

WOCN SOCIETY, AUA AND ASCRS POSITION STATEMENT ON PREOPERATIVE STOMA SITE MARKING FOR PATIENTS UNDERGOING OSTOMY SURGERY

ORIGINATED BY:

Wound, Ostomy, and Continence Nurses Society[™] (WOCN[®]) Stoma Site Marking Task Force in collaboration with the American Society of Colon and Rectal Surgeons (ASCRS) in 2007.

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WOCN Society's Stoma Site Marking Task Force in collaboration with the ASCRS and the American Urological Association (AUA) in 2015 and 2021.

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STATEMENT OF POSITION

Ostomy education and stoma site selection should ideally be completed preoperatively for all patients facing the possibility of stoma creation. Marking the stoma site has been identified as best practice by a growing number of specialty organizations globally (Best Practice in Surgery, 2016; Hendren et al., 2015; Registered Nurses' Association of Ontario, 2019; Roveron et al., 2016; Salvadalena et al., 2015a; Salvadalena et al., 2015b; WCET, 2020; WOCN Society Guideline Development Task Force, 2018). Multiple studies indicate that preoperative stoma site marking by an educated health care provider is associated with higher quality of life and fewer ostomy-related complications (Çakır & Özbayır, 2018; Harris et al., 2020; Hsu et al., 2020; McKenna et al., 2016; Maydick, 2016; Millan et al., 2010; Person et al., 2012; Parmar et al., 2011; Pittman et al., 2008).

An appropriately-located stoma site may decrease early and late ostomy-related complications such as pouching system leakage, hernia (Kozan & Gultekin, 2018), and peristomal dermatitis (Arofo et al., 2018; Gök AFK, 2019; Hsu et al., 2020; Sands & Morales, 2015). Preoperative stoma site marking may also improve the interval between pouching system changes, promote patient adaptation to the stoma, ease transition to independent self-care, and may reduce healthcare costs and resource utilization.

Preoperative stoma site marking requires assessment of the patient's abdomen in multiple positions, which allows selection of the optimal stoma site. While preoperative stoma site marking is a strongly-supported best practice, it is not always possible due to preoperative circumstances. Moreover, intraoperative findings such as bowel condition, perfusion, and mesenteric length may require the surgeon to use a suboptimal stoma site.

Preoperative ostomy education provided at the time of a stoma site marking session promotes a patient-centered approach respecting the individuality, values, and health literacy information needs of the patient in the context of their support network. Preoperative educational sessions allow time to provide information regarding ostomy management, including pouching options, and offer psychosocial support. By learning about stoma management, patients can appreciate the rationale for stoma site marking.

In our nationally multi-ethnic society, ostomy specialists and surgeons should acknowledge and understand concerns specific to the patient's cultural and religious preferences. Stoma site marking is a dynamic process that takes into account the patient's lifestyle, profession, values, skills, and limitations as well as the patient's

learning pattern, preferences and cultural and religious beliefs (WCET, 2020). Ensure there are no language barriers by asking the patient their preferred language to communicate and learn and use a medical translator, if necessary.

Minimize the patient's bodily exposure during examination and marking and use drapes when needed to convey privacy and modesty. When possible, stoma site marking and education should include the patient's partner, spouse, and other key caregivers as identified by the patient. Inquire about the patient's religious beliefs and cultural customs to assess the impact of the stoma site on specific prayer practices, activities, or special garments.

Surgeons and certified ostomy nurses are the optimal health care providers to select and mark stoma sites, as this skill is a part of their education, practice and training. However, these providers are not always available, particularly in emergency situations. All surgeons who create stomas should familiarize themselves with the principles of proper stoma site selection, including placement of the stoma within the rectus abdominis muscle, use of multiple patient positions to identify appropriate stoma sites, avoidance of folds, scars, and bony prominences, adequate distance from the midline and umbilicus, and consideration of clothing/beltline and patient lifestyle/activities. Considerations for the technical creation of the stoma are outside the scope of this document, but included in a reference (McGee and Cataldo, 2016).

PURPOSE

The WOCN Society, in collaboration with the ASCRS and the AUA, developed the following educational guide to assist clinicians (especially those who are not surgeons or wound, ostomy and continence [WOC] nurses) in selecting an effective stoma site.

KEY POINTS TO CONSIDER

1. The stoma site should ideally be located within the rectus abdominis muscle (Hardt et al., 2019). A flat pouching surface should be selected within the patient's field of vision. Examine the patient standing, sitting and supine when selecting stoma location.
2. Stoma sites should be individualized. The use of a standardized "one size fits all" approach to stoma site marking is not recommended (Braumann et al., 2018; Pengelly et al., 2014).
3. Consider individual needs such as the presence of contractures, posture, mobility (e.g., wheelchair or walker use, arm mobility, etc.), and the use of prosthetics, braces or tools (e.g. holster or tool belt) that may impact stoma site selection. Inquire about any visual or dexterity issues (e.g. limitations due to stroke or prior injury).
4. Patients with a protuberant abdomen often benefit from an upper abdominal stoma location. Stomas created on the superior aspect of a protuberant abdomen are better

visualized by the patient than stomas on the inferior aspect. Additionally, since the superior abdominal wall is often thinner than the inferior abdominal wall, the higher location may make the stoma easier to fashion in patients with central adiposity.

5. Consider each patient's abdominal wall surface anatomy and how it may impact the stoma and pouching system. Carefully note abdominal protuberance, skin folds and creases, wrinkles, and uneven scars. Note the presence of other stomas, the rectus abdominis muscle borders, waistline, iliac crest, costal margin, pendulous breasts, and the presence of any hernias.
6. Adjust potential stoma sites for patient-specific activities and preferences such as diagnosis, occupation, prior experience with a stoma, and preferences about the stoma's location.
7. Identify surgery-specific needs: surgeon's preferences, type of surgery and stoma planned, and whether the planned diversion is an incontinent (i.e. managed with pouch) or continent (and catheterizable) diversion.
8. Multiple stoma sites: if two stomas will be present or are planned, select sites on different horizontal planes in the event that an ostomy belt is required for one or both stomas.
9. Multiple stoma site options (e.g. ileostomy, colostomy) may be marked and prioritized in rank-order of patient and provider preference when intraoperative uncertainty is anticipated. Graphical denotation of potential stoma sites with photography or drawings or discussion with team members is helpful to clarify site selection in complex cases.
10. Consider clearly marking areas to avoid (such as deep creases and folds which may not be apparent when the patient is supine).
11. When possible, ensure a family member or caregiver is present during patient education and stoma site marking, particularly if the patient requires help to care for themselves.
12. For patients requiring "double barrel" (e.g. proximal enterostomy with distal mucous fistula), attempt to place both stomas with the same abdominal wall trephine so that both stomas can be pouched with one appliance. Alternatively, if intraoperative technical factors prohibit a shared trephine, mark a location at least two inches apart so two pouches can fit.
13. A variety of marking adjuncts may be used at the time of site marking to denote potential stoma sites. If a marking pen is chosen, indelible ink is recommended. The patient may be provided with the marker and instructed to re-draw the mark if it begins to fade between the stoma site marking session and surgery. Alternatively, the inked mark may be covered with a waterproof dressing to ensure it does not wash away between marking and surgery. Commercially-available temporary radiographic mark covers may be used. Intradermal tattoo may be used to localize stoma sites, but may be invasive, painful, and may increase infection risk.

Figures 1 & 2 display two individuals in varying positions. Key factors affecting stoma site placement are highlighted. A separate document, Stoma Site Marking Procedure - Quick Reference, provides stoma site selection and marking instructions as well as links to video demonstrations.

FIGURE 1. MALE WITH PROTRUDING TAUT ABDOMEN

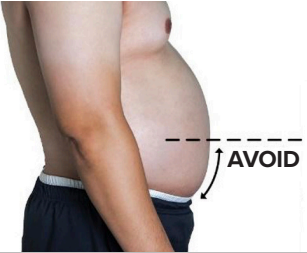

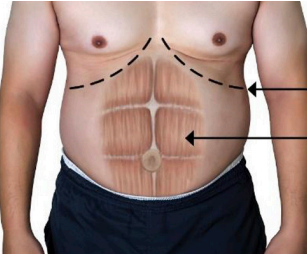
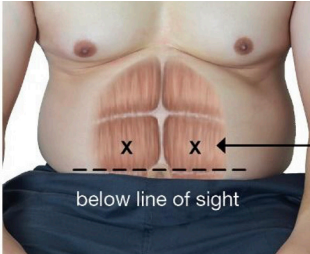
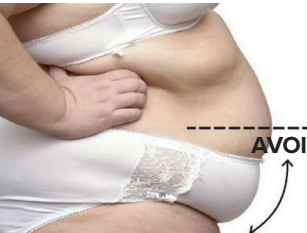
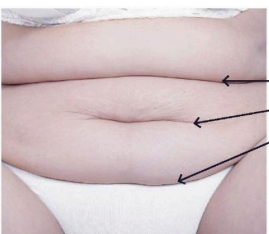
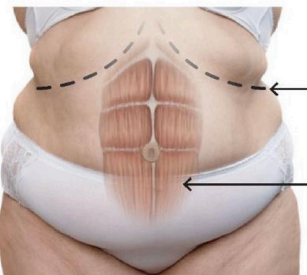
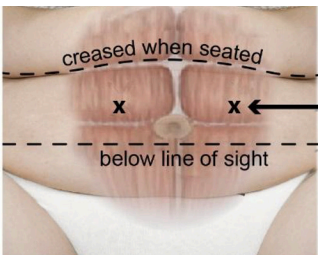
<p>STANDING</p> <p>Look at the profile of the patient. Notice where the abdomen curves back under towards the body. Avoid the underside of the abdomen which is not visible to the patient.</p>  <p>LINE OF SIGHT Patient cannot see below the line of sight.</p>	<p>SITTING</p> <p>Observe patient while seated. Note and avoid skin folds, bony prominences and creases.</p> 
<p>SUPINE</p> <p>Identify and target the rectus abdominis muscle below the ribs.</p>  <p>BELOW RIBS</p> <p>RECTUS ABDOMINIS MUSCLE</p>	<p>MARKING</p> <p>Mark optimal stoma site within the rectus abdominis, and in the patient's line of sight, avoiding creases and skin folds.</p>  <p>MARK preferred site for stoma</p> <p>below line of sight</p>

FIGURE 2. FEMALE WITH PROTRUDING SOFT ABDOMEN

<p>STANDING</p> <p>Look at the profile of the patient. Notice where the abdomen curves back under towards the body. Avoid the underside of the abdomen which is not visible to the patient.</p>  <p>LINE OF SIGHT Patient cannot see below the line of sight.</p>	<p>SITTING</p> <p>While patient is seated look for skin folds and creases. Note and avoid these areas.</p>  <p>AVOID creases and folds.</p>
<p>SUPINE</p> <p>Identify and target the rectus abdominis muscle below the ribs.</p>  <p>BELOW RIBS</p> <p>RECTUS ABDOMINIS MUSCLE</p>	<p>MARKING</p> <p>Mark optimal stoma site within the rectus abdominis, and in the patient's line of sight, avoiding creases and skin folds.</p>  <p>MARK preferred site for stoma</p> <p>creased when seated</p> <p>below line of sight</p>

SUMMARY

Preoperative stoma site marking has well-documented benefits and should be performed by a trained clinician prior to stoma creation. Patient education should accompany stoma site marking and consider each patient's individuality, surgical indication, body habitus, cultural and lifestyle needs and preferences. The companion document "Stoma Site Marking Procedure – Quick Reference" and associated videos provide additional resources for clinicians needing support in the absence of a specialist with experience in the procedure.

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REFERENCES

- Arolfo, S., Borgiotto, C., Bosio, G., Mistrangelo, M., Allaix, M. E., & Morino, M. (2018). Preoperative stoma site marking: a simple practice to reduce stoma-related complications. *Techniques in Coloproctology*, 22(9), 683–687. <https://doi.org/10.1007/s10151-018-1857-3>
- Best Practice in Surgery. ERAS for patients with an ostomy. University of Toronto's Best Practice in Surgery, release date April 2016. Downloaded from bestpracticeinsurgery.ca/wp-content/uploads/2018/11/ERAS-STOMA_BPS_FINAL_2018.pdf
- Braumann, C., Müller, V., Knies, M., Aufmesser, B., Schwenk, W., & Koplin, G. (2018). Complications After Ostomy Surgery: Emergencies and Obese Patients are at Risk—Data from the Berlin Ostomy Study (BOSS). *World Journal of Surgery*, 43(3), 751–757. <https://doi.org/10.1007/s00268-018-4846-9>
- Gök, A. F. (2019). Complicated or not complicated: Stoma site marking before emergency abdominal surgery. *Turkish Journal of Trauma and Emergency Surgery*. <https://doi.org/10.14744/tjtes.2019.48482>
- Hardt J, Meerpohl JJ, Metzendorf MI, Kienle P, Post S, Herrle F. Lateral pararectal versus transrectal stoma placement for prevention of parastomal herniation. *Cochrane Database of Systematic Reviews* 2019, Issue 4. Art. No.: CD009487. <https://doi.org/10.1002/14651858.CD009487.pub3>. Accessed 02 January 2021.
- Harris, M. S., Kelly, K., & Parise, C. (2020). Does Preoperative Ostomy Education Decrease Anxiety in the New Ostomy Patient? A Quantitative Comparison Cohort Study. *Journal of Wound, Ostomy & Continence Nursing*, 47(2), 137–139. <https://doi.org/10.1097/won.0000000000000623>
- Hendren S, Hammond K, Glasgow SC, Perry WB, Buie WD, Steele SR, Rafferty J. (2015). Clinical practice guidelines for ostomy surgery. *Dis Colon Rectum*. 58(4): 375-387. [10.1097/DCR.0000000000000347](https://doi.org/10.1097/DCR.0000000000000347)
- Hsu, MY, Lin JP, Hsu HH, Lai HL, Wu YL. (2020). Preoperative stoma site marking decreases stoma and peristomal complications: A meta-analysis. *J Wound Ostomy Continence Nurs*. 47(3):249-256. [10.1097/WON.0000000000000634](https://doi.org/10.1097/WON.0000000000000634)
- Çakır, S.K., & Özbayır, T. (2018). The effect of preoperative stoma site marking on quality of life. *Pakistan Journal of Medical Sciences*, 34(1). <https://doi.org/10.12669/pjms.341.14108>
- Kozan R, Gultekin FA. (2018). Controllable Risk factors in the Development of Parastomal Hernia; Preoperative Marking. *Turk J Colorectal Dis* 28: 172-176. [10.4274/tjcd.35492](https://doi.org/10.4274/tjcd.35492)
- Maydick D. (2016). A descriptive study assessing quality of life for adults with a permanent ostomy and the influence of preoperative stoma site marking. *Ostomy Wound Management* 62(5):14-24.
- McGee MF and Cataldo PA. "Intestinal Stomas" in *The ASCRS Textbook of Colon and Rectal Surgery*. Third edition. Springer, 2016 Whitlow, Charles B., Anthony Senagore, Theodore J. Saclarides, Thomas E. Read, Tracy L. Hull, and Scott R. Steele (eds). pp 971-1013.
- McKenna LS, Taggart E, Stoelting J, Kirkbride G, Forbes GB. (2016). The impact of preoperative stoma marking on health-related quality of life: A comparison cohort study. *J Wound Ostomy Continence Nurs*. 43(1):57-61. [10.1097/WON.0000000000000180](https://doi.org/10.1097/WON.0000000000000180)
- Millan M, Tegido M, Biondo S, Garcia-Granero E. (2010). Preoperative stoma siting and education by stomatherapists of colorectal cancer patients: A descriptive study in twelve Spanish colorectal surgical units. *Colorectal Dis*.12(7 Online): e88-e92. [10.1111/j.1463-1318.2009.01942.x](https://doi.org/10.1111/j.1463-1318.2009.01942.x)
- Parmar KL, Zammit M, Smith A, Kenyon D, Lees NP. (2011). A prospective audit of early stoma complications in colorectal cancer treatment throughout the Greater Manchester and Cheshire colorectal cancer network. *Colorectal Dis*. 13(8): 935-938. [10.1111/j.1463-1318.2010.02325.x](https://doi.org/10.1111/j.1463-1318.2010.02325.x)
- Pengelly S, Reader J, Jones A, Roper K, Douie WJ, Lambert AW. (2014). Methods for siting emergency stomas in the absence of a stoma therapist. *Ann R Coll Surg Engl* 96:216-218. [10.1308/003588414X13814021679717](https://doi.org/10.1308/003588414X13814021679717)
- Person B, Ifargan R, Lachter J, Duek SD, Kluger Y, Assalia A. (2012). The impact of preoperative stoma site marking on the incidence of complications, quality of life, and patients' independence. *Dis Colon Rectum* 55(7): 783-787. [10.1097/DCR.0b013e31825763f0](https://doi.org/10.1097/DCR.0b013e31825763f0)
- Pittman J, Rawl SM, Schmidt CM, et al. (2008). Demographic and clinical factors related to ostomy complications and quality of life in veterans with an ostomy. *J Wound Ostomy Continence Nurs*. 35(5): 493-503. [10.1097/O1.WON.00000335961.68113.cb](https://doi.org/10.1097/O1.WON.00000335961.68113.cb)
- Registered Nurses' Association of Ontario. Supporting adults who anticipate or live with an ostomy. 2nd ed. Toronto (ON): Registered Nurses' Association of Ontario; 2019. <https://rnao.ca/bpg/guidelines/ostomy>.
- Roveron, G., De Toma, G., & Barbierato, M. (2016). Italian Society of Surgery and Association of Stoma Care Nurses Joint Position Statement on Preoperative Stoma Siting. *Journal of Wound, Ostomy & Continence Nursing*, 43(2), 165–169. <https://doi.org/10.1097/won.0000000000000204>
- Salvadalena G, Hendren S, McKenna L, et al (2015). WOCN Society and ASCRS position statement on preoperative stoma site marking for patients undergoing colostomy or ileostomy surgery. *J Wound Ostomy Continence Nurs*.42(3):249-252. <http://dx.doi.org/10.1097/WON.0000000000000119>
- Salvadalena G, Hendren S, McKenna L, et al (2015). WOCN Society and AUA position statement on preoperative stoma site marking for patients undergoing urostomy surgery. *J Wound Ostomy Continence Nurs*.42(3):253-256. <http://dx.doi.org/10.1097/WON.0000000000000118>
- Sands, L. R., & Morales, C. S. (2015). Re-operative surgery for intestinal stoma complications. *Seminars in Colon and Rectal Surgery*, 26(4), 200–205. <https://doi.org/10.1053/j.scrs.2015.09.006>
- WCET. (2020). WCET International Ostomy Guideline. Chabal LO, Prentice JL & Ayello EA (Eds.). Perth Australia: WCET
- WOCN Society Clinical Guideline. (2018). *Journal of Wound, Ostomy & Continence Nursing*, 45(1), 50–58. <https://doi.org/10.1097/won.0000000000000396>