Definition and etiology of constipation in adult

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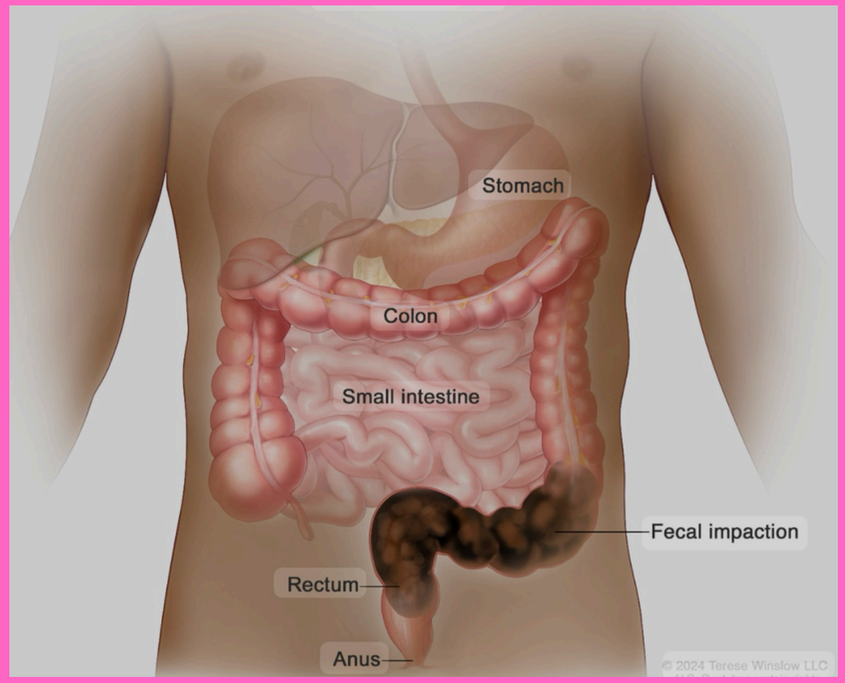


- **DEFINITION OF CONSTIPATION** — **Constipation** is often **treated** on the **basis** of a **patient's impression** that there is a **disturbance** in **bowel function**. However, the **term constipation** has **varied meanings** for **different people**. **Stools** may be too **hard** or too **small** for some, **while** for others **defecation** is too **difficult** or **infrequent**.

- **Constipation** has been **defined** as a **stool frequency** of **less than three per week based** upon **epidemiological studies** in the **United States** and the **United Kingdom**. However, this **definition** is not **universally applicable**.

- This has led some **investigators** to propose that only the **use** of **daily diaries** can **define constipation adequately**. Another **problem** is that **up to 60 percent of patients** in one survey who reported themselves to be **constipated** had **daily bowel movements**. These **individuals** most often **complained** of **defecatory straining** or a sense of **incomplete defecation.**

- These **observations** have led to the **use** of more **expansive criteria** of **functional constipation**. An international working committee recommended diagnostic **criteria (Rome IV) f**or **functional constipation** . The diagnosis should be based upon the **presence** of the **following** for **at least three months** (with **symptom onset at least six months prior** to **diagnosis**).

- (1) Must **include two** or **more** of the following:
- ⬤**Straining** during more than 25 percent of defecations.
- ⬤**Lumpy** or **hard stools** (Bristol Stool Scale Form 1-2) in more than 25 percent of defecations .
- ⬤**Sensation** of **incomplete evacuation** for more than 25 percent of defecations.
- ⬤**Sensation** of **anorectal obstruction/blockage** for more than 25 percent of defecations.

- ⬤**Manual maneuvers** to facilitate more than 25 percent of defecations (eg, digital evacuation, support of the pelvic floor).
- ⬤**Fewer** than **three spontaneous bowel movements per week**.
- (2) **Loose stools** are **rarely present without** the **use** of **laxatives**
- (3) There are **insufficient criteria** for **IBS**.

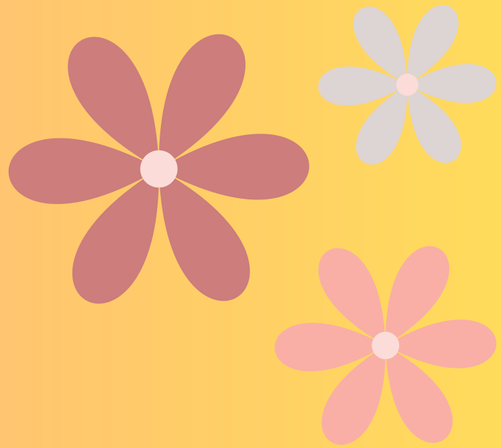
Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. **Entirely Liquid**

- **ETIOLOGY AND PATHOPHYSIOLOGY —**
- **Secondary causes of chronic constipation — Diseases associated** with **constipation** include **neurologic** and **metabolic** disorders, **obstructing lesions** of the **gastrointestinal tract**, including **colorectal cancer**, **endocrine disorders** such as **diabetes mellitus**, and **psychiatric disorders** such as **anorexia nervosa.**



- **Constipation** may also be **due** to a **side effect of drugs**
- **Other abnormalities leading** to **impairment** of **defecation** include **aganglionosis** (**Hirschsprung disease**) and **functional outlet disorder** (known as **dyssynergic defecation** or **pelvic floor dyssynergia**). In addition, **patients** with **irritable bowel syndrome** often **complain** of **periods** of **constipation**, which may **alternate** with **periods** of **diarrhea** or **normal bowel function.**

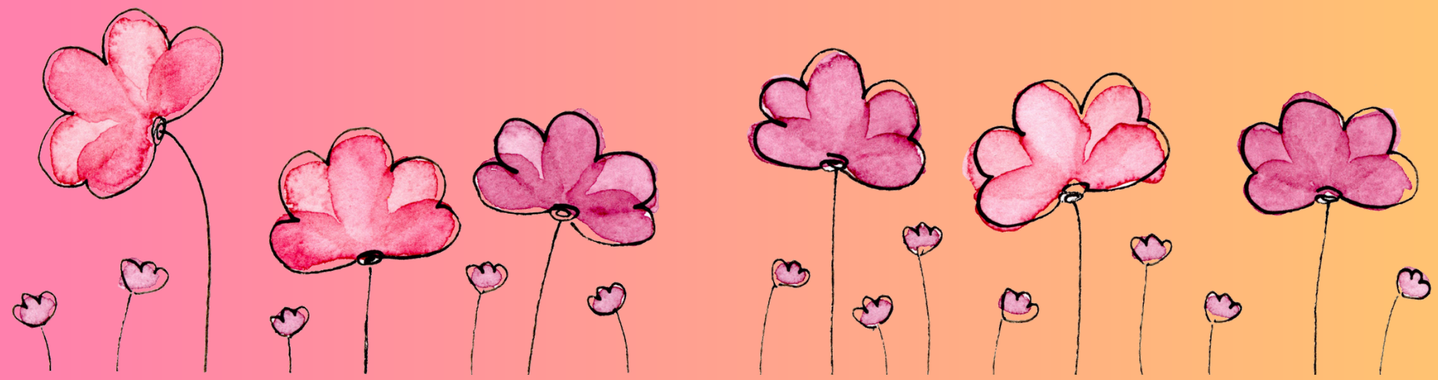


Causes of chronic constipation

Neurogenic disorders	Non-neurogenic disorders
Peripheral	Hypothyroidism
Diabetes mellitus	Hypokalemia
Autonomic neuropathy	Anorexia nervosa
Hirschsprung disease	Pregnancy
Chagas disease	Panhypopituitarism
Intestinal pseudoobstruction	Systemic sclerosis
Central	Myotonic dystrophy
Multiple sclerosis	**Idiopathic constipation**
Spinal cord injury	Normal colonic transit
Parkinson disease	Slow transit constipation
Irritable bowel syndrome	Dyssynergic defecation

Analgesics
Anticholinergics
Antihistamines
Antispasmodics
Antidepressants
Antipsychotics
Cation-containing agents
Iron supplements
Aluminum (antacids, sucralfate)
Barium
Neurally active agents
Opiates
Antihypertensives
Ganglionic blockers

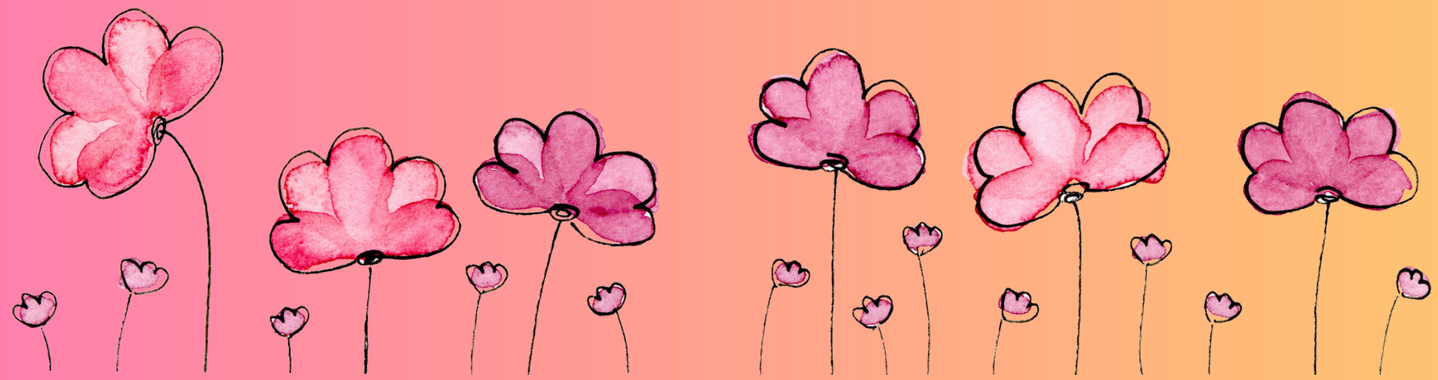
- **Colonic** and **anorectal motor functions** are **coordinated** by **enteric**, **sympathetic**, and **parasympathetic nerves**. Thus, **diseases** of the **central** and **peripheral nervous systems** are **often associated** with **constipation.**



- ●The **distal colon** receives **parasympathetic** innervation from the sacral nerves that pass through the pelvis and enter the bowel wall in the rectum. **Transection** of **these nerves** or **lesions** in the **cauda equina** may **produce constipation** associated with **hypomotility**, colonic **dilatation**, **decreased rectal tone** and **sensation**, **stasis** of the **distal colon**, and **impaired defecation**.

- The **high prevalence** of **constipation** in **multiple sclerosis** and **Parkinson** disease may be **worsened** by **physical inactivity** or the **use** of **medications** with **constipating side effects** .

- **Hirschsprung** disease is a **congenital** disorder **characterized** by **obstipation** from **birth** and **colonic dilatation proximal** to a **spastic**, **non-relaxing segment** of **distal bowel**. **Functional obstruction** of the **distal bowel** is due to **absent intramural ganglion cells** of the **submucosal** and **myenteric plexuses.**



- **Severe idiopathic chronic constipation — Severe idiopathic chronic constipation** in **adults** is **predominantly** a **disease** of **females** . **Abdominal pain** is **uncommon** and **megacolon** is **rare**. Patient **complaints** include **infrequent defecation**, **excessive straining** when **defecating**, or **both**; these **symptoms** often **fail** to **improve** with **fiber supplements** or **mild laxatives**.

- There are **several subtypes** of **severe idiopathic chronic constipation**, which can be distinguished by studies of bowel function:
- **Normal colonic transit** — Some patients who complain of infrequent defecation and are unresponsive to laxatives and fiber supplements have **normal colonic transit**

- **Some of these patients** demonstrate **abnormalities** of **anorectal sensory** and **motor function** that are **indistinguishable** from those in **patients** with **slow transit constipation.**



- **Colonic inertia** — The **majority** of **patients** with **severe constipation** with **slow colonic transit** are said to have **colonic inertia**, defined as the **delayed passage** of **radiopaque markers through** the **proximal colon** in the **absence** of a **defecation abnormality**.
- **Patients** with **colonic inertia** have a **resting colonic motility** that is **similar** to **normal controls** but have **little** or **no increase** in **motor activity after meals** or with the **administration** of **bisacodyl.**



- The **term colonic inertia** should be **reserved** for **cases** in which **transit** in the **proximal colon** is **delayed without evidence** of a **defecatory disorder** by **appropriate testing**. A more precise term to use in clinical practice is **slow transit constipation**.

- **Outlet delay** — The **term outlet delay designates** a **form** of **idiopathic constipation** in which **markers move normally** through the **colon** but **stagnate** in the **rectum** . This **pattern** may also be seen in **Hirschsprung** disease, in patients with **fecal impaction**, in **megarectum**, and in **persons** who demonstrate **abnormal responses** of the **pelvic floor muscles** during **defecation** . The last entity, also known as **dyssynergic defecation** or **pelvic floor dyssynergia**.



- **Dyssynergic defecation** — **Defecation** normally **involves** the **coordinated relaxation** of the **puborectalis** and **external anal sphincter muscles**, together with **increased intraabdominal pressure**.

- In **patients** with **dyssynergic defecation**, **ineffective defecation** is **associated** with a **failure** to **relax**, or **inappropriate contraction** of, the **puborectalis** and **external anal sphincter muscles**.
- This **narrows** the **anorectal angle** and **increases** the **pressures** of the **anal canal** so that **evacuation** is less **effective**.

- **Manometric diagnostic criteria** for **dyssynergic defecation** include **inappropriate contraction** of the **pelvic floor** or **less than 20 percent relaxation** of **basal resting sphincter pressure** with **adequate propulsive forces** during **attempted defecation** . Manometry alone is insufficient for this diagnosis to be made but is best made in conjunction with an **abnormal balloon expulsion test**.

- **Megacolon and megarectum** — Only a **small percentage** of **patients** with **constipation** have **megacolon** or **megarectum**. Megacolon and megarectum can occur together or separately.

- **Primary megacolon** is thought to be **associated** with **neurogenic dysfunction**, although **histologic changes** may not be **evident** without **specialized neurohistologic staining**. In contrast, **secondary megacolon** and **megarectum** often **develop later** in **life** and **may occur** in **response** to **chronic fecal retention**.
- **These patients** have **increased rectal compliance** and **elasticity**, **blunted rectal sensation**, and an **increased threshold** and **smaller degree** of **relaxation** of the **internal anal sphincter** in **response** to **rectal distension.**

- **Megarectum** may be **associated** with **fecal impaction** and **soiling**, which often occurs in **children** and in **physically** and **mentally impaired older adults** . **Megarectum** can also be seen in **Hirschsprung** disease, **meningomyelocele**, lesions of the **lumbosacral cord**.

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