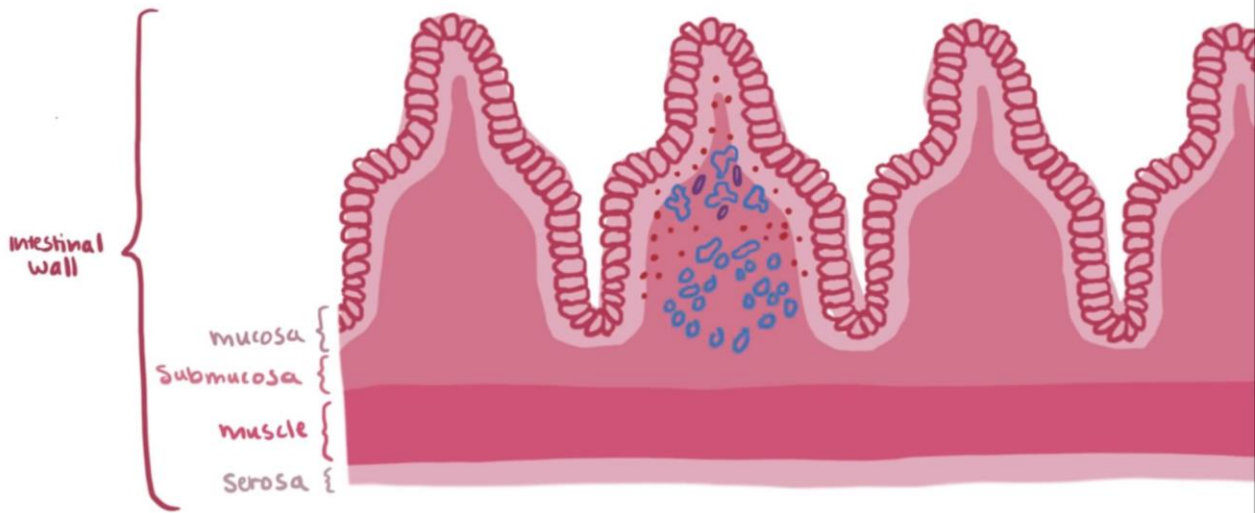
Dietary and bacterial antigens penetrate into the intestinal wall thought to be an increased permeability of the mucous membrane. This may lead to increased passage of luminal antigens

induce a cell-mediated inflammatory response.

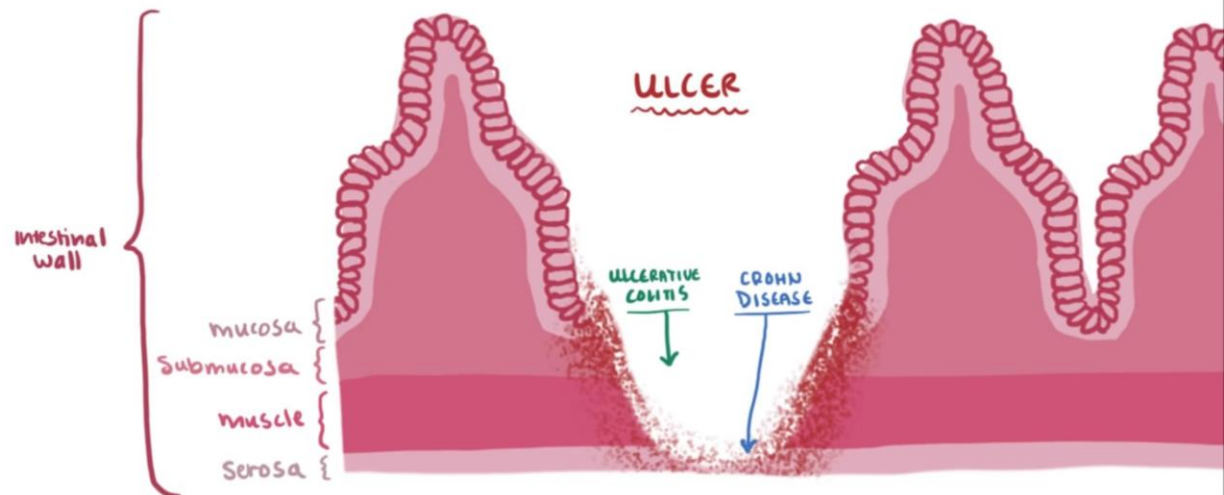
This causes increased production of pro-inflammatory mediators such as interleukin-2 and tumour necrosis factor, which coordinate local and systemic inflammatory responses



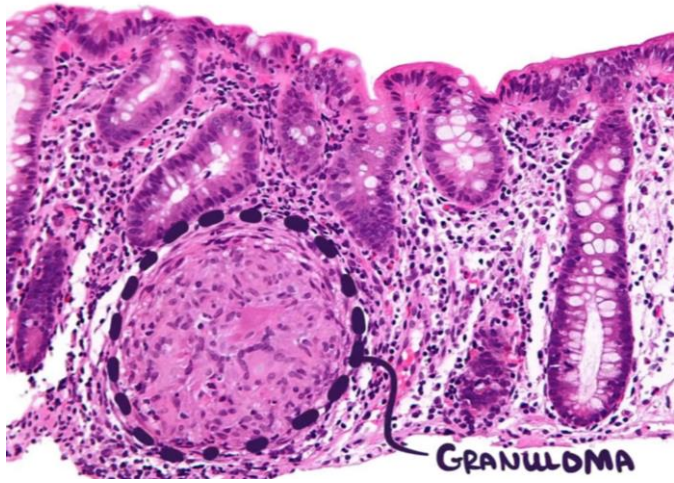
Rectum typically spared
Ileal disease is common



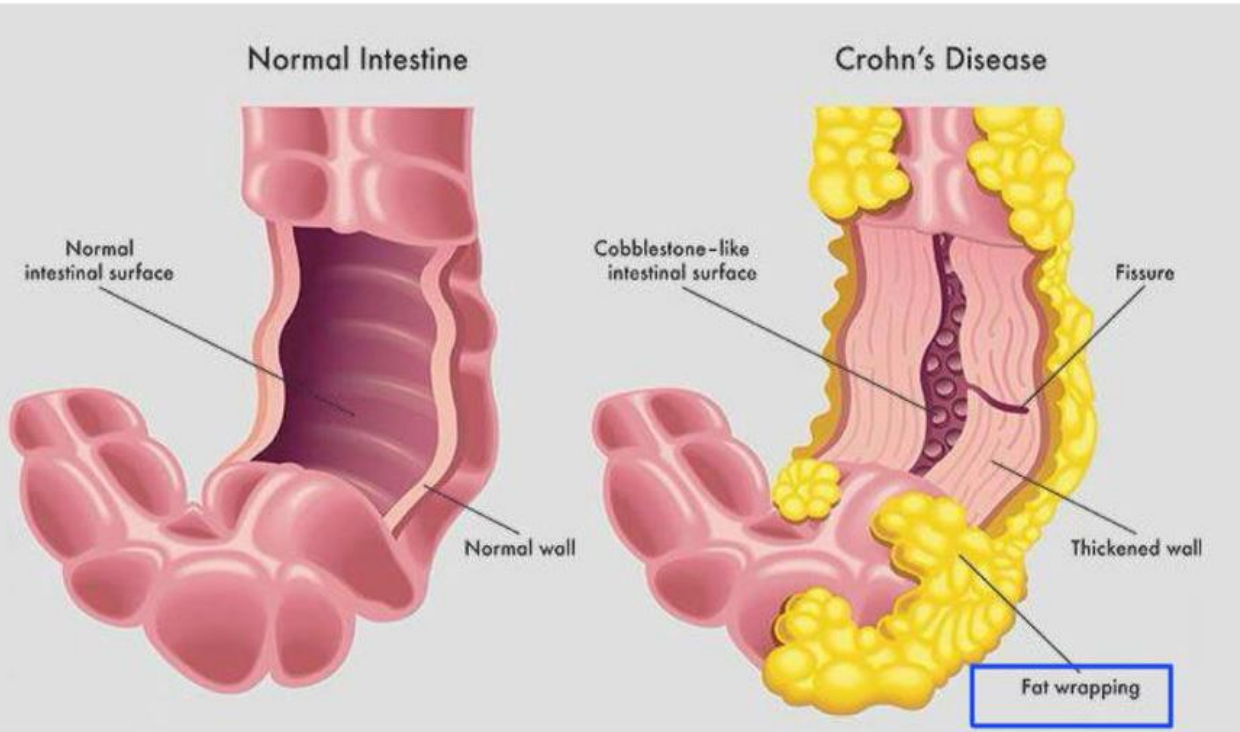
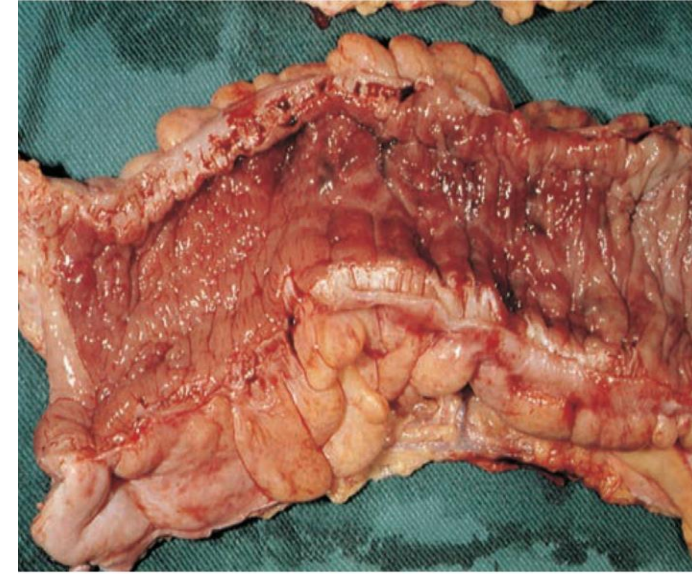
- transmural pattern of inflammation, showing entire depth of the intestinal wall leads to thickening of the bowel wall and can cause a narrowed lumen.



the lining of the intestine is irritated, cells may be shed more frequently, causing ulcers.



Granulomas known as giant cells, are found in 50% cases of Crohn's disease.



Intestinal Complications of Crohn's Disease

Ulcers: When the lining is irritated, cells may be shed more frequently, causing ulcers. They are most common in ileum, colon or rectum it can be serious if they go through the intestines and damage an artery. this can lead to life-threatening bleeding.

Sores and ulcers can become deep and form tunnel through the tissues of nearby organs:

The rectum, other parts of the intestine, bladder , vagina, skin

These tunnels are called "**fistulas**," and can become infected

Abscess

An abscess is a collection of pus that has formed as a result of fistula due to an infection.

An abscess must be drained in order to heal or surgery may be recommended to remove the infected portion of bowel.

Bowel Obstruction

The most common complication of Crohn's disease is blockage of the intestine, known as a bowel obstruction occurs in up to 30% of people.

A bowel obstruction occurs because the disease tends to thicken the intestinal wall with swelling and scar tissue, narrowing or even blocking the passage.

Cancer

- The risk of cancer gets higher as great as 32 times the normal rate if the whole colon is involved

Perforation

A perforation is a hole in the bowel.

The size, location, and seriousness of the hole can vary.

Small perforations often seal themselves off.

More serious bowel perforations may require a surgery and removal of the damaged area.

Toxic Megacolon

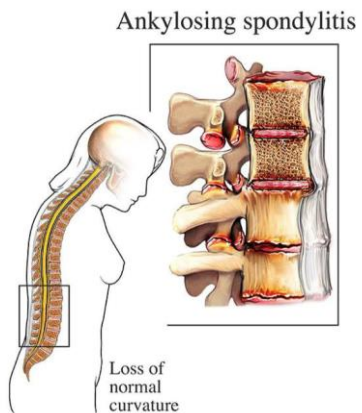
which occurs when the large intestine stops working and expands suddenly.

This can cause it to bleed excessively, or even rupture which can be very dangerous.

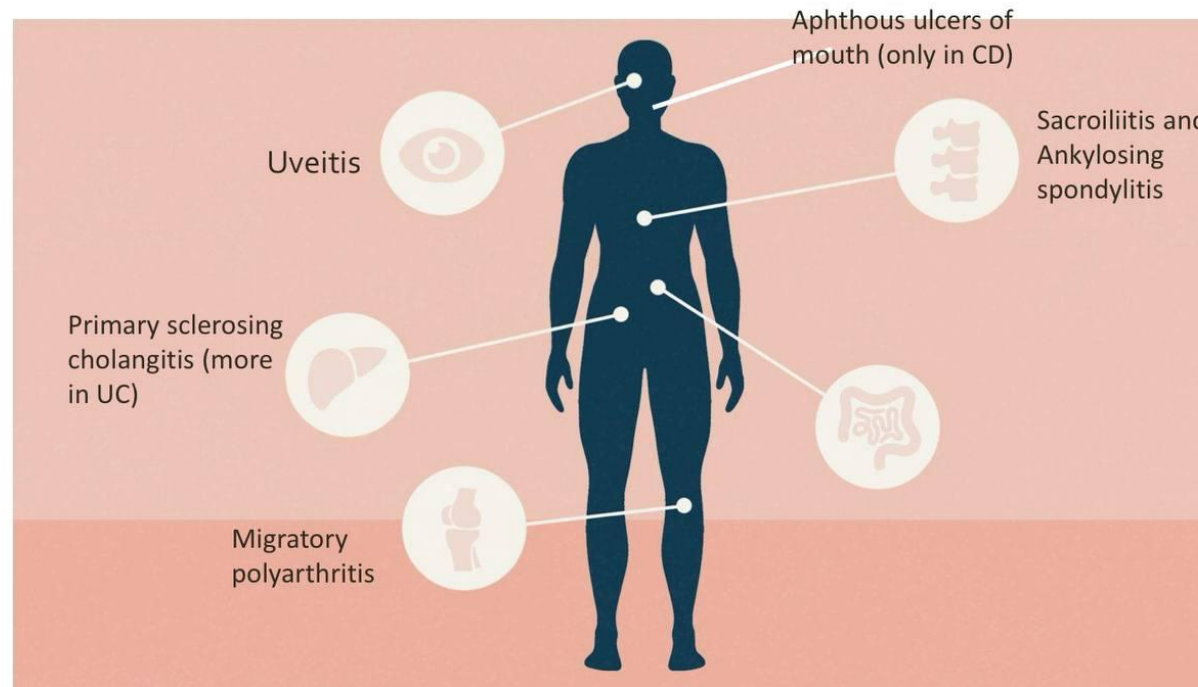
Extra-intestinal complications



Sclerosing Cholangitis
inflammatory obliterative
fibrosis of the biliary tree



Ankylosing spondylitis



Erythema nodosum



Crohn's disease “CD” Clinical features

- Gradual onset abdominal pain and there is remissions & exacerbations .
 - It starts by diarrhoea.
 - In ileitis only there is no passage of mucus , pus or bleeding per rectum and no tenesmus.
 - Colicky pain & tenderness in the right iliac fossa simulating acute appendicitis .
 - In long standing cases: Indurated tender mass in the right iliac fossa or I.O may occurs.
 - General manifestations are similar to ulcerative colitis.
 - Perianal disease is common
 - Malabsorption syndrome (or B12 def. & bile salts). Melena & iron def. if colon is involved.
- Stricture & intestinal obstruction (esp. with small bowel involvement). Perforations, abscesses, fistulas formation.
-

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.



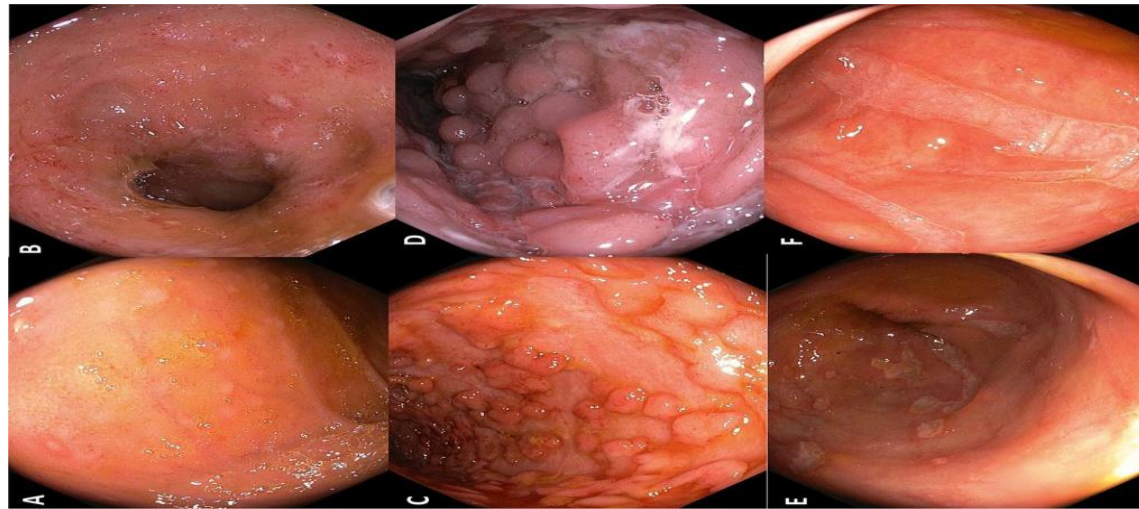
Oral aphtosis



Anal tags

Endoscopy Colonoscopy Sigmoidoscopy

- Colonoscopy helps to determine the pattern and severity of Inflammation
- colonic and terminal ileum inflammation and allows biopsies to be obtained.
- Endoscopic features are aphthous 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

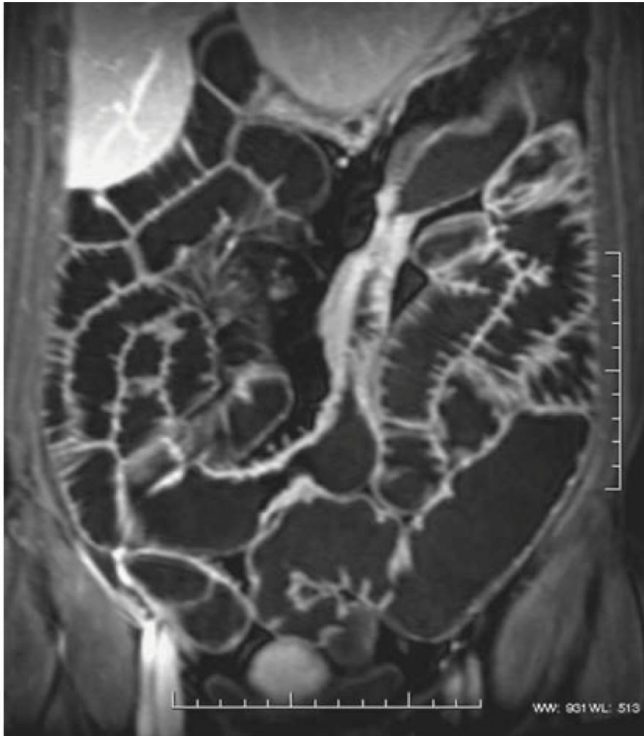


Figure 69.12 Computed tomographic enteroclysis showing small bowel dilatation secondary to strictured terminal ileum involved with Crohn's disease (courtesy of Dr H Bungay, John Radcliffe Hospital, Oxford, UK).

- **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 o Useful for looking for inflammation and narrowing of small bowel

Blood Test

- 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.
-

Treatment

- Medical treatment is the main line of treatment
 - Surgical treatment :Indications :
 - recurrent intestinal obstruction
 - bleeding
 - perforation
 - failure of medical therapy
 - intestinal fistula
 - fulminant colitis
 - malignant change
 - perianal disease.
-

Pharmacological Treatment

- The major types of drug therapy used in IBD include
 - Aminosalicylates
 - Corticosteroids
 - Immunosuppressive agents
 - NF - Tumor Necrosis Factor Inhibitor
 - Antimicrobials

Surgery for Crohn's Disease

- Strictureplasty: If an area of the bowel narrows, this widens the area without removing any portion of the small intestine.
- Resection (removing portions of the intestines): This involves removing affected areas of the intestine, and then joining together the two ends of healthy intestine in a procedure called anastomosis

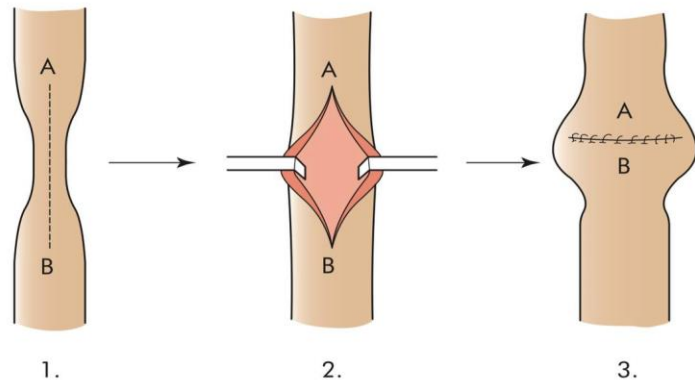
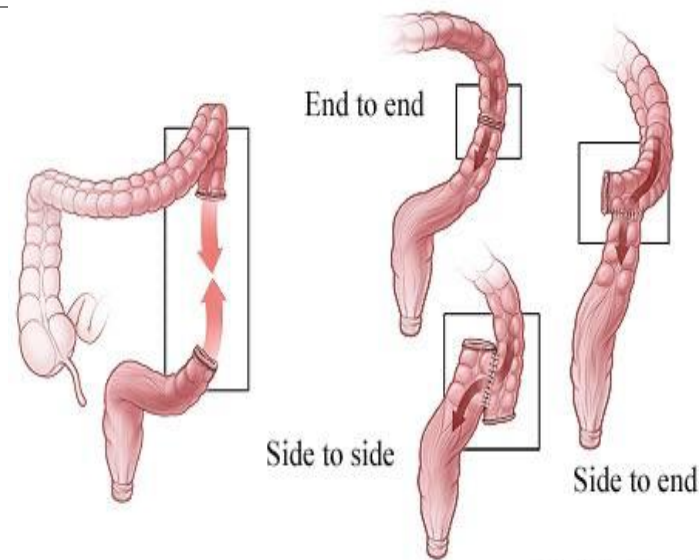


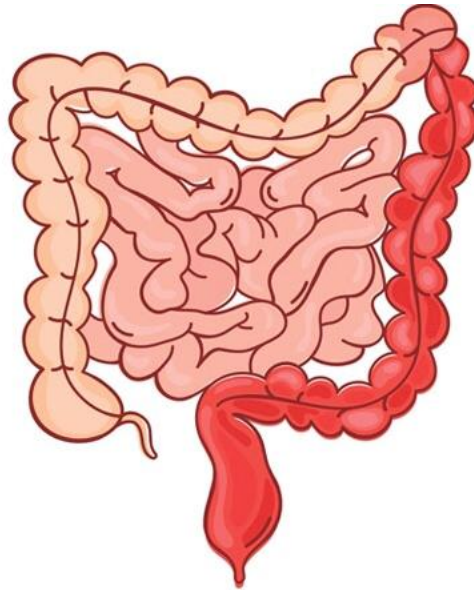
Figure 69.15 Strictureplasty. (1) A strictured length of intestine is incised along its length. (2) The bowel is opened and the walls are retracted as shown. (3) The bowel is resutured transversely to widen the narrowed segment.



Cont..

- Surgery for abscesses and fistulas: Sometimes abscesses (pus- filled mass) need to be removed surgically. And surgery may be required if a fistula (abnormal tract) is causing symptoms that don't respond to medication.
 - Colectomy (removing the colon) or proctocolectomy (removing the colon and rectum): If only the colon is affected, a colectomy may be needed. But if the colon and rectum are affected, a proctocolectomy may be needed, along with ileostomy - bringing the ileum (end of the small intestine) through a stoma (opening) in the abdominal wall to allow drainage of intestinal waste out of the body. After the procedure, an external bag must be worn over the opening to collect waste.
-

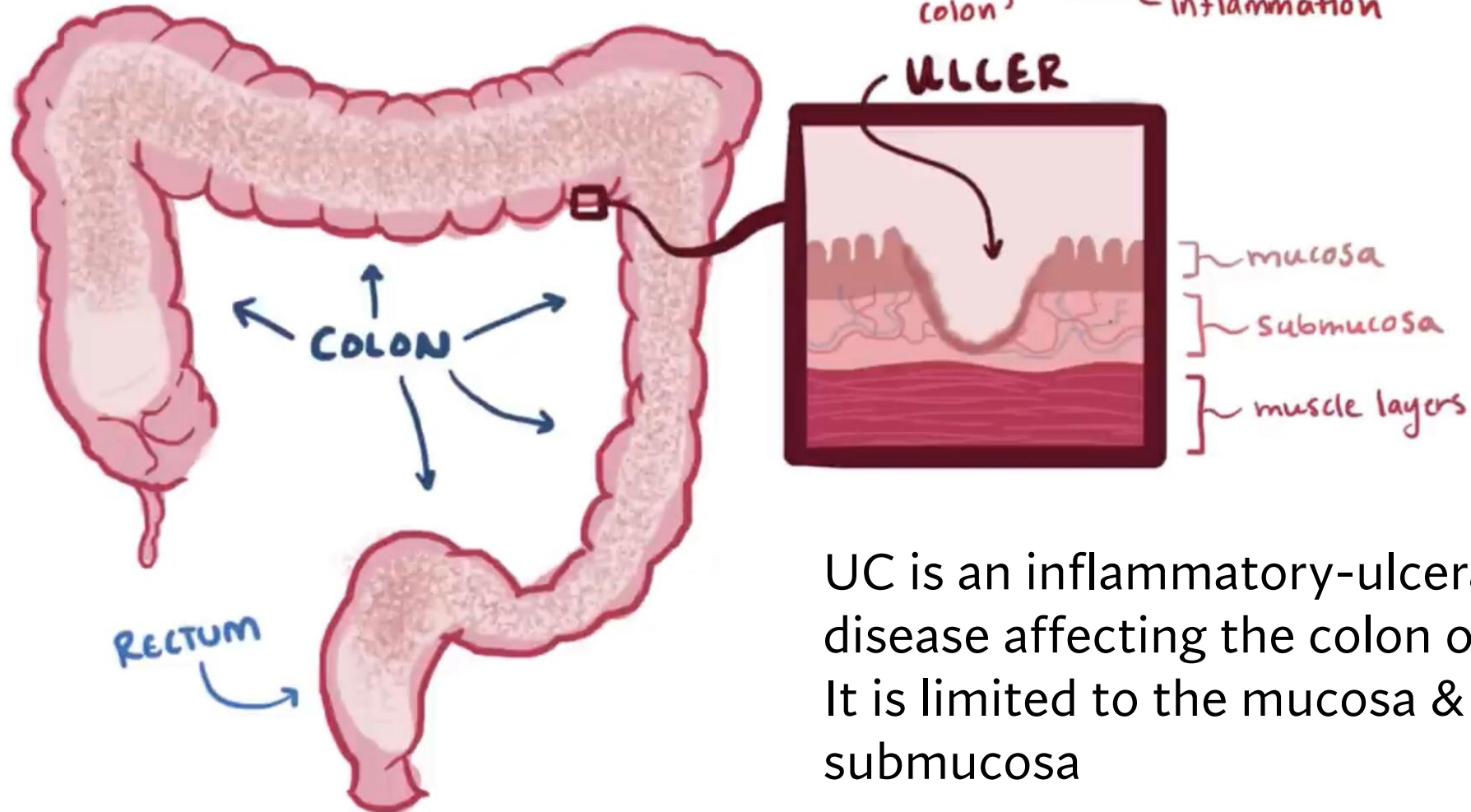
Ulcerative colitis



Ulcerative colitis is an inflammatory disease of the rectum extending for a variable distance proximally in the colon. Women are more often affected than men, and it is found in any age from infancy to the elderly, but the maximum incidence is between the ages of 15 and 30 with a second peak between 50 and 70

ULCERATIVE COLITIS

colon inflammation



UC is an inflammatory-ulcerative disease affecting the colon only
It is limited to the mucosa & submucosa

Aetiology

- The etiology of ulcerative colitis is unknown,
- although it appears to combine genetic factors, environmental stimuli and altered immune responses; it is one of the few diseases in which smoking appears to be protective.

• 1-Genetic:

- A- 10% of patients have a first-degree relative affected
 - B-monozygotic twins have a 10% concordance
 - C- Ashkenazi Jews have a fivefold higher risk than other ethnic groups
 - D- association with HLA-DRB1*0103.
-

•2- Environmental

- A-incidence is higher in developed countries than undeveloped
 - B- smoking is protective (half the incidence of non-smokers)
 - C- appendicectomy before the age of 20 appears protective
 - D-previous episode of enteric infection (e.g. Salmonella, Campylobacter) doubles the risk of later ulcerative colitis.
-

•3- Immune response

- A- epithelial barrier impaired: synthesis of mucin 2 is decreased
 - B- dendritic cell numbers reduced
 - C- exaggerated T cell (Th2) response.
-

Pathology

•The rectum and sigmoid colon are principally affected, but the whole colon may be involved. Initially, there is oedema of the mucosa, with contact bleeding and petechial haemorrhage, proceeding to ulceration; the ulcers are shallow and irregular. Oedematous islands of mucosa between the ulcers form pseudopolyps. The wall of the colon is oedematous and fibrotic and is therefore rigid with loss of its normal haustrations.

■ Mucosal Findings .

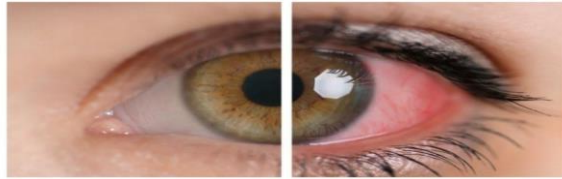
1. Granular, flat mucosa
 2. ulcer
 3. Cryptabscess
 4. Dilated mucosal vessels
 5. Pseudopolyps
-

Clinical features

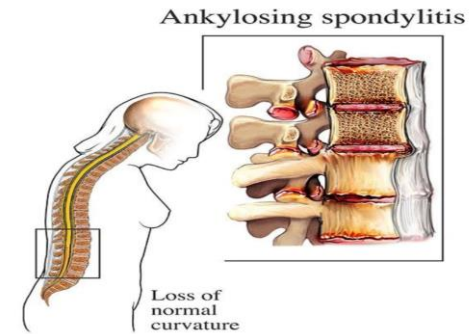
- They are usually asymptomatic, and were unknown before the advent of mesenteric angiography and colonoscopy.
 - **Intestinal symptoms**
 - Bloody mucoid diarrhea & tenesmus.
 - Colicky lower abdominal pain relieved by defecation.
 - Fecal urgency
-

Extraintestinal symptoms of ulcerative colitis

- Migratory polyarthrititis
- Sacroiliitis & ankylosing spondylitis
- Uveitis



Uveitis is inflammation of the uvea, the middle layer of the eye between the retina and the sclera (white of the eye)



Ankylosing spondylitis (AS) is a rare type of arthritis that causes pain and stiffness in the spine

- Pyoderma gangrenosum > Erythema nodosum
- Primary sclerosing cholangitis
- **In children and adolescents:** growth retardation and delayed puberty
- Some people manifest fever and weight loss



#Disease course

- **Chronic intermittent**
 - Most common course
 - Exacerbation is followed by complete remission.
 - **Chronic continuous**
 - Complete remission does not occur.
 - Disease severity varies.
 - **Acute fulminant**
 - Sudden onset
 - Severe diarrhea, dehydration, shock
-

Complications of ulcerative colitis

- Acute
 - Toxic dilatation
 - Perforation
 - Hemorrhage
 - Chronic
 - Extra-alimentary manifestations: skin lesions, eye problems and liver disease
 - Cancer (Colon cancer is the most serious long-term complication (More with Ulcerative colitis))
-

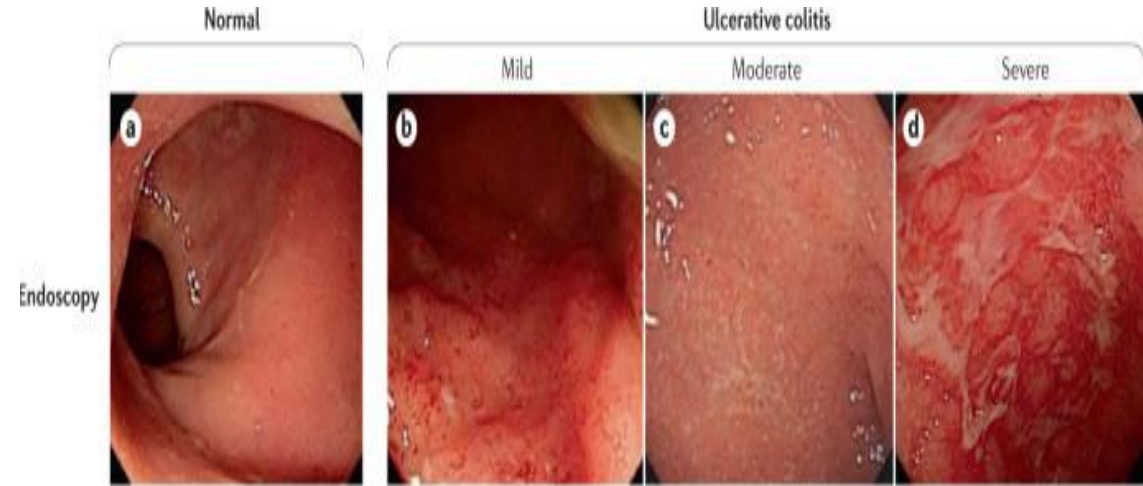
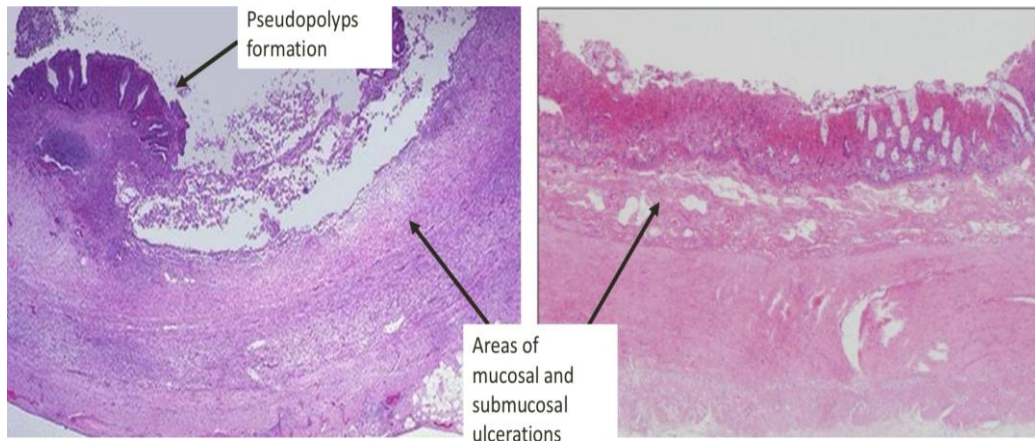
Cancer risk in colitis

- The overall incidence (2-10%)
 - The risk of carcinoma is higher in:
 - Long standing disease (after 8-10 years) - so more if started in early childhood.
 - pancolities
 - Continuous unremitting disease.
 - Surveillance programs
 - Repeated colonoscopies and multiple and extensive biopsies to detect dysplasia (in UC). Starts after 8 years of disease diagnosis
 - Possible prophylactic colectomy
-

Diagnosis

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

Investigation



#biopsy

#involves mucosa/submucosa

#crypt abscesses

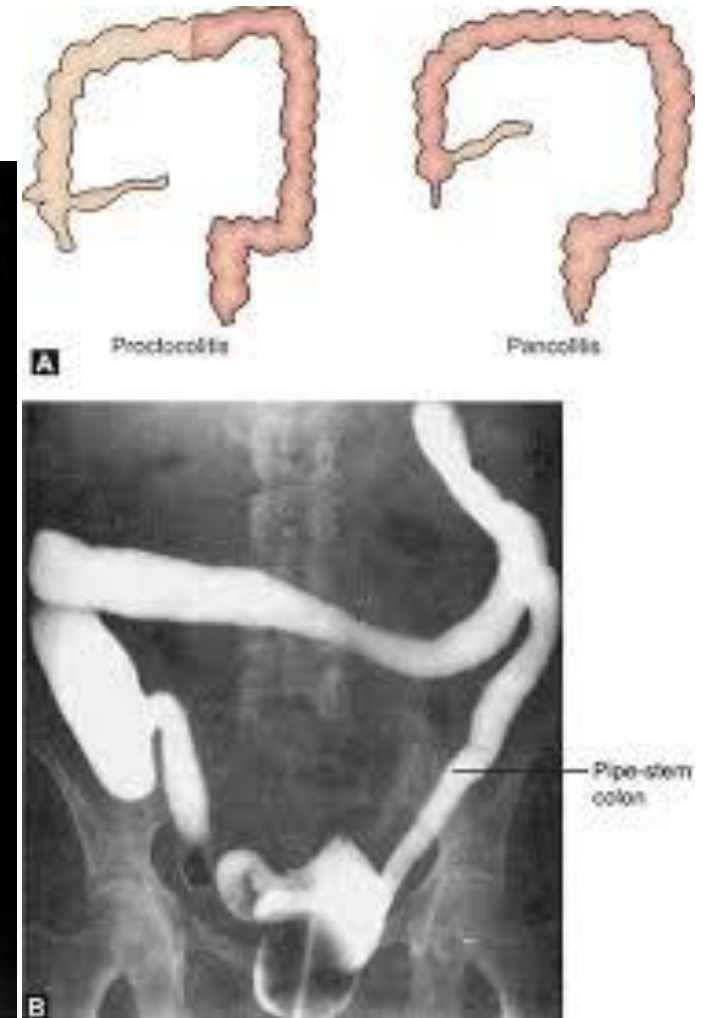
#no granulomas and fissuring

Table 69.1 Distinguishing ulcerative colitis and Crohn's disease.

	Ulcerative colitis	Crohn's disease
Macroscopic		
Distribution	Colon/rectum	Anywhere in the gastrointestinal tract
Rectum	Always involved	Often spared
Perianal disease	Rare	Common
Fistula formation	Rare	Common
Stricture	Rare	Common
Microscopic		
Layers involved	Mucosa/submucosa	Full thickness
Granulomas	No	Common
Fissuring	No	Common
Crypt abscesses	Common	Rare

Cont..

- Barium enema
- Fine mucosal granularity
- Pipe stem appearance losses (loss of haustra)



Management and treatment

- Principles of management of ulcerative colitis
 - Many patients can be adequately maintained for years on medical therapy(that is based on anti-inflammatory agents)
 - Toxic dilatation must be suspected in any patient who develops severe abdominal pain; missed colonic perforation is associated with a high mortality
 - Colitic patients are at increased risk of developing cancer; those with pancolitis of long duration are most at risk
-

Surgical intervention

- Indications for surgery
 - severe or fulminating disease failing to respond to medical therapy;
 - chronic disease with anaemia, frequent stools, urgency and tenesmus ;
 - steroid dependent disease(here ,the disease insisted repeatedly ,but remission cannot be maintained without substantial doses of steroids);
 - inability of the patient to tolerate medical therapy required to control the disease (steroid psychosis or other side effects, azathioprine-induced pancreatitis), such that remission cannot be maintained;
 - neoplastic change: patients who have severe dysplasia or carcinoma on review colonoscopy;
 - extraintestinal manifestations
-

Surgical methods

Proctocolectomy
(excision of whole
colon and rectum)
with permanent ileostomy
is the classical treatment .



Colon and rectum
removed but anal
sphincters preserved



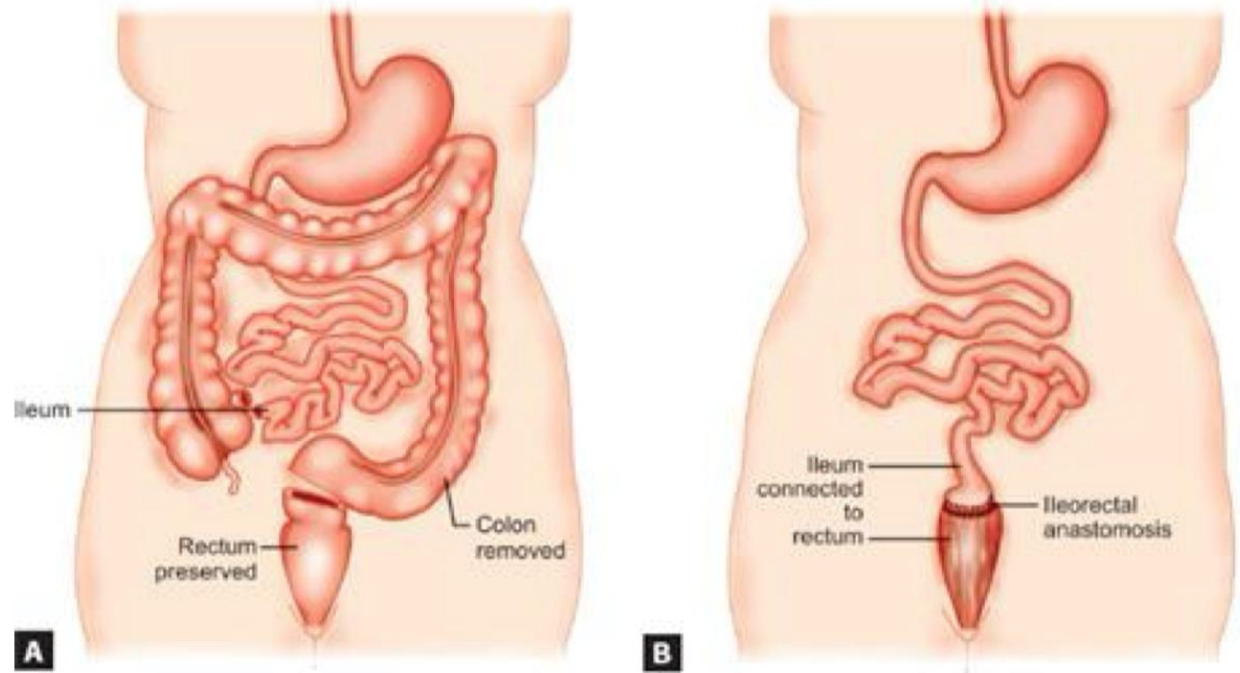
Temporary ileostomy
diverts flow while
ileoanal pouch heals



Ileostomy reversed

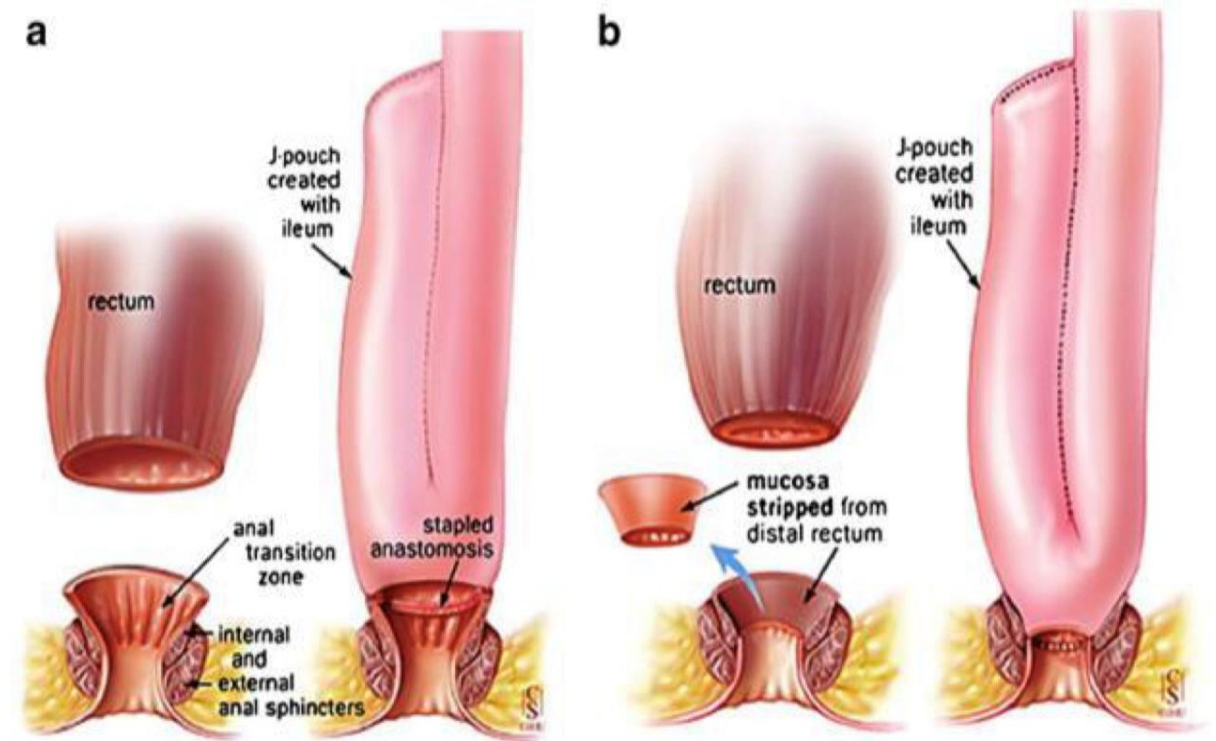
Surgical methods

- Total Colectomy with rectal sparing and ileo-rectal anastomosis .Follow up for life to avoidrectal cancer .



Total colectomy with ileorectal anastomosis

- Proctocolectomy with distal rectalmucosectomy and ilealpouch is fashioned to acts reservoir and is anastomosed to anal canal within the preserved rectal muscle



Proctocolectomy with distal rectal mucosectomy and ileal pouch is anastomosed to the anal canal

Indeterminate colitis

Seen in 10% of patients with IBD, Due to histopathologic and clinical overlap between UC and CD

Not possible to make a distinction.
