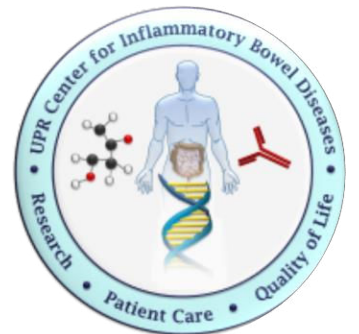


Essentials in Inflammatory Bowel Disease

Esther A Torres MD
Professor of Medicine
Director, UPR Center for IBD





Disclosures

- Research grants to the University of Puerto Rico
 - AbbVie
 - Tigenix
 - Education grants to the UPR
 - Takeda
 - AbbVie
-

Outline

Epidemiology

Pathogenesis

Clinical presentation

Therapy

New models of care

IBD in Puerto Rico

Definitions: Inflammatory Bowel Diseases (IBD)

- Chronic, incurable, intestinal inflammatory diseases of unknown cause
- Ulcerative colitis
 - Mucosa inflammation
 - Limited to the colon
- Crohn's disease
 - Transmural inflammation
 - Affects all GI tract
- Indeterminate colitis
- Microscopic/lymphocytic colitis



Epidemiology



Epidemiology

- Peak onset 15-35 y/o
- Male = Female
- All races
- Increasing in ethnic minorities globally
- UC > CD

Crohn's disease

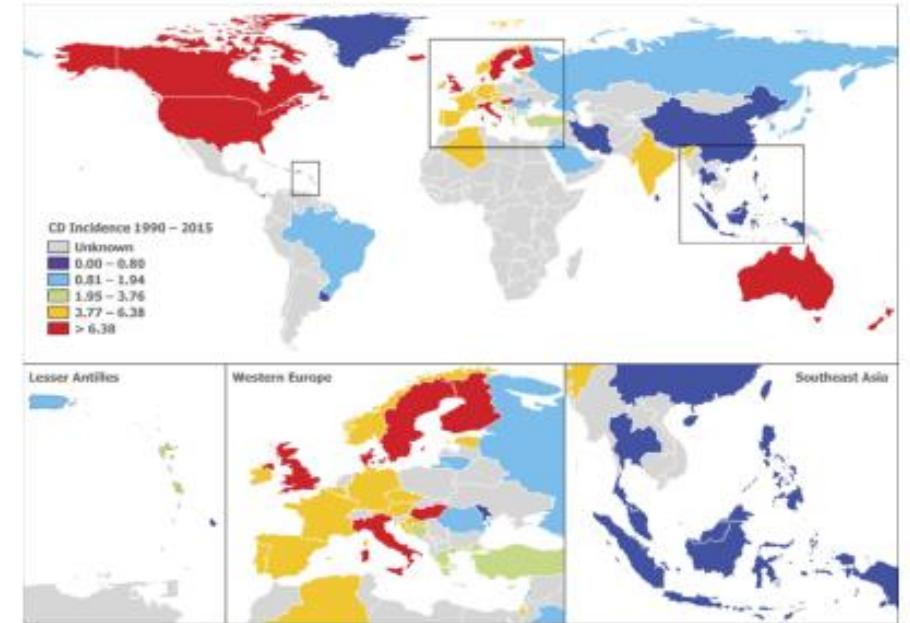
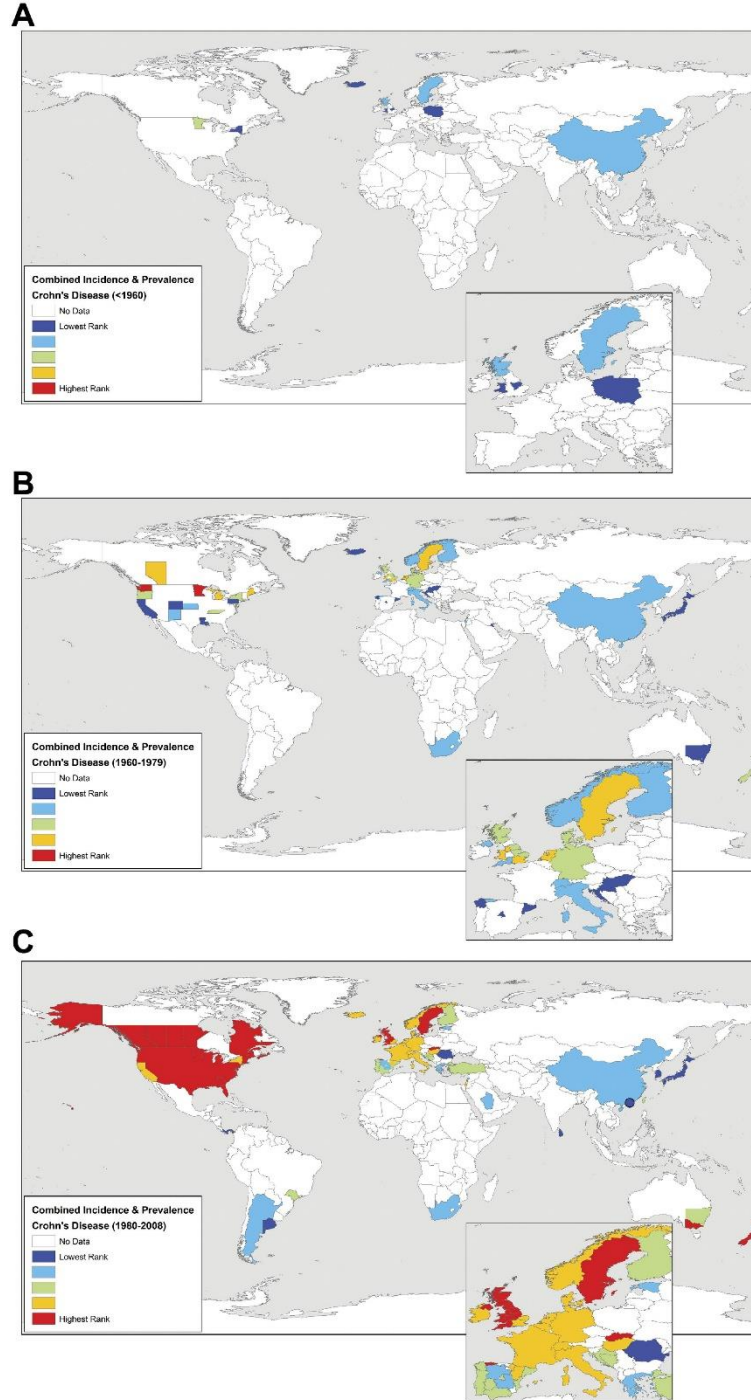


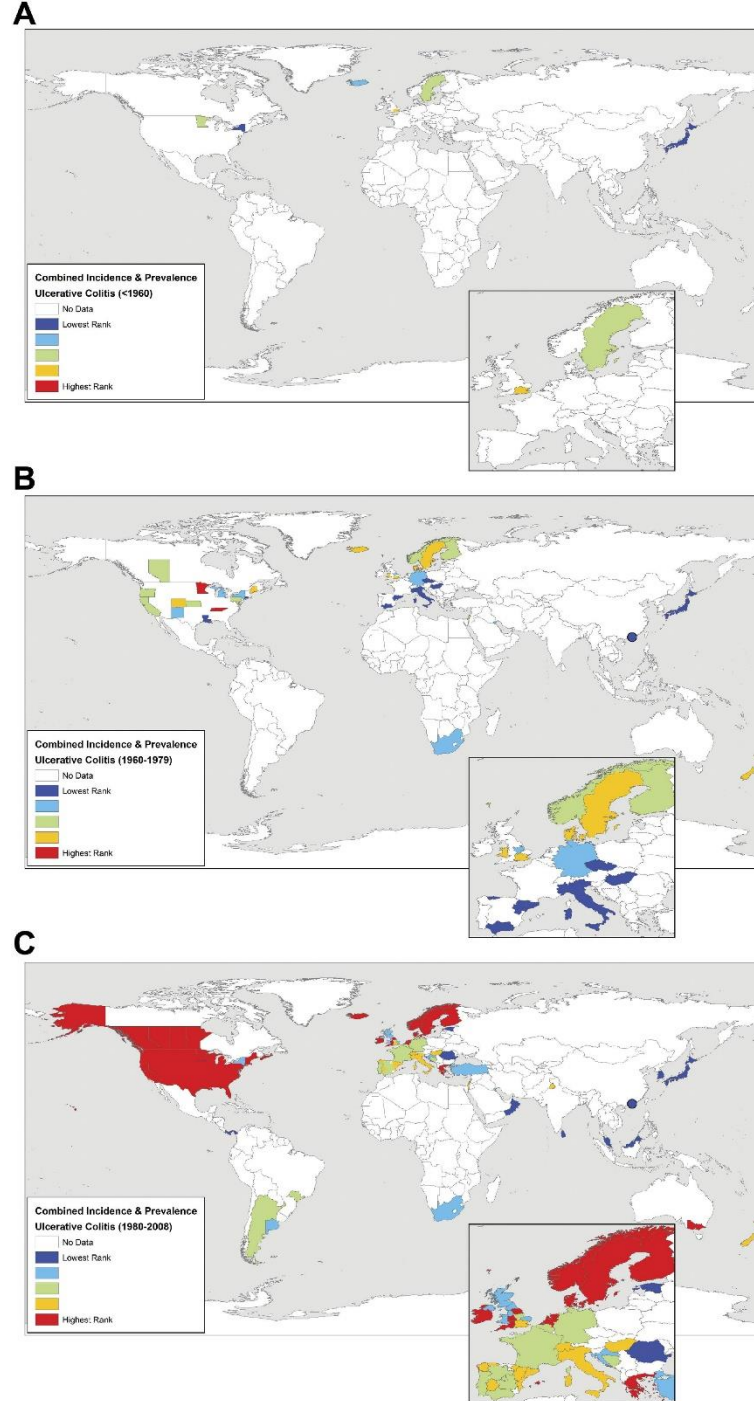
Figure 2: Worldwide map of incidence of Crohn's disease stratified by quintile levels

*Increasing Incidence and Prevalence of
the Inflammatory Bowel Diseases With
Time, Based on Systematic Review
Molodecky NA et
al, Gastroenterology 2012;142;46-54*

Tu1794 THE WORLDWIDE INCIDENCE AND PREVALENCE OF INFLAMMATORY BOWEL DISEASE IN THE 21ST CENTURY: A SYSTEMATIC REVIEW OF POPULATION-BASED STUDIES

Siew C. Ng, Hai Yun Shi, Nima Hamidi, Fox E. Underwood, Whitney Tang, Eric I. Benchimol, Justin C. Wu, Francis K. Chan, Joseph J. Sung, Gilaad Kaplan Gastro 2017

Ulcerative Colitis



*Increasing Incidence and Prevalence of
the Inflammatory Bowel Diseases With
Time, Based on Systematic Review
Molodecky NA et
al, Gastroenterology 2012;142;46-54*

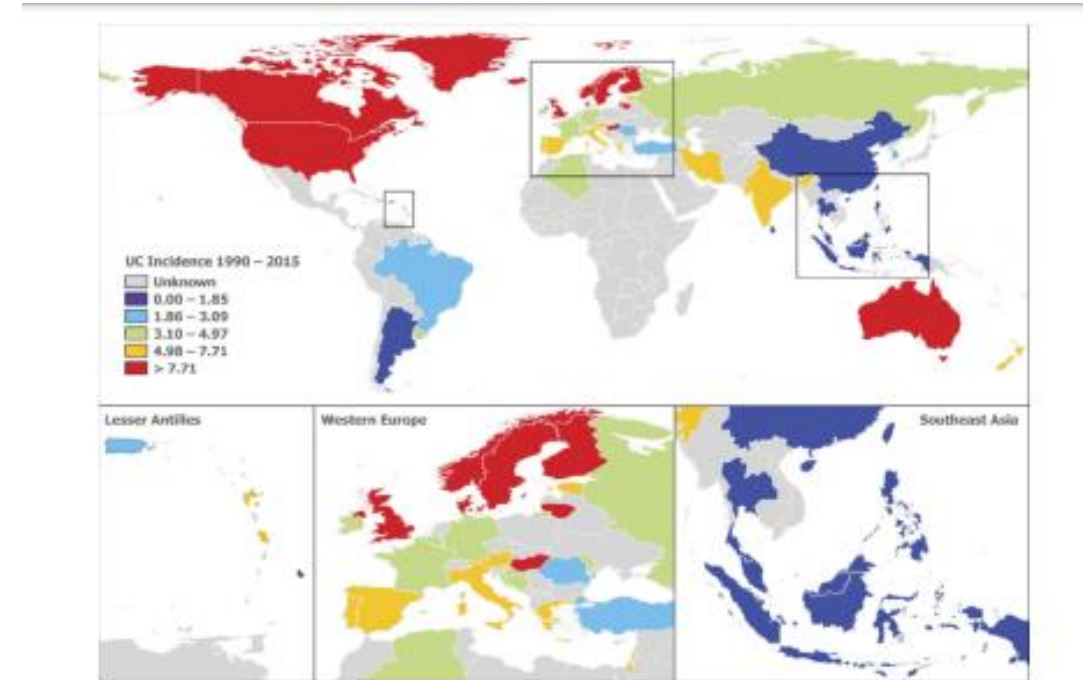


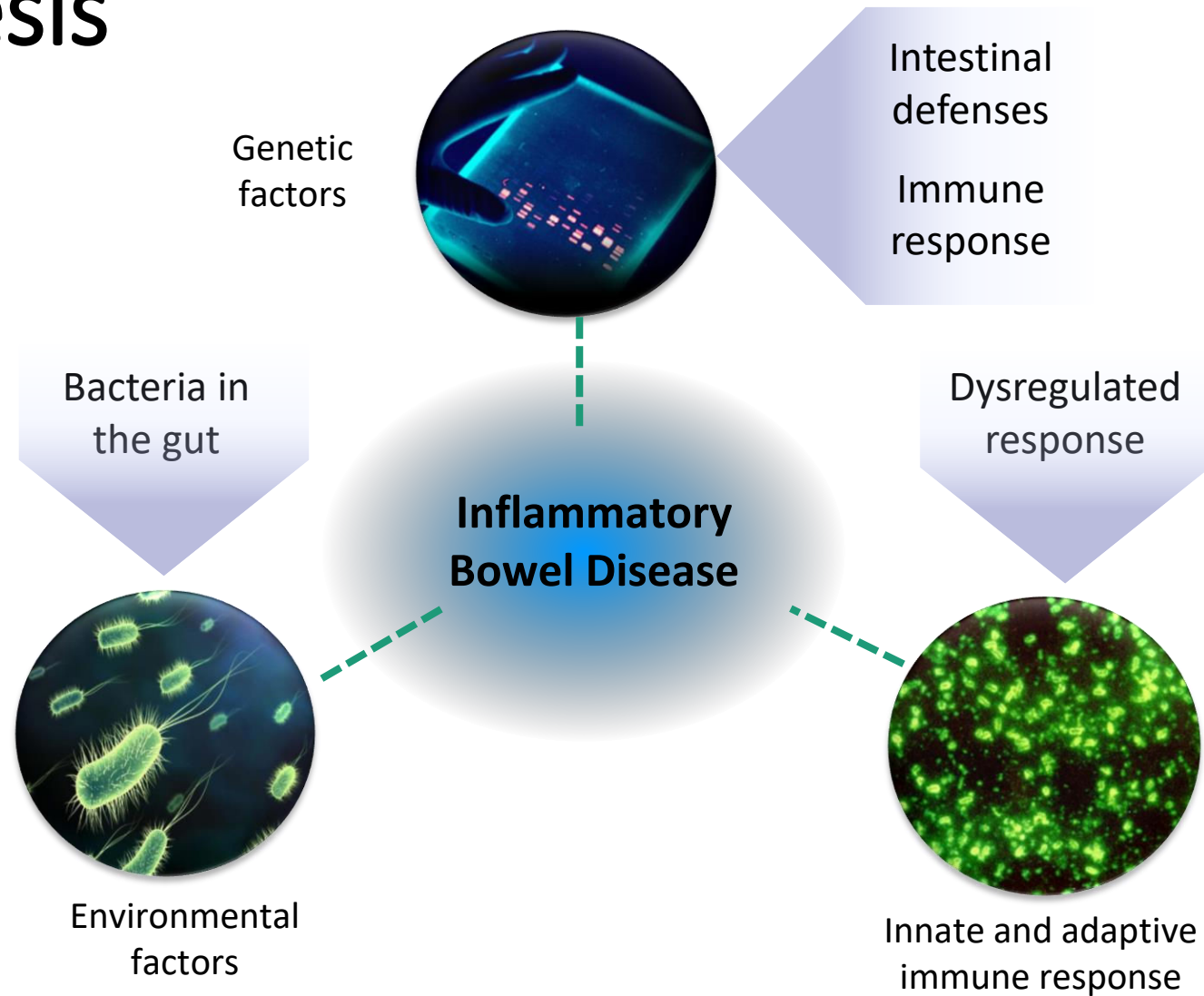
Figure 1: Worldwide map of incidence of ulcerative colitis stratified by quintile levels

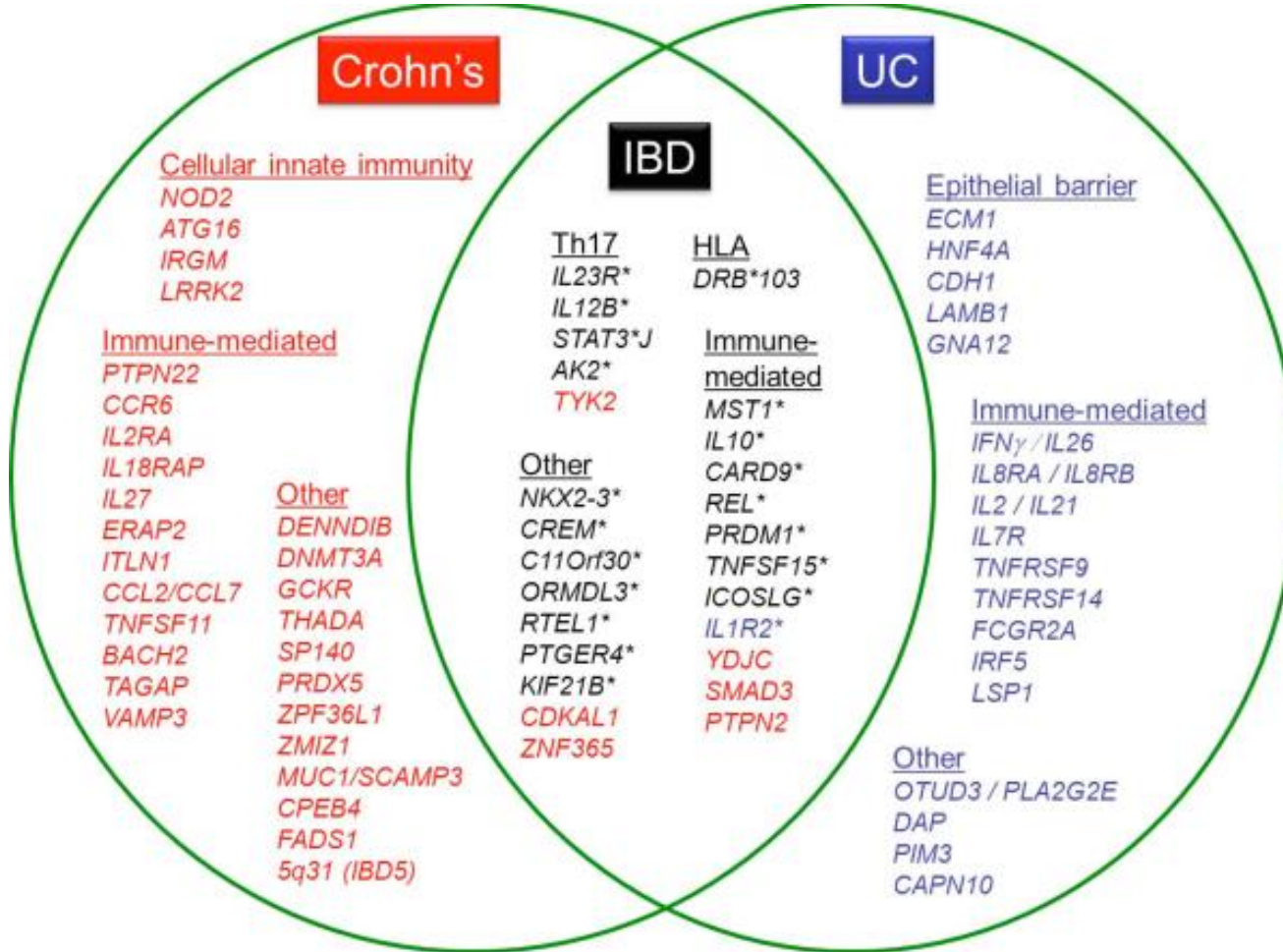
Tu1794 THE WORLDWIDE INCIDENCE AND PREVALENCE OF INFLAMMATORY BOWEL DISEASE IN THE 21ST CENTURY: A SYSTEMATIC REVIEW OF POPULATION-BASED STUDIES

Siew C. Ng, Hai Yun Shi, Nima Hamidi, Fox E. Underwood, Whitney Tang, Eric I. Benchimol, Justin C. Wu, Francis K. Chan, Joseph J. Sung, Gilaad Kaplan Gastro 2017

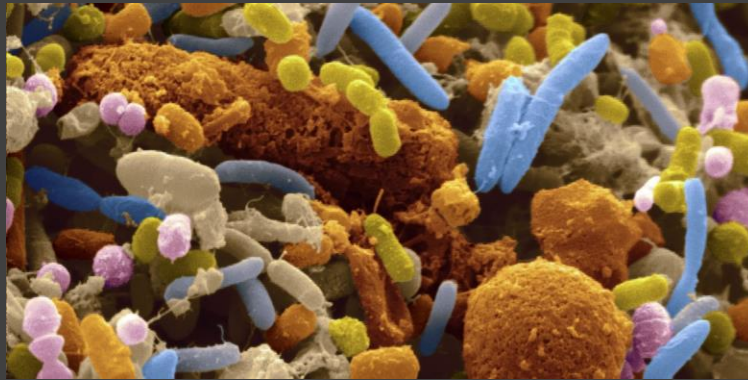
Pathogenesis

Pathogenesis





- Many of the identified risk gene products are involved in the recognition and processing of microbial antigens at the mucosal surface



Microbiome complexity and stability

Factors affecting the microbiome



Healthy

Perturbation

Perturbation

Infectious diseases, metabolic diseases, and inflammatory disorders

Disease

Early onset

Adult onset

Late onset

Birth

3 years

Adult

Elderly

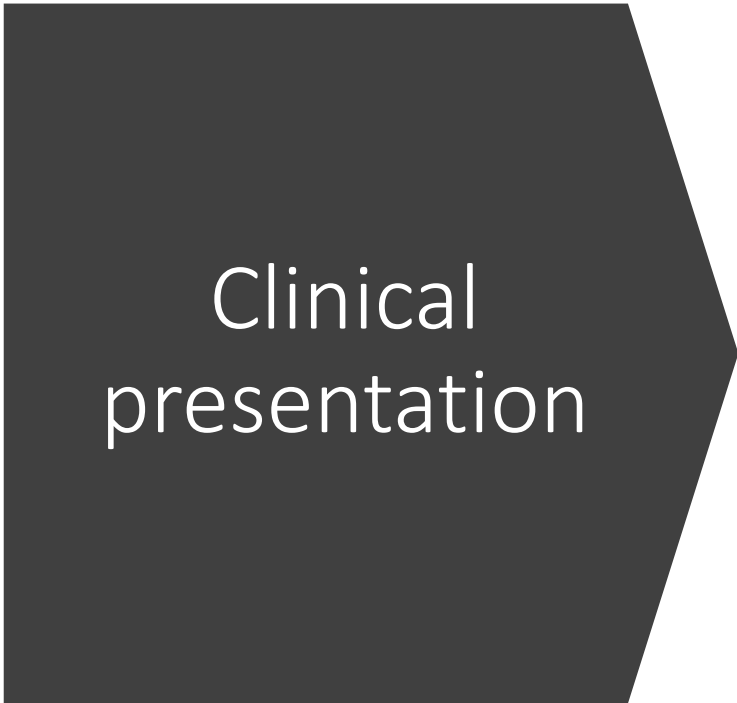
- Protect against pathogens
- Train/stimulate immune function
- Supply nutrients, energy, vitamins, SCFA

- Inflammation (local > systemic)
- Oxidative stress
- Increase in Gram negative bacteria
- Infection (opportunistic/pathogenic)
- Altered metabolite production





From bench to bedside



Clinical presentation

- UC

- bloody diarrhea
- abdominal pain
- tenesmus
- affects only the colon
- diffuse involvement
- limited to the mucosa

- CD

- abdominal pain
- weight loss
- fever
- diarrhea
- growth failure
- any part of the GI tract
- transmural
- patchy

IBD Diagnosis

- Suspect it!!
- History and physical exam
- CBC & platelets, chemistries (albumin, liver enzymes)
- Inflammatory markers: Sed Rate, CRP, fecal calprotectin
- Stool w/u
 - O&P, C/S, C Diff
- Refer to a subspecialist if IBD is suspected or possible
 - Diagnosis requires special studies
 - Management is complex

IBD Diagnosis

- Endoscopy and biopsy
- Imaging – GI contrast studies, US, CTE, MRI/MRE
- Videocapsule endoscopy
- Serology (Prometheus[®] IBDsgi[™])
 - serology, genetic and inflammation markers
 - not routinely indicated
 - expensive
 - not specific

PROMETHEUS[®] Crohn's Prognostic

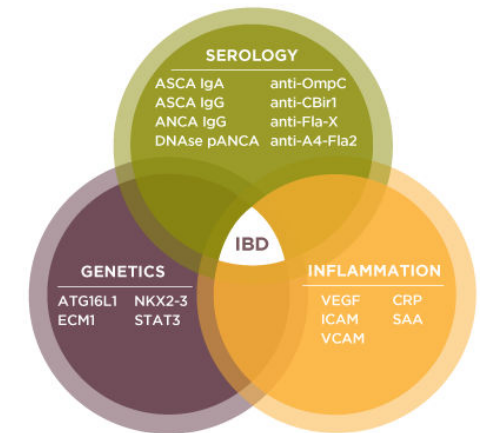
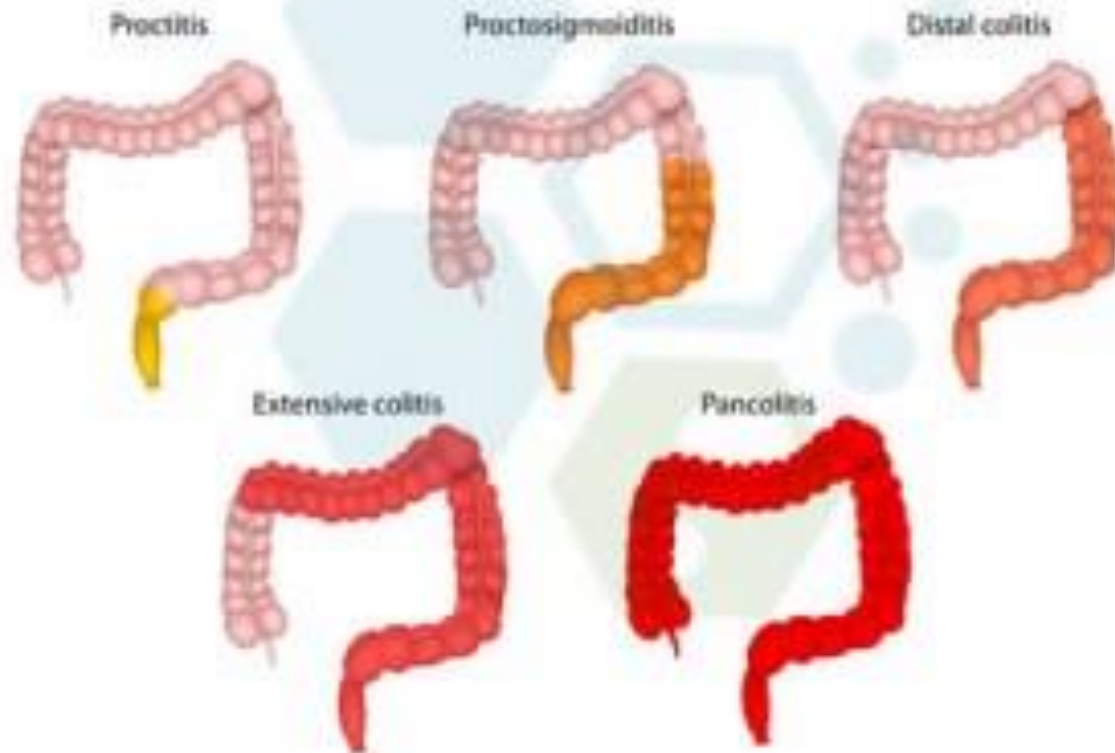


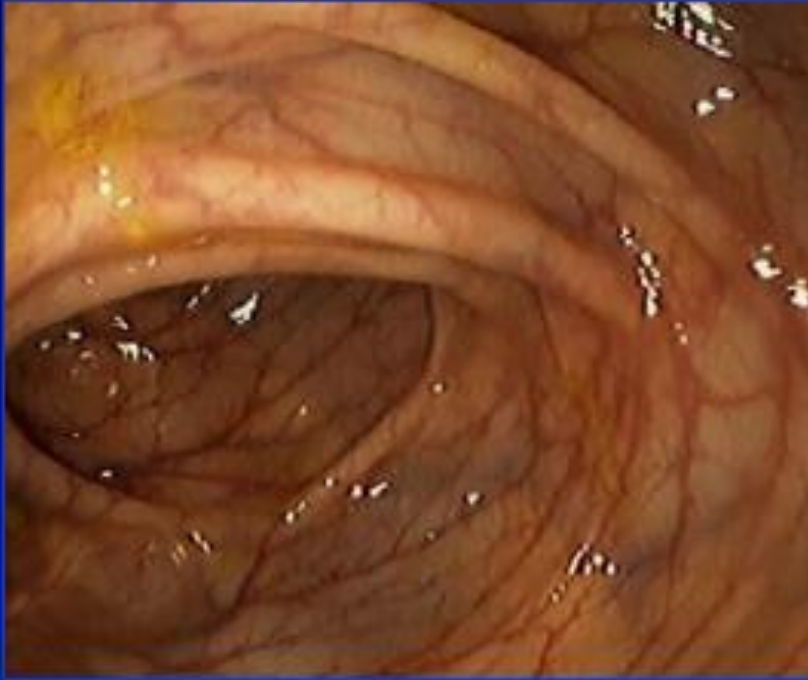
Figure 1. PROMETHEUS IBD sgi Diagnostic Incorporates 17 Assays vs 3 Assays From General Reference Labs

TYPES OF ULCERATIVE COLITIS

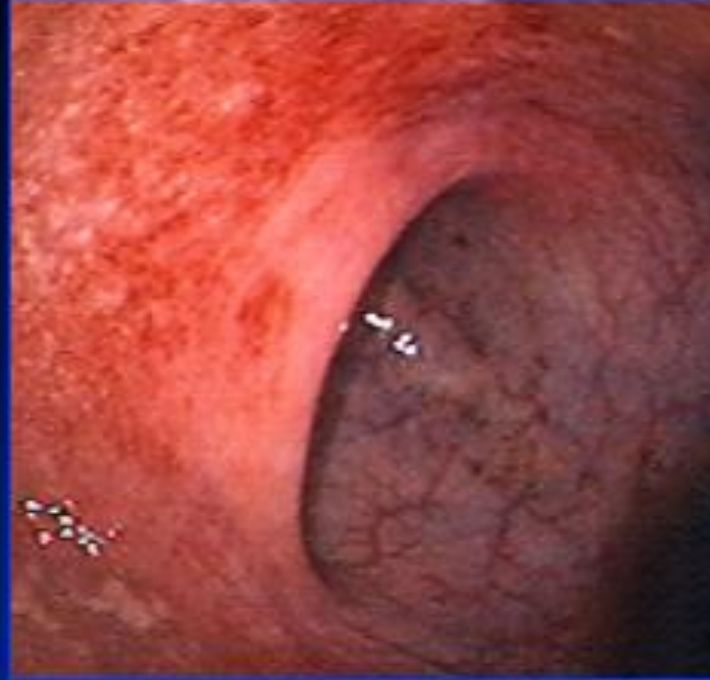


UC - Spectrum of Disease

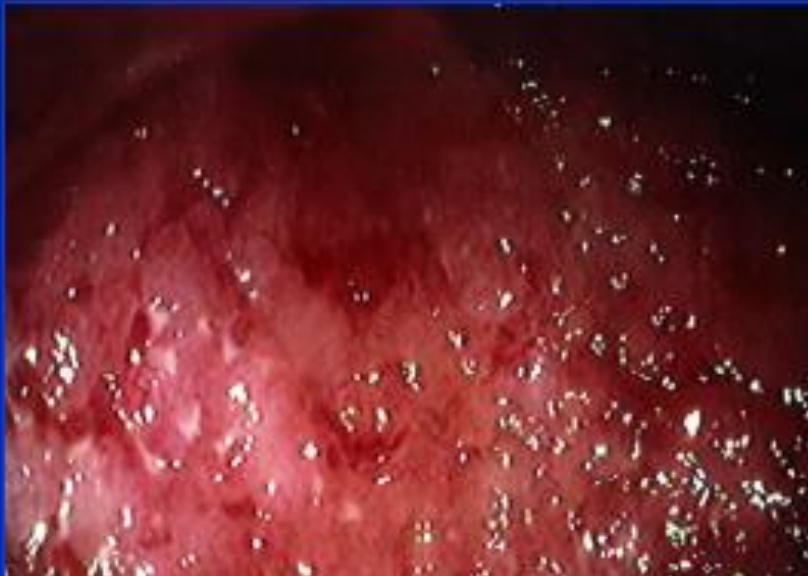
Normal



Mild



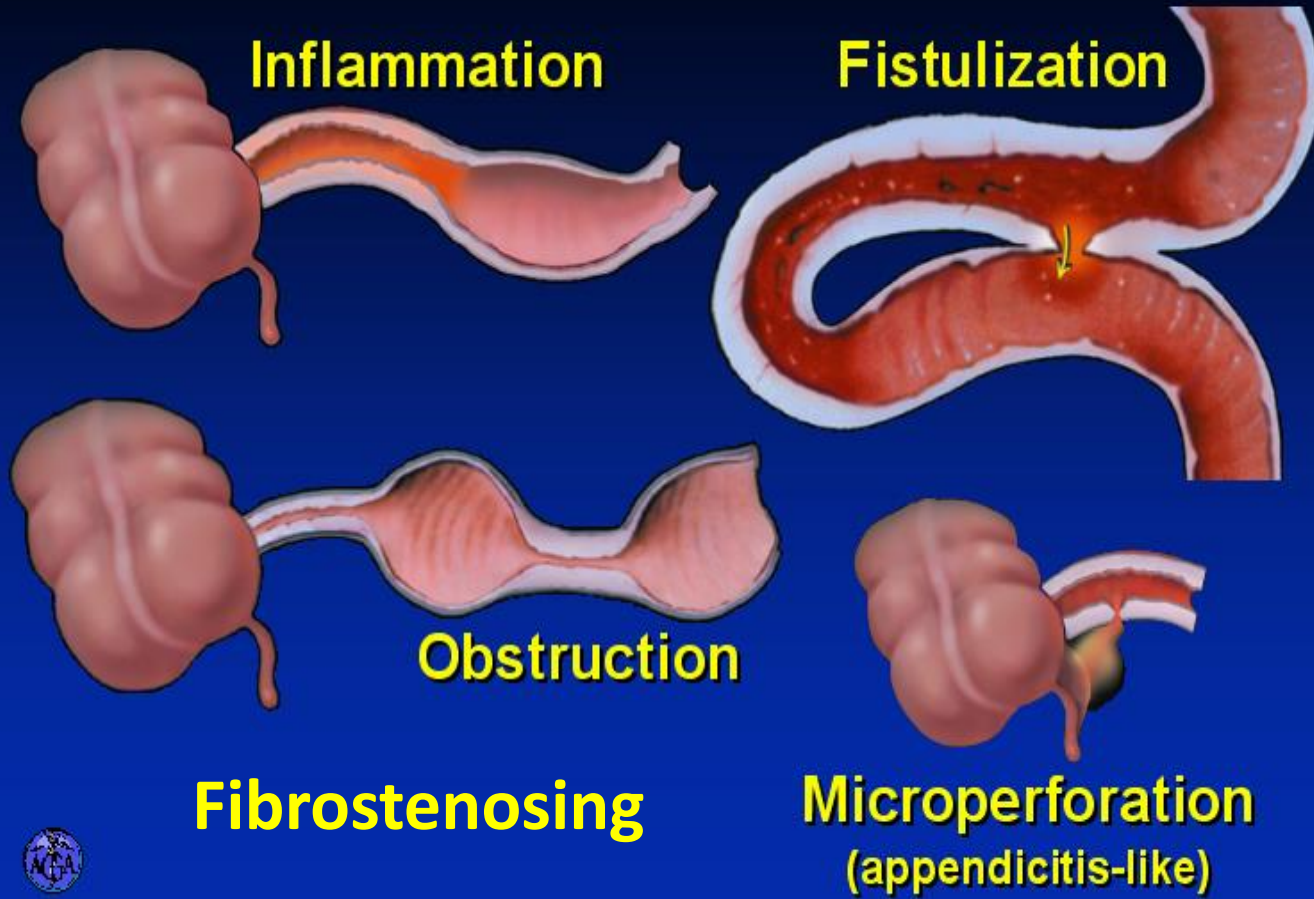
Moderate



Severe

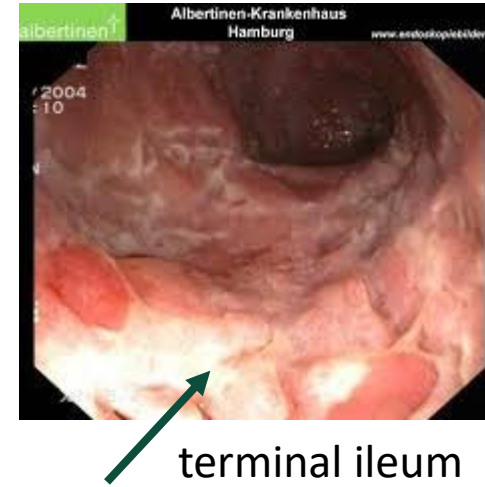


CD - Clinical Patterns

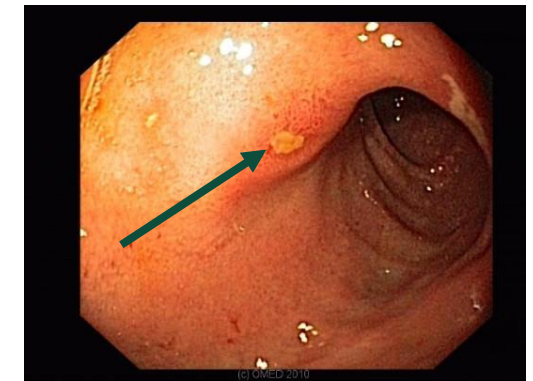


Perianal

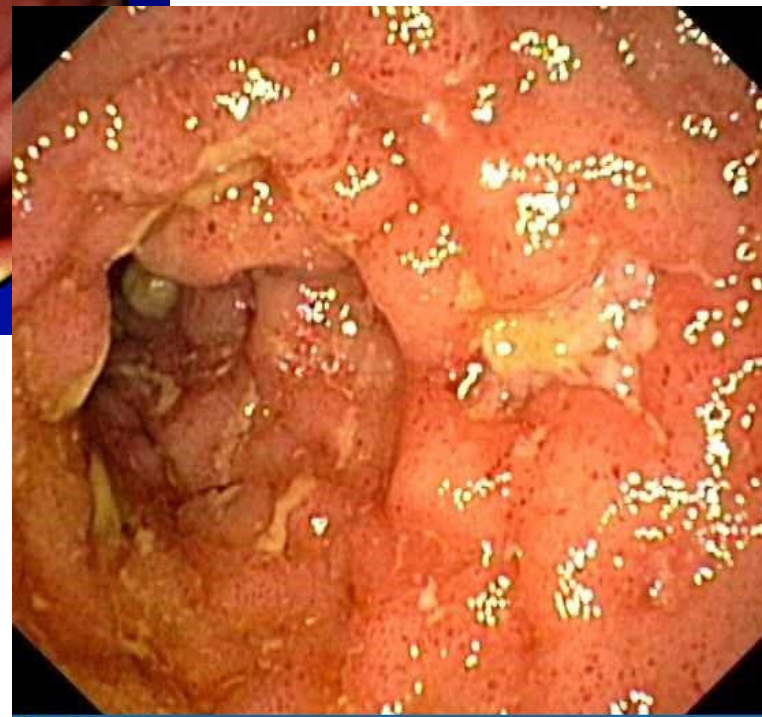
Crohn's disease



terminal ileum



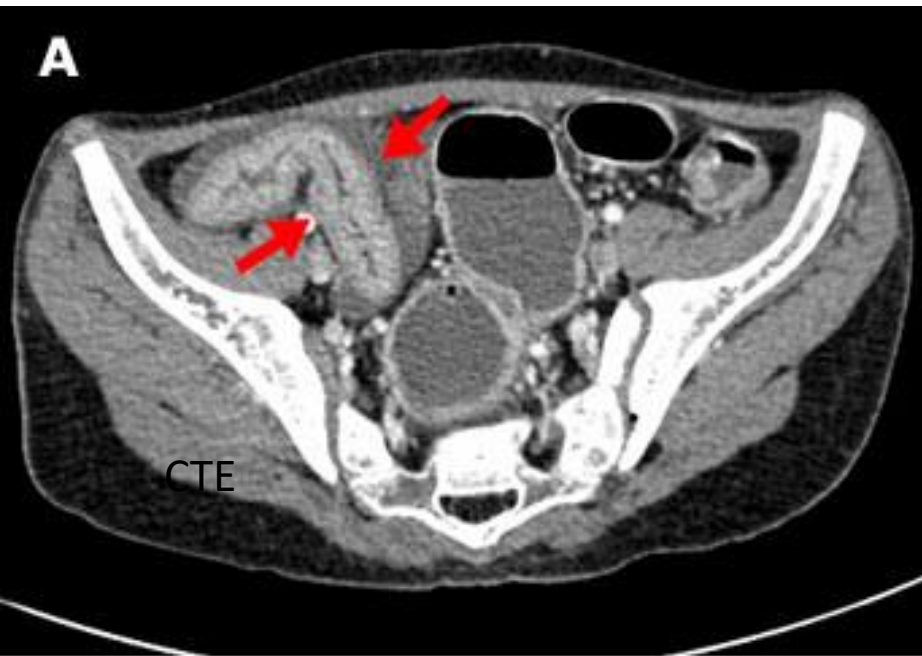
duodenum



Medscape

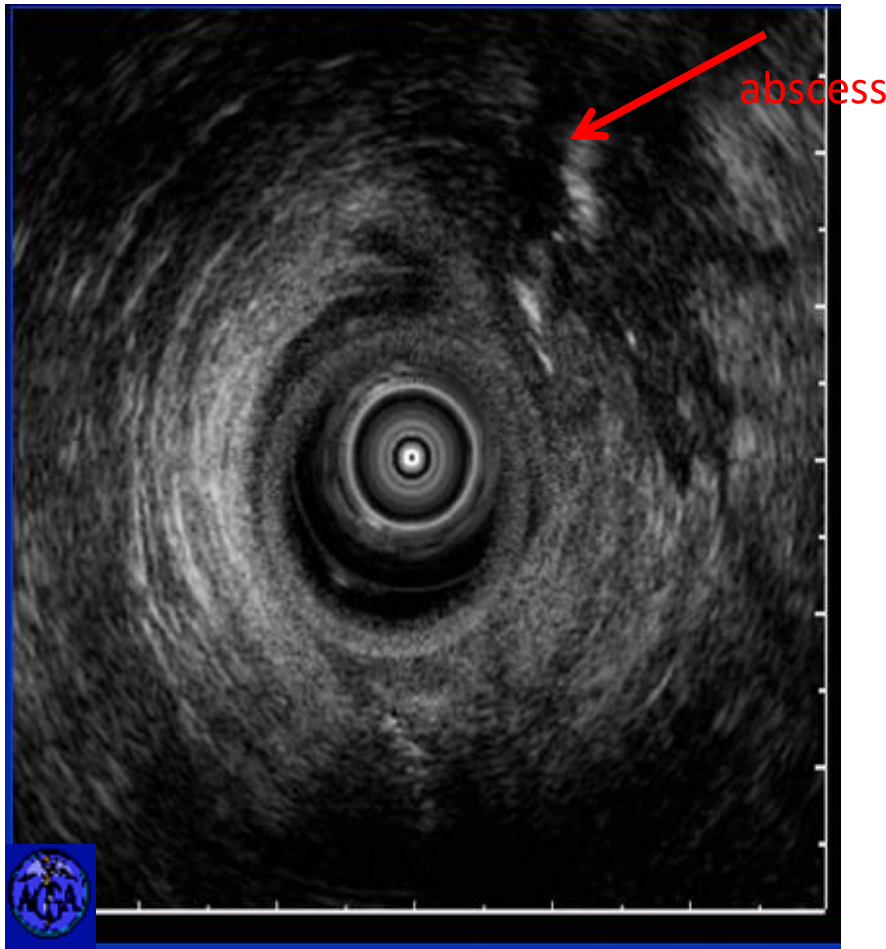


Small bowel
videocapsule
endoscopy

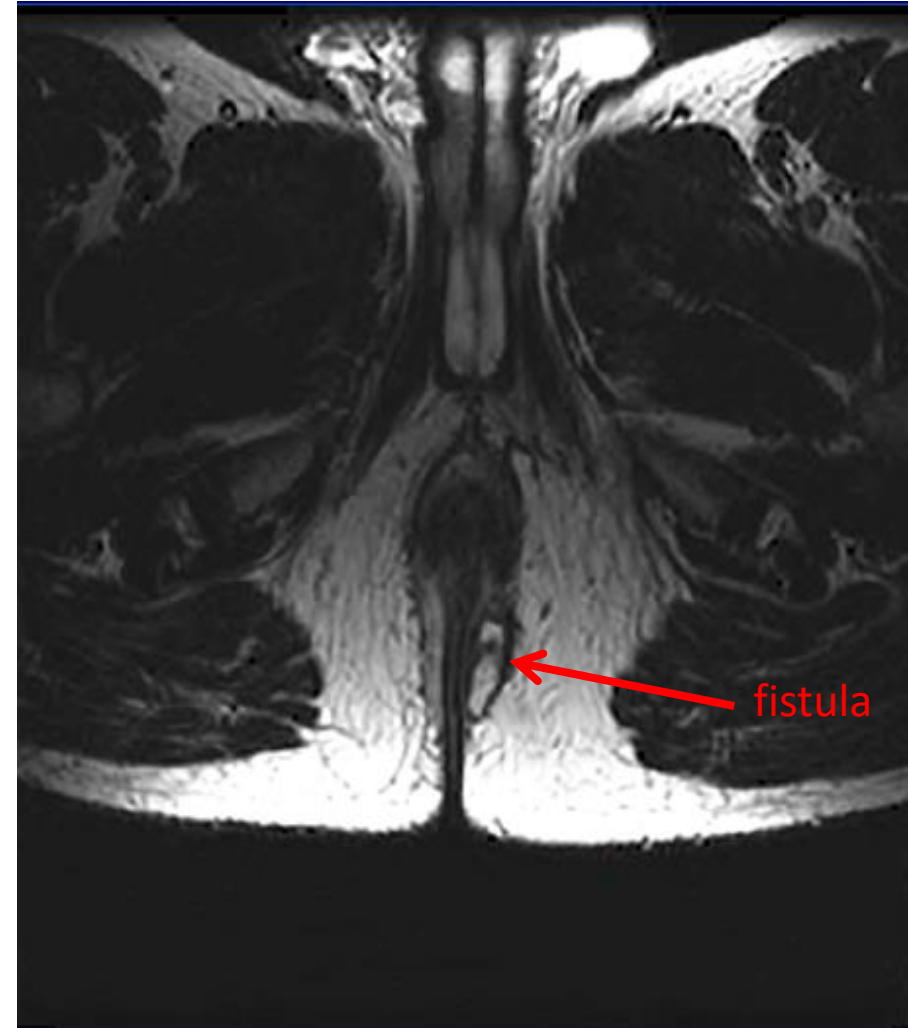


MRE

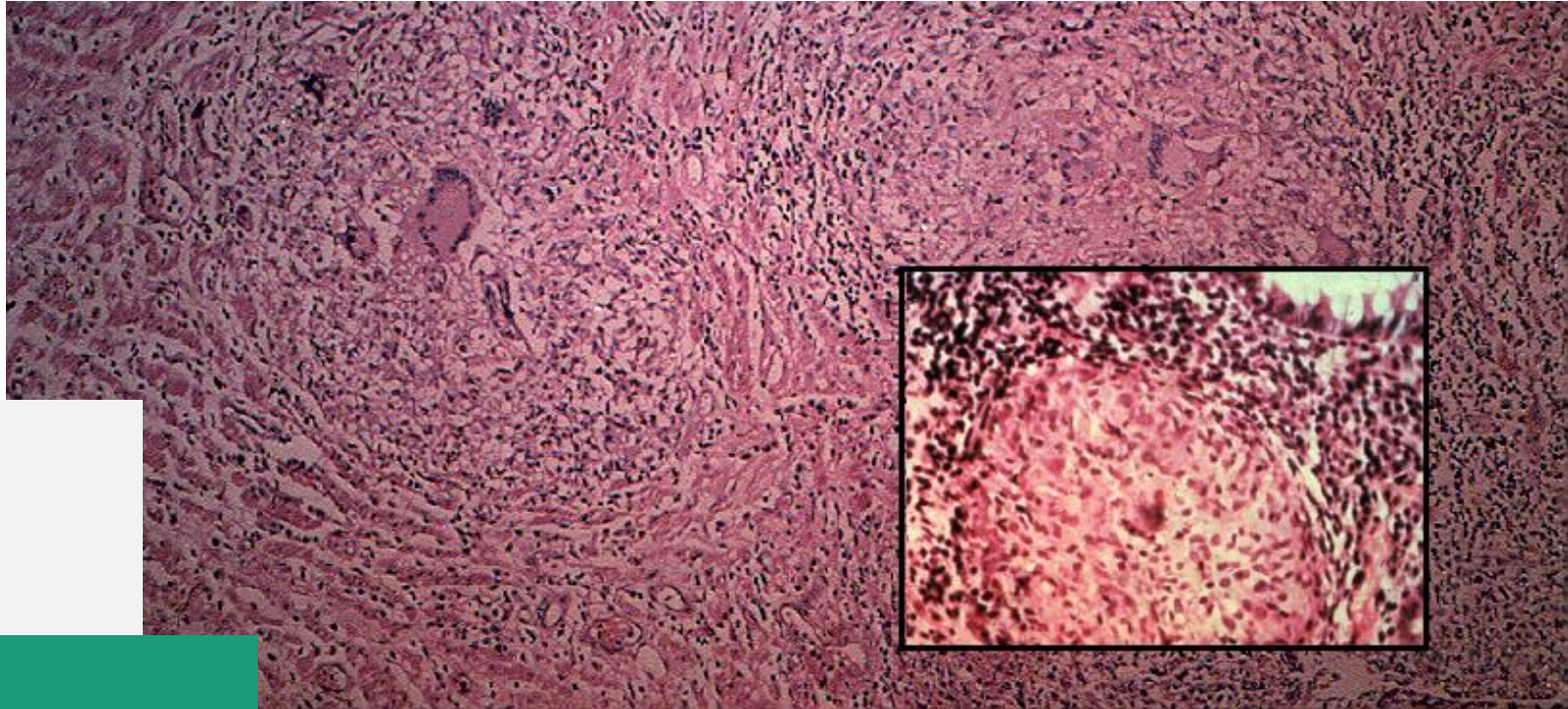
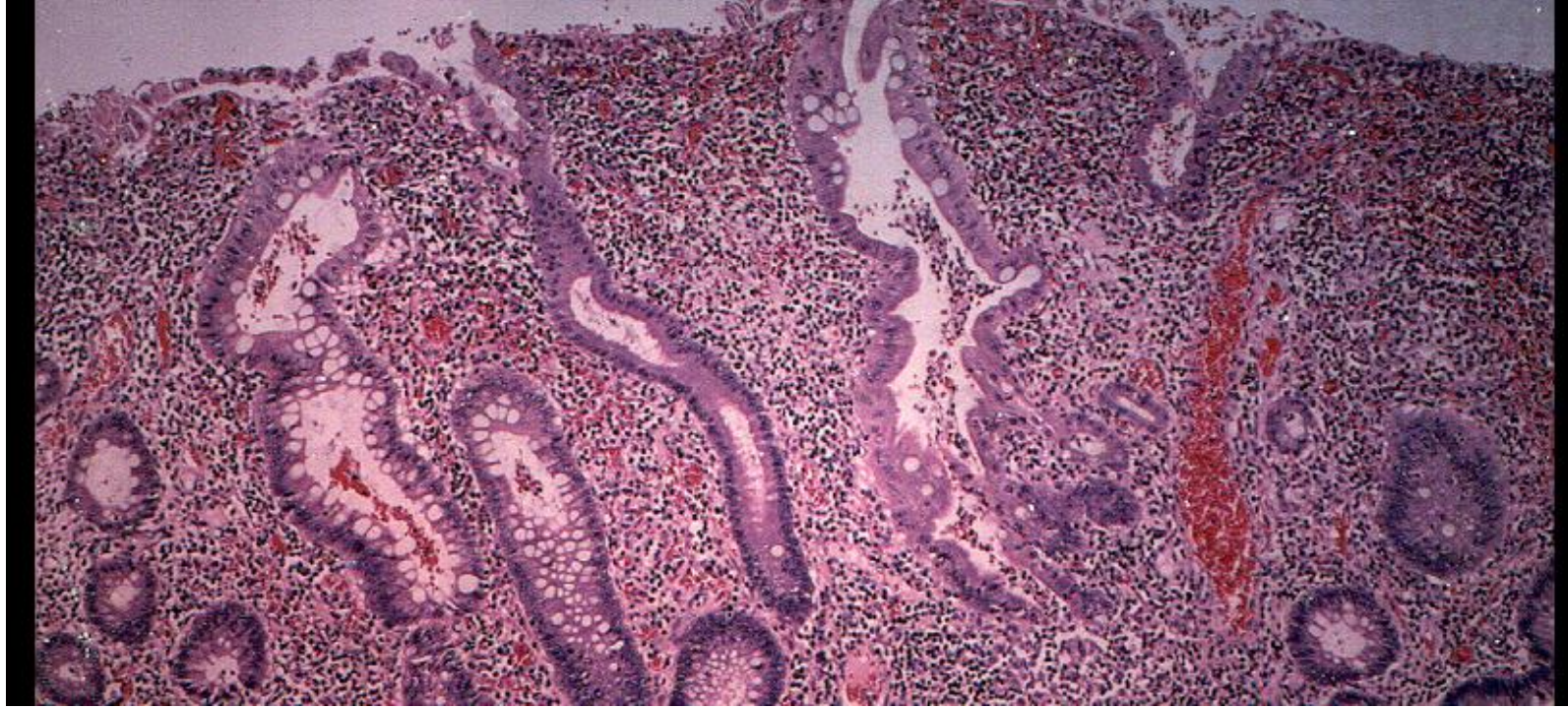
radiology.ucsf.edu



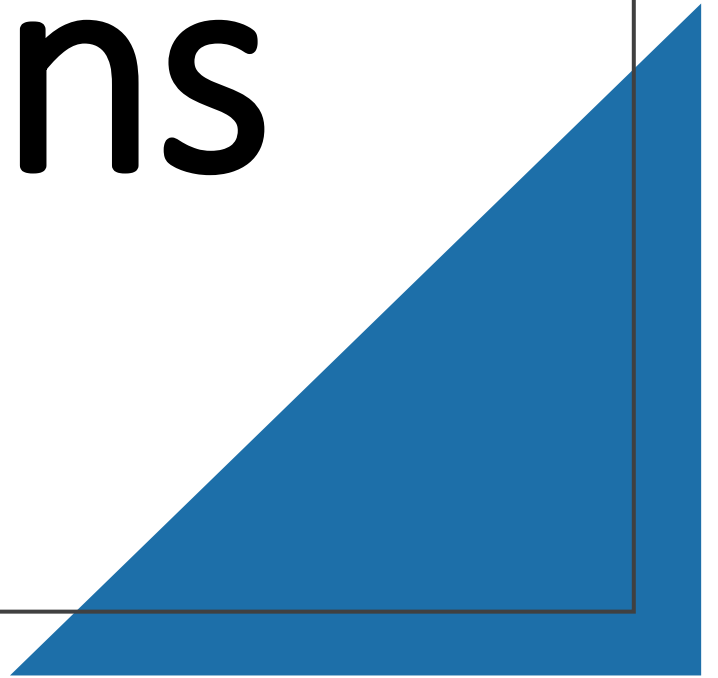
Perianal Crohn's



Can you
confirm it?



Extraintestinal manifestations





Extraintestinal manifestations

Arthropathy
– 20 to 30%

- Arthritis
- Sacroiliitis
- Ankylosing spondylitis

Eye
involvement
– 5%

- Uveitis,iritis, episcleritis

Skin - 10%

- Erythema nodosum
- Pyoderma gangrenosum



Extraintestinal manifestations

Primary Sclerosing Cholangitis

Venous and arterial thromboembolism

Renal stones

Bone loss and osteoporosis

- Corticosteroids
- Vitamin D and Calcium malabsorption

Anemia

- Vitamin B12 and/or iron deficiency
- Anemia of chronic disease

Other: pulmonary, cardiac, neuro...





IBD in older patients

IBD after age 60

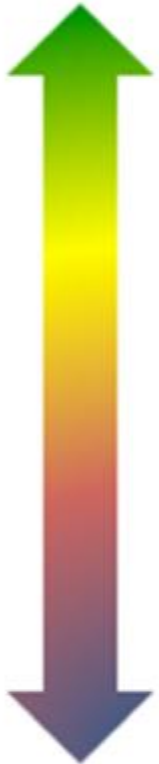
- 10-15% new diagnosis, UC > CD
- Age-associated immunologic and microbial changes, smoking, microvascular thrombosis and ischemia
- Misdiagnosis and delays b/o mimickers: diverticular disease complications, ischemic colitis, medication induced colitis, radiation colitis, infectious diarrhea
- CD: colonic, inflammatory
- UC: left sided
- Less EIM
- Similar rates of hospitalization, progression, and surgery
 - Higher CD-specific mortality



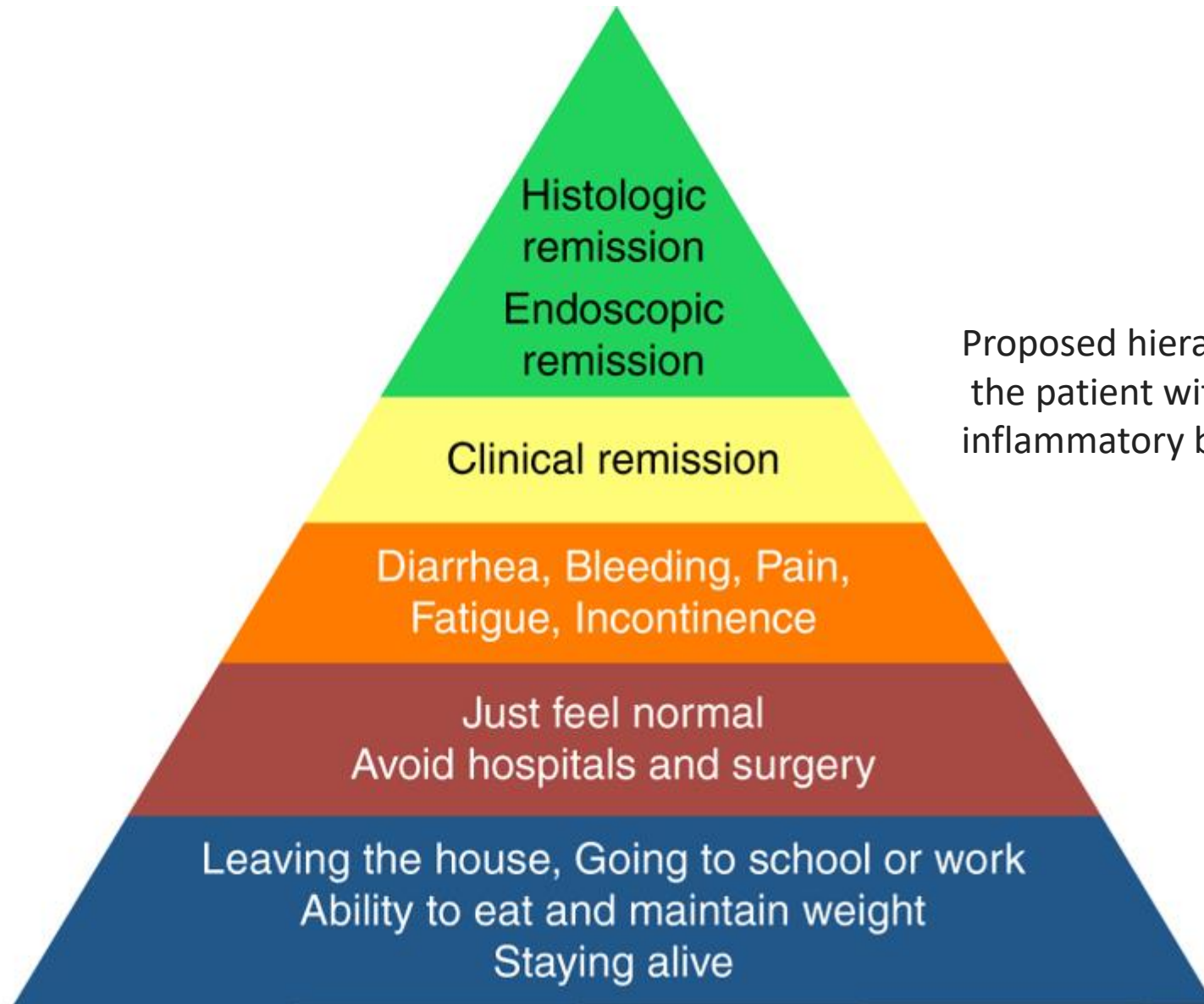
Therapies: how and why?



Physician focus



Patient focus



Proposed hierarchy of needs for
the patient with
inflammatory bowel disease

Main drug categories

5-ASA and derivatives

Corticosteroids

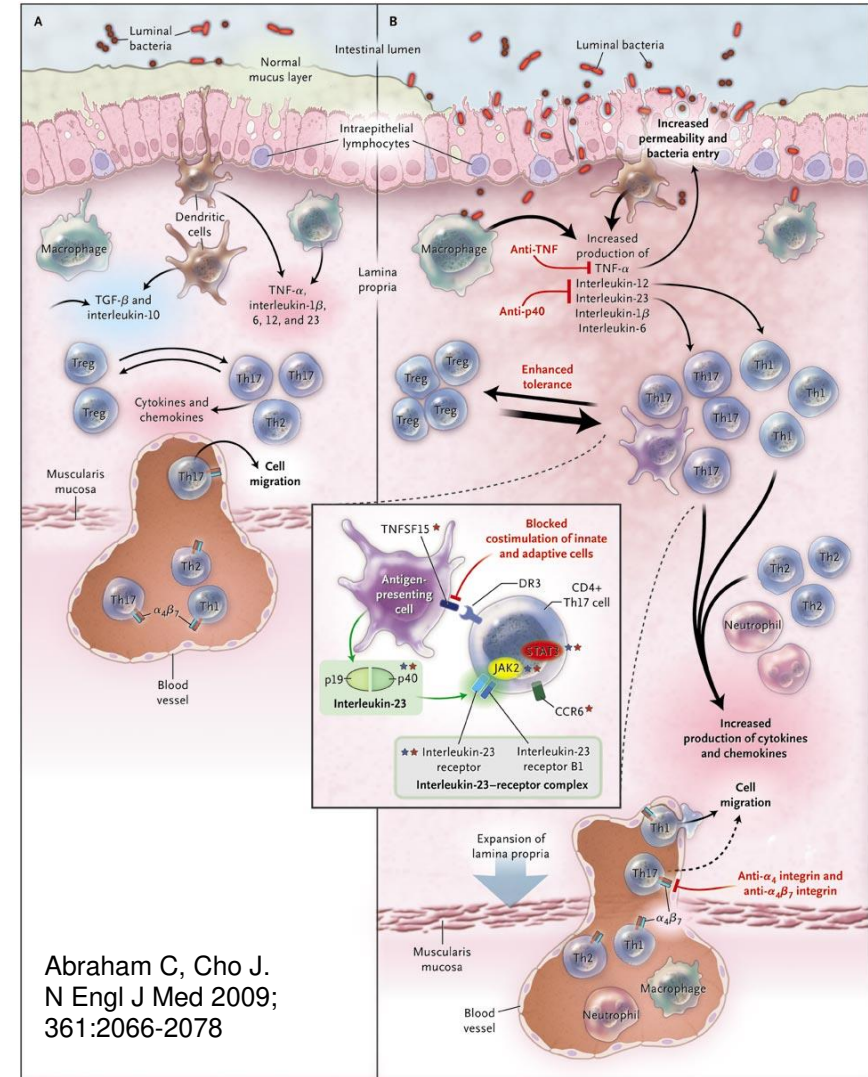
- topical
- oral
- parenteral

Immunomodulators

- azathioprine, 6-MP
- methotrexate
- cyclosporine tacrolimus thalidomide

Biologics and small molecules

- a-TNF
- a-integrins
- p40 inhibitor (IL-12 & IL23)
- JAK inhibitors
- a varied pipeline





Choosing therapy for IBD

Classic “activity” model
does not do the job well

Assesing risk of
severity/complications

Early therapy to decrease
risks

Most adult medications are
also used in the pediatric
population

STRATIFY ACCORDING TO COLECTOMY RISK (3)

Identify Patient at Low Risk for Colectomy

- Limited anatomic extent
- Mild endoscopic disease

Identify Patient at High Risk for Colectomy

- Extensive colitis⁷⁻¹⁰
- Deep ulcers¹¹
- Age <40⁸
- High CRP and ESR^{8, 12, 13}
- Steroid-requiring disease^{8, 9, 12, 14}
- History of hospitalization⁹
- *C. difficile* infection¹⁵
- CMV infection¹⁶

www.gastro.org/ucdecisiontool

CD clinical decision support tool www.gastro.org/ibdcarepathway

Identify patient as moderate/high risk⁽¹²⁾

- Age at initial diagnosis < 30 years
- Extensive anatomic involvement
- Perianal and/or severe rectal disease
- Deep ulcers
- Prior surgical resection
- Stricturing and/or penetrating behavior

Identify patient as low risk⁽¹²⁾

- Age at initial diagnosis > 30 years
- Limited anatomic involvement
- No perianal and/or severe rectal disease
- Superficial ulcers
- No prior surgical resection
- No stricturing and/or penetrating behavior



Treat to target

Assess response

- Clinical
- Endoscopic
- Histologic

Therapeutic drug monitoring

**STEROIDS ARE NOT A
MAINTENANCE DRUG**



- Drug-class specific
- Immunosuppressive drugs
 - Infections
 - Malignancies
- General rule: IBD drugs are safe
 - Be familiar with contraindications and at-risk situations
 - Benefits outweigh the risks
 - Steroids ARE NOT maintenance

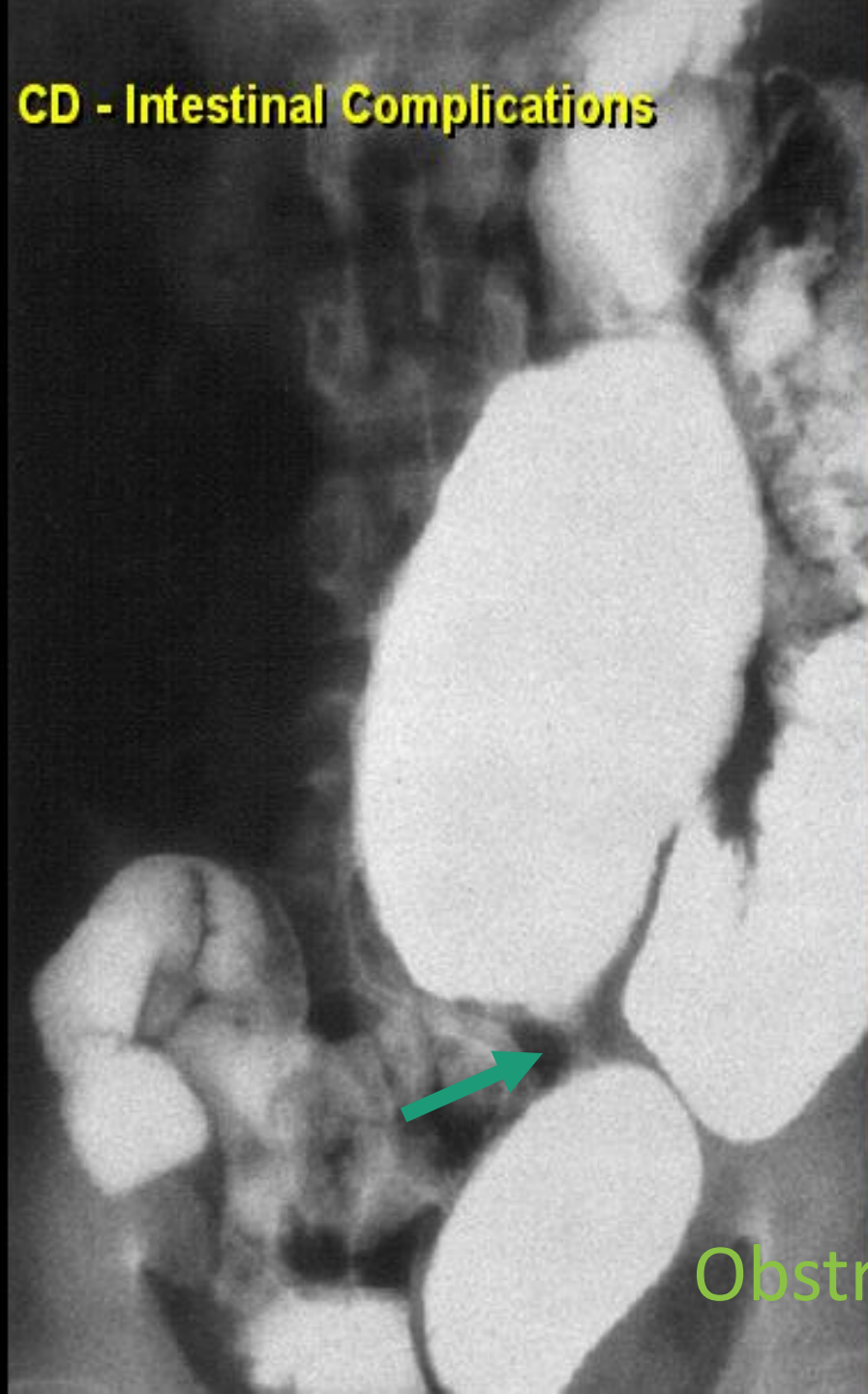
Treatment-
related
complications

Treatment for IBD: Surgery

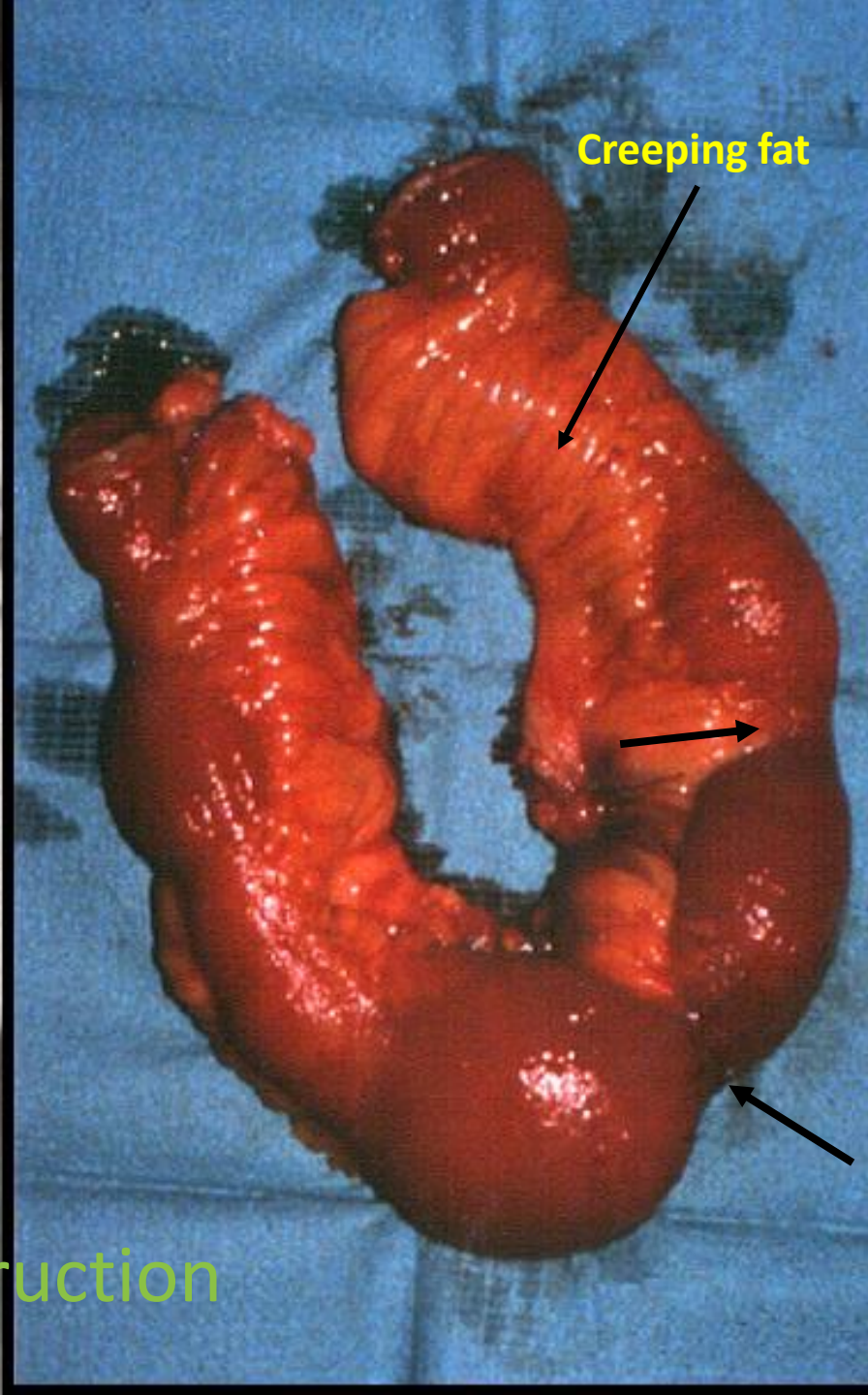
- Another option, NOT the last option
- Structural bowel damage
- Intractable disease
- Complications
- Dysplasia or cancer
- Growth retardation



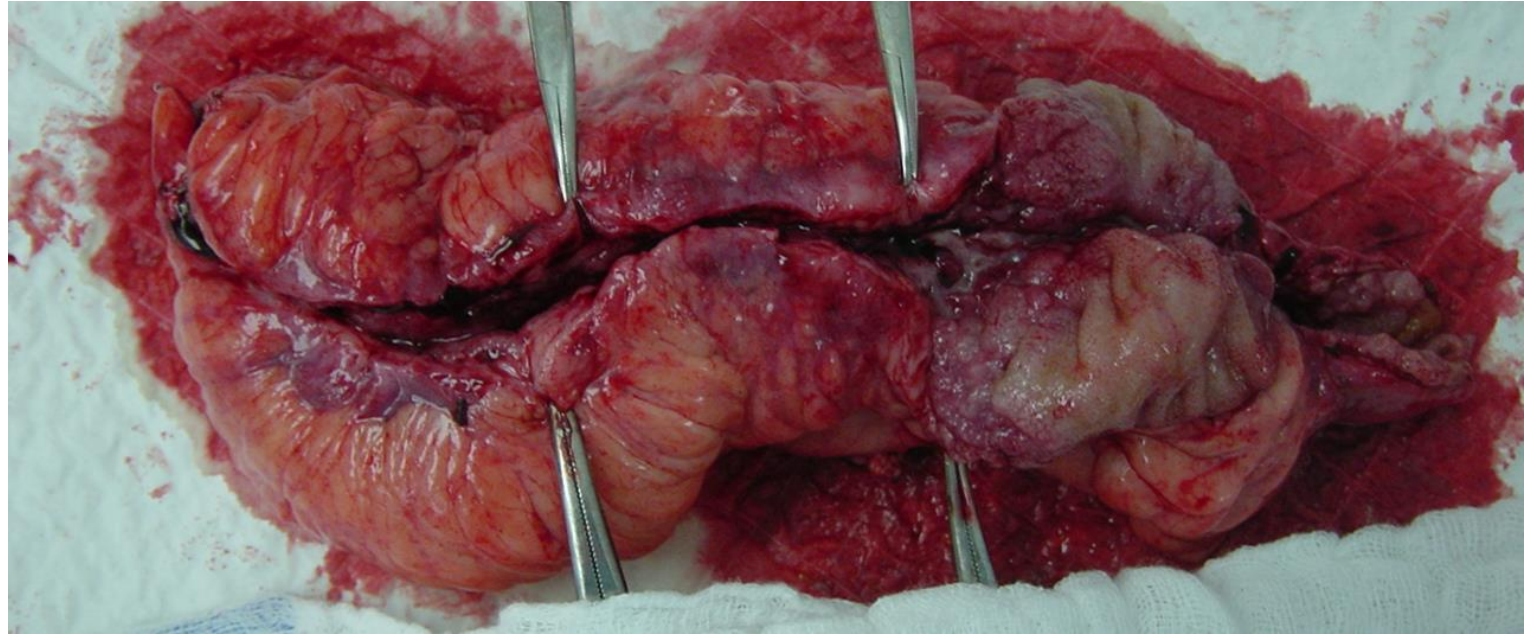
CD - Intestinal Complications



Obstruction



Creeping fat



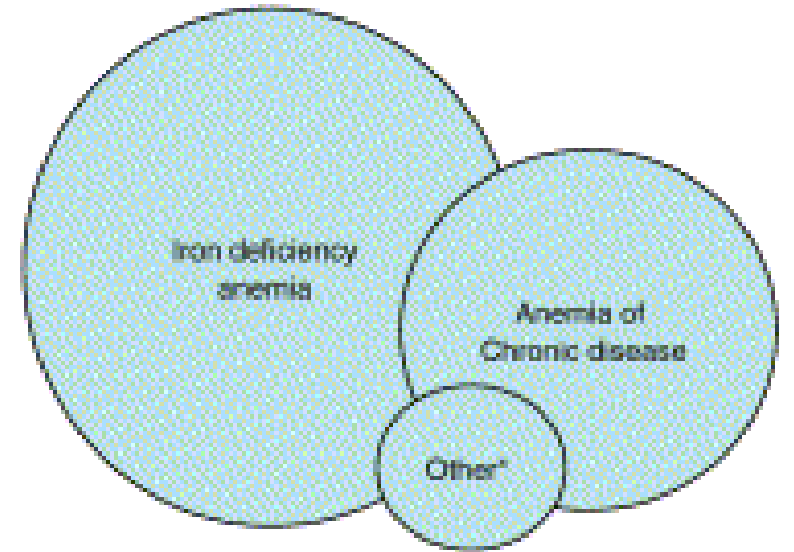
Photos courtesy Dr. Juan Lojo

Preventive care in IBD

	All IBD	Immunosuppressed
Vaccines		
Flu	X	
Pneumococcus		X
Zoster	>50	Before tofacitinib
Varicella (unexposed)	Before IMM	
Age appropriate	Before IMM	
Cervical cancer screening		Annual
Screening for depression and anxiety	X	
Screening for melanoma	X	
Screening for NMSC		X
Bone densitometry	Conventional risk factors	
Smoking cessation	CD	

Anemia in IBD

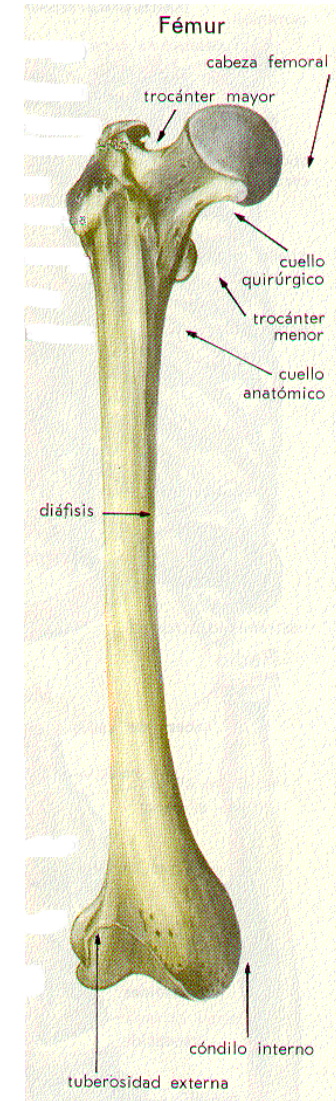
- Anemia of chronic disease
- Iron deficiency
 - Look for Fe deficiency BEFORE anemia appears
 - Poor oral tolerance and absorption
- B12 deficiency
- Folic acid deficiency
- Medication related



*Vitamin B12 or folate deficiency, drug induced, hemolysis, myelodysplastic syndrome, aplasia, hemoglobinopathies

Osteopenia: risk factors

- Ethnicity
- Family history
- Diet and lifestyle
- Reproductive history
- Body habitus
- Inflammation (cytokines)
 - CD>UC
- Medications
 - steroids



Pregnancy

- Planned
 - IBD is controlled
 - A healthy patient is the best predictor of a healthy baby
- Joint follow up with GI and OB
- Medications are continued with few exceptions



Risk factors for colorectal neoplasia in IBD

PSC (OR 4.09)

Extensive colitis
(SIR 5.6-14.8)

Active endoscopic
inflammation
(OR 2.54)

Active histologic
inflammation
(OR 2.56-5.13)

Family history of
CRC <50 yrs
(RR 9.2)

History of
dysplasia (9x CRC)

Strictures found
in colonoscopy
(OR 4.62)

Gender
(M 2.6>F 1.9)

Shergill and Farraye,

Gastrointest Endoscopy Clin N Am 24 (2014)

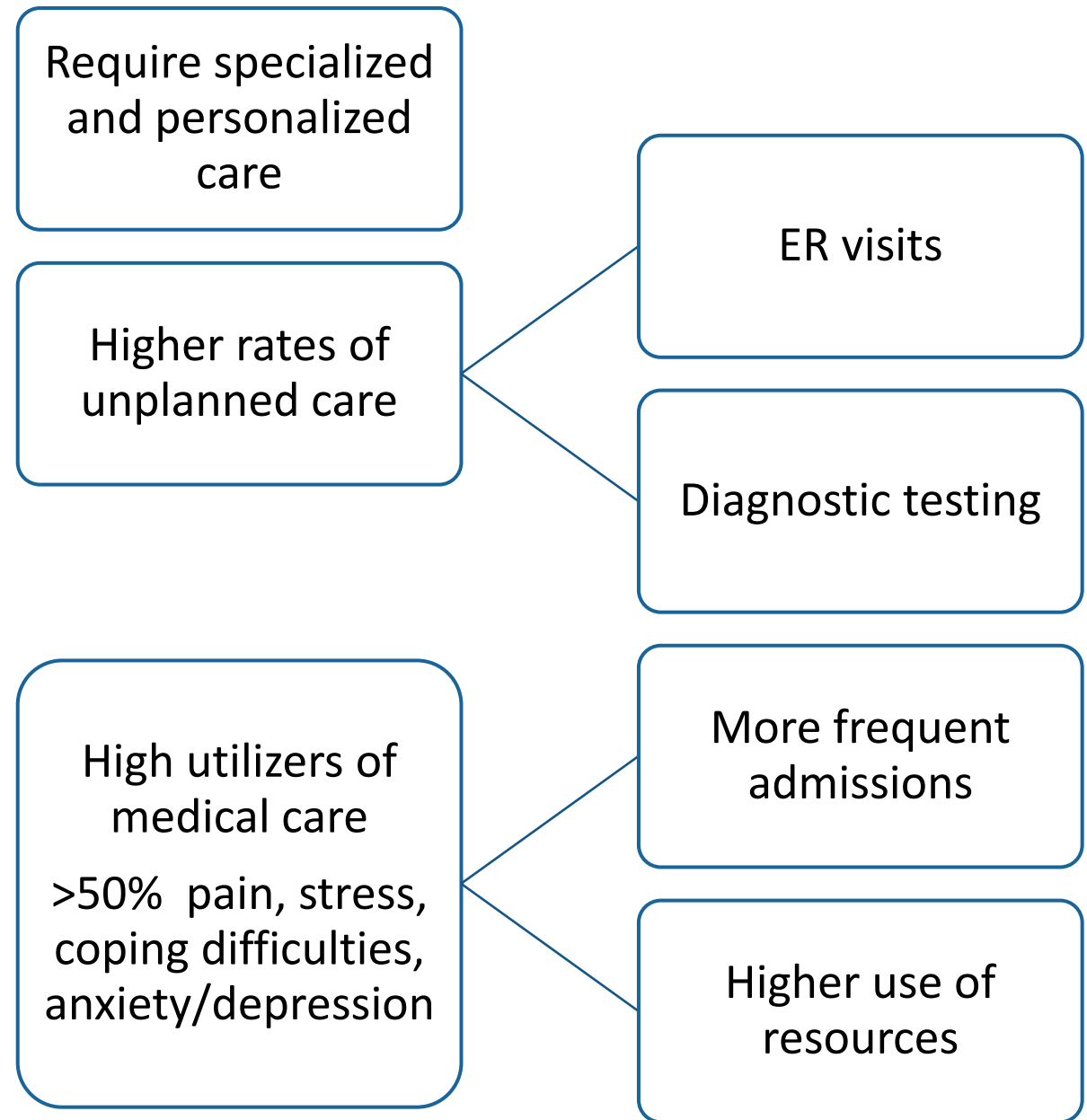
COVID-19 and IBD

- No increased risk for infection
- Severity of infection and mortality same as general population
 - Higher risk for adverse outcomes if on steroids
 - Avoid or decrease dose if possible
 - Observed more severe COVID if on mesalamine
- Biologics not risk factor for more severe disease
- Biologics are started if indicated and continued
- If infected: hold biologics/IMMs until cleared
- SECURE-IBD global database
 - 2223 cases, 3% mortality

Medical Home (n.)—The medical home is best described as a model or philosophy of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety.¹

1. Defining the Medical Home: A Patient-Centered Philosophy That Drives Primary Care Excellence. Patient-Centered Primary Care Collaborative.
Available at: <https://www.pcpcc.org/about/medical-home>.

Why IBD?



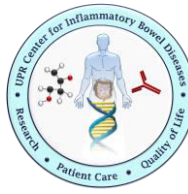
New models of care: IBD medical home

Regueiro MD et al. Inflamm
Bowel Dis 2016;22:1971-1980.

- **Patient centered**, shared decision making
- Integrated interdisciplinary care
 - Care for the IBD WHOLE person
 - GI principal care provider
 - Psychosocial aspects actively addressed
 - Preventive health care
- Less hospitalizations
- Lower costs
- Better outcomes



IBD in Puerto Rico



A FOUR-FOLD INCREASE IN THE PREVALENCE OF INFLAMMATORY BOWEL DISEASE IN PUERTO RICO OVER THE PAST 8 YEARS

Esther A. Torres, Mariela Torres-Cintrón, Roberto Vendrell, Cynthia Pérez

INCREASING PREVALENCE OF INFLAMMATORY BOWEL DISEASE IN THE PEDIATRIC POPULATION OF PUERTO RICO

Stephanie J. Velázquez, Mariela Torres, Cynthia Pérez, Antonio del Valle, Esther A. Torres



Results: Overall

- 5,378 of a total population of 2,962,409 had IBD
- Overall prevalence of IBD was 181.54 per 100,000
 - 72.71 per 100,000 for CD
 - 90.77 per 100,000 for UC
 - 18.05 per 100,000 for undetermined IBD
- Prevalence was higher in govt insured for CD and UC

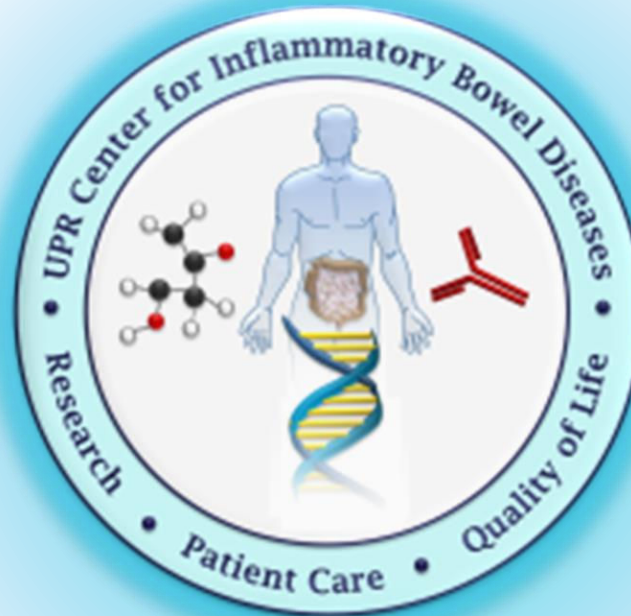
Results: Pediatric

- N of total pediatric population: 800,409
 - 269,868 (government) vs 570,541 (private)
- Total # IBD cases: 719
 - 469 (65.23%) government vs 250 (34.77%) private
- Total prevalence: 89.8 per 100,000
- Prevalence by diagnosis:
 - **CD**: 60 per 100,000
 - UC: 21.1 per 100,000

Interdisciplinary Integrated Patient Care



Education



Community Service

Research

Sexual Dysfunction in Puerto Rican Hispanic Females with Inflammatory Bowel Disease: a pilot study of the UPR Center for IBD

Authors: Pablo K. Pérez-Rodríguez¹, Ana M. Marín-Legido^{2,3}, Adriana Ortiz⁴, Natalie L. Emmert⁵, Grace Vilas-Joy^{6,7}, Esther A. Torres^{8,9}

Departments: ¹Department of Medical Sciences, University of Puerto Rico, ²Department of Medicine, UPR School of Medicine, ³Department of Psychiatry, UPR School of Medicine, ⁴Department of Obstetrics, University of Puerto Rico, ⁵Department of Pediatrics, UPR School of Medicine, ⁶Department of Pediatrics, UPR School of Medicine, ⁷Department of Pediatrics, UPR School of Medicine, ⁸Department of Pediatrics, UPR School of Medicine, ⁹Department of Pediatrics, UPR School of Medicine

Background:

- Inflammatory bowel disease (IBD) is a chronic disease characterized by inflammation of the gastrointestinal tract.
- The prevalence of IBD is increasing worldwide, with a higher incidence in developed countries.
- IBD is associated with various complications, including sexual dysfunction.
- There is a need for research on the impact of IBD on sexual health, particularly in underserved populations.

Aims:

- To determine the prevalence of sexual dysfunction in Puerto Rican Hispanic females with IBD.
- To identify factors associated with sexual dysfunction in this population.

Experimental Design:

- A cross-sectional study was conducted using a validated questionnaire.
- The study included 25 Puerto Rican Hispanic females with IBD.
- Data was collected on demographic information, IBD characteristics, and sexual health.

Results:

Demographic Characteristics:

Characteristic	Frequency	Percentage
Age (mean ± SD)	38.5 ± 12.5	
IBD Type		
Ulcerative Colitis	15	60%
Crohn's Disease	10	40%
IBD Duration (mean ± SD)	12.5 ± 8.5	
Current Medication		
5-ASA	18	72%
Corticosteroids	5	20%
Immunosuppressants	2	8%

Sexual Health Findings:

Sexual Health Issue	Frequency	Percentage
Low sexual desire	12	48%
Difficulty achieving orgasm	10	40%
Pain during intercourse	8	32%
Low sexual satisfaction	15	60%

Conclusions:

- Sexual dysfunction is prevalent in Puerto Rican Hispanic females with IBD.
- Factors such as IBD duration and medication use are associated with sexual health issues.

References:

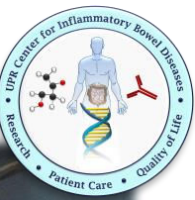
1. World Gastroenterology Organisation Global Strategy for the Management of Inflammatory Bowel Disease.
2. American College of Gastroenterology. Inflammatory Bowel Disease: Clinical Guidelines.
3. Crohn's and Colitis Foundation of America. Inflammatory Bowel Disease: A Practical Approach.
4. European Crohn's and Colitis Organisation. Guidelines for the Management of Inflammatory Bowel Disease.
5. American Gastroenterological Association. Medical Management of Inflammatory Bowel Disease.
6. American Society of Colon and Rectal Surgeons. Clinical Practice Guidelines for the Management of Inflammatory Bowel Disease.
7. American Society of Gastrointestinal Endoscopy. Guidelines for the Management of Inflammatory Bowel Disease.
8. American Society of Clinical Nutrition. Guidelines for the Management of Inflammatory Bowel Disease.
9. American Society of Human Genetics. Guidelines for the Management of Inflammatory Bowel Disease.

Acknowledgments:

We thank the participants of the study for their contribution to the research.

Discussion:

The prevalence of sexual dysfunction in Puerto Rican Hispanic females with IBD is high, which is consistent with findings from other studies. The factors associated with sexual health issues, such as IBD duration and medication use, suggest a need for further research on the impact of IBD on sexual health. The findings of this study highlight the importance of addressing sexual health in the management of IBD.



**Take home
message:
we can impact
outcomes**

Diagnose accurately and treat early

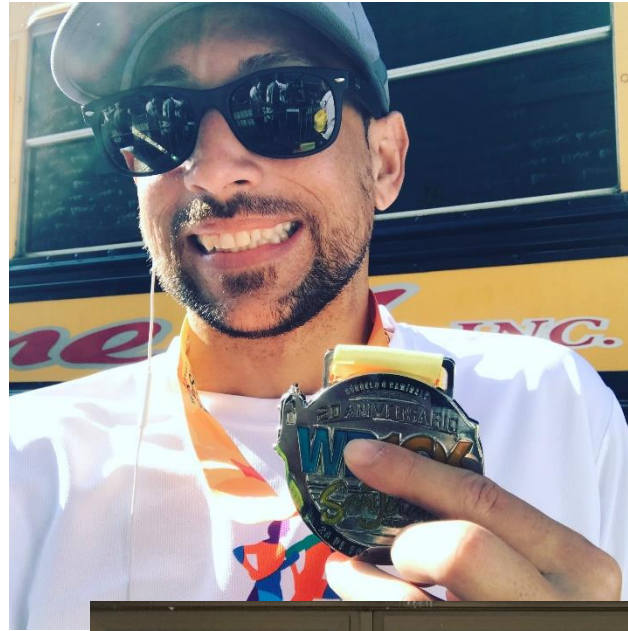
Patient-centered integrated care

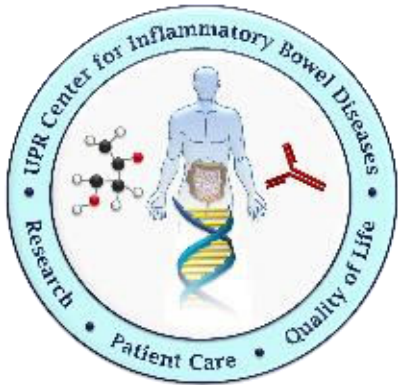
Provide appropriate wellness care

Plan for pregnancy

Educate and empower patient







Thank you! Questions?

estheratorresmd@gmail.com