

## Crohn's Symptoms and Associations

Crohn's disease is an inflammatory bowel disease characterized by chronic inflammation of a portion of the GI tract. The clinical manifestations of Crohn's disease are extremely variable but typically presents with diarrhea, fever, and abdominal pain. Prolonged inflammation of the GI tract can lead to generalized nutrient malabsorption and significant weight loss. Inflammation of the terminal ileum can also lead to bile wasting, leading to increased incidence of gallstones, and increased lipids in the intestines causing oxalate kidney stones. Extraintestinal manifestations include ankylosing spondylitis, erythema nodosum, uveitis, and migratory polyarthritis. Individuals with this disease also have an increased risk for colorectal cancer and should get regular screenings.



PLAY PICMONIC

### Diarrhea

#### Toilet

Clinical manifestations of Crohn's disease are extremely variable, but commonly begin with a combination of diarrhea, fever, and abdominal pain.

### Malabsorption

#### Intestinal-mallet

Prolonged inflammation of the gut can lead to generalized nutrient malabsorption and significant weight loss.

### Bile-Wasting

#### Bile-Nile

Normally, bile acids that enter the small intestine from the gallbladder and liver are reabsorbed in the terminal ileum and recycled in the body. In Crohn's disease, the terminal ileum is commonly affected leading to poor bile reabsorption and bile wasting.

### Pigment Gallstones

#### Pig with Gold-stones

Patients with Crohn's disease demonstrate increased bile concentrations of total calcium, unconjugated bilirubin and conjugated bilirubin, resulting in a predisposition to forming pigment gallstones. This is thought to be the result of multiple mechanisms including abnormal enterohepatic cycling of bilirubin, gallbladder hypomobility, biliary sludge formation, and bilirubin deconjugation from bacterial beta-glucuronidase, resulting in calcium bilirubinate precipitation.

### Oxalate Kidney Stones

#### Ox Kidney-throwing-Stones

Crohn's disease is associated with increased incidence of oxalate kidney stones. Normally, oxalate is bound to calcium and excreted in the urine. In Crohn's disease, malabsorption leads to excess lipids in the intestines that bind calcium causing the concentration of unbound oxalate to increase. This results in increased intestinal absorption of oxalate into the bloodstream, and thereafter the formation of oxalate kidney stones.

### Ankylosing Spondylitis

#### Anchor spine

Ankylosing spondylitis is a chronic inflammatory disease of the axial skeleton that mainly affects the joints in the spine and sacroiliac joint in the pelvis. Prolonged inflammation can lead to eventual fusion of the spine, a condition called "bamboo spine" due to its appearance on radiographs. Ankylosing spondylitis is an associated extraintestinal manifestation of Crohn's disease.

### Erythema Nodosum

#### Nodosaur with Red Bumps on Legs

Erythema nodosum refers to inflammation of the fat cells beneath the skin and is characterized by red tender nodules or bumps on the anterior surface of the shins.

### Uveitis

#### UV-sunglasses

Uveitis refers to inflammation of the middle layer of the eye and is an associated extraintestinal manifestation of Crohn's disease.

## **Migratory Polyarthritis**

### **Migrating Polly-King-Arthur**

A particular type of arthritis that progressively affects a number of joints as it moves from one joint to another. Migratory polyarthritis is an associated extraintestinal manifestation of Crohn's disease.