

## Gastrointestinal Motility — Clinical Presentation and Treatment

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**Patients with intestinal motility disorders, whether hypomotility or intestinal dysmotility syndromes, might need a diverse array of medications for symptomatic relief. These medications fall into one of the following categories: antibiotics, antidiarrheals, opioid antagonists, cholinergic and promotility drugs. Additionally, antiemetics might be needed as these patients can complain of nausea or vomiting.**



### Definition of Intestinal Motility Disorders

**Any alteration in normal transit of food and secretions in the gastrointestinal tract is considered as intestinal motility disorder.** Patients with intestinal motility disorders might develop abnormal intestinal peristaltic movement, intestinal paralysis, spasms, and contractions. Depending on whether the cause is intrinsic to the intestinal neuronal layers or a consequence of a systemic condition, intestinal motility disorders can be primary or secondary.

Patients with intestinal motility disorders complain of [abdominal pain](#), distension, constipation, [diarrhea](#) and/or vomiting. They might have a fever because of an infectious etiology or because of dehydration.

# Epidemiology of Intestinal Motility Disorders

Intestinal motility disorders are sometimes difficult to diagnose, but **it is currently estimated that 30 million Americans complain of some sort of an intestinal motility disorder**. Additionally, intestinal motility disorders constitute up to 45 % of all GI conditions, making them a serious burden to the healthcare system. Fortunately, motility and morbidity associated with intestinal motility disorders are low.

Functional intestinal motility disorders such as irritable bowel syndrome are more common in the younger population, ranging between 20 and 40 years old. Other forms of intestinal motility disorders are not age-specific. Intestinal motility disorders are three times more common in females.

## Etiology of Intestinal Motility Disorders

Several etiologies have been identified for intestinal motility disorders, but the majority of the cases remain cryptogenic. **Following conditions are considered in intestinal motility disorder:**

- Chronic intestinal pseudo-obstruction
- [Irritable Bowel Syndrome](#)
- Fecal incontinence
- Constipation

Irritable bowel syndrome can be one of the common causes of functional intestinal motility disorders. Patients can have symptoms related to both the [small intestine](#) and the colon.

Patients with a prolonged history of fecal incontinence and constipation are at risk of developing intestinal motility disorders. This could be related to diet choices, prolonged stretching of the colon or [dependence on laxatives](#).

Additionally, several causes have been identified for constipation, which includes poor diet choices of low fiber foods, pregnancy, psychological issues, [hypothyroidism](#), and anal fissures and [hemorrhoids](#). If the cause of constipation can be eliminated, patients might stop their dependency on laxatives and their intestinal motility disorder-related symptoms are expected to improve.

**Laxatives can work in several different ways:**

Mechanism	Examples
Bulk-forming	Psyllium, methylcellulose, polycarbophil
Stool-softening	Docusate, glycerin, mineral oil
Osmotic	Magnesium oxide, sorbitol, lactulose, magnesium citrate, sodium phosphate, polyethylene glycol
Stimulate	Aloe, senna cascara, castor oil, bisacodyl
Chloride channel activator	Lubiprostone, Linaclotide (indirect via cGMP)
Opioid receptor antagonists	Methylnaltrexone, alvimopan

Certain genetic polymorphisms in mitochondrial DNA put the carrier at risk of developing constipation and other forms of intestinal motility disorders. Infections can cause abdominal distention, vomiting, and diarrhea. Lactose intolerance or glutenopathy can also cause abdominal pain, malabsorption, and weight loss.

# Clinical Presentation of Intestinal Motility Disorders

Patients with intestinal motility disorders complain of constipation or diarrhea, vomiting, abdominal pain, distention, abdominal colicky pain, frequent defecation, fecal incontinence, fever and signs of dehydration and [gastrointestinal reflux disease](#).

Additionally, physical examination can reveal signs of other secondary causes of abnormal intestinal motility. These could be signs and symptoms of hyperthyroidism—including tremors, fever, high blood pressure, and a goiter—and hypothyroidism—including cold intolerance, weight gain and hoarseness of voice. Patients with hyperthyroidism are more likely to complain of diarrhea, while those with hypothyroidism might have constipation.

History taking and physical examination should differentiate between organic causes of abnormal intestinal motility and functional causes such as irritable bowel syndrome.

## Diagnostic Work-up for Intestinal Motility Disorders

The criteria for diagnosis include the presence of symptoms and signs with ileus, air-fluid levels or distended bowel on a plain radiograph of the abdomen. **Other considerations are:**

**Patients with obstructive bowel disease due to cancer or benign strictures might have anemia on their complete blood count.** Electrolyte imbalance should be excluded as disorders of potassium and sodium homeostasis can be associated with intestinal motility disorders, namely constipation. Patients with steatorrhea might have pancreatic exocrine dysfunction and should have their stool examined for fat content, in addition to excluding bacterial overgrowth. Tumor markers should be checked, such as CA-125 and carcinoembryonic antigen, when cancer is a possibility.

Abdominal X-rays are indicated to exclude bowel obstruction. Air-fluid levels can be seen on organic causes of intestinal obstruction, but abdominal X-rays are usually normal in irritable bowel syndrome. CT scan has no diagnostic value as compared to the cost.

A barium meal is also needed to evaluate a patient with an intestinal motility disorder. Delays in transit time are common in patients with organic causes of constipation, while normal transit times are common in irritable bowel syndrome.

Endoscopy is also beneficial in patients with constipation or diarrhea, especially when they have occult blood on stool examination. A colonoscopy helps confirm organic causes of constipation such as strictures, tumors, and intestinal paralysis. A biopsy can be taken from suspected lesions to exclude malignancy.

## Medications Used in Intestinal Motility Disorders

Avoid drugs that can cause intestinal motility disorder. Patients who are receiving [opioids](#), for instance, for pain relief in terminal cancer are at risk of developing constipation as a consequence. Methylnaltrexone, a peripheral-acting opioid antagonist, can alleviate opioid-related constipation in this group of patients.

Cholinergic agonists are indicated in cases of constipation without an apparent obstructive lesion. Neostigmine inhibits enzymatic destruction of acetylcholine, while bethanechol stimulates muscarinic receptors directly.

Patients with severe constipation or constipation-dominant [irritable bowel syndrome](#) might benefit from promotility or prokinetic drugs. Tegaserod can be used in the treatment of constipation-dominant irritable bowel syndrome with good results. Tegaserod is a serotonin receptor agonist that works on serotonin receptor 4 but not the 5-HT<sub>3</sub> receptors.

Metoclopramide (increase GI motility) can help patients with vomiting as it improves the synchrony between the stomach and duodenum.

Patients with mainly diarrheal symptoms should be evaluated for a possible infectious etiology before attempting to start antidiarrheal therapy. Loperamide inhibits intestinal motility and is used in patients with intractable diarrhea. Patients might also benefit from a diphenoxylate and atropine combination, which acts through a narcotic analgesic and anticholinergic mechanism.

Finally, it is always important to remember that one of the most common causes of acute diarrhea are infections. Ova and cyst examination of the stool, stool white blood cells and leukocytosis should be excluded as they are all signs of possible infection. When an organism is identified, antibiotics should be prescribed specifically for the causative organism.

In a few cases, the antibiotic erythromycin might be used as a prokinetic agent rather than for its antimicrobial effects. Erythromycin improves stomach motility in patients with gastroparesis, i.e., diabetics. Erythromycin works as a prokinetic agent because it can mimic the action of motilin, which is responsible for peristalsis movements in the intestine and stomach. IV and oral administration of erythromycin improve stomach emptying times for liquids and solids in patients with gastroparesis.

## Surgical Treatment

Surgery is indicated in case of bowel perforation or peritonitis. Other surgical options depending on the diagnosed conditions may include laparoscopy to remove adhesions, colectomy with or without near total proctectomy or total proctectomy, etc.

## References

Kuwajerwala, N. (29 de December de 2005). Intestinal Motility Disorders Medicine. Obtido de Medscape: <http://emedicine.medscape.com/article/179937-medication>

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