STOMA COMPLICATIONS

BEST PRACTICE FOR CLINICIANS
Acknowledgments

Stoma Complications: Best Practice for Clinicians

This document was developed and completed by the WOCN Society’s Clinical Practice Ostomy Committee in August 2013.

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Introduction and Purpose

Ideally, a stoma should appear red or pink, moist, and slightly elevated from the surrounding skin. There may be underlying conditions that predispose certain individuals to stomal complications. The seven most common stomal complications described in the literature are hernia, laceration, mucocutaneous separation, necrosis, prolapse, retraction, and stenosis. This document was originally developed by the WOCN® Society’s Clinical Practice Ostomy Committee as a best practice guide for clinicians who care for patients with ostomies (Wound, Ostomy and Continence Nurses Society [WOCN], 2005).

The purpose of this updated document is to facilitate the identification, assessment and management of common stomal complications. This document does not include common peristomal skin conditions related to pouching problems. For each of the seven common complications, this best practice guide provides an overview with a description and information about assessment and nursing interventions. The following information is provided for each complication: definition, contributing factors/risks, potential complications, identifying characteristics, assessment parameters; and nursing interventions for prevention, management, patient/caregiver education, and indications for referral to a primary healthcare provider. Also, recommendations for further research to expand the evidence-base about stomal complications and their management are provided. Please see the appendix (Figures 1-7) for images of the seven stomal complications (WOCN, 2007a).
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<tr>
<th>Description</th>
<th>Identifying characteristics</th>
<th>Prevention</th>
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<tr>
<td>• A peristomal hernia is a bulge under the peristomal skin indicating that one or more loops of bowel have passed through the dissected area of fascia and muscle, which was needed to externalize the stoma; and the bowel is now protruding into the subcutaneous tissue around the stoma (Thompson, 2008; WOCN, 2010, 2011).</td>
<td>• A bulge is noticeable around the stoma. oThe bulge can vary in size and it may be partial or circumferential. • The bulge may reduce in size when the patient lies down and increase in size when the patient stands, sits, or exerts him/herself. • The stoma may also change in size or shape. • A hernia is often asymptomatic, or it can be symptomatic with pain, bulging, and poor fit of the pouch (Bafford &amp; Irani, 2013). • Subclinical hernia: If the patient's history suggests a hernia but the physical exam does not indicate a hernia is present, then further testing may be indicated. A cat scan with oral contrast or an upper GI x-ray such as a small bowel series or retrograde contrast study to visualize the loops of bowel may help determine if a hernia is present.</td>
<td>• Marking the stomal site within the rectus muscle may reduce the risk of a hernia developing (WOCN, 2011). • Patients should: o Lose excess weight prior to surgery (WOCN, 2011). o Attain/maintain their waistline at less than 39.4 inches or 100 cm (De Raet, Delvaux, Haentjens, &amp; Van Nieuwenhove, 2008). o Avoid lifting over 5 pounds for 6 to 8 weeks after surgery. o Stop smoking (Arumugam et al., 2003). o Use abdominal support belts and garments when doing heavy lifting or heavy work (WOCN, 2011). o Support the abdominal area with a pillow or hands when coughing or sneezing during the post-operative period. o Abstain from active abdominal exercises or lifting heavy objects for at least 3 months following surgery (WOCN, 2011). o Maintain adequate postoperative nutrition (WOCN, 2011).</td>
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### Contributing factors/risks

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<tr>
<th>Assessment parameters</th>
<th>Management</th>
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<tr>
<td>• An aperture/opening through the abdominal muscle that is too large (WOCN, 2011; 2010).</td>
<td>• Modify the pouching system if needed: strategies to consider include: o A one-piece flexible system. o A two-piece system with a floating flange. o A two-piece flexible or flangeless system. o Cautionary use of tape to avoid shearing. o Cautionary use of convexity to avoid pressure. o Adjusting the size and shape of the opening in the skin barrier/wafer as needed.</td>
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<tr>
<td>• Obesity (Husain &amp; Cataldo, 2008; WOCN, 2010, 2011).</td>
<td>• If condition allows, measure the patient for a hernia support belt per manufacturer's instructions, and apply the belt with the patient in a supine/flat position.</td>
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<td>• Older age (Husain &amp; Cataldo, 2008; WOCN, 2010, 2011).</td>
<td>• Use caution when irrigating a colostomy in a patient who has a parastomal hernia, and use only a cone-tipped irrigator to reduce any risk of perforation (Grant et al., 2012; Varma, 2009; Williams, 2011). o Some experts consider a parastomal hernia as a contraindication to colostomy irrigation (Carlsson et al., 2010; Hatton &amp; Brierley, 2011; Perston, 2010).</td>
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<tr>
<td>• Weakness of the abdominal musculature (WOCN, 2010, 20101).</td>
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<tr>
<td>• Location of the stoma outside the rectus muscle (Husain &amp; Cataldo, 2008; Thompson, 2008; WOCN, 2010, 2011).</td>
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<tr>
<td>• Waist circumference greater than 39.4 inches or 100 centimeters (De Raet et al., 2008).</td>
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<td>• Wound infection (WOCN, 2010).</td>
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<td>• Excessive coughing and vomiting after surgery that causes increased abdominal pressure (Bafford &amp; Irani, 2013; WOCN, 2011).</td>
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<td>• Stomal construction such as a double-barrel stoma or loop colostomy (WOCN, 2011).</td>
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### Assessment

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<td>• Assess for the following symptoms or problems: o Abdominal pain. o Bowel obstruction. o Change in bowel habits. o Difficulty with the colostomy irrigation that was not present prior to the hernia. o Signs of ischemic bowel. o Monitor the skin for pressure areas from the pouching system. o Ask the patient if the wear time of the pouching system has changed. o Observe for leakage and peristomal skin irritation. o Remove the ostomy pouch and observe for a bulge around the stoma when the patient performs the Valsalva maneuver while standing and in a supine position (WOCN, 2011). o While the patient performs the Valsalva maneuver, gently perform a digital examination of the stoma to identify the fascial defect and bowel loop (WOCN, 2011).</td>
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<td>PERISTOMAL HERNIA</td>
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<td><strong>Description</strong></td>
<td><strong>Assessment</strong></td>
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<td>• Laparoscopic technique for colorectal surgery where the stoma is brought out through the same incision used to remove the resected specimen (Randall, Lord, Fulham, &amp; Soin, 2012).</td>
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<td>• Pregnancy, if accompanied by excessive vomiting (WOCN, 2010, 2011).</td>
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<td>• Smoking tobacco (WOCN, 2010).</td>
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<td>• Steroid use (Husain &amp; Cataldo, 2008; WOCN, 2010, 2011).</td>
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<td>• Emergency stoma placement or prior stoma placement (WOCN, 2011).</td>
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**Potential complications**

- Stomal and peristomal changes that may cause leakage of the pouching system and peristomal skin irritation.
- Mucosal stretching/spreading (WOCN, 2011).
- Incarceration, strangulation, perforation and complete obstruction, which are the most dangerous complications of a hernia and require emergency surgery (Bafford & Irani, 2013; De Raet et al., 2008; Heo et al., 2011; WOCN, 2011).

**Patient/caregiving education**

- Teach the patient to:
  - Perform skin care and pouching procedures.
  - Apply the support belt while lying down in a reclining, flat position.
  - Wear the support belt while up and ambulatory, and remove it while in bed.
  - Measure the stoma periodically and adjust the size of the opening in the skin barrier/wafer as needed.
  - Use only a cone-tipped irrigator for colostomy irrigations.
  - If patients have trouble instilling water during colostomy irrigations or poor returns, they should stop the irrigations.
  - If the colostomy irrigation is stopped, the patient may need a mild laxative and stool softeners or dietary modifications to promote bowel regularity. Reassure the patient that the stoma should continue to function without difficulty.
  - Call their healthcare provider or ostomy nurse, or seek emergency care if signs and symptoms of blockage, obstruction, incarceration or strangulation occur, such as (WOCN, 2011):
    - Decreased output.
    - Pain.
    - Abdominal cramping.
    - Distension around the stoma.
    - Nausea and emesis (Kann, 2008).
    - Dusky, black or necrotic color of the stoma (Shabbir & Britton, 2010).
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<td></td>
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<td>• If they are medically able, encourage patients to exercise regularly to maintain abdominal muscle tone and strength.</td>
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Refer to the primary healthcare provider

• Persistent peristomal skin irritation.
• Recurrent pouching difficulties.
• Signs and symptoms of incarceration and reduced blood flow to the stoma (e.g., stoma turns gray, dark or black), which indicates that the patient needs immediate medical/surgical attention (WOCN, 2011).
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<tr>
<th>Definition</th>
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<td><strong>LACERATION</strong></td>
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<td><strong>Description</strong></td>
<td><strong>Assessment</strong></td>
<td><strong>Nursing Intervention</strong></td>
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<td>A stomal laceration is a cut or tear that most often develops as a result of the pouching technique (e.g., stoma rubbing against part of the pouching system) (Ratliff, Scarano, Donovan, &amp; Colwell, 2005).</td>
<td>The stoma’s mucosa presents with a yellow to white linear discoloration.</td>
<td>Cautiously clip or shave hair in the direction away from the stoma to avoid cutting the stoma.</td>
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<td>Lacerations may also develop in conjunction with trauma (e.g., car accident, shaving with a razor).</td>
<td>There is usually no pain associated with a laceration, and bleeding may or may not be present.</td>
<td>Consider using a rigid, protective, dome cover over the stoma during activities that have a potential for forceful injuries, such as contact sports or physical labor.</td>
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**Contributing factors/risks**

- Misalignment of the pouching system.
- A peristomal hernia.
- Stomal prolapse.

**Assessment parameters**

- Assess the patient’s technique for applying the pouching system.
  - Examine the stoma while the pouching system is in place to check for proper fit and alignment of the skin barrier/wafer.
  - Assess if belts or clothing are causing an improper fit.
  - Remove the skin barrier/wafer and assess for proper fit.
- Rule out other stomal complications, such as Crohn’s ulcer, malignant lesion, or diverticulosis.

**Management**

- Eliminate the factor(s) that caused the laceration.
- Resize the pouching system or the skin barrier/wafer so that the stoma is not in contact with the flange or other firm edges.
- Adjust tight clothing that may be impinging on the stoma.
- Use hemostatic measures as needed to control bleeding (e.g., silver nitrate, which may require an order from the primary health care provider).

**Potential complications**

- Excessive bleeding.
- Compromised functioning of stoma which could require emergent surgery.
- Severed stoma.

**Patient/caregiver education**

- Encourage the patient to follow preventive measures.
- Teach the patient:
  - That blood in the pouch may be a sign of a laceration.
  - To apply direct pressure to stop excess bleeding.
  - Seek urgent medical assistance if bleeding does not stop.
  - Skin care and pouching procedures.

**Refer to the primary healthcare provider**

- Lacerations that do not heal.
- Uncontrolled or repeated bleeding.
- Severed stoma.
### MUCOCUTANEOUS SEPARATION

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<tr>
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<tr>
<td>A mucocutaneous separation occurs when a stoma completely or partially separates/detaches from the skin (Butler, 2009).</td>
<td>With a mucocutaneous separation, there is an observable separation between the stoma and skin. The separation may be preceded by erythema, a darker discoloration, or induration at the mucocutaneous junction with absence of a ridge adjacent to the mucosal-dermal junction.</td>
<td>If possible, avoid early use of convexity (Rolstad &amp; Beaves, 2006). Seek a preoperative nutritional consult, as needed (Fulham, 2008). Encourage pre-op and post-op smoking cessation (Franz et al., 2008).</td>
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<tr>
<th>Contributing factors/risks</th>
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<tr>
<td>Conditions that compromise wound healing (Boyd-Carson, Thompson, &amp; Boyd, 2004; Butler, 2009): Abdominal radiation. Corticosteroid use. Diabetes. Infection. Malnutrition (Butler, 2009). Smoking (Franz et al., 2008). Irritable bowel disease (Boyd-Carson et al., 2004). Chemotherapy (Boyd-Carson et al., 2004). Fecal contamination at the suture line (Boyd-Carson et al., 2004).</td>
<td>Describe the location/extent of the separation. The location of a separation is often described by referring to the stoma as the face of a clock (e.g., mucocutaneous separation present from the 1 o’clock to 3 o’clock position). Identify the depth of the separation in centimeters. Gently measure the depth with a cotton-tipped applicator. Do not force the cotton-tipped applicator into the defect. If you are unfamiliar with this procedure, refer the patient to a surgeon for further evaluation. Identify if slough is present (Butler, 2009). Assess if pain is present, which could indicate an underlying disease process, and may help determine the extent of the separation. Assess for a fistula if fecal material is in the separation (Butler, 2009). Assess the amount of drainage from the site, which varies and might require more frequent pouch changes.</td>
<td>Flush the separated area with normal saline, tap water, or a noncytotoxic wound cleanser. Fill the separation with a product to absorb drainage and provide an environment for healing. Product selection may vary according to the depth and amount of drainage (e.g., skin barrier paste, skin barrier powder, calcium alginites, hydrofiber). After the defect is filled, apply the pouching system over the separation, exposing only the stoma. Consider using a two-piece system with an easy-to-remove pouch (e.g., flangeless or floating flange) to facilitate patient comfort during pouch removal and reapplication. Change the pouching system more frequently if needed to provide wound care to the separation: If wound care is needed daily or more often, consider using a pouching system that allows access to the separation, so the system does not have to be changed with each treatment (e.g., two-piece system or wound drainage collector).</td>
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| Additional contributing factors/risks include: An abdominal wall opening that is larger than the bowel. Excessive tension on the suture line. Stomal necrosis. Convexity, which may cause deeper tissue destruction and impaired healing at the stoma/skin junction (WOCN, 2007b). | | |

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<tr>
<th>Potential complications</th>
<th>Patient/caregiver education</th>
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<tr>
<td>Infection (Boyd-Carson et al., 2004; Butler, 2009). Peritonitis (Bafford &amp; Irani, 2013). Stomal stenosis (Butler, 2009). Stomal retraction (Bafford &amp; Irani, 2013).</td>
<td>Teach the patient care of the mucocutaneous separation and pouching procedures.</td>
<td>Any separation that is suspected to extend below the level of the fascia, which warrants referral to a surgeon.</td>
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<td>Description</td>
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<td>Necrosis is tissue death that occurs when blood flow to or from a stoma is impaired or interrupted.</td>
<td>With necrosis, the stoma may be dark red, purplish, dusky blue (cyanotic tint), gray, brown, or black. The mucosa may be soft and flaccid (Butler, 2009), or it might be hard and dry. Necrosis is most likely to occur within the first 5 postoperative days. Necrosis often occurs within 24 hours of the surgery (Butler, 2009; Colwell, Goldberg, &amp; Carmel, 2004). The necrosis can involve the entire stoma or affect only scattered areas, and it may be superficial or deep.</td>
<td>Monitor for increased edema and enlarge the stomal opening of the pouching system, as needed, to prevent constriction of the stoma. Assess for and recommend measures to manage abdominal distension as needed (e.g., nasogastric tube). Assess for and recommend measures to manage hypovolemia and hypotension (Butler, 2009).</td>
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### Contributing factors/risk
- Edema of the bowel wall.
- Embolism/arterial compromise (Kann, 2008).
- Extensive stripping of/or tension on the mesentery.
- Hypotension/hypovolemia.
- Obesity.
- Sutures that are placed too close together or are too tight.
- Constriction from a skin barrier/wafer opening that is too small (Butler, 2009).
- Abdominal edema or distension (Butler, 2009).

### Assessment parameters
- Assess the color of the stoma and mucosal appearance every 8 hours for the first 72 hours after surgery. Notify surgeon if color is not red/pink.
- Monitor the stoma for progression of the necrosis and for sloughing of the tissue.
  - The necrotic tissue may cause an offensive odor.
  - Consider assessing the level of necrosis/viability of the stoma by gently inserting a clear, well-lubricated glass tube into the stoma and visualizing the lumen of the stoma using a penlight (Butler, 2009; Colwell et al., 2004; Kann, 2008).
  - When the light is shined into the tube, viable mucosa appears red and healthy (Kann, 2008).
- Assess if the suture line is intact during changes of the pouching system.
- Rule out melanosis coli, a condition in which the stoma is brownish black due to excessive use of an anthraquinone laxative such as cascara (McQuaid, 2012).

### Management
- Use a transparent pouch to visualize the stoma.
- Use a two-piece pouching system, so the pouch can be removed as needed for close inspection of the stoma.
- Size the opening of the pouching system to prevent constriction of the stoma.
- Resize the pouching system as nonviable tissue sloughs and the stomal opening contracts.
- Monitor for stenosis.

### Potential complications
- Mucocutaneous separation.
- Peritonitis.
- Stomal retraction.
- Stomal stenosis.

### Patient/caregiver education
- Prepare the patient for anticipated changes in the stoma (e.g., color changes, tissue sloughing).
- Encourage the patient to observe the appearance of the stoma on a daily basis, and to use a transparent pouch.

### Refer to the primary healthcare provider
- Necrosis that extends beyond the level of the fascia, which requires surgical intervention.
## Description

- **Definition:** A prolapse occurs when a full thickness length of bowel protrudes through an ostomy (Bafford & Irani, 2013; Butler, 2009).
- **Loop colostomies** prolapse more often than end colostomies (Bafford & Irani, 2013).
  - Prolapse occurs in 2-22% of loop ostomies (Maeda et al., 2003).
  - Prolapses of transverse loop colostomies are the most common, but prolapses can be seen with any stoma (Husain & Cataldo, 2008).
- **Classification of prolapsed stomas** (Bafford & Irani, 2013):
  - **Fixed:** Permanent eversion of an excessive length of bowel.
  - **Sliding:** Intermittent protrusion of bowel through the stomal orifice, usually because of an increase in intra-abdominal pressure, such as during the Valsalva maneuver.
- The prolapsed bowel varies in length (e.g., 5-13 inches), becomes edematous from the dependent position, is prone to bleed, and is at risk of trauma (Butler, 2009).
- The patient may not experience any pain or obstruction with the prolapse (Husain & Cataldo, 2008).

## Assessment

### Identifying characteristics

- The prolapsed bowel varies in length (e.g., 5-13 inches), becomes edematous from the dependent position, is prone to bleed, and is at risk of trauma (Butler, 2009).
- The patient may not experience any pain or obstruction with the prolapse (Husain & Cataldo, 2008).

## Nursing Intervention

### Prevention

- If circumstances permit, for obese patients encourage weight loss prior to surgery and long-term weight management after surgery.
- Encourage patients who are medically able to exercise regularly to maintain abdominal muscle tone and strength.

### Management

- With the patient in a reclining position, attempt to manually reduce the prolapse by applying gentle continuous pressure to the distal portion of the stoma.
- Manual reduction of an edematous, prolapsed stoma may be enhanced by temporarily decreasing the edema with an application of cold compresses or sugar to the prolapse for 10-15 minutes (Butler, 2009; Husain & Cataldo, 2008).
- Apply a support binder or an ostomy/hernia support belt with a prolapse overbelt.
  - The belt must be applied while the prolapse is reduced, which is best accomplished with the patient in a reclining, flat position (Butler, 2009).
- Revise the pouching system:
  - Increase the size of the opening in the skin barrier/wafer.
  - Cut radial slits or darts in the skin barrier/wafer to accommodate changes in the size of the stoma.
  - Use a larger/longer pouch to accommodate the size and length of the prolapse (Husain & Cataldo, 2008).
- Encourage a back-lying position for sleeping.
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<tr>
<th>Potential complications:</th>
<th>Assessment</th>
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<tbody>
<tr>
<td>• Poor fit of the pouching system (Bafford &amp; Irani, 2013).</td>
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<td>• Reassure the patient that the stoma should continue to function without difficulty.</td>
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<td>• Mucosal irritation or ulceration (Husain &amp; Cataldo, 2008).</td>
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<td>• Provide counseling regarding body image, as needed.</td>
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<td>• Obstruction, incarceration, and strangulation (Bafford &amp; Irani, 2013; Husain &amp; Cataldo, 2008).</td>
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<td>• Teach the patient:</td>
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<tr>
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<td></td>
<td>o Skin care and pouching procedures.</td>
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<td>o To monitor the stoma for changes in color, irritation, laceration or bleeding.</td>
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<td>o To notify their physician for changes in color of the stoma or increased abdominal pain.</td>
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<td>o To call their healthcare provider or ostomy nurse, or seek emergency care if signs and symptoms of blockage, obstruction, incarceration or strangulation occur such as:</td>
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<tr>
<td></td>
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<td>▪ Decreased or no output.</td>
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<td>▪ Pain, abdominal cramping.</td>
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<td>▪ Distension around the stoma.</td>
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<td>▪ Nausea.</td>
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<td>Refer to the primary healthcare provider</td>
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<td>• Ischemia, obstruction or inability to reduce the stoma, which warrants a surgical evaluation or intervention (Butler, 2009).</td>
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## Retraction

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<td>A retraction occurs when a stoma is drawn or pulled below the skin level (Shabbir &amp; Britton, 2010).</td>
<td>With a retraction, all or part of the stoma is located below the skin level or the surrounding skin pulls inward due to tension.</td>
<td>Encourage patients to manage their weight to avoid stomal retraction and the associated pouching difficulties and complications which can result (Arumugam et al., 2003).</td>
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<tr>
<td>A retraction may involve an entire stoma, or it may be limited to the mucocutaneous junction.</td>
<td>Depth of the retraction may increase when the patient is in a sitting or supine position, and the stoma may not be visible when the patient sits upright (Butler, 2009).</td>
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<td>Retractions are more common in patients with ileostomies or with Crohn's disease, possibly due to the short and stiff mesentery that has been thickened by edema.</td>
<td>The presence or severity of a retraction can also be affected by peristalsis (Butler, 2009).</td>
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### Contributing factors/risks

- An abdominal wall opening that is larger than the bowel (Butler, 2009); infection; a mucocutaneous separation (Black, 2009; Butler, 2009); a necrotic stoma (Black, 2009).
- Premature removal of the supporting device from a loop stoma (Butler, 2009); a stoma located in a skin fold.
- Malnourishment, obesity, steroid use, or immunosuppression (Bafford & Irani, 2013; Kann, 2008).
- Tension on the stoma due to:
  - Excessive scar/adhesion formation; excessive weight gain.
  - Poor fixation of the bowel to the fascial layer; a short mesentery.
  - Inadequate length of the stoma (Black, 2009; Butler, 2009).
  - Recurrent malignancies (Black, 2009).
  - Radiation damage to the bowel or mesentery (Black, 2009).
  - A fatty mesentery and well developed panniculus (Shabbir & Britton, 2010).

### Assessment parameters

- Observe for excessive pressure from use of convexity or a belt (Butler, 2009).
- Assess for leakage and peristomal skin irritation due to feces or urine undermining the pouching system:
  - Fecal—severe skin erosion/ulceration.
  - Urine—encrustation, ulceration, and stenosis.
- After removing the pouching system, observe the stoma and abdominal contours as the patient changes position.

### Management

- Evaluate the pouching system (Butler, 2009).
- Consider use of convexity, a belt, skin barrier rings, strips, or paste (Butler, 2009).
- Consider use of a custom-made silicone or rigid faceplate.
- Consider use of a liquid skin barrier film.

### Potential complications (Kann, 2008):

- Leakage of the pouching system; peristomal skin irritation; a mucocutaneous separation; stomal stenosis.

### Patient/caregiver education

- Teach the patient skin care and pouching procedures.
- Encourage the patient to attain/maintain ideal body weight.

### Refer to the primary healthcare provider

- A complete mucocutaneous separation that is accompanied with retraction of the stoma below the fascia, which is considered a surgical emergency (Kann, 2008).
- Recurrent pouching difficulties, which may require surgical revision to advance the bowel and create a budded stoma (Black, 2009).
# STENOSIS

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| • Stenosis is a narrowing or contracting of the stomal opening that may occur at the skin or fascial level.  
  o It is considered an early complication (Butler, 2009), but it can also be a late stomal complication (Husain & Cataldo, 2008). | • With stenosis there is a small, narrow opening in the stoma, which impairs drainage from the stoma. | • Maintain a secure pouch seal to prevent skin irritation.  
  • Promptly treat hyperplasia by cauterization with silver nitrate (may require a written order), and make modifications in the pouching system to ensure that fecal or urinary drainage does not come into contact with the peristomal skin (Butler, 2009).  
  • Avoid routine dilation of the stoma (Butler, 2009).  
  • Maintain adequate hydration (Butler, 2009). |
| **Contributing factors/risks**                                             | **Assessment parameters**                                                  | **Management**                                                                        |
| • Alkaline encrustation in urinary stomas.  
  • Excessive scar tissue formation at the skin or fascial level due to repeated dilation of the stoma or keloid scars.  
  • Epithelial hyperplasia (Black, 2009; Butler, 2009).  
  • Inadequate excision of the skin during construction of a stoma.  
  • Inadequate suturing of the fascial layer.  
  • Mucocutaneous separation.  
  • Peristomal sepsis (Butler, 2009).  
  • Prior irradiation of the bowel segment.  
  • Recurrent disease (e.g., cancer, Crohn's disease, or tumor growth).  
  • Recurrent episodes of skin irritation.  
  • Stomal ischemia, necrosis, or retraction (Butler, 2009; Kann, 2008). | • Perform a gentle digital examination using a lubricated, gloved finger to assess the size and mobility of the skin and fascial rings (Butler, 2009; Colwell et al., 2004).  
  o If it is not possible to perform a digital examination, a small, rubber catheter can be used to conduct a retrograde contrast study (Butler, 2009; Colwell et al., 2004).  
  o If further testing is indicated, such as a retrograde contrast study, refer to a surgeon.  
  • Observe for signs of stomal obstruction:  
  o Fecal diversions.  
  ▪ Abdominal cramps; episodes of diarrhea; excessive and loud flatus; explosive passage of stool; narrowed caliber of stool.  
  o Urinary diversions.  
  ▪ Decreased urinary output; flank pain.  
  ▪ Evidence of high residuals of urine in the conduit such as urine passing from the stoma in a projectile fashion, or when catheterized, large amounts of urine immediately passing from the stoma.  
  ▪ Recurring urinary tract infections. | • For fecal stomas, stool softeners, laxatives, and low residue diets may be needed for stool to pass through the narrowed opening (Butler, 2009).  
  • Surgery may be needed for severe complications (Butler, 2009). |
| **Potential complications**                                                |                                                                           | **Patient/caregiver education**                                                      |
| • Stricture that acts as a mechanical obstruction (Bafford & Irani, 2013). |                                                                           | • Teach the patient skin care and pouching procedures.  
  • Urinary Diversion: Instruct the patient about the signs/symptoms of urinary tract infection.  
  • Fecal Diversion: Teach the patient strategies to prevent constipation.  
  • Symptoms of partial or complete obstruction, which may require surgical revision. |
Research Recommendations

A search of the literature revealed that the evidence base for stomal complications and the management consists primarily of expert opinion. Further descriptive or exploratory research studies are needed to address the following areas:

- Evaluate the technique, complications, reliability and validity of findings of the mini-endoscopy technique (i.e., test tube procedure) for assessing stomal necrosis.
- Describe the characteristics of patients who develop peristomal hernias.
- Describe the efficacy of various pouching systems to manage peristomal hernias and mucocutaneous separations.
- Determine nursing measures that can help prevent peristomal hernias.
- Determine if routine dilation is effective to manage stomal stenosis, or if the procedure contributes to the development or worsening of stenosis.
- Describe the effectiveness of vitamin C tablets or cranberry juice to acidify urine or reduce the occurrence of encrustation.
- Identify if there are any specific long-term activity restrictions that can reduce the incidence of stomal prolapses and peristomal hernias.
- Describe the efficacy of cold compresses or sugar to facilitate manually reducing stomal prolapses.
- Identify if the early use of convexity contributes to the development of mucocutaneous separations.
Glossary

**Calcium alginate:** A non-woven, non-adhesive wound care product derived from seaweed.

**Fascia:** Fibrous connective tissue.

**Flange:** The rigid ring on a two-piece skin barrier/wafer onto which the pouch snaps.

**Hernia:** A protrusion of any viscus from its surrounding tissue walls. Hernias are classified by anatomic location, contents of the hernia, and whether the hernial contents are reducible, strangulated, or incarcerated (Byars, 2011).

**Hydrofiber:** A nonwoven, cotton-like wound care product made of carboxymethylcellulose fiber.

**Hyperplasia:** An overgrowth of tissue.

**Incarcerated hernia:** A hernia that is firm, often painful, and non-reducible by direct manual pressure hernia (Byars, 2011).

**Melanosis coli:** Discoloration of the colon due to chronic use of anthraquinone laxatives containing aloe, senna, and cascara components, which occur naturally in plants. These laxatives are poorly absorbed. When used chronically, they produce a characteristic brown pigmentation of the colon known as “melanosis coli” (McQuaid, 2012).

**Reducible hernia:** The hernial sac is soft and easy to replace back through the hernia neck defect (Byars, 2011).

**Slough:** Moist brown, gray, yellow, or tan necrotic tissue that may appear mucus-like, thin, or stringy.

**Strangulated hernia:** The hernia presents with severe, exquisite pain at the hernia site, often with signs and symptoms of an intestinal obstruction, a toxic appearance, and, possibly, skin changes overlying the hernial sac. A strangulated hernia is an acute surgical emergency. *Strangulation* develops as a consequence of incarceration and implies impairment of the arterial or blood flow (Byars, 2011).
References


Appendix

Images of Stomal Complications

Figure 1. Peristomal Hernia; Wound, Ostomy and Continence Nurses Society, 2007
Figure 2. Stomal lacerations; Wound, Ostomy and Continence Nurses Society, 2007
Figure 3. *Mucocutaneous separation*, Wound, Ostomy and Continence Nurses Society, 2013
Figure 4. Necrosis, Wound, Ostomy and Continence Nurses Society, 1997
Figure 5. Prolapsed stoma; Wound, Ostomy and Continence Nurses Society, 2007
Figure 6. Retracted stoma; Wound, Ostomy and Continence Nurses Society, 2007
Acknowledgment about Content Validation
This document was reviewed in the consensus-building process of the Wound, Ostomy and Continence Nurses Society known as Content Validation, which is managed by the Center for Clinical Investigation.