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PRINCIPLES OF

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STOMA  
SITING

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*A brief guide prepared by*

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## INTRODUCTION

In an effort to improve the quality of life for patients after stoma surgery we decided to use the experience gained by us at both St Marks and Chase Farm Hospitals and also the knowledge of our medical colleagues, to develop a resource which can be used for Stoma Nurses and other Health Professionals who are required to site stomas. It brings together general principles, the latest research in up-to-date appliances and also demonstrates their practical application with real patients prior to surgery.

It is generally accepted that the responsibility for siting a stoma rests with the Stoma Care Nurse. Very little has been written on the principles of stoma siting and most of us have had to learn to do this whilst in post.

We must not forget that the patients quality of life is directly related to the position of the stoma and the ease with which day to day stoma care can be maintained.

If we are to be truly accountable for our practice we need to be able to justify our decisions and the actions which follow them. We feel that the use of this video as a learning resource should enable those who use it to be confident in their stoma siting practice.

*Celia Myers, Lorraine Kelly*

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## POINTS TO REMEMBER

1. Patients should be fully involved at all stages of the procedure. Options for siting should be discussed with the patient in detail, giving them all the relevant information that they need to enable them to give informed consent. Patients should state that they are satisfied with the final choice of chosen site before positioning is marked.
2. In emergency situations assessment can be complex due to the patients conditions and abdominal distention. Basic guidelines should be adhered to but, it should be explained to the patient or his relatives, that in this situation the priority is life saving surgery and the final decision may be left to the surgeon.

Stomas sited under these circumstances may not be in the ideal position and our experience has shown that these problems are sometimes unavoidable.

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## BASIC GUIDELINES FOR SITING

1. Find the line of the rectus muscle.
2. Draw an imaginary line between the umbilicus and the iliac crest on the appropriate side.
3. Place a piece of tape at the mid point on this line.

If the patient is to have a transverse loop colostomy, after finding the mid point move the tape vertically upwards by the width of your thumb.

4. For the initial general position you now need to assess the individual patient to find the ideal position for them.

*For suggested alternative positions refer to 'The Principles of Stoma Siting' video.*

### Avoid

- Bony prominences
- Pendulous breasts
- Previous scars, drain sites and wounds
- Skin folds

### Consider

- Clothing
- Cultural and religious aspects
- Social activities
- Sporting activities
- Employment

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Ensure that the patient can see and reach the proposed site. After careful consideration of these points mark the chosen site with an indelible pen.

5. You may offer each patient the opportunity to wear an appropriate appliance and then evaluate their experience with them.

### Additional points

6. For physically handicapped and wheelchair-bound patients it is imperative for them to maintain their independence. The Stoma Care Nurse, Surgical team and the patient should all work together to achieve an appropriately sited stoma, e.g. where appropriate and technically possible to siting the ileostomy to the left iliac Fossa.

With children the same basic principles of stoma siting apply, however it may be necessary to consider revision to the ideal site as the child grows and develops.

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## THE PRINCIPLES OF STOMA SITING

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The objective is to create a stoma that is easy for the patient to handle and that does not place undue changes on the patient's desired lifestyle. There are clearly emotional and disease related factors to be considered, but these notes will concentrate solely on the 'mechanics'.

### WHAT THE PATIENT WANTS

Having accepted, however reluctantly, the medical recommendation that a stoma is necessary, the patient wants to have an easy-to-use system with appropriate travel-ability (for holidays etc), availability and disposability. Patients now expect that the 'nuts and bolts' of such systems work; and indeed, from the manufacturer's point of view, this is certainly the case. What usually fails the patient is the biological/human aspects of stoma construction.

### WHY PATIENTS HAVE PROBLEMS WITH THEIR STOMAS

Some problems arise from poor technique and inattention to detail. But no amount of technique can overcome the problems of a poorly sited or biologically failed stoma.

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## SITING

The simple answer to siting is that it should be appropriate to the patient's circumstances and needs. The stoma should be manageable and should ride with changes of the abdominal wall contour – much as a boat rides on the surface of the waves and is not swamped (which it would be if it were firmly anchored to the sea-bed; and as does happen with stomas when a failure of 'travel' results in a satisfactory stoma and appliance when recumbent that turns into a nightmare for management when sitting, caused by abdominal wall 'travel' that is not matched by equivalent stoma travel, so that a crease develops, adherence of the wafer is compromised, and leakage occurs).

A stoma should be slightly on the upper surface of the abdominal wall fat roll when sitting, and away from scars, depressions and bony prominences. The usual position is overlying the belly of the rectus abdominis muscle and is quite anterior. However, at times an experienced stoma care nurse will find that other sites may be more appropriate in the circumstances, so do not be afraid at times to be inventive. One should bear in mind that the siting on the abdominal wall skin does not necessarily need to coincide with the point of egress of the stoma through the abdominal wall. The objective is simply to supply an appropriately flat skin surface for adherence of the appliance wafer: the surgeon may have to reute the stoma subcutaneously at times to achieve this. Considerations of the waistline and the



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optional choice of belts versus braces in men are really secondary considerations. Where more than one abdominal wall site would do, then these considerations should apply, but inevitably there are times when the patient must be told that a change in their usual style of clothes will unfortunately be necessary if a satisfactory and trouble-free stoma is to be achieved.

## LENGTH AND SHAPE

How long should an ileostomy be, and in what direction should the opening at its tip point? Should a colostomy be flush with the skin, or is a slight mucosal rim an advantage? There is no hard 'science' here to guide us, but conversations with a large number of experienced stoma care nurses in the United Kingdom have led to the following recommendations.

### Ileostomies

These should not be too long, especially in a woman who may see an overlong ileostomy as incompatible with her feminine body image. Modern appliances are perfectly good enough to cope without any difficulty whatsoever with an ileostomy length of 2cm. Enthusiasm for a short stoma in a malnourished and sick patient with inflammatory bowel disease should be tempered by the realisation of a likely significant weight gain after surgery, which may lead later to problems with a stoma that is too short.

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The aperture at the apex should ideally point somewhat downwards.

A simple way to achieve both of the above objectives is the '554' ileostomy. Two sutures are placed at the upper edge of the divided ileum on either side of the mesentery. A serosal bite 5cm proximal is followed by a subcuticular bite. When tied, these two stitches will result in a superior margin on the stoma of 2.5cm; and if a single inferior stitch takes its serosal bite at 4cm rather than 5cm, then the final product will have a 2cm inferior margin and an apical opening that points slightly downwards.

### Colostomies

Colostomy construction is on the whole more difficult than ileostomy construction. This is because patients are usually older and fatter, because the colon maybe quite bulky because of fat laden appendices epiploicae that make it difficult to deliver through an appropriately small opening in the anterior abdominal wall, and because length may be at a premium. Unlike the case with the small bowel, where it is usually easy to get enough length for an adequate spout, the colon is bound to the posterior abdominal wall, where it lies as an extra-peritoneal structure. Mobilisation of the splenic flexure and the entire left colon may be necessary on occasion to achieve sufficient length; if not to achieve a satisfactory stoma when the patient is supine on the operating table, then to allow

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sufficient 'travel' when the patient sits up so that an abdominal wall crease is prevented.

Most experienced stoma care nurses say that they would prefer a colostomy with a slight rim to it. I am not personally quite sure why they prefer the idea of a rim, and construction of a satisfactory rim is not always easy. The basic steps are to take bites of the divided colon edge followed by serosal bites about 1cm proximal and then subcuticular bites of skin. This results in an approximate 0.5cm spout or rim.

### **Temporary stomas**

The choice lies between a loop ileostomy and a loop colostomy. Both have their advantages and disadvantages.

### **Transverse loop colostomy**

This stoma is easy for the surgeon to construct and, what is more important, it is easy to close. It does not have to be placed in the right upper quadrant where it interferes with the waistline and the rib margin. It is a simple matter for the surgeon to mobilise the hepatic flexure and thereby permit placement in the much more satisfactory right iliac fossa position. It is bulky and prone to prolapse of the proximal limb.

### **Loop Ileostomy**

This is a much nicer stoma for the patient to have, when it has been constructed well, but it can be a brute to close and may be associated with episodes of small bowel obstruction. In general, it is best to leave the choice between loop colostomy and loop ileostomy to the surgeon's preference. When a particularly low colorectal anastomosis depends on the marginal artery for its proximal blood supply it may be safer to construct a loop ileostomy, because closure does not put the marginal artery at risk of injury – which, should it happen, would result in necrosis of the remaining left colon!

### **MINIMALLY INVASIVE SURGERY**

Most stomas are constructed at the time of a more major conventional abdominal procedure. But there are occasions when a minimally invasive approach may be indicated. A left iliac fossa end colostomy can be achieved through a trephine incision, sometimes aided by some laparoscopic mobilisation of the congenital adhesions that bind down the sigmoid colon in some people. It is usual to site one of the laparoscopic ports through the previously chosen stoma site. Whether the dissection is performed with the laser or with the diathermy or with scissors has no bearing on the planning and subsequent outcome of stoma surgery.

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## AVOIDING FUTURE STOMA RELATED PROBLEMS

The particular problems, other than those occasioned by poor siting and poor technique that lead to skin irritation, are prolapse, retraction, stenosis, hernia and fistula.

Persistent ileostomy prolapse may need extraperitoneal tunnelling in order to get the more proximal ileum to stick down and be prevented from travelling. There are some advantages to performing an extraperitoneal course for an ileostomy as a matter of routine, but in cases of Crohn's disease where recurrence is not uncommon this can make revisional surgery more awkward, which explains why surgeons vary in their opinions. Less troublesome prolapse can be treated painlessly as an outpatient by stapling the stoma wall with a stapling instrument that does not incorporate a knife blade.

A prolapse transverse loop colostomy cannot be treated except by closure and formation of a new stoma at another site. This explains why some surgeons would rather avoid its construction in the first place.

Colostomy prolapse can be treated by trimming the prolapsed stoma and resuturing the colon to the skin edge. Because of the extraperitoneal position of the descending colon, persistent recurrent prolapse is unlikely and the more major option of choosing an extraperitoneal course for the colostomy can usually

be avoided. Constructing the original colostomy as an extraperitoneal colostomy might seem a sensible way of avoiding the problem in the first place, but in reality length may be at a premium, and an extraperitoneal course needs more colon as the distance travelled is further. Probably more important is the potential that an extraperitoneal colostomy has for anchoring the colostomy to the posterior abdominal wall making 'travel' difficult, which can result in creasing of the skin when the patient sits forward.

Retraction is usually related to weight gain, when it can be avoided by anticipation, or recurrent disease (Crohn's or cancer).

Stenosis is uncommon, is probably related to perioperative ischaemia or retraction, and usually will need corrective surgery.

Hernia is surprisingly common. It is more common with colostomies and in those who have had hernias at other sites, perhaps because of a common underlying defect in these patients' collagen. It has been claimed that siting the stoma through the body of the rectus abdominis rather than more laterally avoids this complication, but there have been no prospective studies or trials to support this claim and retrospective studies do not agree with the contention. Repair is worthwhile and may be effective, although recurrence is disappointingly common.



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Fistulae are uncommon except in Crohn's disease, when there is usually a segment of diseased intestine just inside the abdominal wall that is responsible for the fistula and which will need to be resected. Some surgeons argue that placing serosal bites, as in the '554' ileostomy, runs the risk of subsequent fistulation, particularly in Crohn's disease, which is why they avoid such sutures. This has not proved to be the case at St. Mark's Hospital, where surgery for Crohn's disease is common and where all the surgeons employ serosal sutures for ileostomy construction.

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## FURTHER READING ON STOMA SITING

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