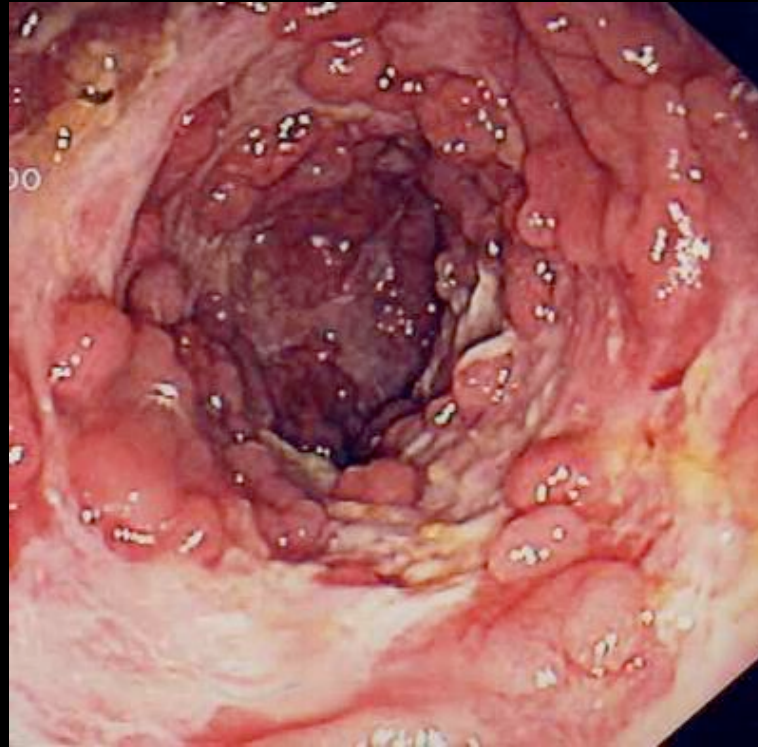


# Crohn's Disease



Genomics and Medicine

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# Crohn's Disease: An Autoimmune Disorder

- Named in 1932
- Inflammatory Bowel Disease: Crohn's disease and ulcerative colitis
- Usually presents in teens or twenties, although can appear at any time
- Genetic and environmental risk factors
  - “Disease of developed countries” (diets in sweet, fatty, refined foods)
  - Runs in families; siblings of people with CD have highest risk

# Symptoms of Crohn's Disease

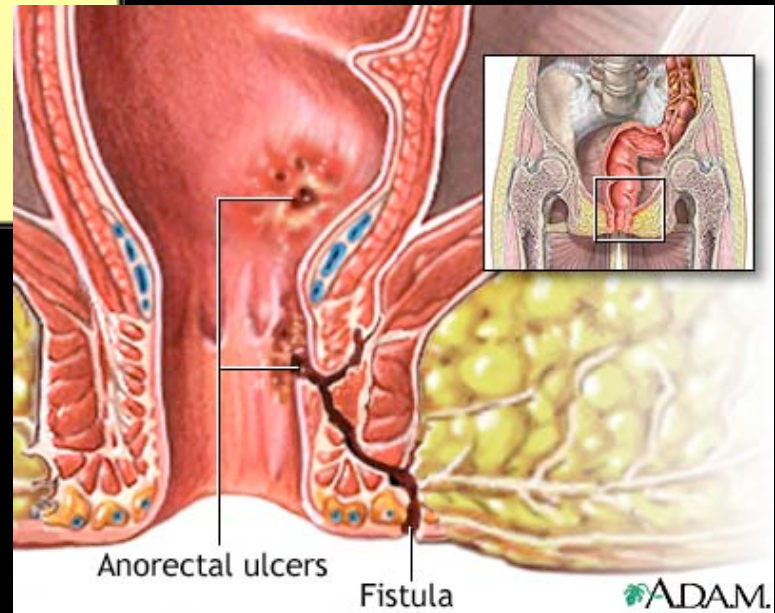
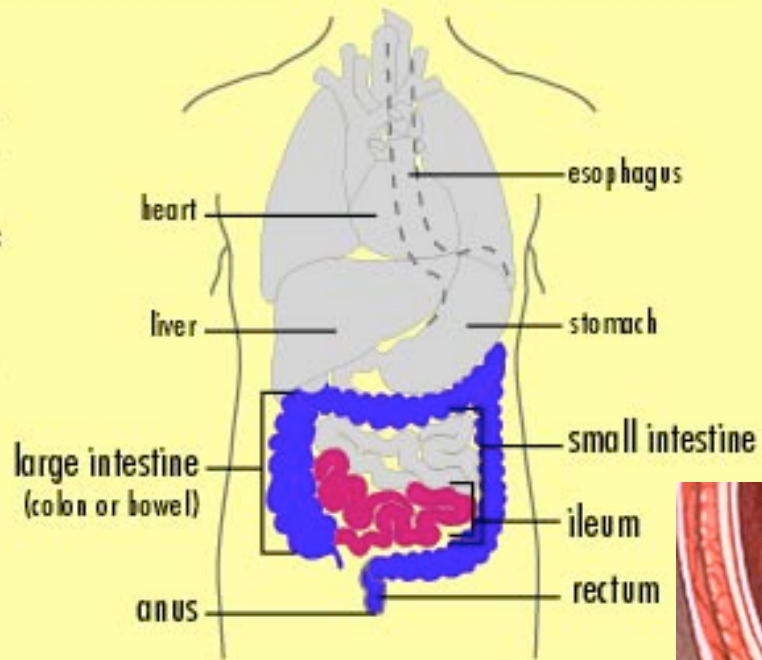
- Immune system mistakes microbes normally found in intestines as foreign bodies
- Immune response in lining of the intestines produces chronic inflammation, ulcerations, and bowel injury
- Most commonly affects the ileum and the colon, but may involve any part of the GI tract

# Symptoms of Crohn's Disease

- Persistent diarrhea
- Cramps and abdominal pain
- Fever
- Rectal Bleeding
- Fistulas resulting from bowel inflammation
- Periodic episodes of remission
- In general, does not significantly negatively affect overall quality of lives

# Where Is Crohn's Disease?

Although the ileum, the lower portion of the small intestine (fuchsia), and the colon (blue) are the most common sites of inflammation, Crohn's disease can involve any part of the digestive tract, including the area where the stomach and small intestine join. The esophagus, mouth and liver also can become inflamed.



# Diagnosis

- No single test to diagnose disease
- Lab tests, X-rays, endoscopy, pathology tests
- Colonoscopy, biopsy of tissue
- Wide ranging symptoms
- Ileocolitis, ileitis, gastroduodenal Crohn's disease, jejunoileitis, Crohn's colitis

# Genetics

- About 20% runs in families
- Complex trait (several genes at different locations may contribute to disease)
- Combination of inherited genes and immune system's response to antigens in environment (some unknown risk factors?)
- Susceptibility locus mapped to Chromosome 16
  - CD19, involved in B-lymphocyte function
  - Sialophorin, involved in leukocyte adhesion
  - CD11 integrin cluster, involved in microbacterial cell adhesion
  - Interleukin-4 receptor

# Treatment

- Goal of medical treatment is to suppress inflammatory response
- Aminosalicylates, corticosteroids, immune modifiers, antibiotics
- Recently developed/approved biologic therapies (infliximab, adalimumab, natalizumab, certolizumab pegol)
- Ongoing research



# Impact of Genomics on Diagnosis and Treatment

- Relatively recently explored disease
- Challenge lies in diagnosis—many possible symptoms, variations
- No current cure
- Researchers still trying to understand underlying causes and how factors interact
- Knowledge of gene has not significantly changed diagnosis, but has helped researchers in finding treatment to suppress severity of disease

# Sources

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