## Colostomy

### Definition
A surgical procedure that brings one end of the large intestine out through the abdominal wall letting stools moving through the intestine drain into a bag attached to the abdomen. Simply it's another way, rather than the normal, for passage of stool and gas from the GIT and out of the body.

### According to site or the part of colon affected it's

1. **Ascending colostomy**
   - The fecal matter in this type is very liquid and contain digestive enzyme
   - Difficult to control the time and frequency of evacuation rather than the offensive odor.
   - Odor may be managed by control the type of food and limitation of certain types as cabbage.

2. **Transverse colostomy**
   - Like ascending colon in being difficult to control
   - The transverse colon is also the most likely place for what is called a loop colostomy where there is 1 stoma with 2 openings:
     - a) drainage of stool from the active side
     - b) drainage of mucus from the in-active side

3. **Descending colostomy**
   - Controlling rate and the bad odor isn’t a problem here
   - But on the other hand fecal impaction may occur because of the solid nature of stool.
   - So defecation may need irrigation of stoma with warm water

4. **Sigmoid colostomy**
   - most common permanent type of colostomy the anal canal and rectum are removed in cancer excision
   - Less problems with the frequency and odor
   - But more liable to impaction so stoma massaging and frequent irrigation are more needed.

### Site of colostomy

1. **Ascending colostomy**
2. **Transverse colostomy**
3. **Descending colostomy**
4. **Sigmoid colostomy**

### Types

1. **Loop colostomy**: mostly brief until the cause of obstruction is treated.
2. **Double-barrel colostomy**: two incisions are made, one for the active proximal colon and the other is for the in-active distal part for drainage of mucus.
3. **End colostomy**: this is a permanent procedure because the distal part isn’t anymore functional, so the patient lives with stoma pouch for life.

### Indications

<table>
<thead>
<tr>
<th>Temporary indication</th>
<th>Permanent indication</th>
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<tbody>
<tr>
<td>1. First stage in operations on the left colon or rectum.</td>
<td>This type of procedure is carried out in cases of rectum and anal cancer where those parts are permanently excised and colostomy is done.</td>
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<td>2. First stage in ano-rectal dysgenesis, imperforate anus.</td>
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<td>3. First step in rectovesical, rectourethral, and rectovaginal fistulae.</td>
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<td>5. Emergency procedure in ano-rectal and left colon wounds.</td>
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<td>6. Emergency ttt of perforated or obstructed diverticular disease of sigmoid.</td>
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<td>7. Resectable cancer left colon</td>
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### Complications

1. **Retraction of the stoma:**
   - Mostly occur when the loop is drawn out of the abdomen under certain tension specially in obese after removal of supporting rod
   - In terminal colostomy ischemia may play a role in retraction.
   - Another operation is done in another suitable site

2. **Stenosis:**
   - **Not very common due to introduction of colo-cutaneous suturing, when it occurs**

3. **Prolapse:**
   - may occur specially to the distal part of transverse colostomy.
   - Manually reduction then expedite the permanent closure.

4. **Obstruction:**
   - May occur in terminal colostomy “sigmoid colostomy” due to failure to close the lateral space which lead to volvulus of small intestine and strangulation around the colostomy
   - Immediate interference is necessary
### Colostomy (Aids in surgery)

<table>
<thead>
<tr>
<th>Definition</th>
<th>An opening of the colon to the skin</th>
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<tbody>
<tr>
<td><strong>Indication</strong></td>
<td><strong>Indication for temporary colostomy</strong></td>
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<tr>
<td>1. To relieve large bowel obstruction in patients with</td>
<td>1. After abdomino – perineal resection</td>
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<td>a) High anorectal malformations</td>
<td>2. Irresepectable carcinoma of the large bowel with obstruction</td>
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<td>b) Hirschsprung’s disease</td>
<td>3. Irresectable cases of anal incontinence</td>
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<td>c) Inflammatory stricture</td>
<td>4. High anal fistulae not amenable to surgery</td>
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<tr>
<td>d) Carcinoma of the colon</td>
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<td>2. In injuries of the colon → the injured segment is either exteriorized as a colostomy or is closed and a proximal diverting colostomy is performed</td>
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<tr>
<td>3. To protect a distal doubtful colonic or rectal anastomosis</td>
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</tbody>
</table>

#### Types

1. **Loop colostomy**
   - Is usually temporary and is usually done in the right side of the transverse colon → transverse colostomy or in the pelvic colon → pelvic colostomy. This part is brought to the surface, fixed to the abdominal wall, opened along one of the taenia coli, and then stitched to the skin (a rod may be passed beneath the loop to prevent retraction, and is removed after one week).

2. **Double barreled colostomy** → Paul Mickulicz operation → temporary colostomy
   - Where the 2 limbs of the proximal & distal ends of colon are sutured together & brought on in the skin. The 2 ends are sutured together in order to form an intervening spur which can be crushed later by using crushing enterotome as a step in its closure.

3. **Devine’s (defunctioning) colostomy** → temporary colostomy
   - Where the proximal & distal end of the the colon are brought separately to the surface with a skin bridge in between.

4. **Terminal colostomy** → permanent colostomy
   - After abdomino – perineal resection for cancer lower 1/3 rectum, where the remaining loop of colon is brought out to the skin as a terminal colostomy. The lateral space between the colon and the perineal peritoneum is closed to prevent an internal hernia. The colon is fixed to the abdominal wall muscles and is then stitched to the skin.

5. **Cecostomy**
   - Is occasionally used for temporary decompression of the colon (not effective as the loop colostomy).

#### Colostomy care

The colostomy is an incontinent opening on the abdominal wall:

1. An iliac colostomy is easy to manage, as by time it functions once or twice a day. The patient usually uses a colostomy appliance and evacuates its plastic bag when it is full.

2. An alternative method is to wash out the colon through the colostomy once every morning. As the colostomy does not act during the rest of the day, a simple dressing is all that is necessary.

### Bowel preparation

**Aim**

Why do we prepare the colon?

1. The risk of anastomosis leakage and wound sepsis is reduced if the large bowel is empty at the time of resection and if the bacterial flora of the colon is reduced.

2. In elective cases where the colon is well prepared (empty and clean) primary anastomosis can be performed in the same session of resection.

#### Mechanical preparation

- **Slow preparation**
  - The patient is asked to have a non-residue diet for 4 days before surgery
  - Combination of enemas and mild laxative are given for 2 – 3 days before the operation

- **Rapid preparation**
  - Can be performed one day before surgery by one of the following methods
  1. Whole gut irritation using 2 – 4 L/hour of a balanced crystalloid solution passed via a nasogastric tube until the patient passes clear fluid per rectum. This method is not used in patients with known cardiac, or renal disease, and in those with partially obstructed colon
  2. One liter of flavoured mannitol administered orally or by a nasogastric tube (metoclopramide may be administered to inhibit vomiting)

#### Chemical preparation

1. Intestinal antiseptics administered orally help to reduce the density of colon bacteria

2. A combination of neomycin and metronidazole (Flagyl) for 2 days will cover the gram negative bacilli and the anaerobes which are normally resident in the large intestine

### Complication

- **Skin complication** → eczema

### Perioperative antibiotic prophylaxis

- To minimize septic complications following colorectal surgery, systemic antibiotics are administered at the time of induction of anesthesia and continued post operatively for a variable period depending on the degree of contamination

- Combination of a cephalosporin or an aminoglycoside with either metronidazole or clindamycin