

IBD: What You Need to Know

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Objectives

- Identify factors involved in the development of inflammatory bowel disease (IBD)
- Discuss the clinical presentation of Crohn's disease and ulcerative colitis
- Review common diagnostic testing and monitoring

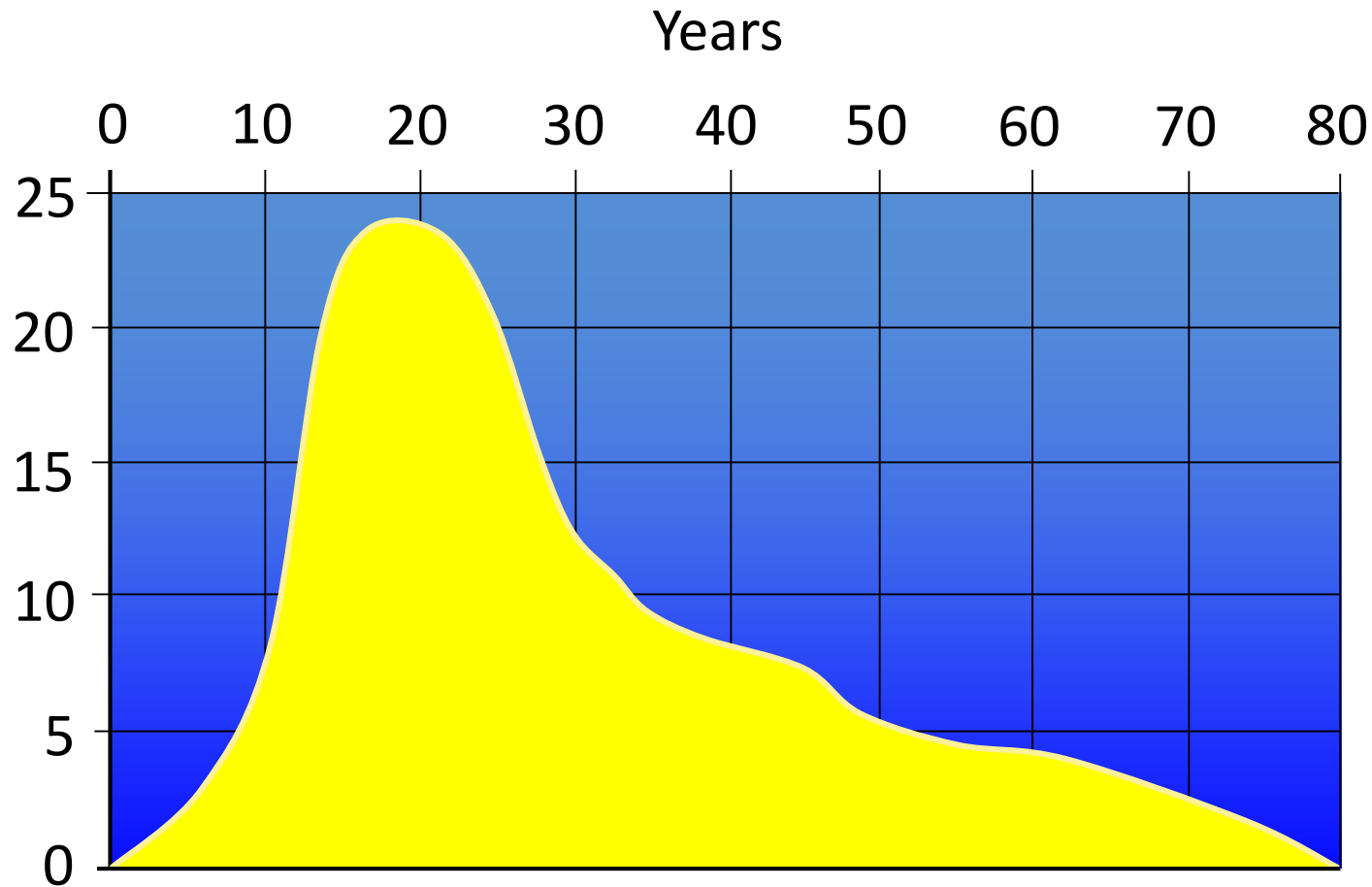
What is IBD?

- IBD is a persistent/long-lasting (chronic) inflammation of the gastrointestinal tract
 - Driven by cells of the immune system
 - Periods of more active and less active inflammation
- Crohn's disease and ulcerative colitis are types of inflammatory bowel disease (IBD)
 - More likely a spectrum of disease
 - The “type” of IBD is often unclear in children

How Common is IBD?

- IBD occurs more often in Western countries
 - 1.6 million Americans with IBD
 - 80,000 children
- IBD rates are increasing worldwide
 - Highest increases are being seen among children
 - In particular very young children
- Peak incidence between the ages of 15-35

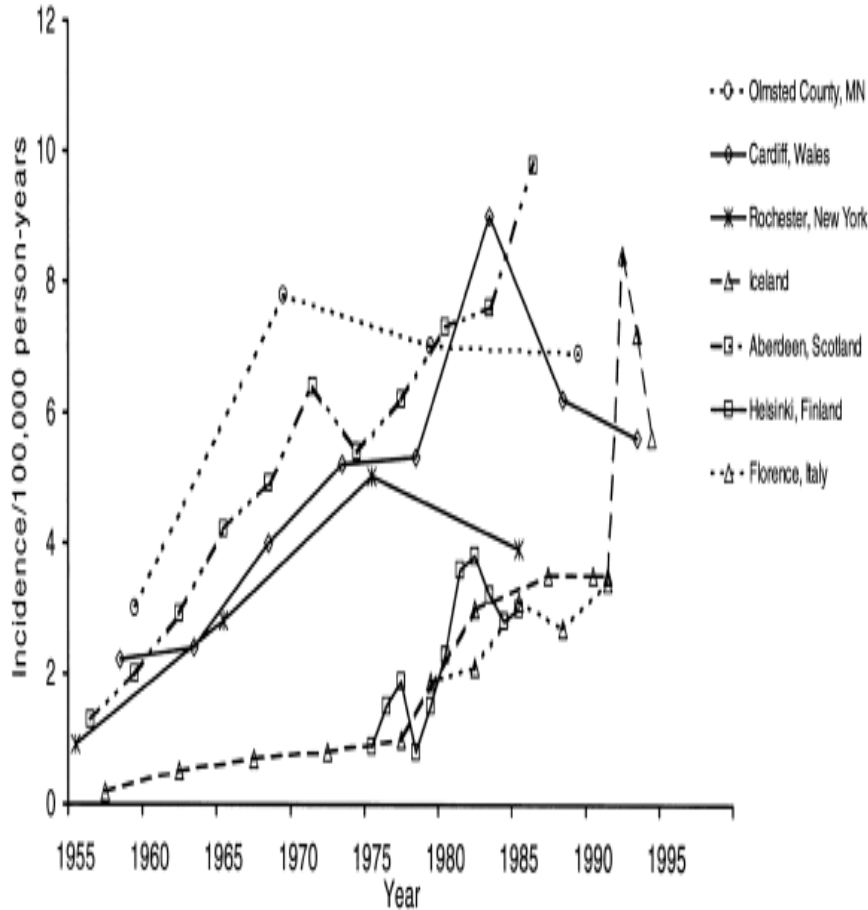
Age of Onset of IBD



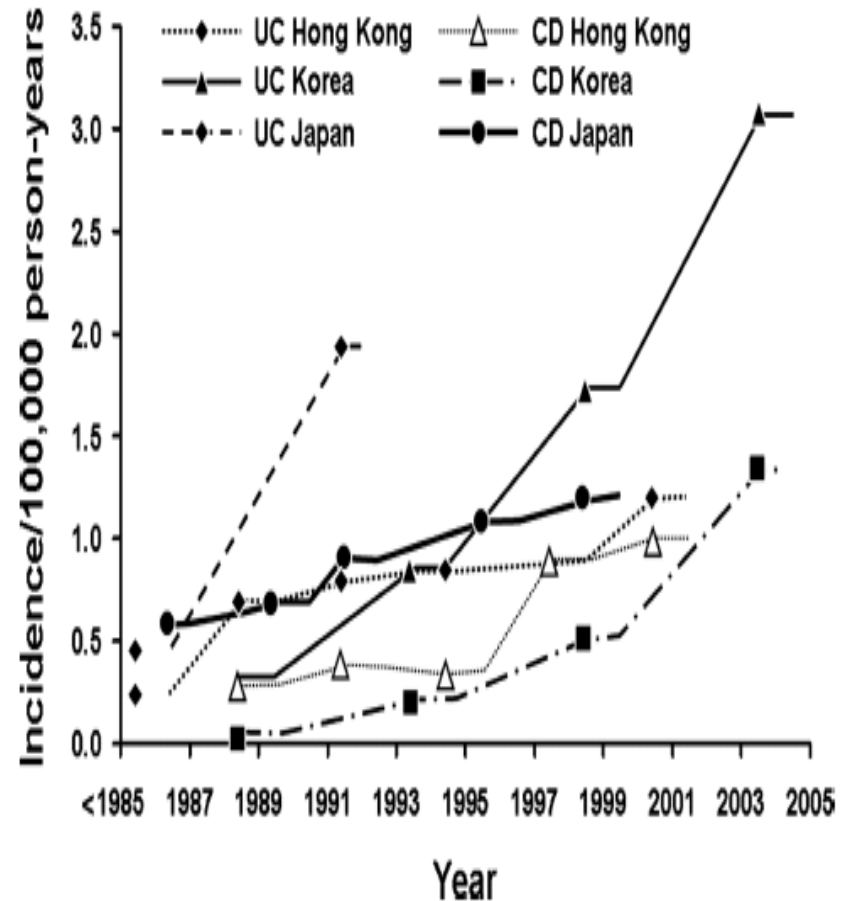
20-25% of IBD cases diagnosed by 20 years

Trends in Incidence of IBD

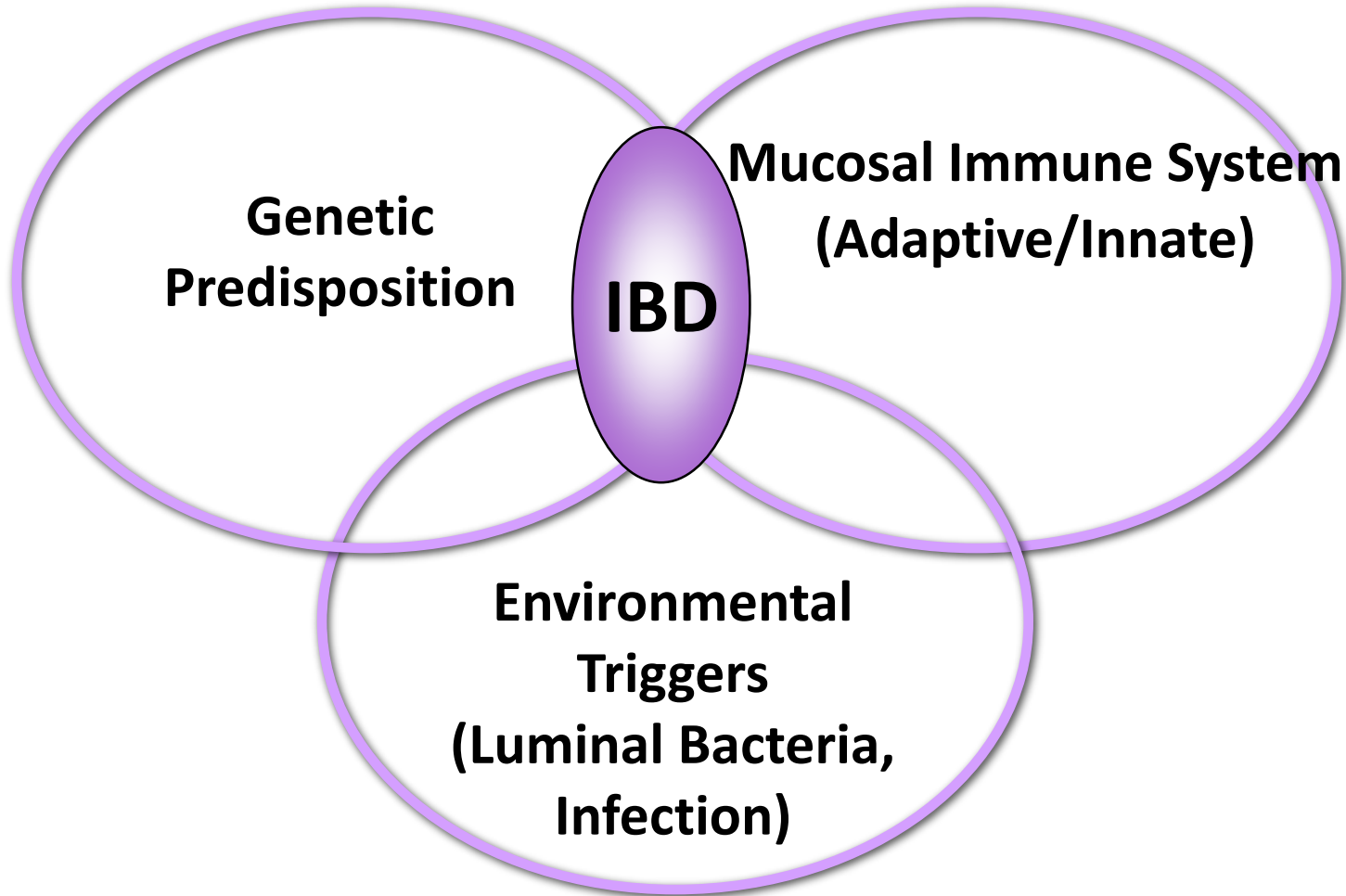
N. America/Europe



Asia



Why does IBD occur?



IBD Presentation

<u>Symptoms/Signs</u>	<u>CD</u>	<u>UC</u>
Rectal bleeding	++	++++
Diarrhea	++	++++
Weight loss	++++	++
Growth failure	++++	+
Perianal disease	++	-
Abdominal pain	++++	+++
Anemia	+++	+++
Mouth ulcers	++	+
Fevers/Arthritis	++	+

Crohn's Disease vs. Ulcerative Colitis

Crohn's Disease

- Any part of the GI tract
- Discontinuous
- Rectal sparing
- Ileum commonly involved
- Perianal disease
- Transmural inflammation
- Fistulae and abscesses
- Granulomas
- Strictures common

Ulcerative Colitis

- Colon only (\pm gastritis)
- Continuous
- No rectal sparing
- \pm backwash ileitis
- No perianal disease
- Mucosal inflammation
- Abscesses very rare
- No granulomas
- Strictures uncommon



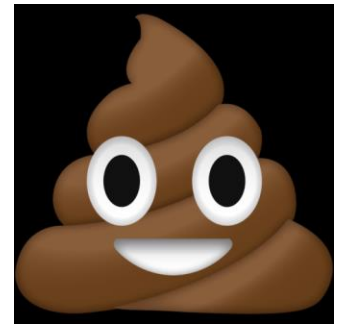
Common Laboratory Testing



- **CBC (complete blood count)**
 - Hemoglobin (low: anemia)
 - WBC (high: infection, inflammation)
 - Platelets (high: inflammation, bleeding, anemia)
- **CMP (complete metabolic panel)**
 - Assess electrolytes, liver, kidney function
 - Albumin (low with intestinal inflammation)
- **ESR/CRP**
 - Markers of inflammation
- **Vitamin D**



Common Stool Testing

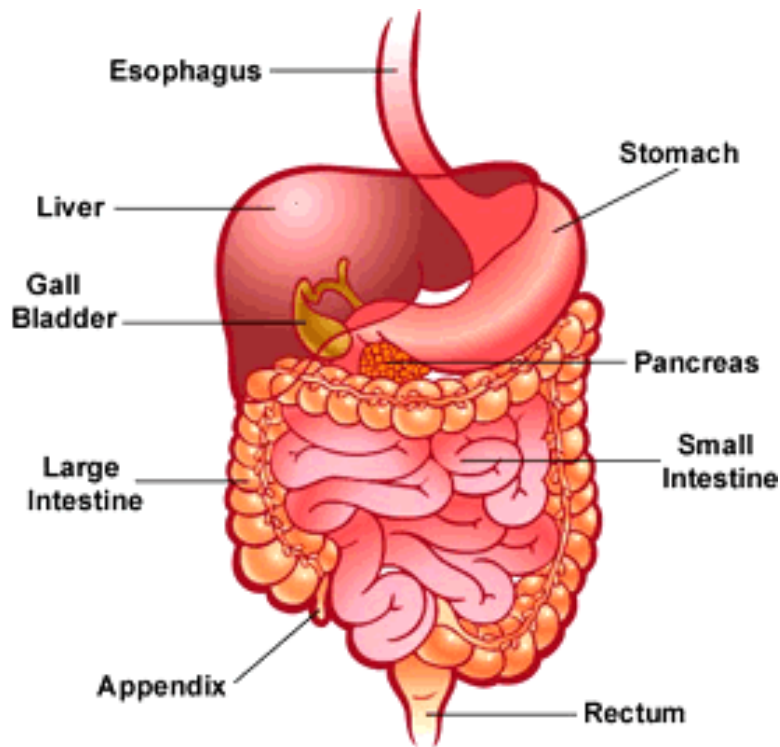


- Rule out enteric infections
 - Culture for bacteria
 - *Clostridium difficile*
 - Viral stool studies
 - Parasites

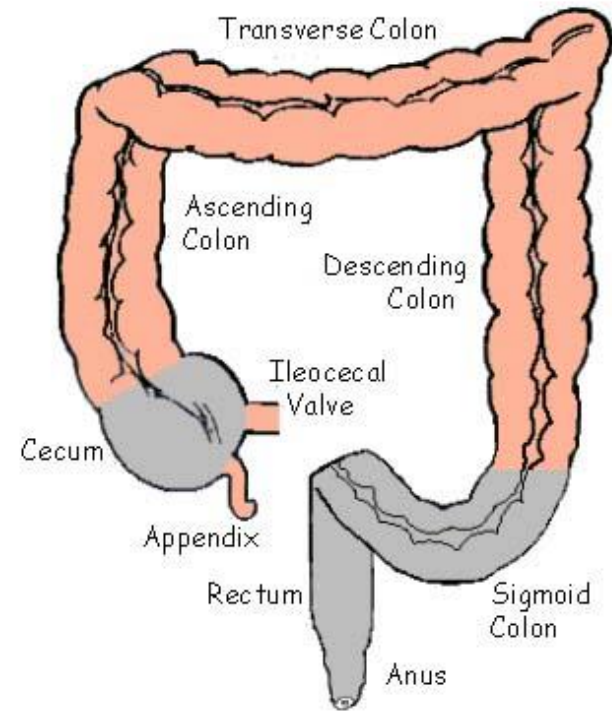
- Calprotectin
 - Sensitive marker of gut inflammation

Normal Digestive Tract Anatomy

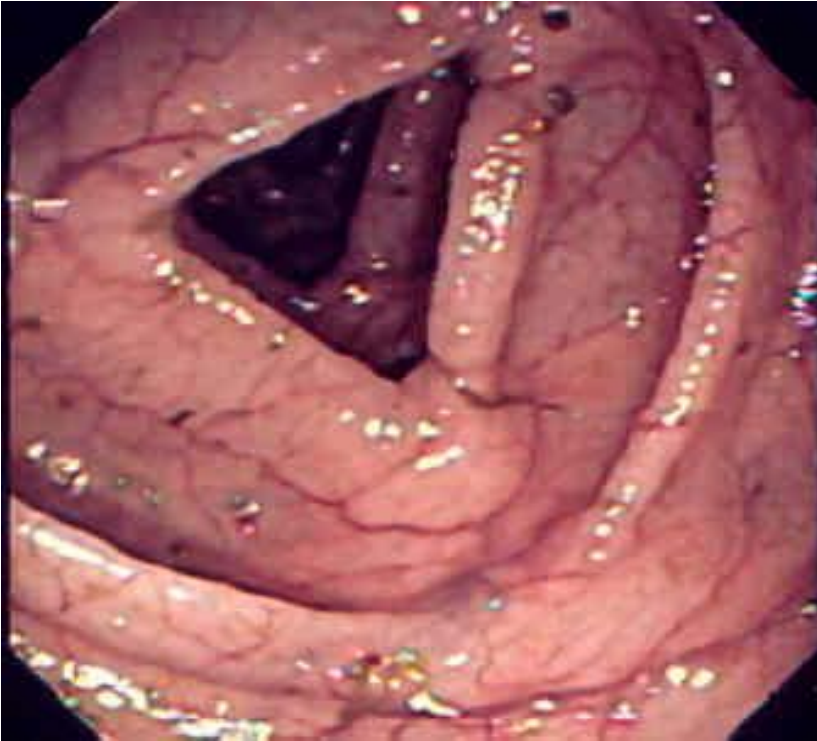
GI Tract



Colon (Large Intestine)



Normal Endoscopic Appearance

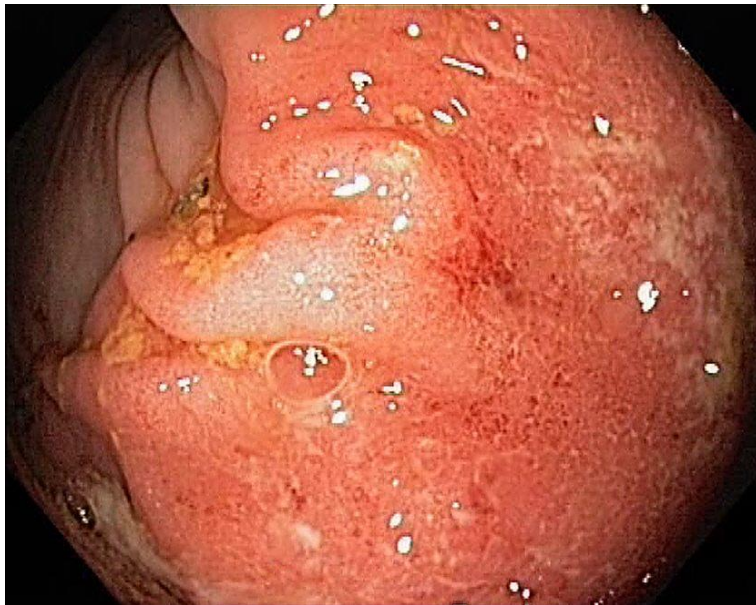
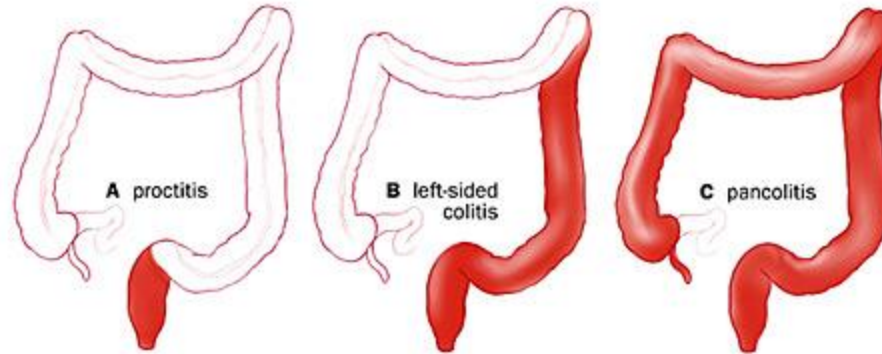


Colon



Terminal Ileum

Ulcerative Colitis: Endoscopy

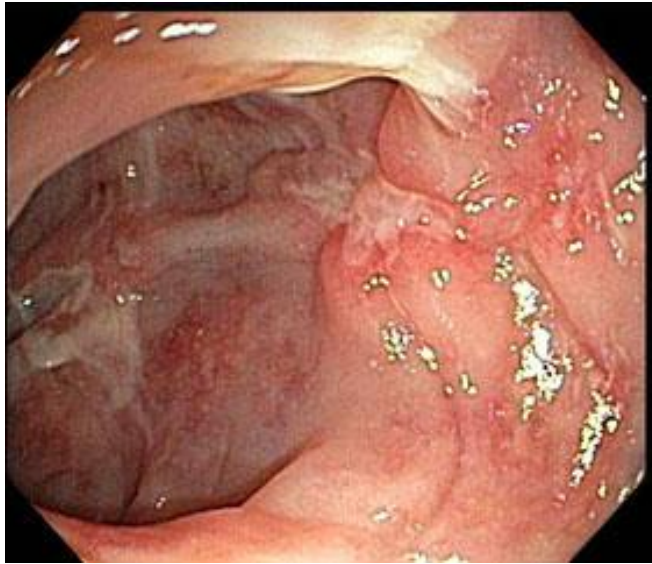


Colitis with Transition Zone

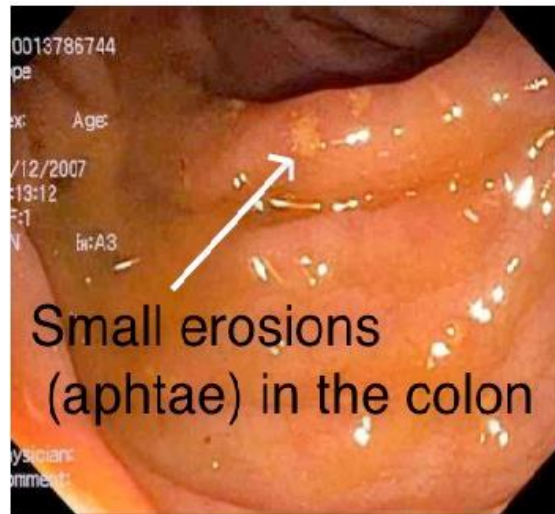


Pancolitis

Crohn Disease: Endoscopy



Patchy Colitis, linear ulceration



Small erosions (aphtae) in the colon



Crohn's ileitis

Extraintestinal Manifestations of IBD

IBD – Mouth exam

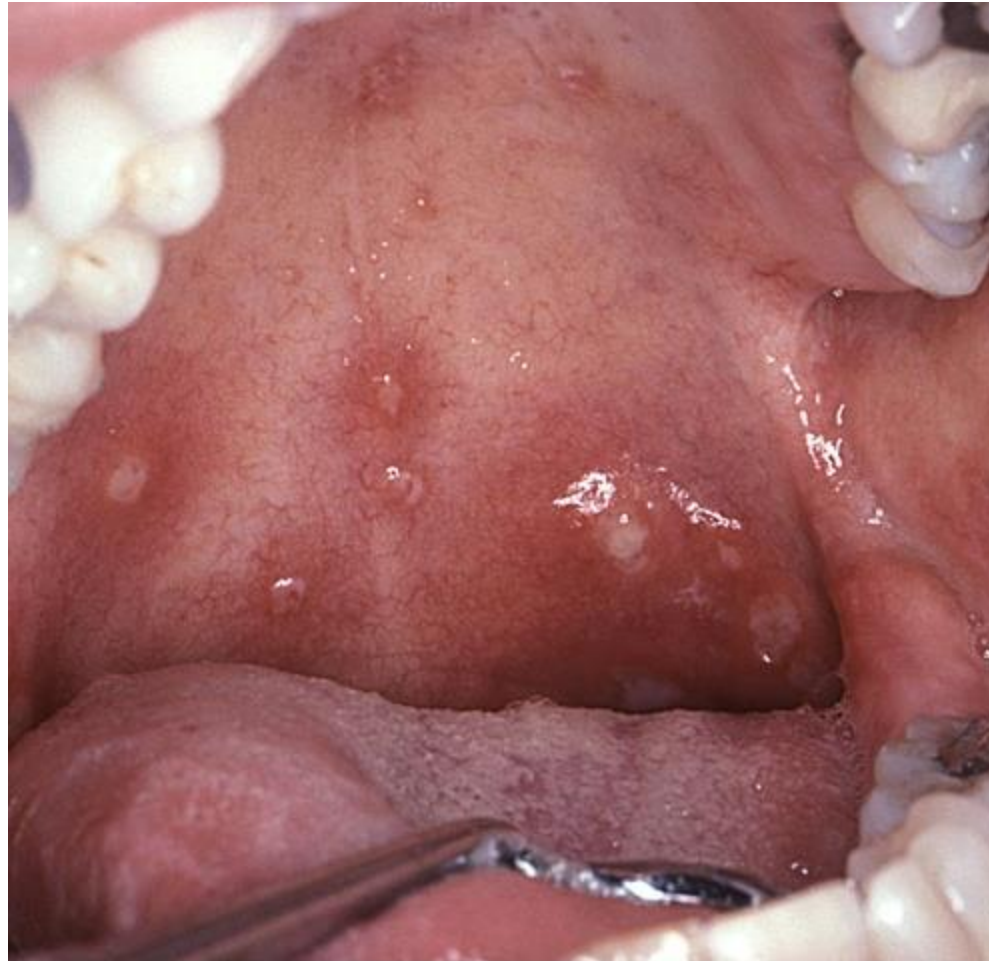


Photo courtesy of CDC - Sol Silverman, Jr., DDS

Aphthous ulcers

IBD – Eye Findings



Episcleritis

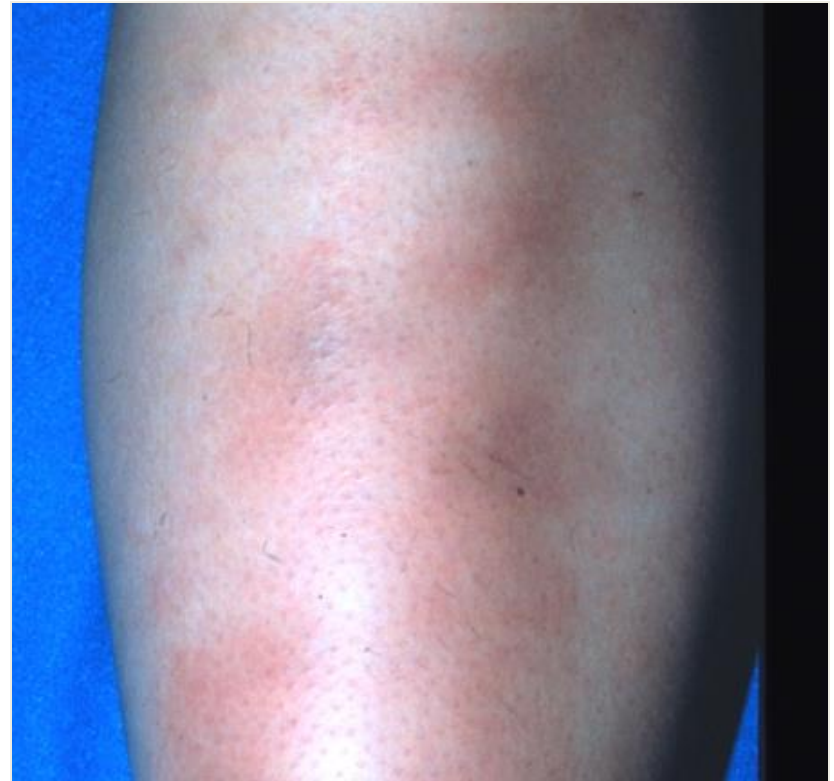


Uveitis

IBD – Skin Manifestations



Pyoderma gangrenosum

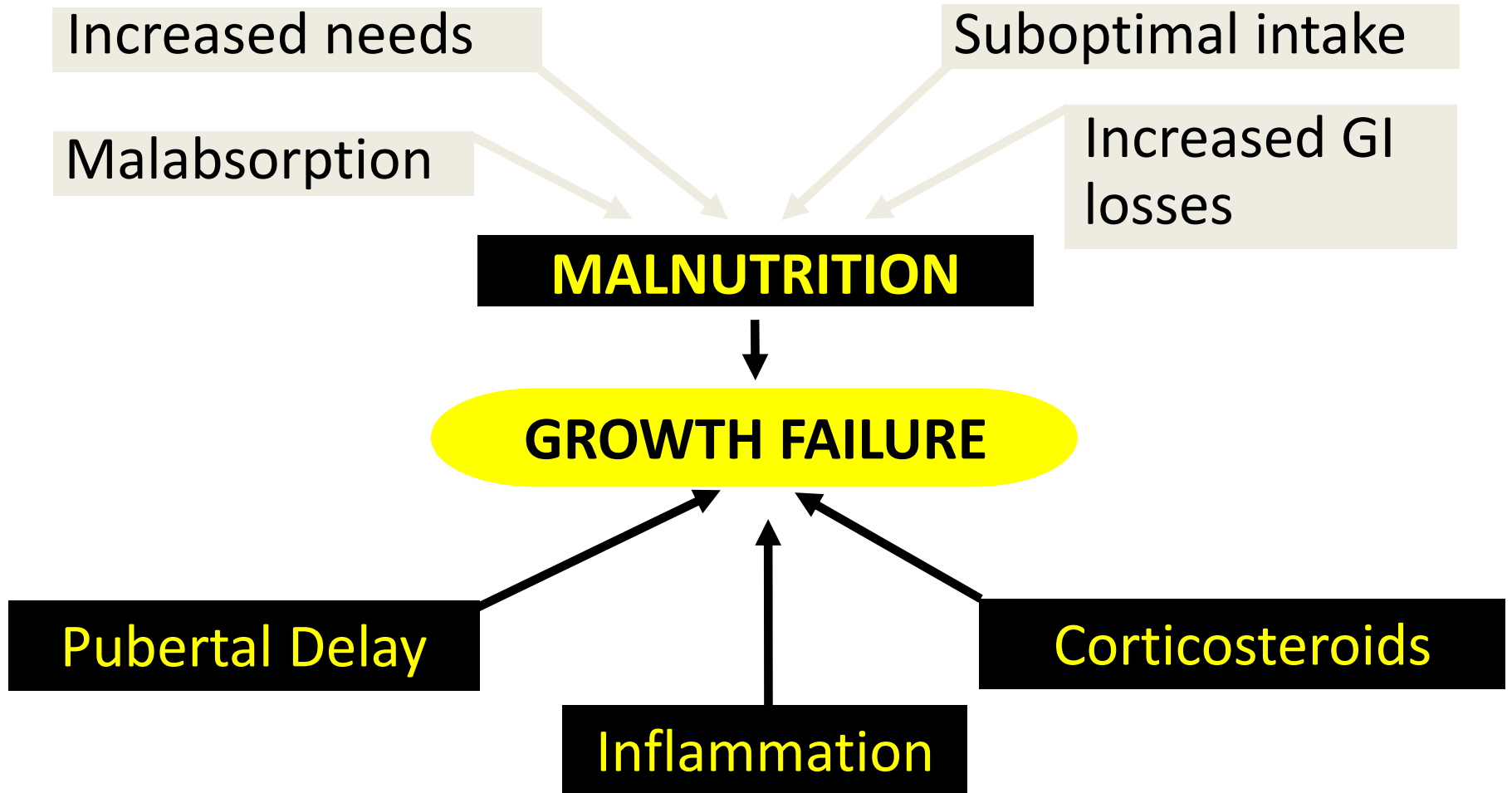


Erythema nodosum

IBD – Arthritis

- Pain, swelling, redness, warmth, reduced flexibility of joints
- Can affect up to 25% of IBD patients
- 2 Forms in IBD
 - Peripheral arthritis
 - Large joints (wrists, elbows, knees, ankles)
 - Moves between joints
 - Usually no lasting damage
 - Mirrors intestinal inflammation
 - Axial spine arthritis
 - Stiffness/pain in lower back
 - Worse in morning; better with activity
 - May cause damage if bones fuse
 - Usually does not mirror intestinal inflammation
 - Ankylosing spondylitis

Growth Failure in Pediatric IBD



Multidisciplinary Assessments

- Since IBD has effects within and outside the gastrointestinal tract the CHOP IBD Center uses a multidisciplinary approach to its management
 - Nutrition
 - Behavioral Psychology
 - Social Work
 - Immunology, rheumatology, dermatology, ophthalmology as needed

Radiological Testing in IBD

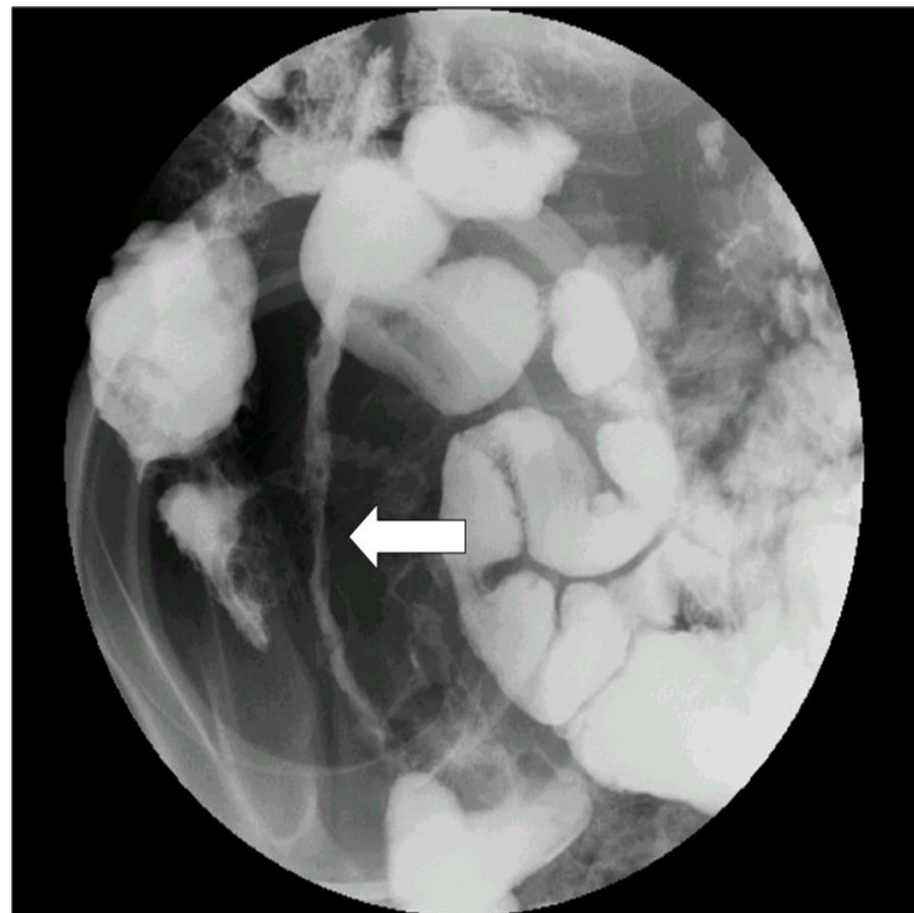
IBD – Radiology Testing

Traditional Modalities

- Upper GI with Small Bowel Follow-Through
- Barium Enema
- CT scan

Recent trends

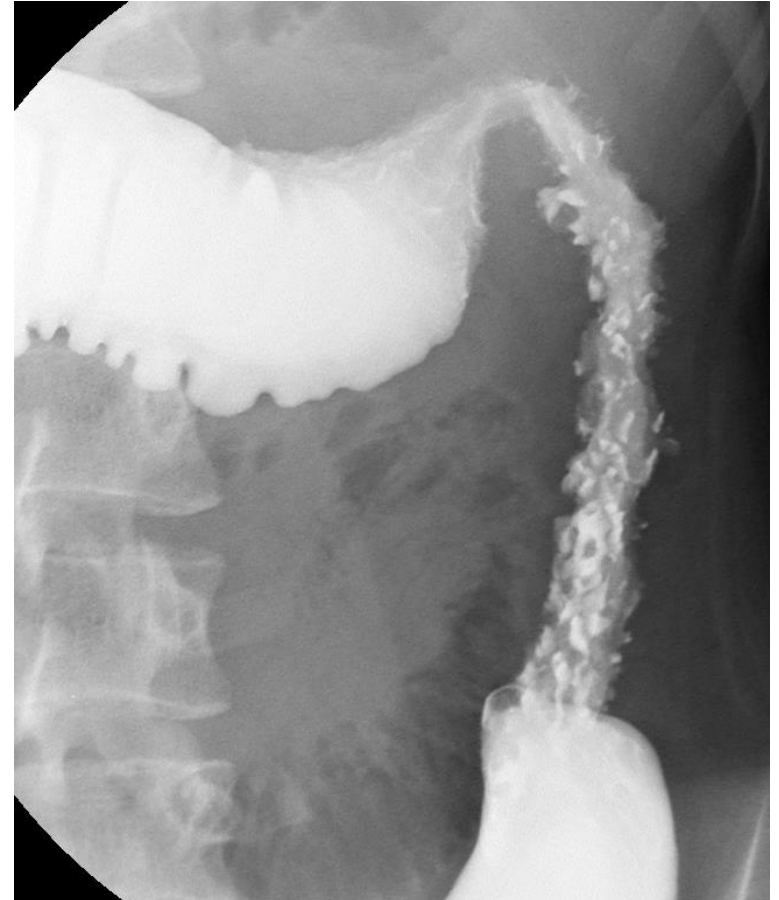
- MRI enterography (pelvis/abdomen)
- High resolution ultrasound/contrast enhanced ultrasound
- CT enterography



Crohn's Disease -- Stricturing



Colonic Stricture

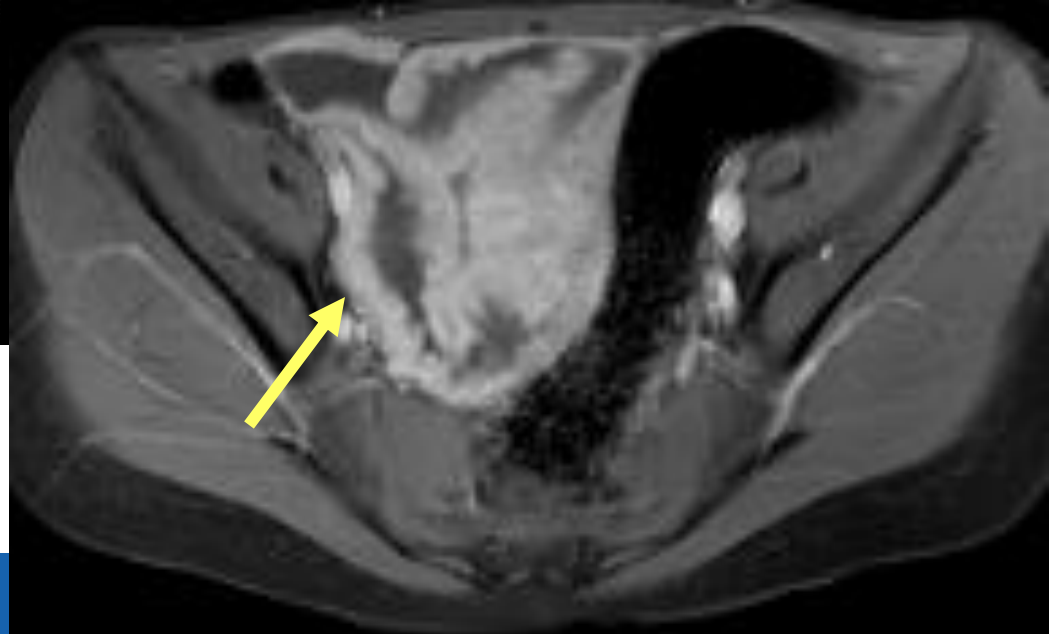
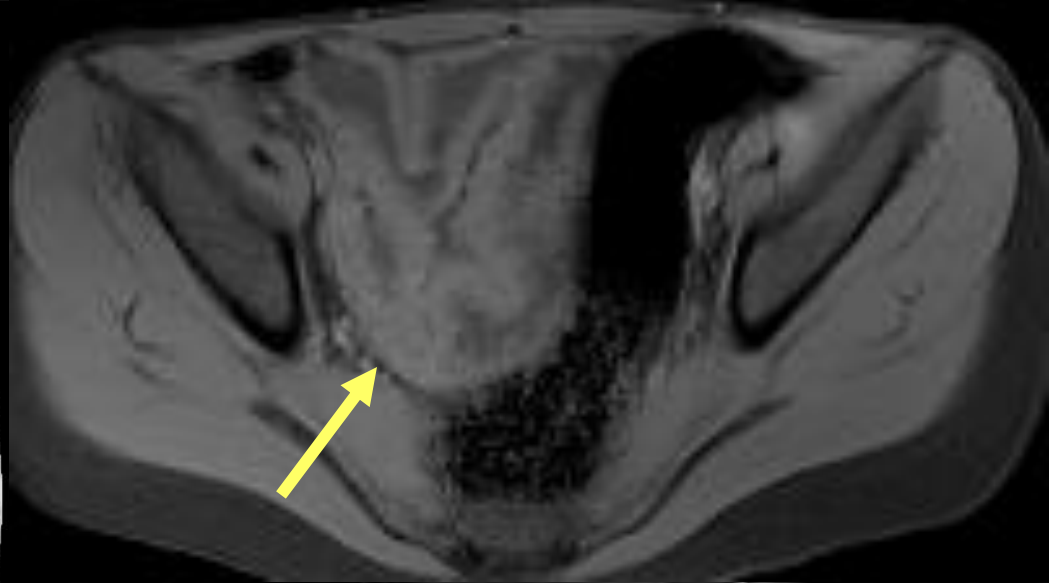


Ileal Stricture

Crohn's Disease – Fistulizing

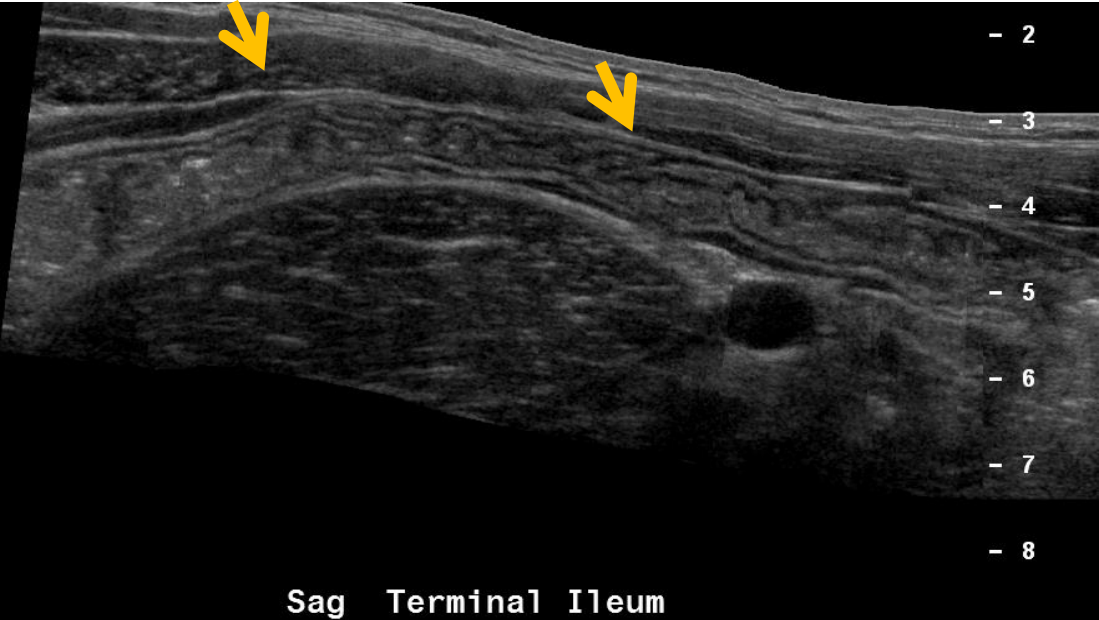


UGISBFT Compared to MR Enterography

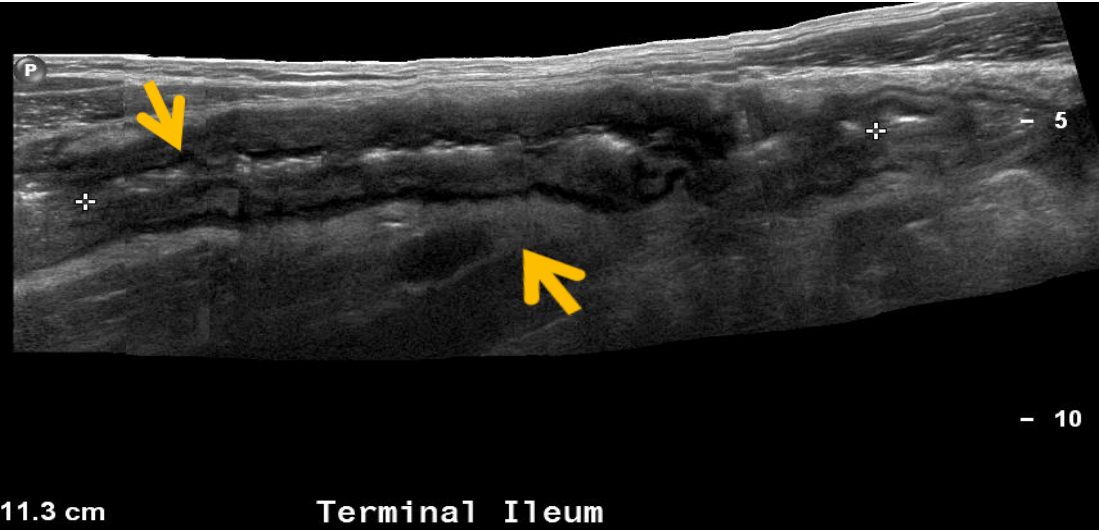


Abnormal TI on SBFT with correlation on MRI before and after contrast

Ultrasound of the Bowel



NORMAL TI

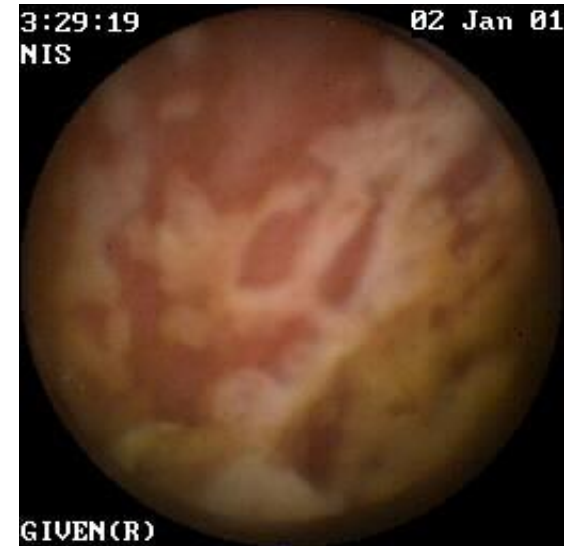


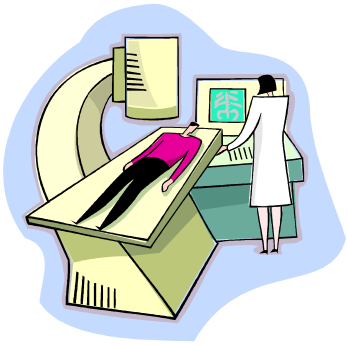
ABNORMAL TI

Capsule Endoscopy

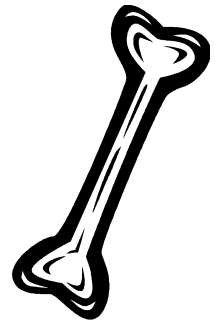


- Relatively easy to swallow
 - Placed during upper endoscopy in younger patients
- Can visualize entire small bowel
- **MUST** rule out intestinal stricture prior to placement





Bone Monitoring



- Decreased bone density recognized in pediatric IBD
- DXA scan
 - Done at diagnosis and repeated when clinically indicated
- Vitamin D
- Calcium
- Increased physical activity
- IBD Medications

Conclusions

- Genetic, immune system, and environmental factors each play a role in the development of IBD
- Crohn's disease and ulcerative colitis are the 2 main types of IBD with overlapping signs and symptoms – particularly in children
- Symptoms, growth, blood tests, stool tests, radiological testing, and endoscopy are used to diagnose and monitor IBD

Thank you