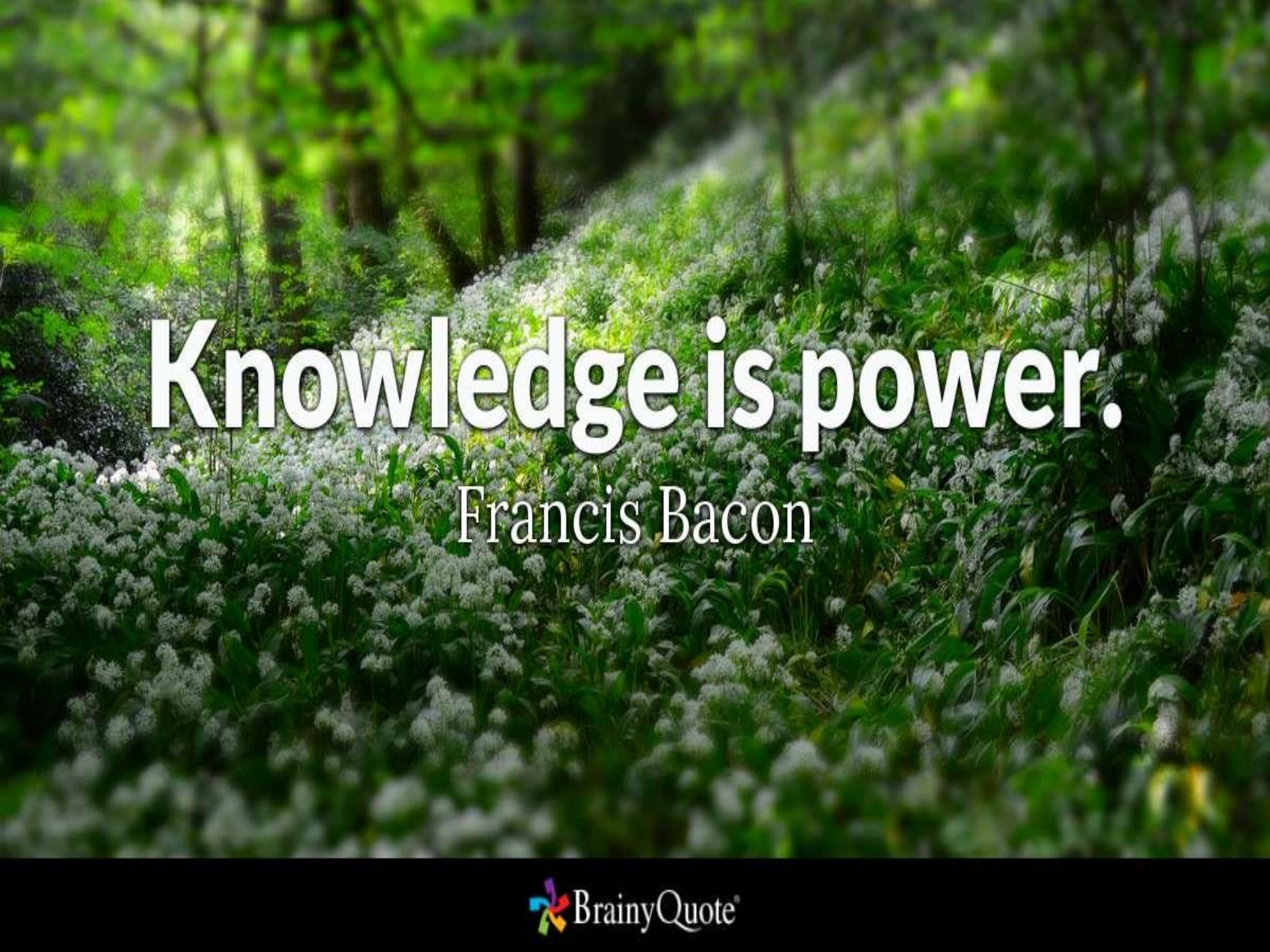
STOMA CREATION: THE *DIFFICULT* STOMA

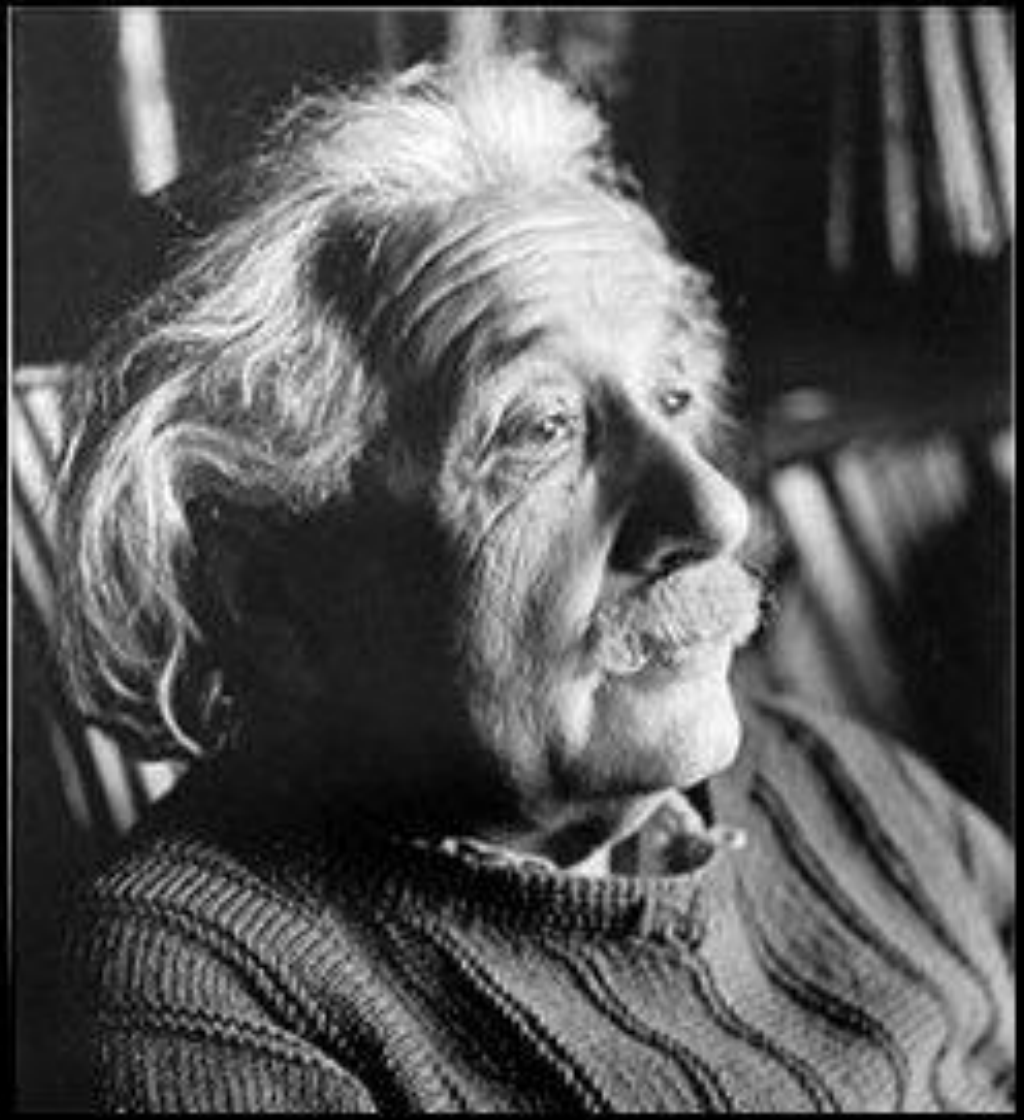
DR. NAGHAM AL-MOZANY

BSC,MBCHB,FRACS,MS

CONSULTANT GENERAL & COLORECTAL SURGEON

AUCKLAND CITY HOSPITAL & MACMURRAY CENTRE


Knowledge is power.
Francis Bacon
BrainyQuote



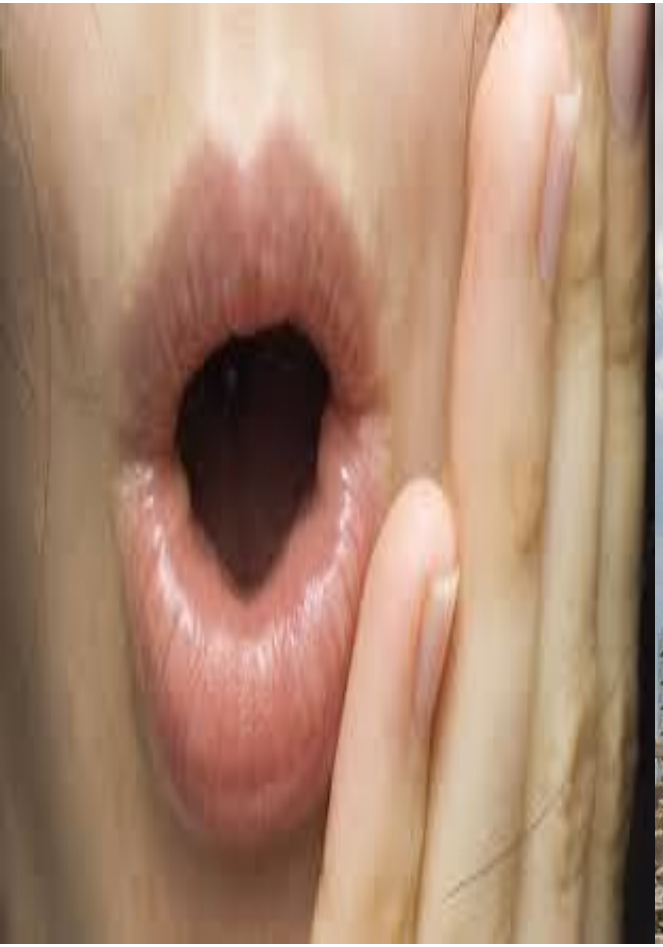
« Those who have the privilege to know have the duty to act. »

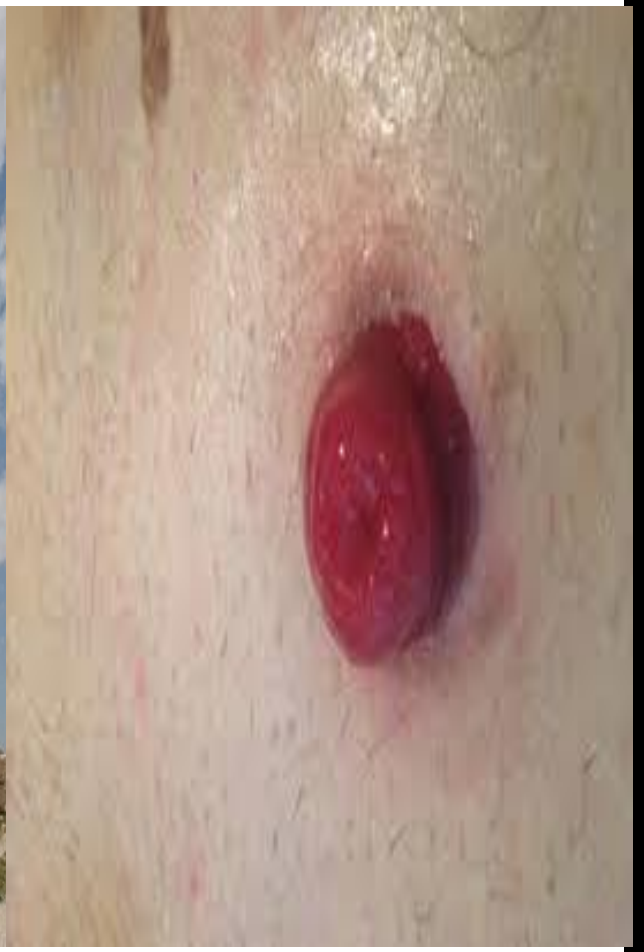
~ Albert Einstein (1879-1955)

OBJECTIVES

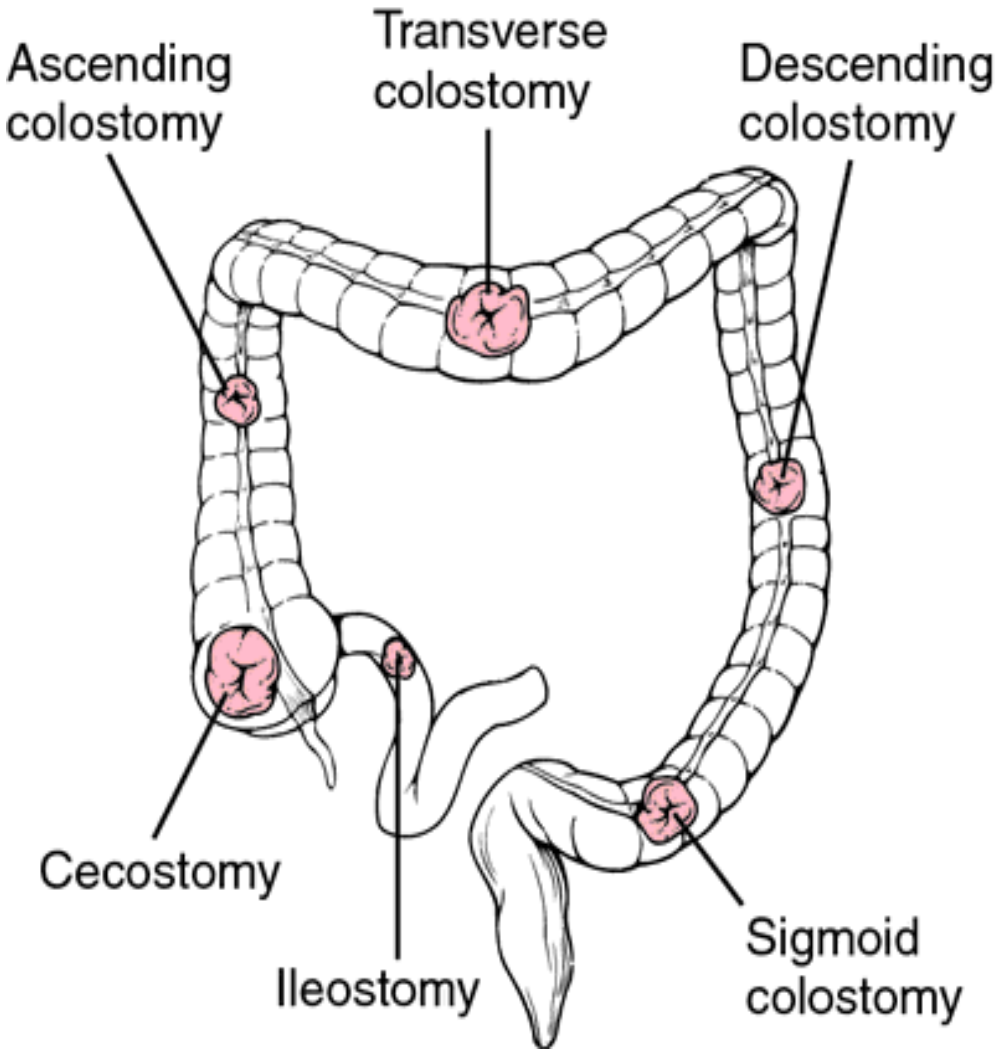
- Definition and types of stomas
- Indications for stoma formation
- Stoma creation and technique?
- Recognizing the complications?
- When to refer ?

DEFINITION

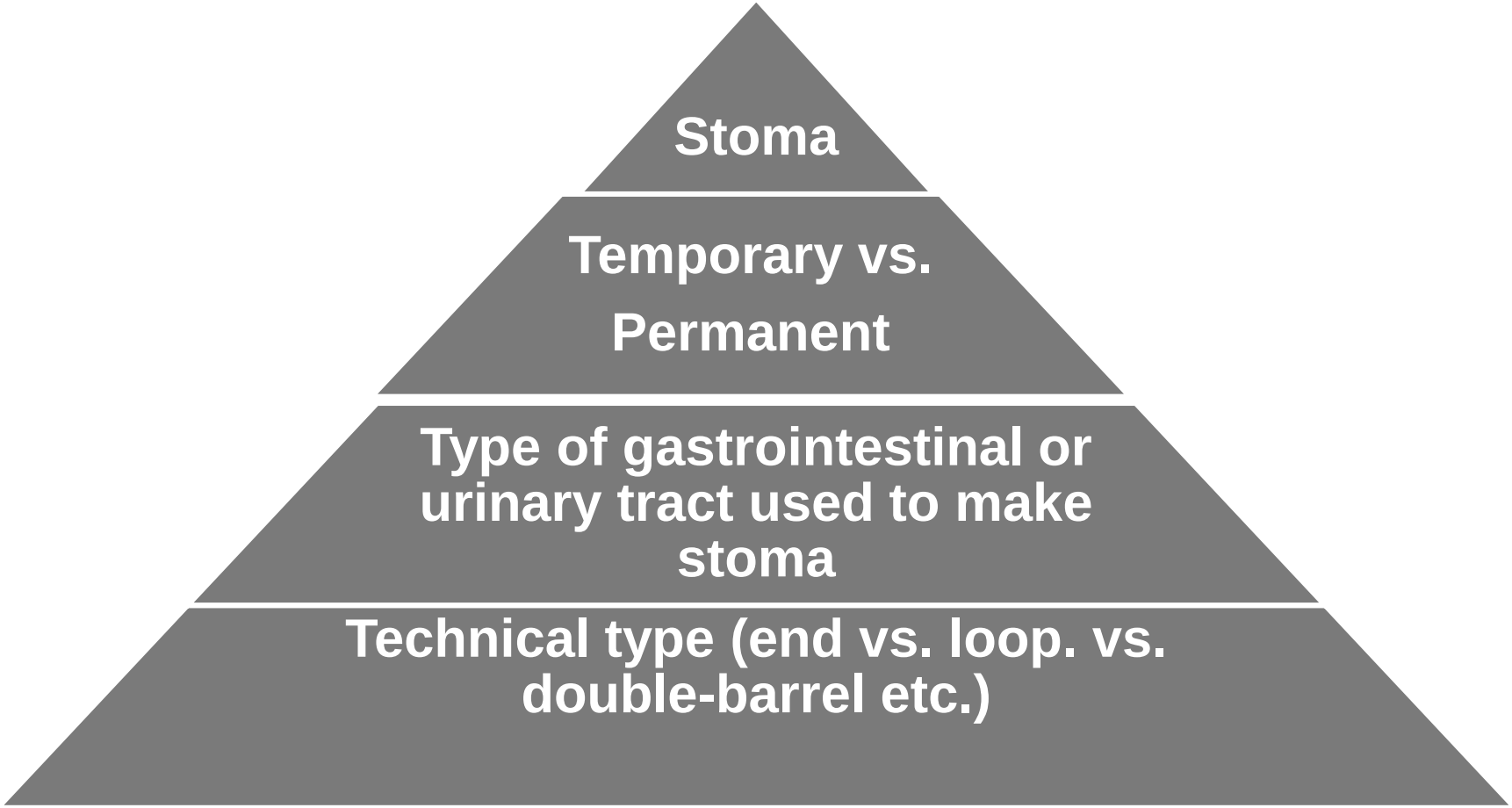




INTESTINAL STOMA

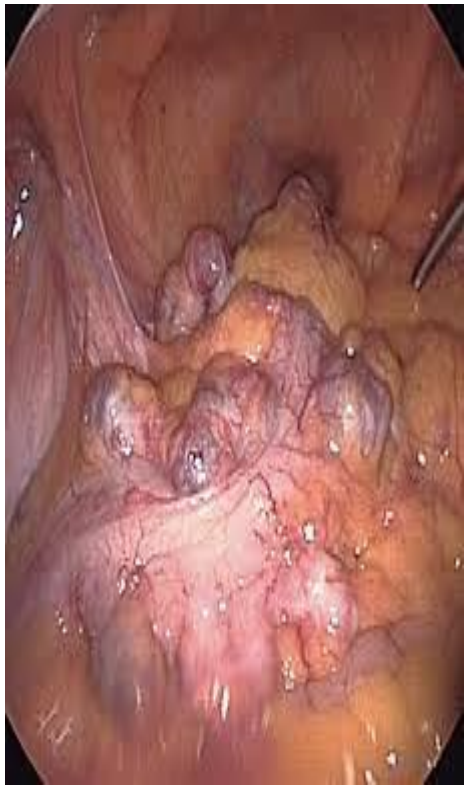


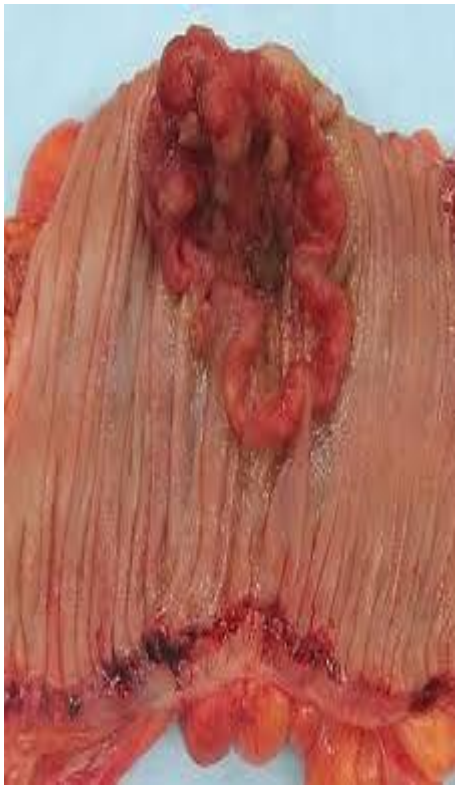
CLASSIFICATION OF STOMAS



TEMPORARY STOMAS

- Core strategy in colorectal surgery
- Assist in management of diverse colorectal pathologies



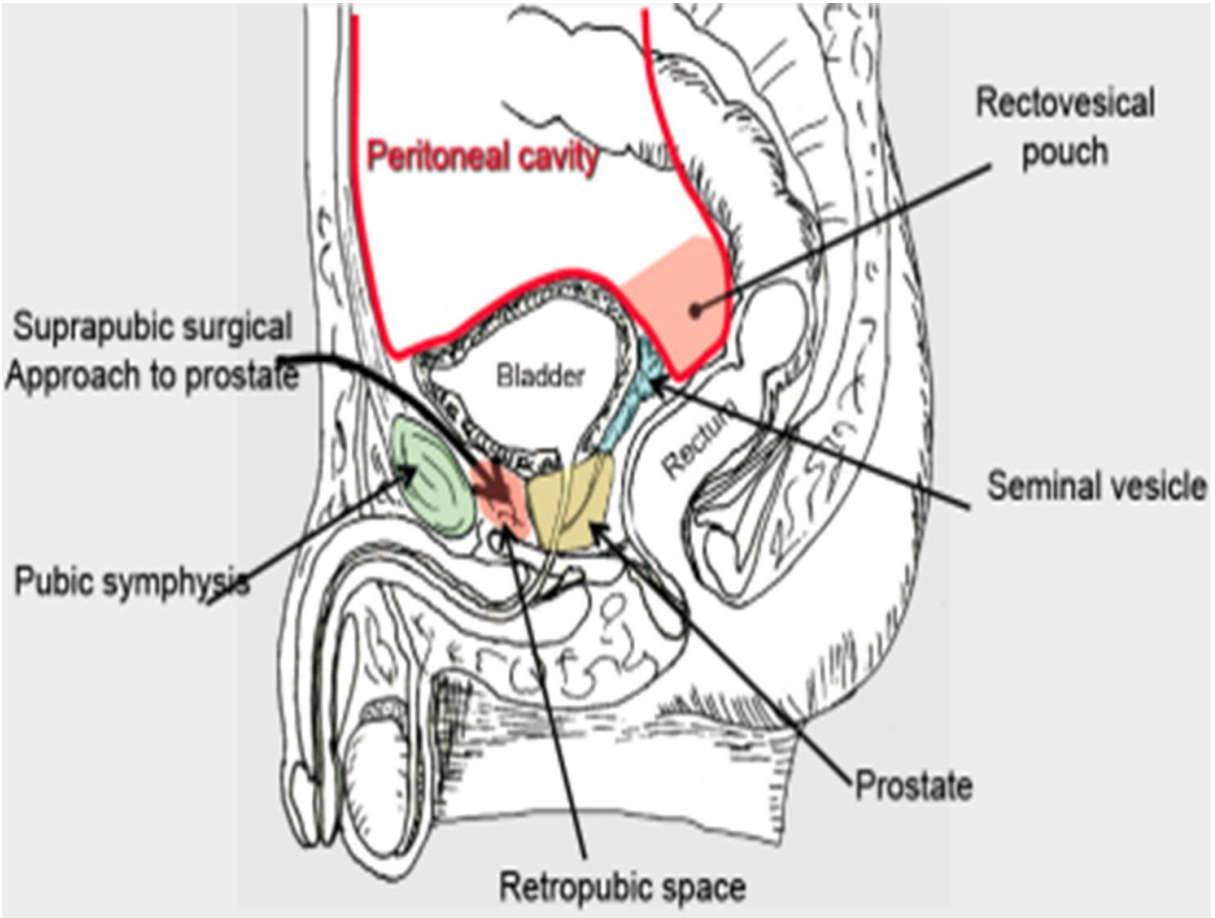


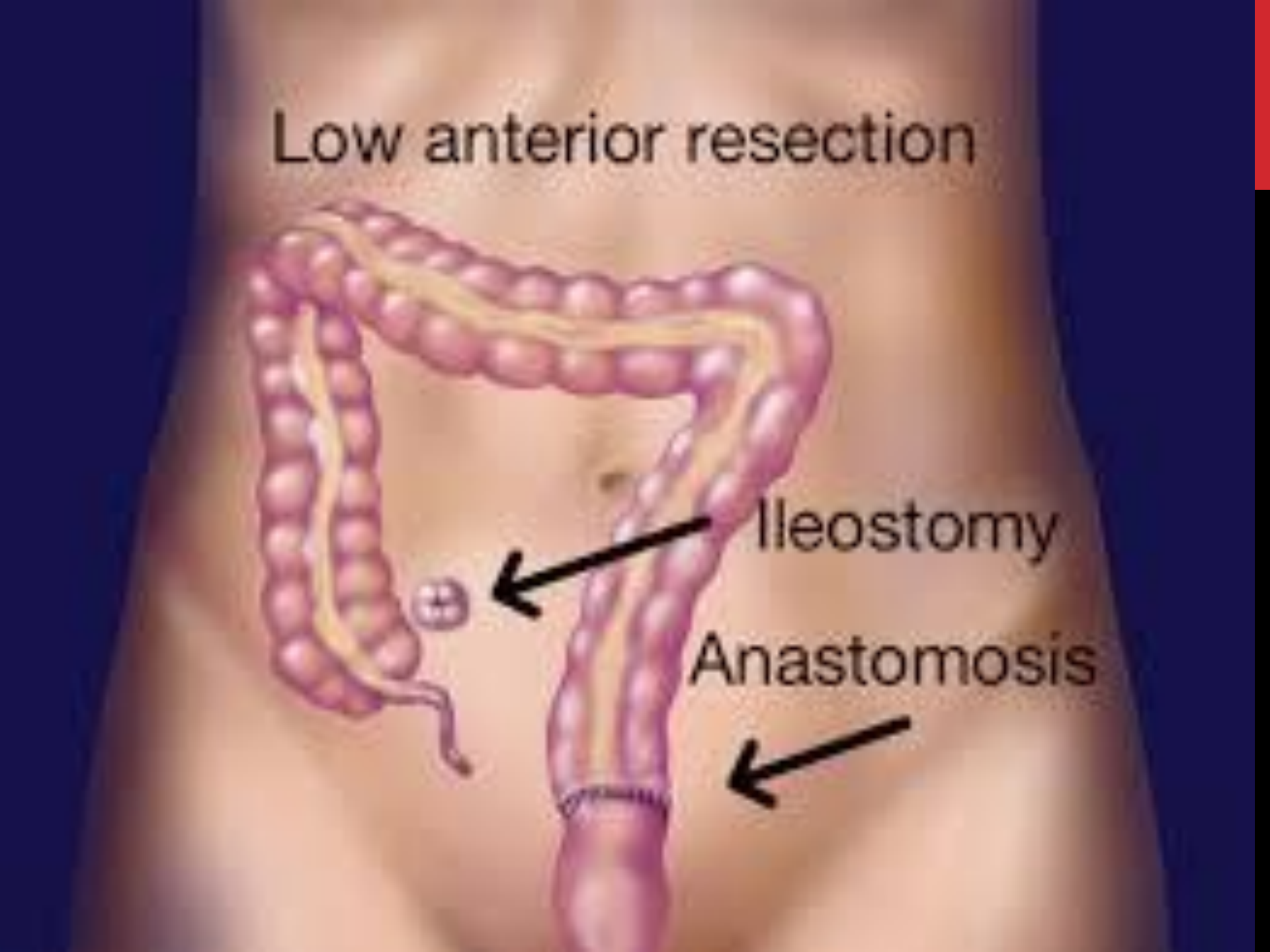
COMMON PRACTICE

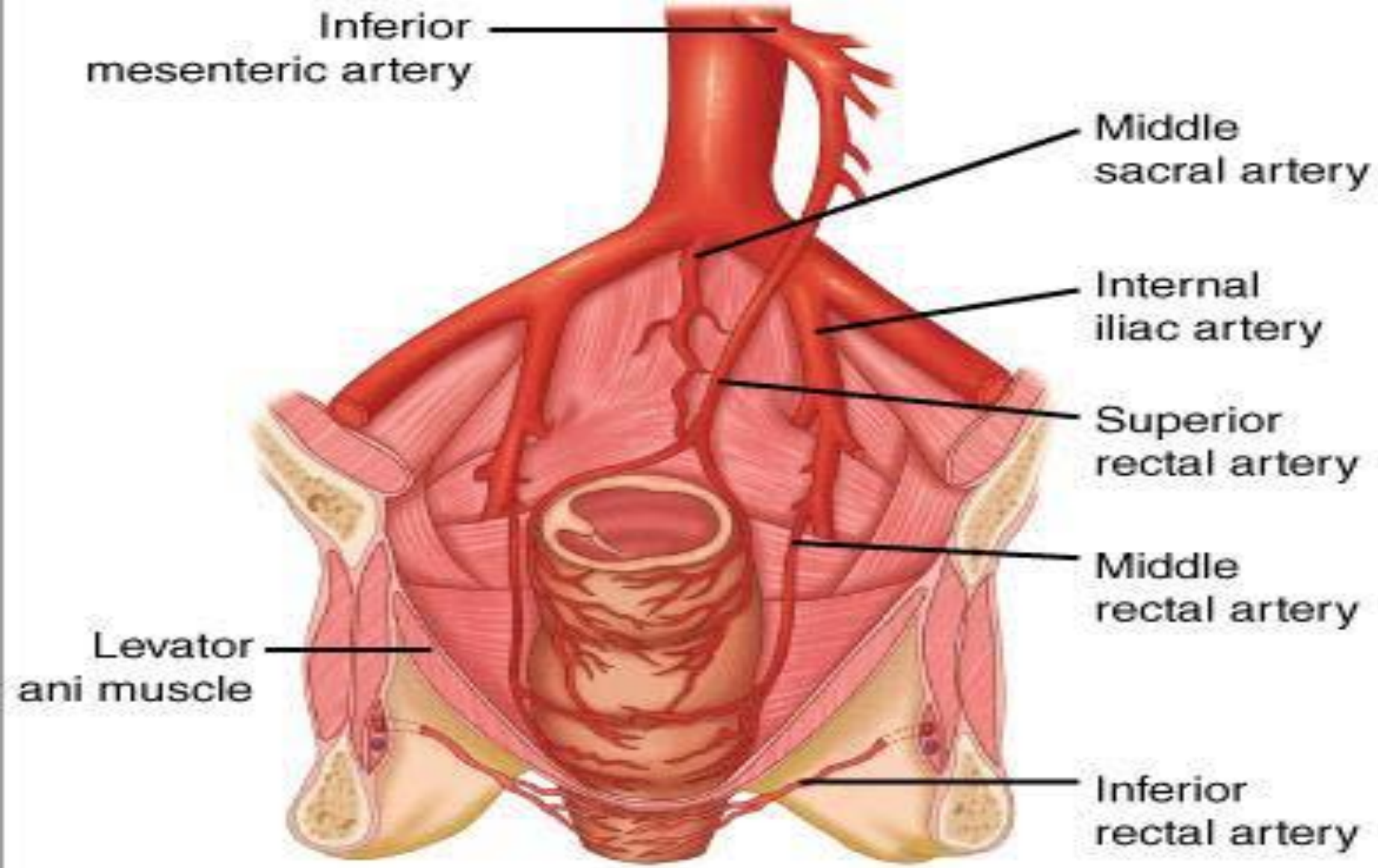
- Context of rectal cancer
- Proximal loop diversion
- 1. Protect a low pelvic anastomosis
- 2. A view to future takedown and re-anastomosis

INDICATIONS FOR TEMPORARILY COVERING A RECTAL ANASTOMOSIS

•Anastomosis **below** the peritoneal reflection e.g. low or ultra-low anterior resection

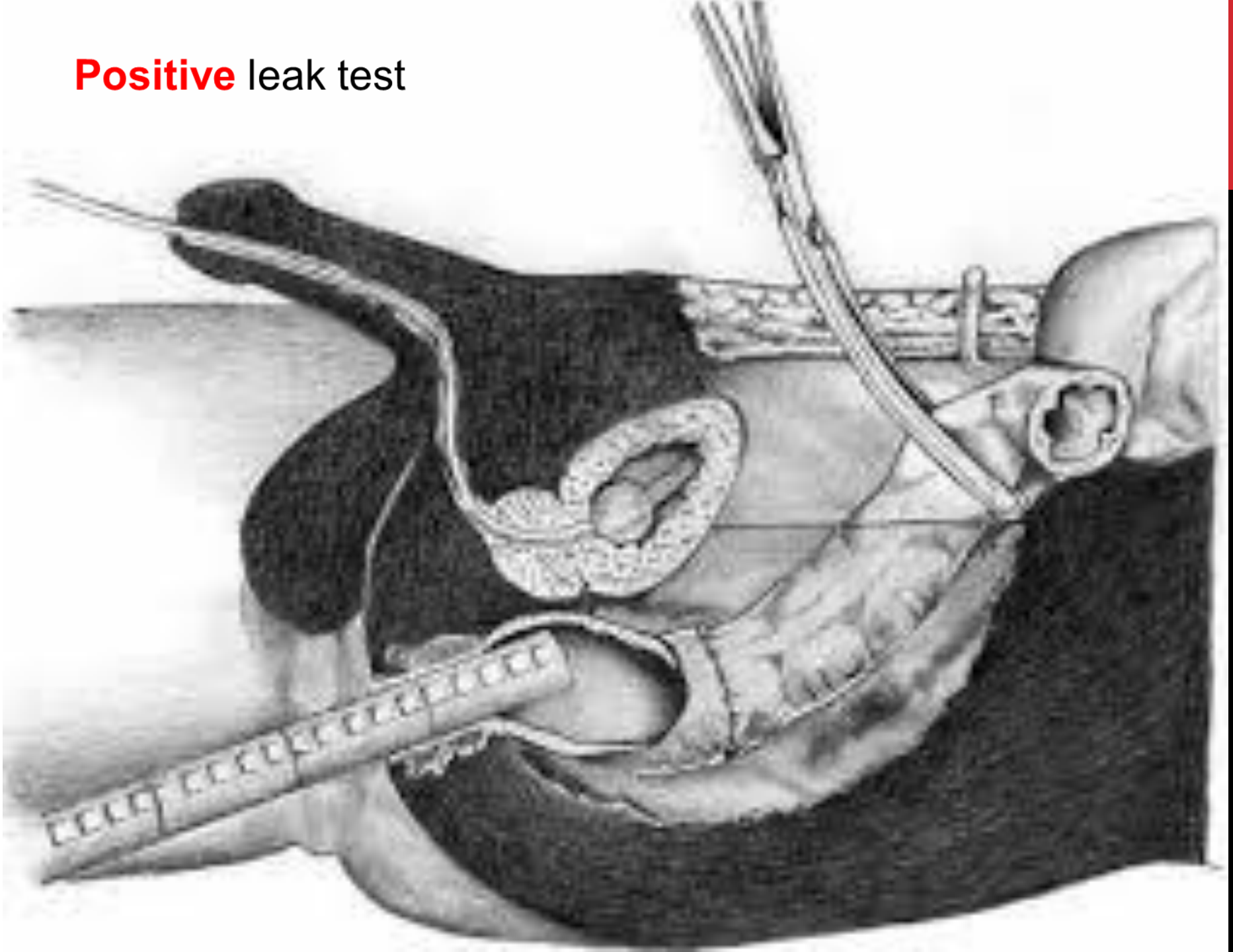



Low anterior resection
Ileostomy
Anastomosis



Arterial supply to the rectum and anal canal.

Positive leak test



INDICATIONS FOR TEMPORARILY COVERING A RECTAL ANASTOMOSIS

- Irradiated field

•Other surgical opinion of unacceptable leak risk, assimilating patient factors :

❖ Patient physiology at time of surgery

❖ Disease factors (e.g. acute obstruction)

❖ Technical factors (e.g. a stapler malfunction)

❖ Operative factors (e.g. prolonged operating time and major blood loss).

- Proximal loop diversion does **not** prevent anastomotic leaks
- Reduces leak severity ➡ lower clinically-diagnosed leak rates ➡ lower re-operation rates and mortality rates.

Tan WS, Tang CL, Shi L, Eu KW. Meta-analysis of defunctioning stomas in low anterior resection for rectal cancer. *Br J Sur*g. 2009 May;96(5):462–72.

ADVERSE IMPACTS OF STOMA CREATION

- Quality of life
- Longer hospital stay
- Unplanned readmissions
- Complications
- Increased use of medical resources
- Risks of closure surgery

- 50% of stomas are ‘problematic’ requiring prolonged pouching and skin care support

- In the elderly population, creation of a stoma may also impede independence due to age-linked comorbidities e.g. declining eyesight and hand arthritis, triggering rest home admission

Hendren S, Hammond K, Glasgow SC, Perry WB, Buie WD, Steele SR, et al. Clinical practice guidelines for ostomy surgery. *Diseases of the Colon & Rectum.* 2015 Apr;58(4):375–87.

Systematic review found :

- Morbidity rate from stoma closure 17%
- Rates of leak 1.4%
- Bowel obstruction 7%
- Mortality 0.4%

Chow A, Tilney HS, Paraskeva P, Jeyarajah S, Zacharakis E, Purkayastha S. The morbidity surrounding reversal of defunctioning ileostomies: a systematic review of 48 studies including 6,107 cases. Int J Colorectal Dis. Springer-Verlag; 2009 Jun;24(6):711–23.

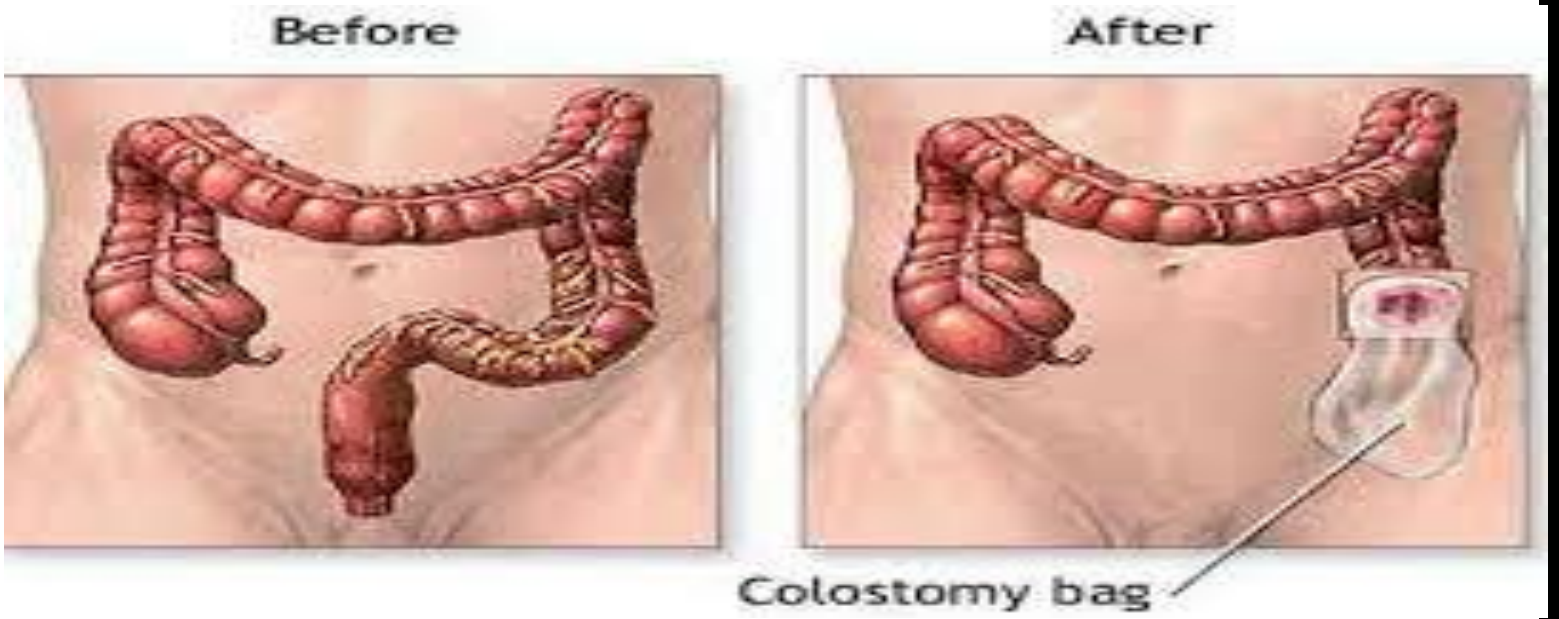
PERMANENT STOMAS

- Permanent stomas are made when there is **no** distal attachment
- **Indications:**

❖ In APR, typically for Cancer or Crohn's disease

❖ Intractable faecal incontinence

❖ Complicated pelvic disease



- Rates of permanent stomas have been declining

- Evidence for improved quality of life following anterior resection vs. APR is actually weak with great variability shown between patients and studies

- Coloanal anastomoses are not suitable for all patients, particularly those with poor sphincter function

Pachler J, Wille-Jørgensen P. Quality of life after rectal resection for cancer, with or without permanent colostomy. Pachler J, editor. Cochrane Database Syst Rev. Chichester, UK: John Wiley & Sons, Ltd; 2012;12:CD004323.

TECHNICAL ASPECTS: INFORMED CONSENT

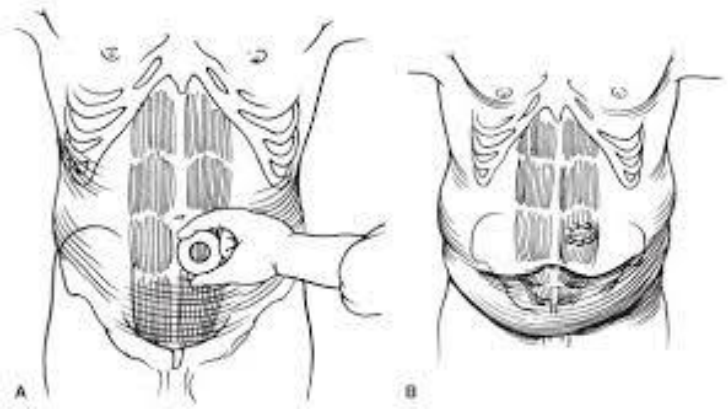
- **Counselling**
- **Stoma nurse specialists**

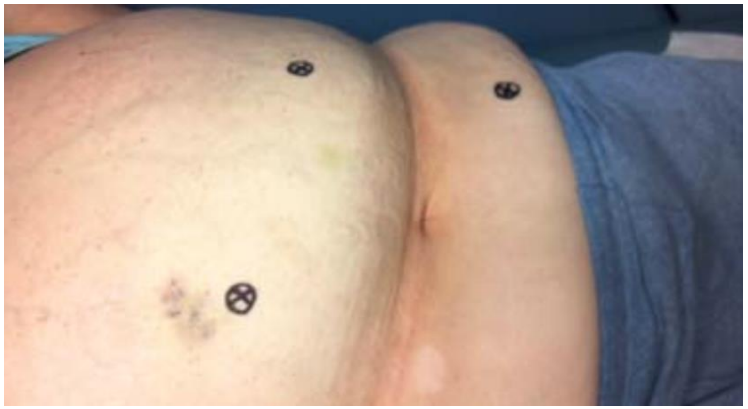
- **Pre-operative Stoma management training is strongly recommended**
- **↓Time to ostomy proficiency**
- **↓ Length of hospital stay**
- **↓ Unplanned interventions**
- **Highly cost effective**

STOMA EDUCATION

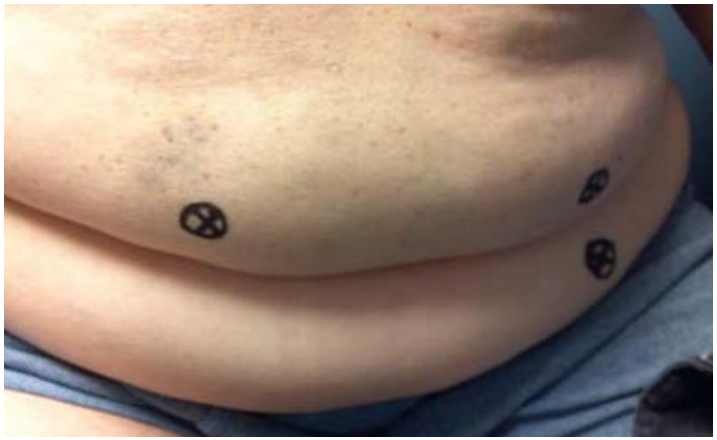
Chaudhri S, Brown L, Hassan I, Horgan AF. Preoperative intensive, community-based vs. traditional stoma education: a randomized, controlled trial. *Diseases of the Colon & Rectum*. 2005 Mar;48(3):504–9.

STOMA SITING

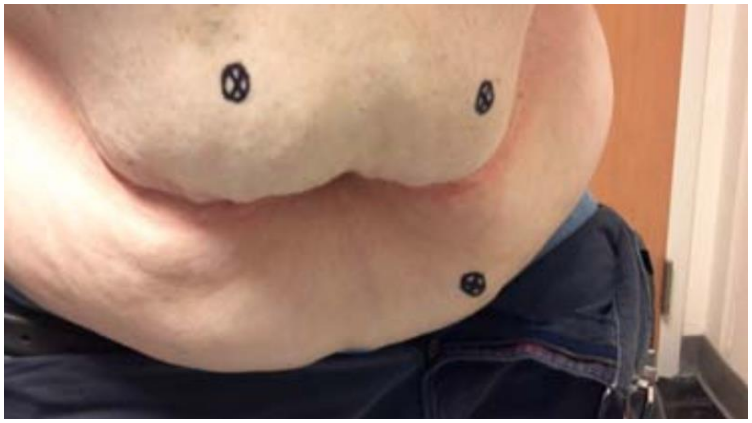




Lying

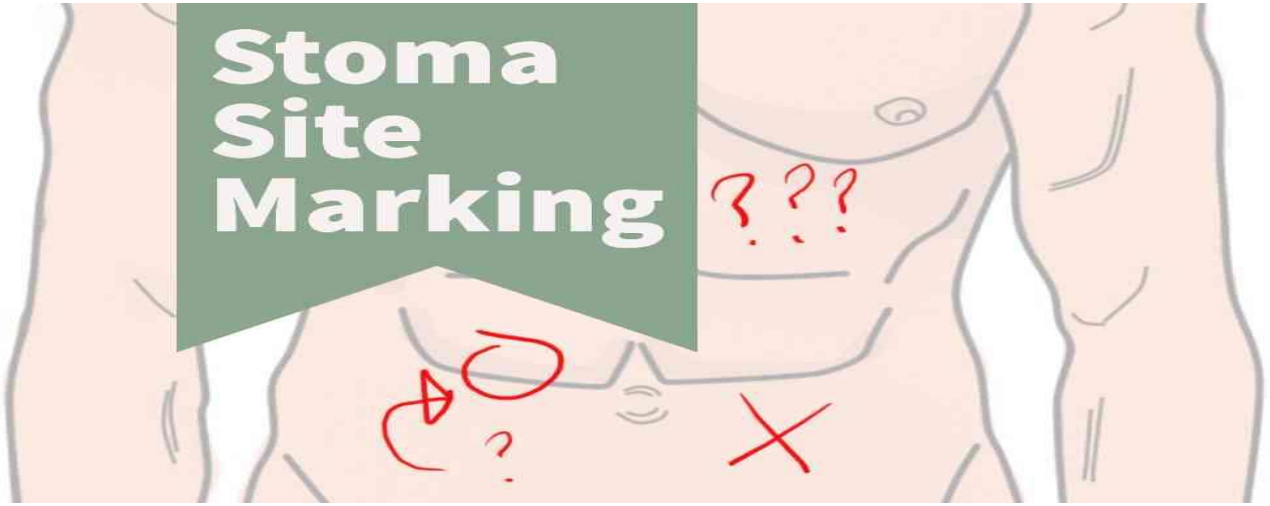


Sitting



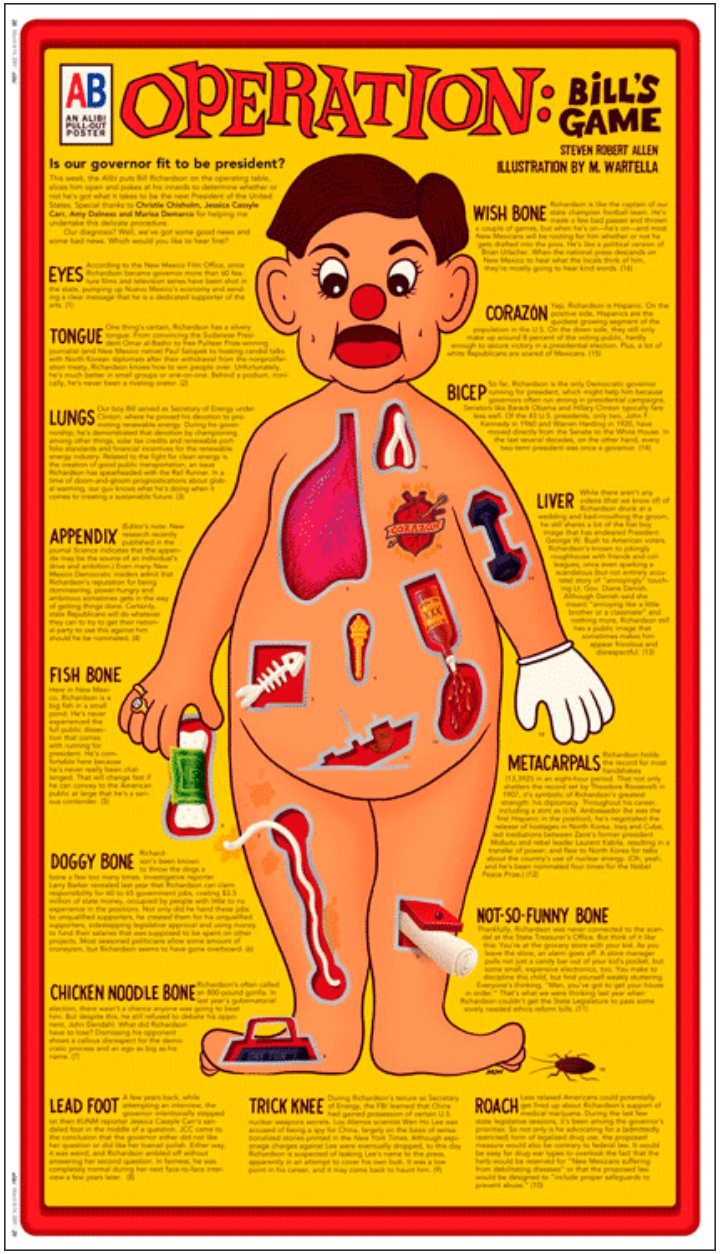
Standing


Elective surgery is better than emergency surgery!
www.personalityinsights.com


Stoma Site Marking

So… how do we do it?

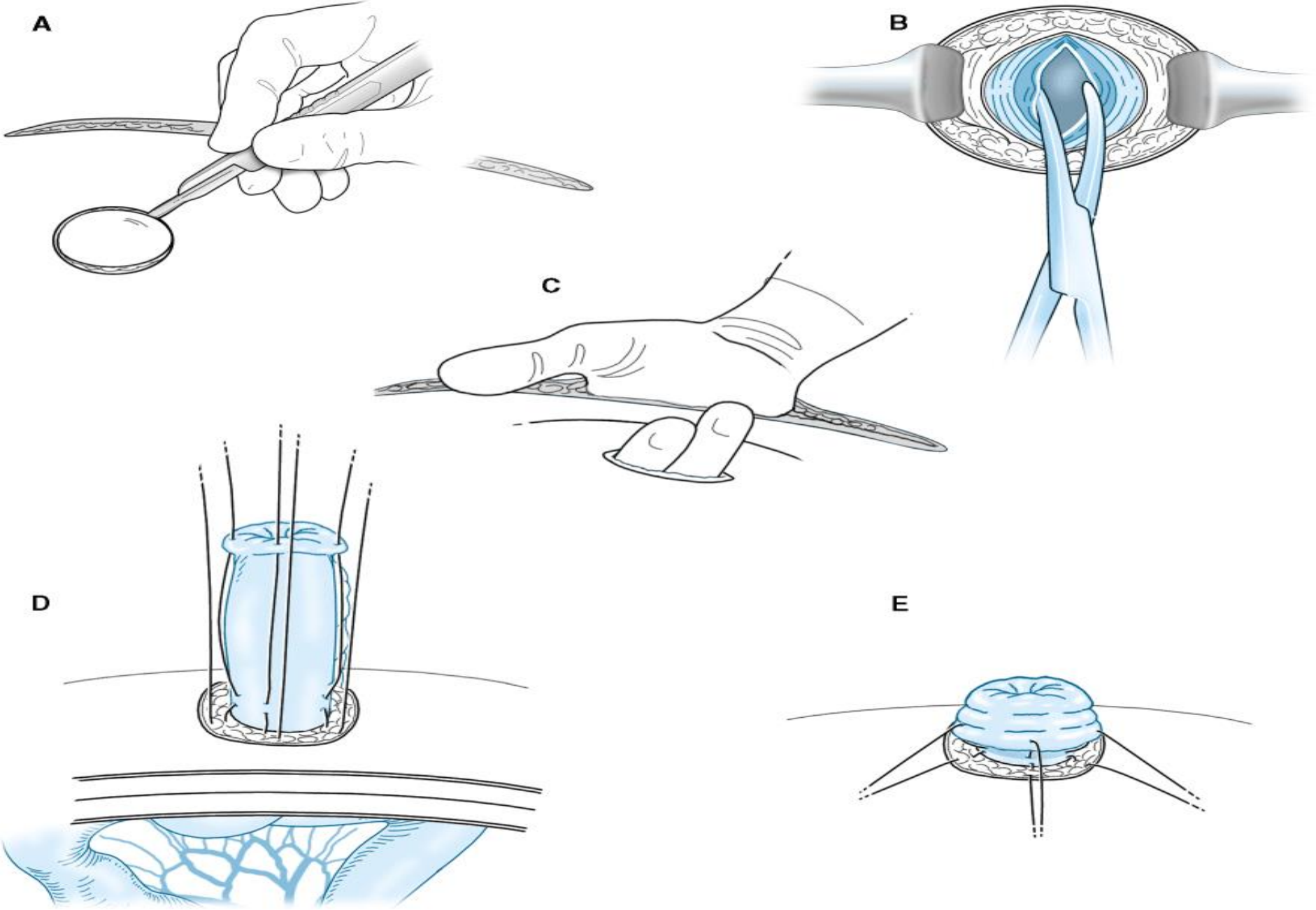
TECHNICAL ASPECTS OF STOMA FORMATION



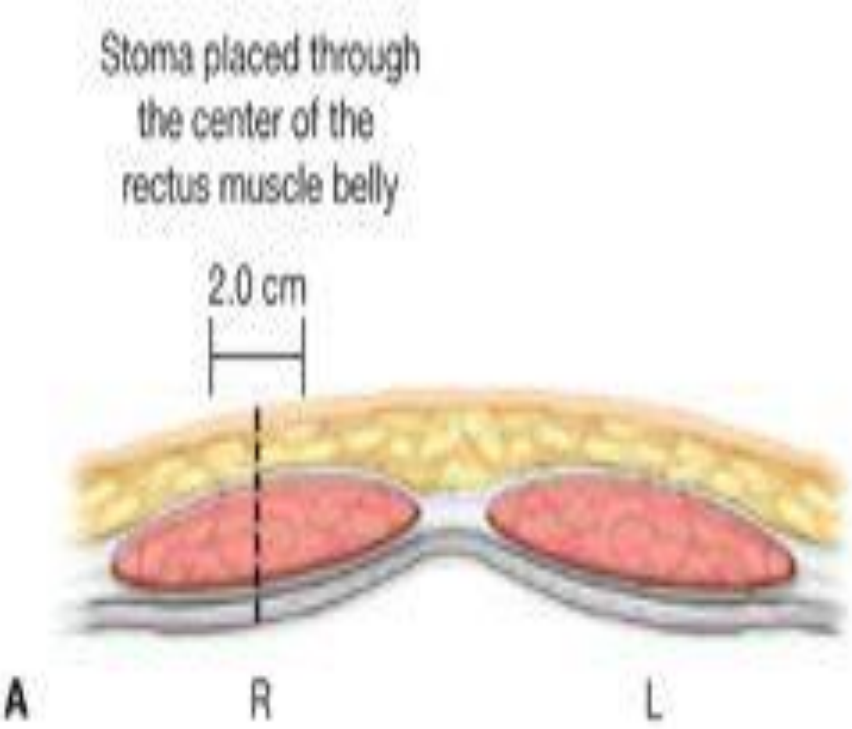

I'm a creature of habit...
GARFIELD
all the bad ones

SURGICAL PRINCIPLES X4

- Sufficient mobilisation
- Minimal tension
- Adequate vascularity
- Primary maturation



Source: Minter RM, Doherty GM: *Current Procedures: Surgery:*
http://www.accesssurgery.com



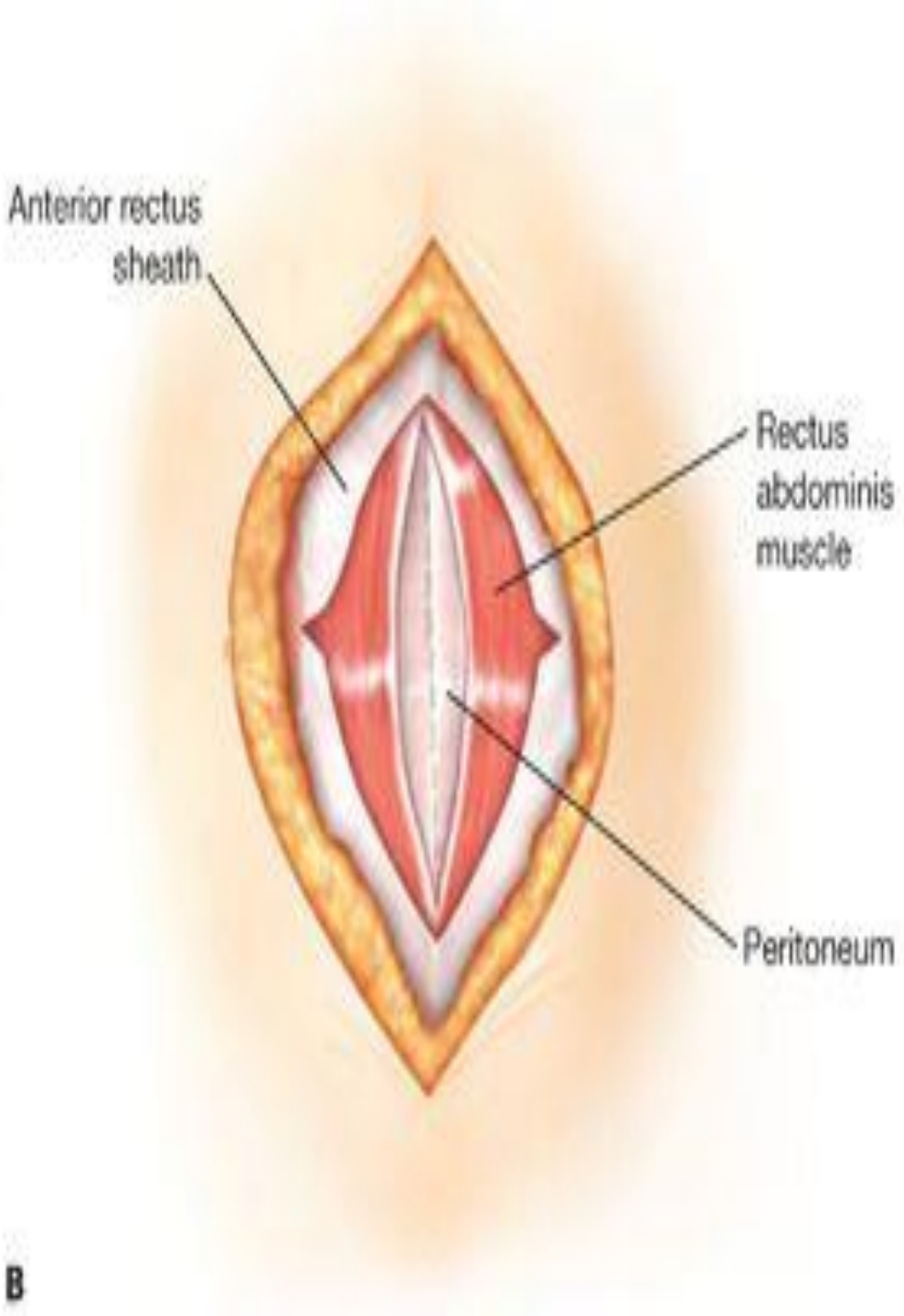
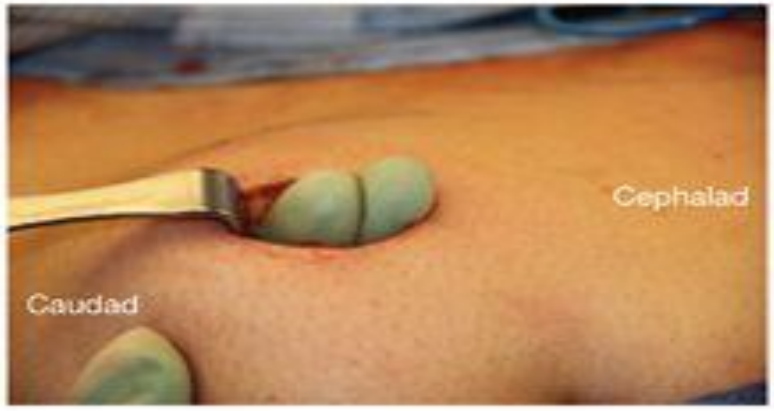


FIG 2 • Creation of an end ileostomy. **A.** A circular skin incision for the ileostomy is made over the center of the rectus muscle belly and carried through the subcutaneous fat. **B.** A cruciate incision is made in the anterior rectus sheath to expose the underlying rectus muscle. The rectus muscle is split bluntly along the direction of its fibers to expose the posterior sheath and peritoneum. *(continued)*



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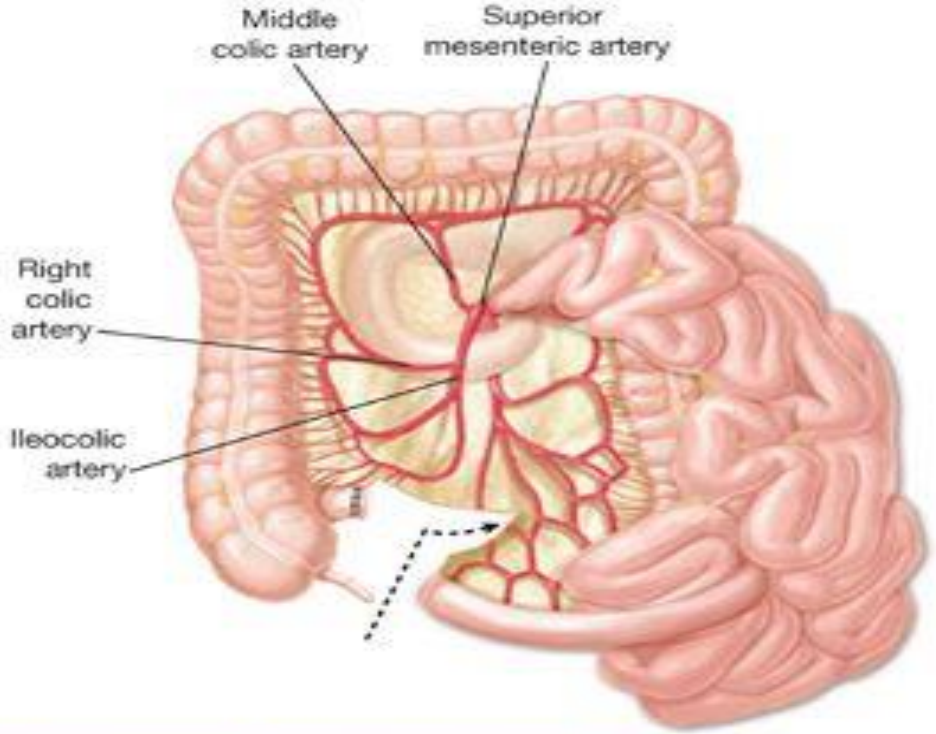

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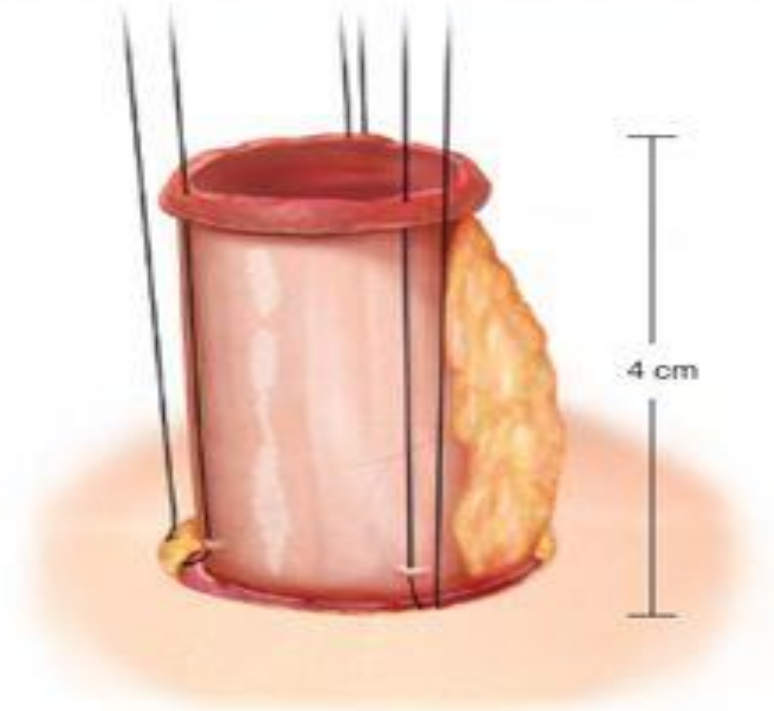
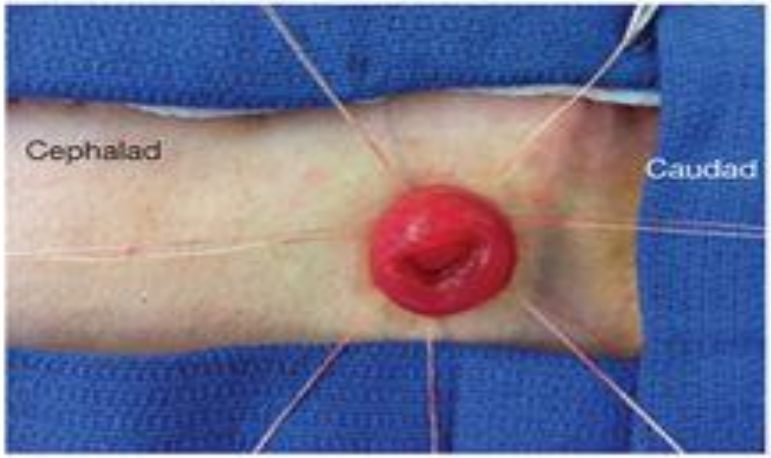


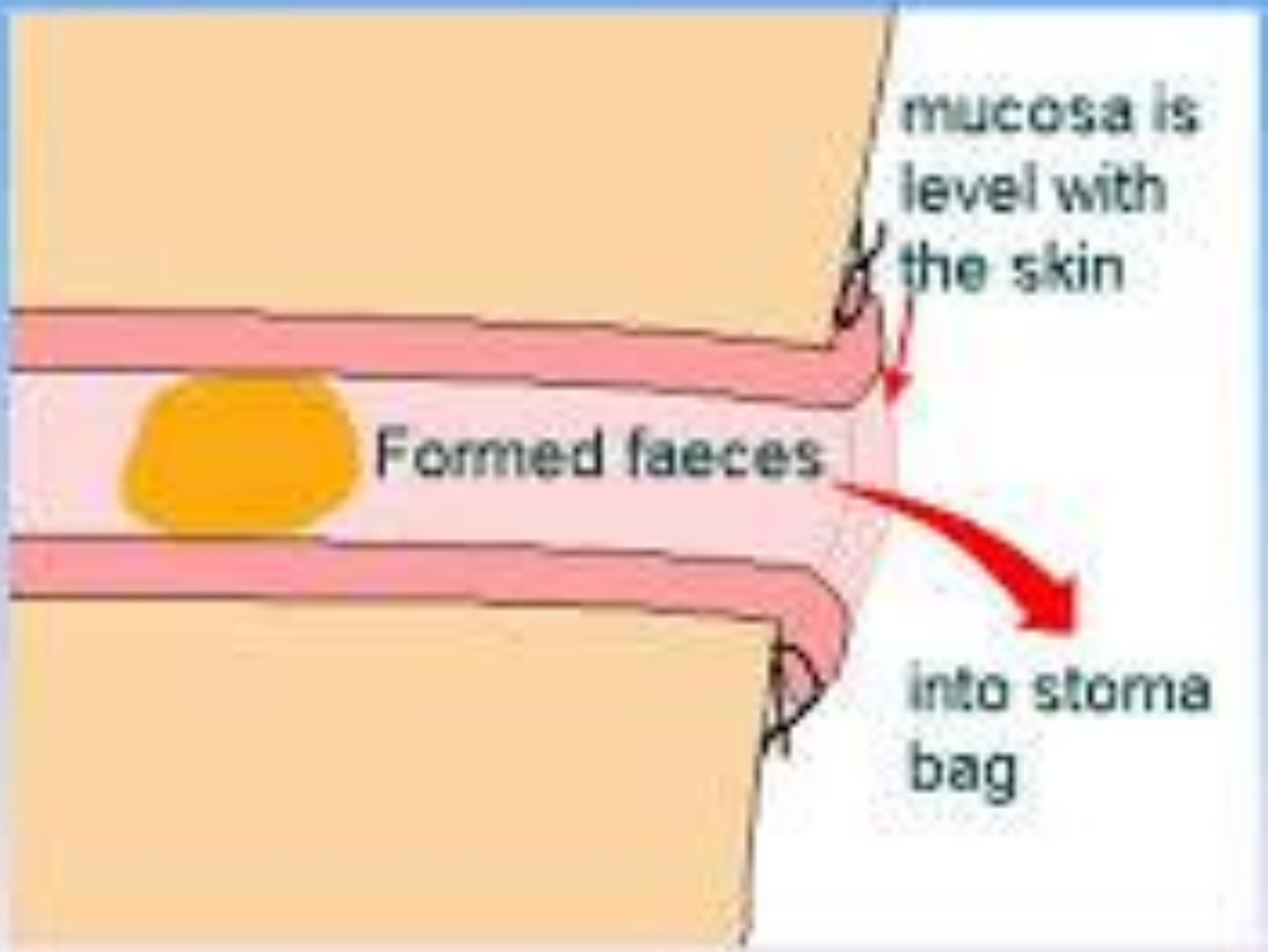
E



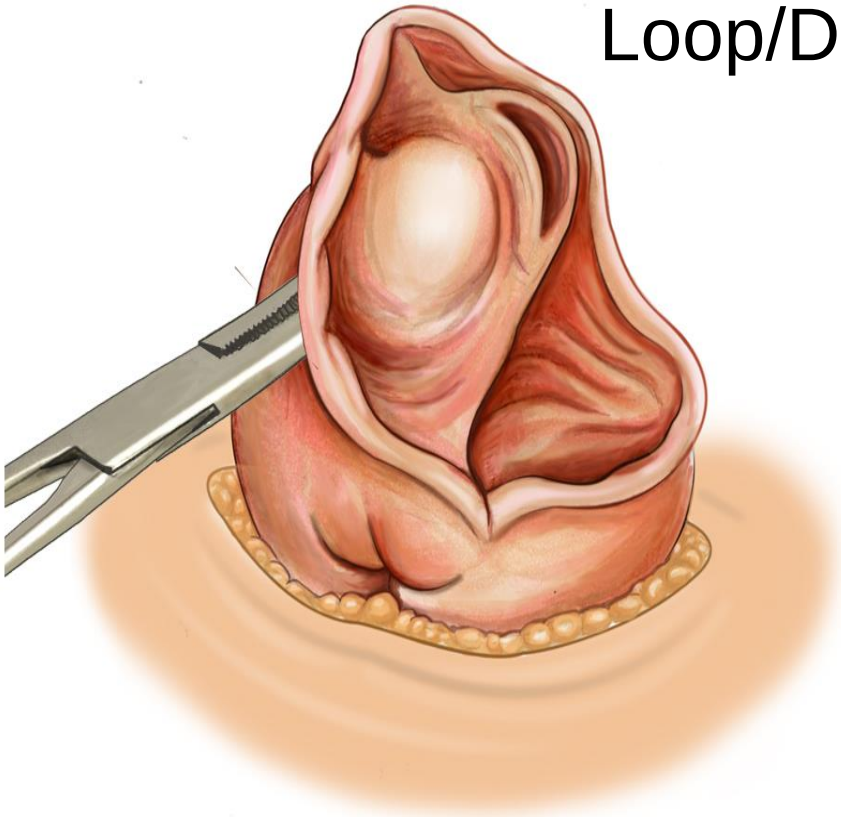
F

FIG 2 • *(continued)* **C.** The peritoneum is incised longitudinally and the incision is widened by stretching it with two digits to obtain the desired aperture. **D.** The vascular end arcade and the mesentery are preserved on the ileal segment that is to be used for the end ileostomy *(dotted arrow)*. **E.** The ileum is advanced through the abdominal wall stoma aperture so that it protrudes for about 4 cm beyond the skin level. Following removal of the staple line, three-point sutures are placed through the end of the ileum (full thickness), the seromuscular layer at the base of the stoma 4 cm from the end of the ileum, and the dermis, respectively. No epidermis should be included in stitch. **F.** The sutures are placed circumferentially. They are only tied after all of them have been placed, everting the ileum to create a 2-cm–high ileostomy.

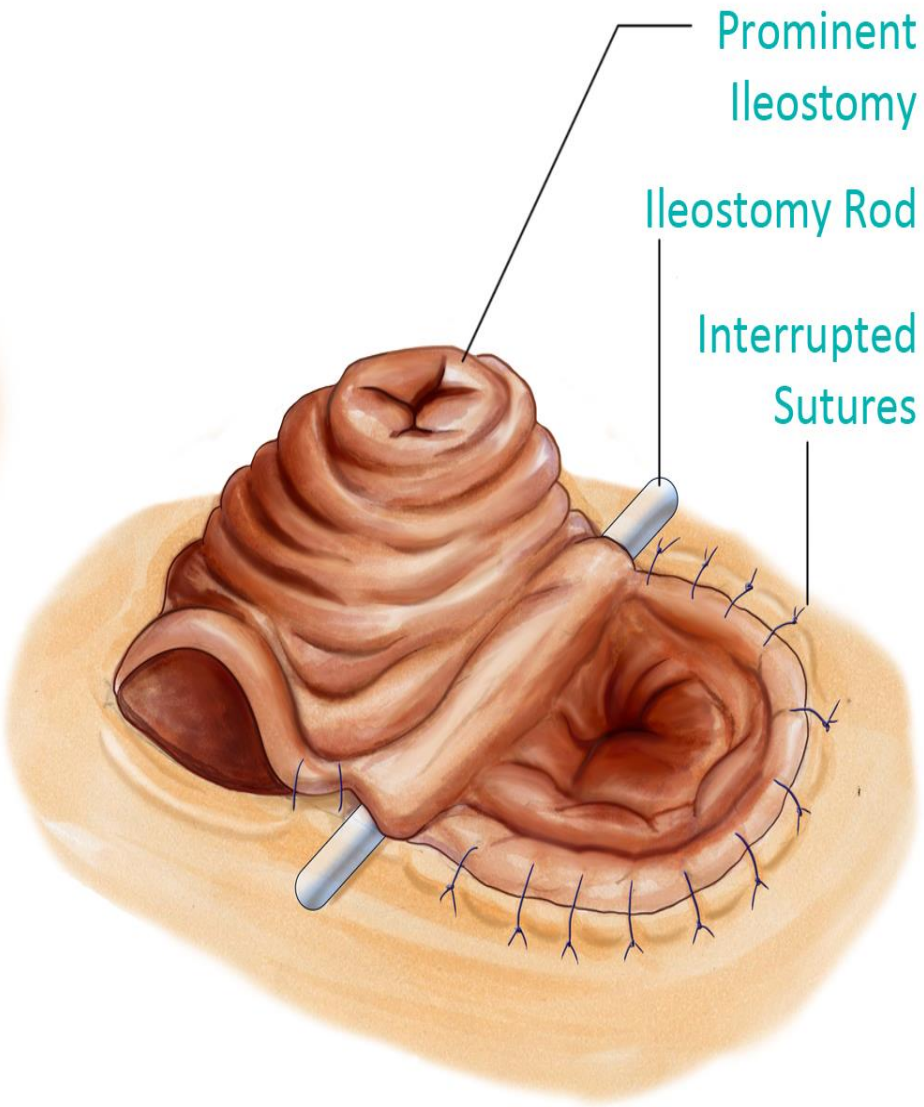
Principles of stoma formation



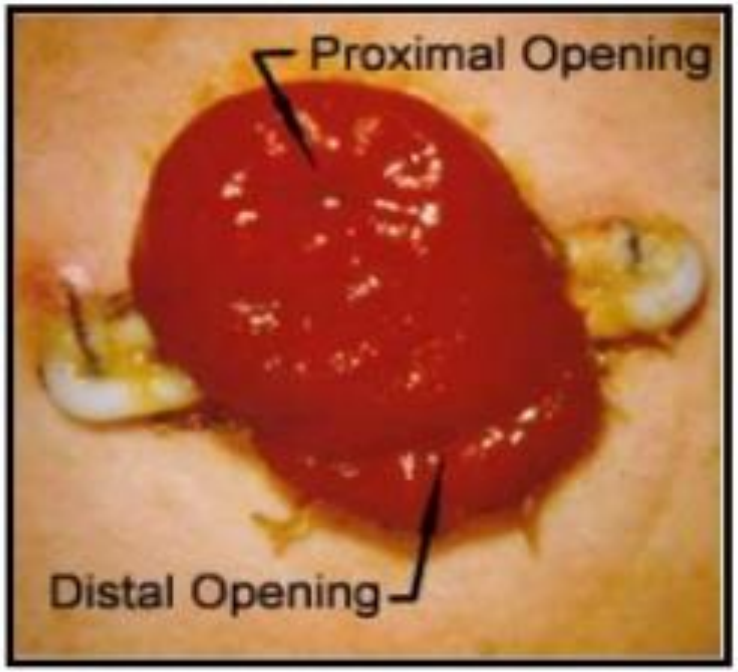
Loop/Defunctioning Ileostomy

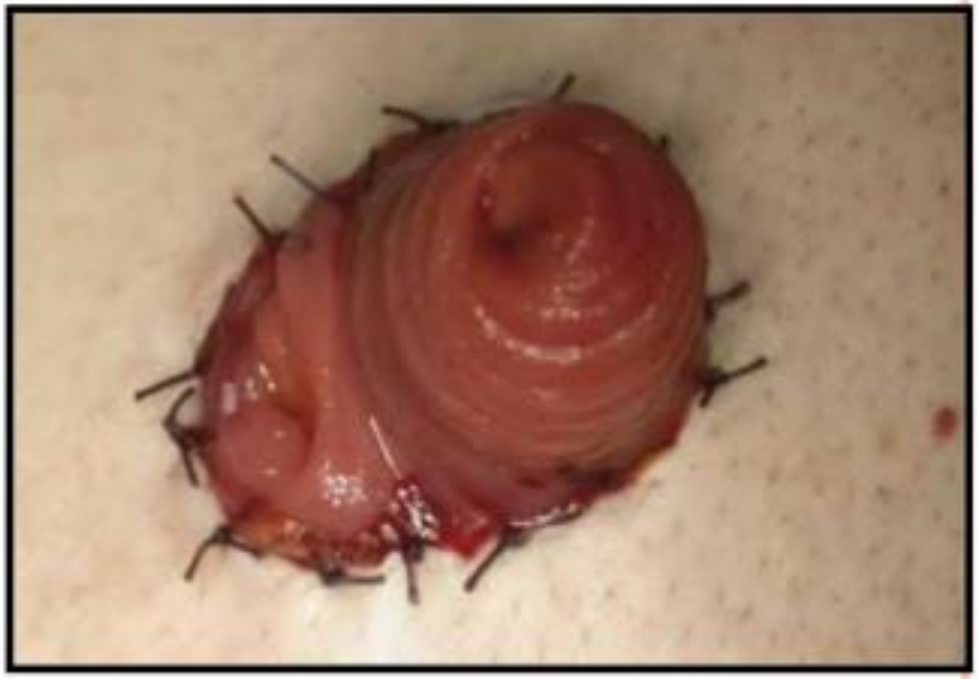


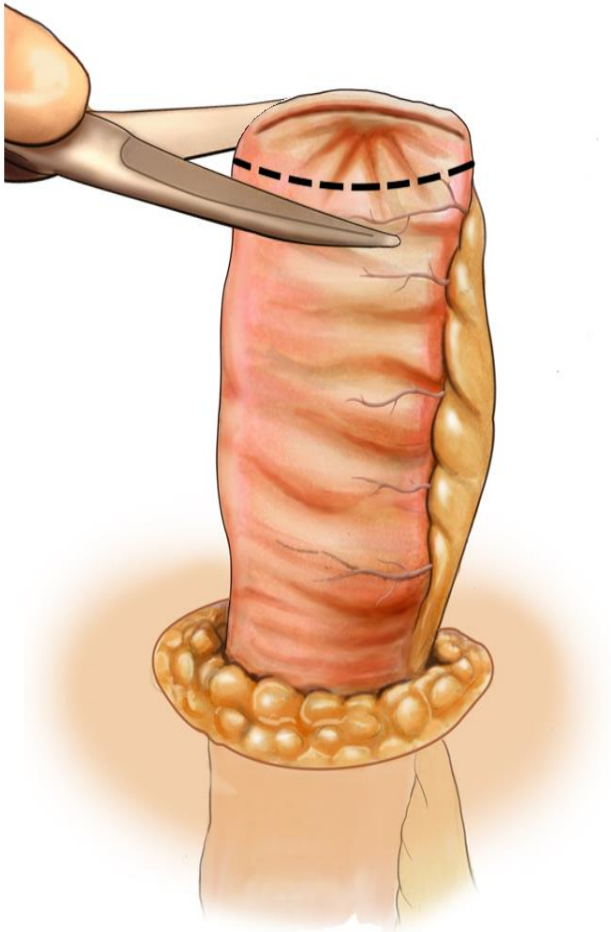
The bowel is everted with the proximal end forming the prominent ileostomy



Loop Ileostomy





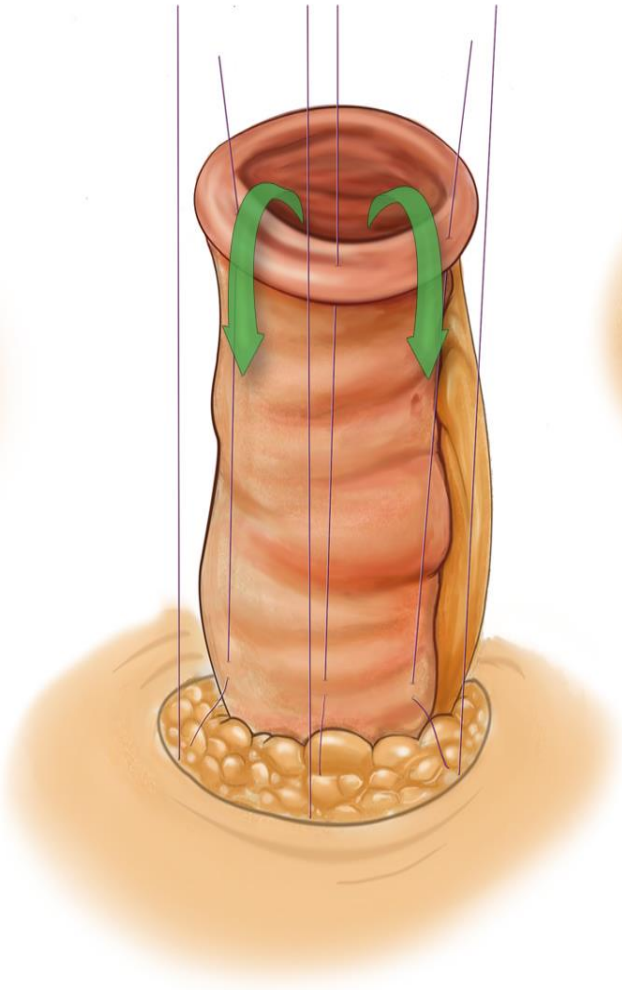


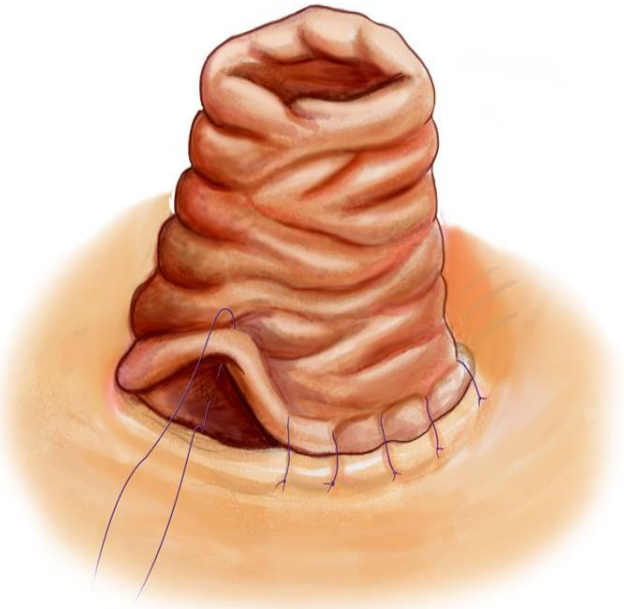
Terminal Ileum is brought to the skin surface.

Staple line is removed with scissors

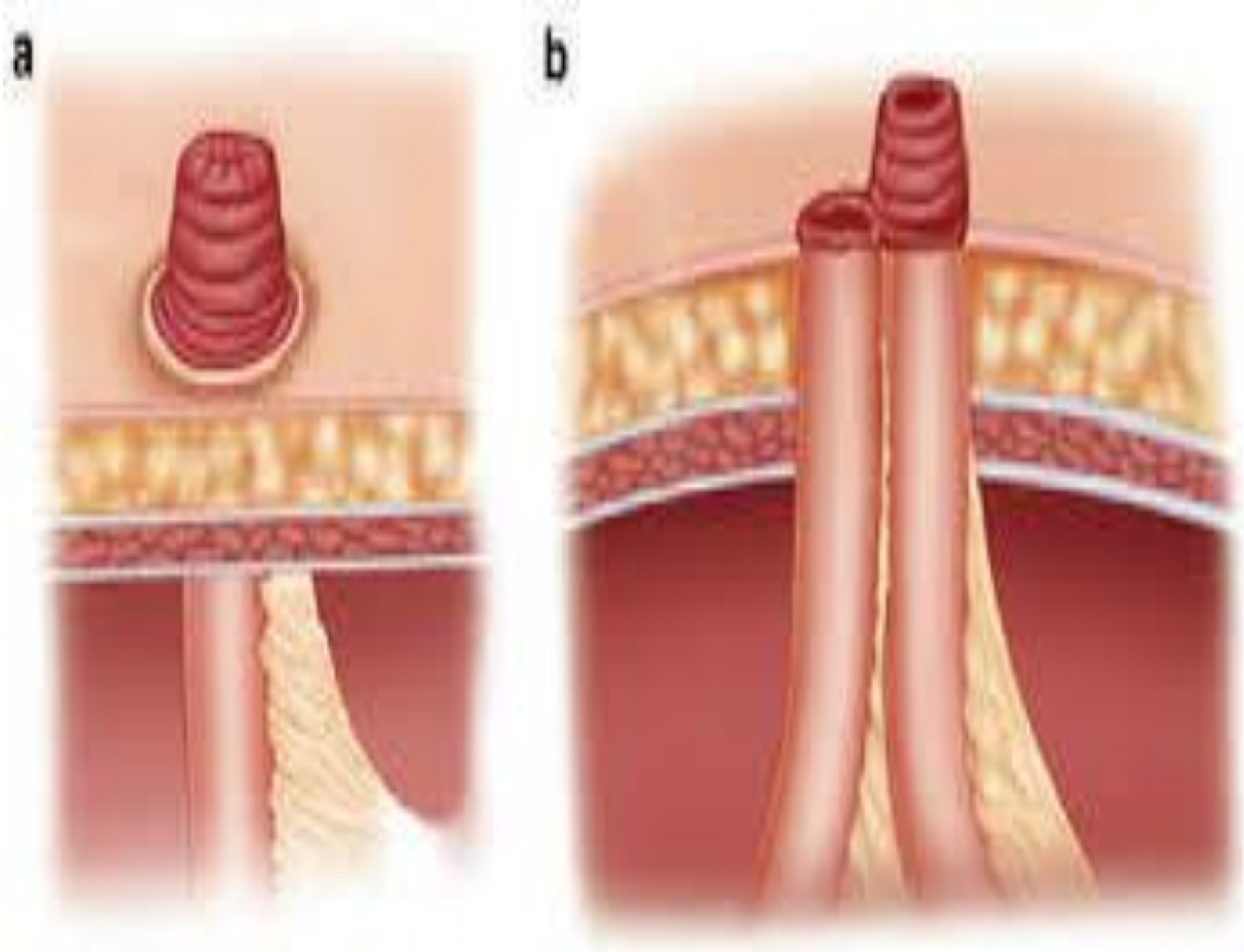
The Ileum is everted to create the prominent spout.

Sutures are placed to secure the stoma.





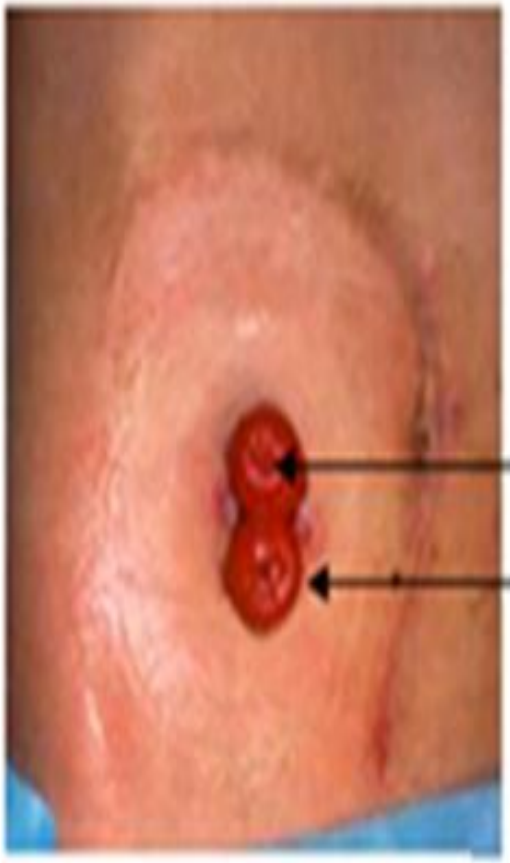
Appearance of TERMINAL ILEOSTOMY


a
b

TYPES OF COLOSTOMY:

- **Loop colostomy:** This type of colostomy is usually used in emergencies and is a temporary and large stoma.
  A loop of the bowel is pulled out onto the abdomen and held in place with an external device. The bowel is then sutured to the abdomen and two openings are created in the one stoma: one for stool and the other for mucus.
- **End colostomy:** A stoma is created from one end of the bowel. The other portion of the bowel is either removed or sewn shut (Hartmann's procedure).
- **Double barrel colostomy:** The bowel is severed and both ends are brought out onto the abdomen. Only the proximal stoma is functioning.

Double-Barrel Stomas



Proximal Stoma

Distal Stoma

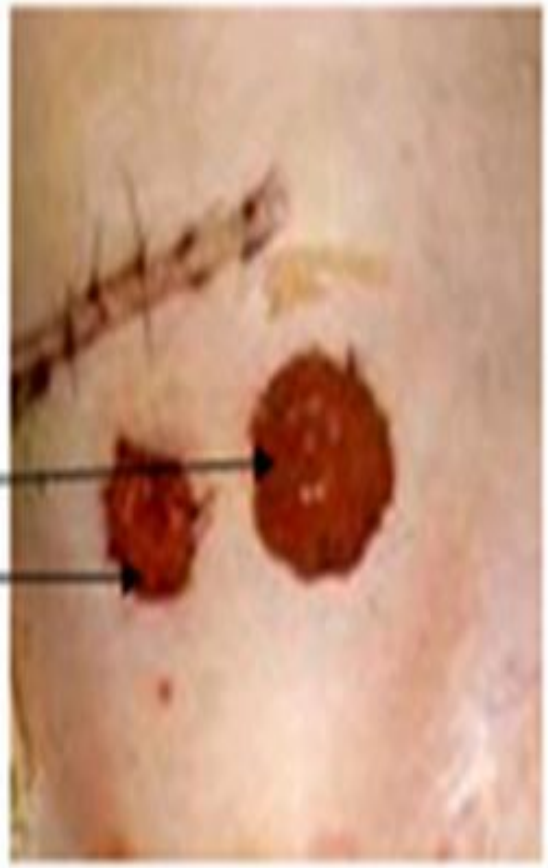
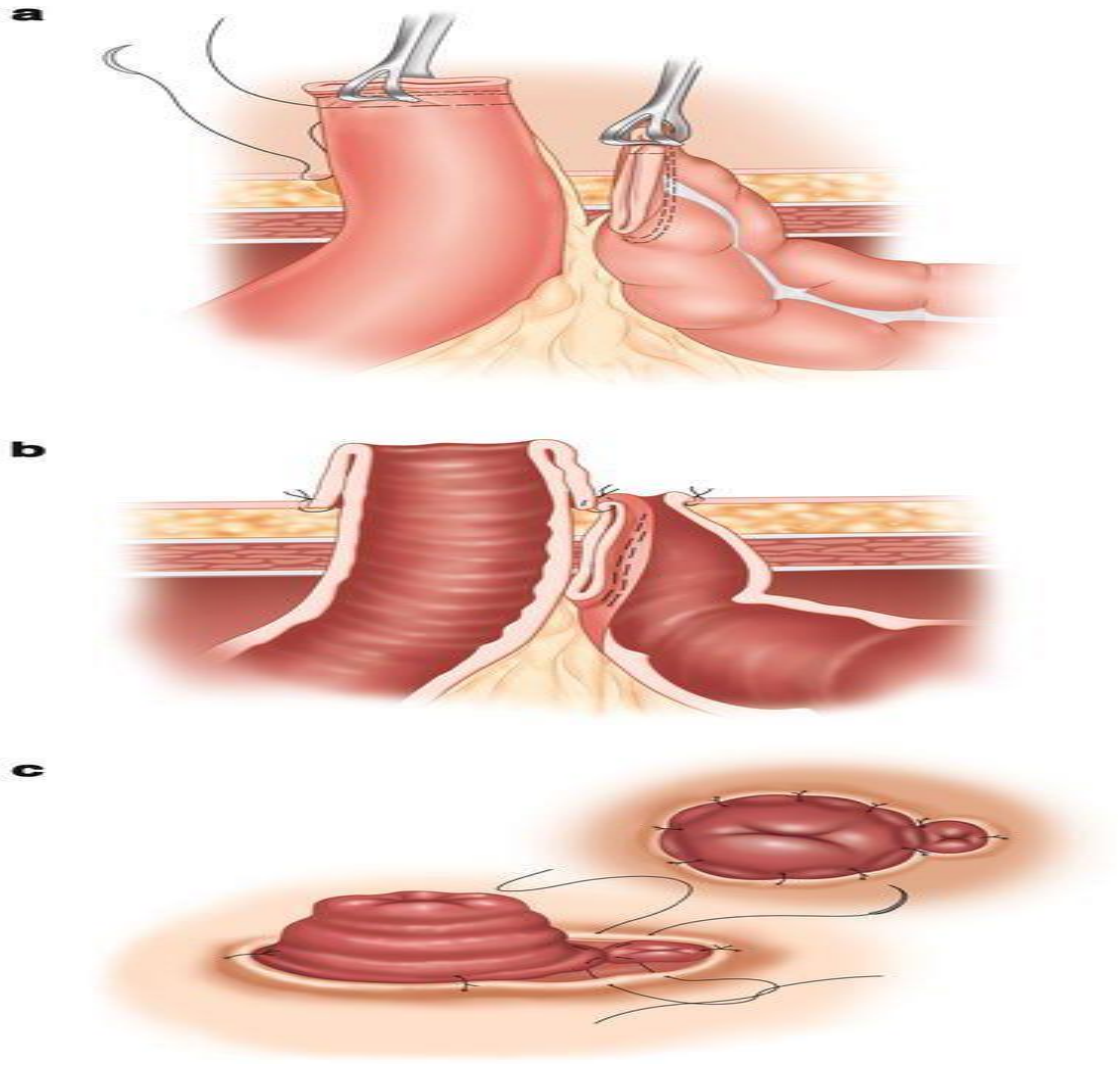


Photo C
Double-Barrel Stoma
Together

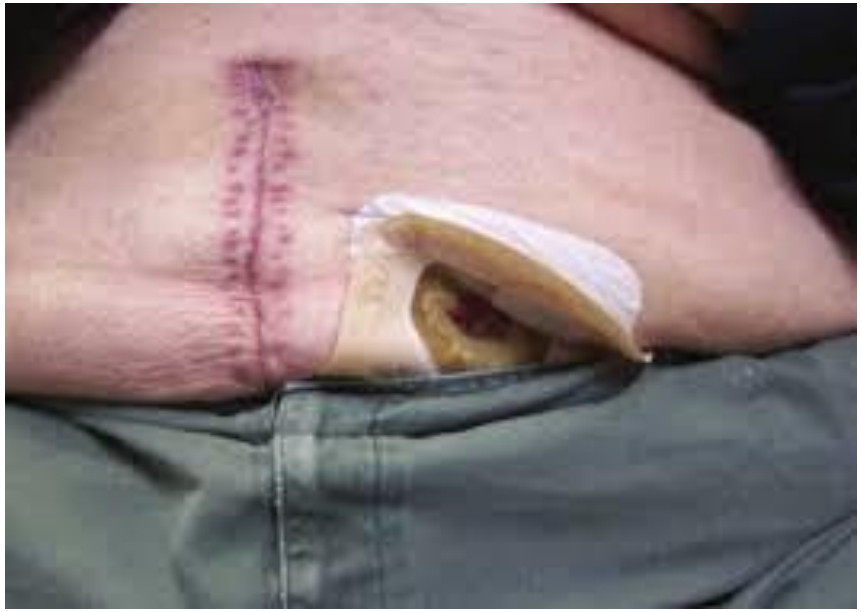
Photo D
Double-Barrel Stoma
Separated

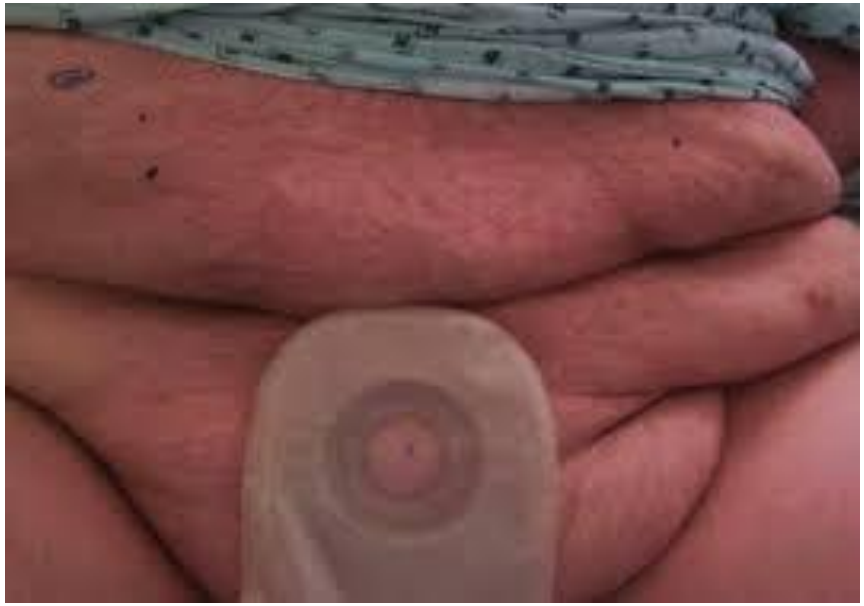
ABCARIAN STOMA



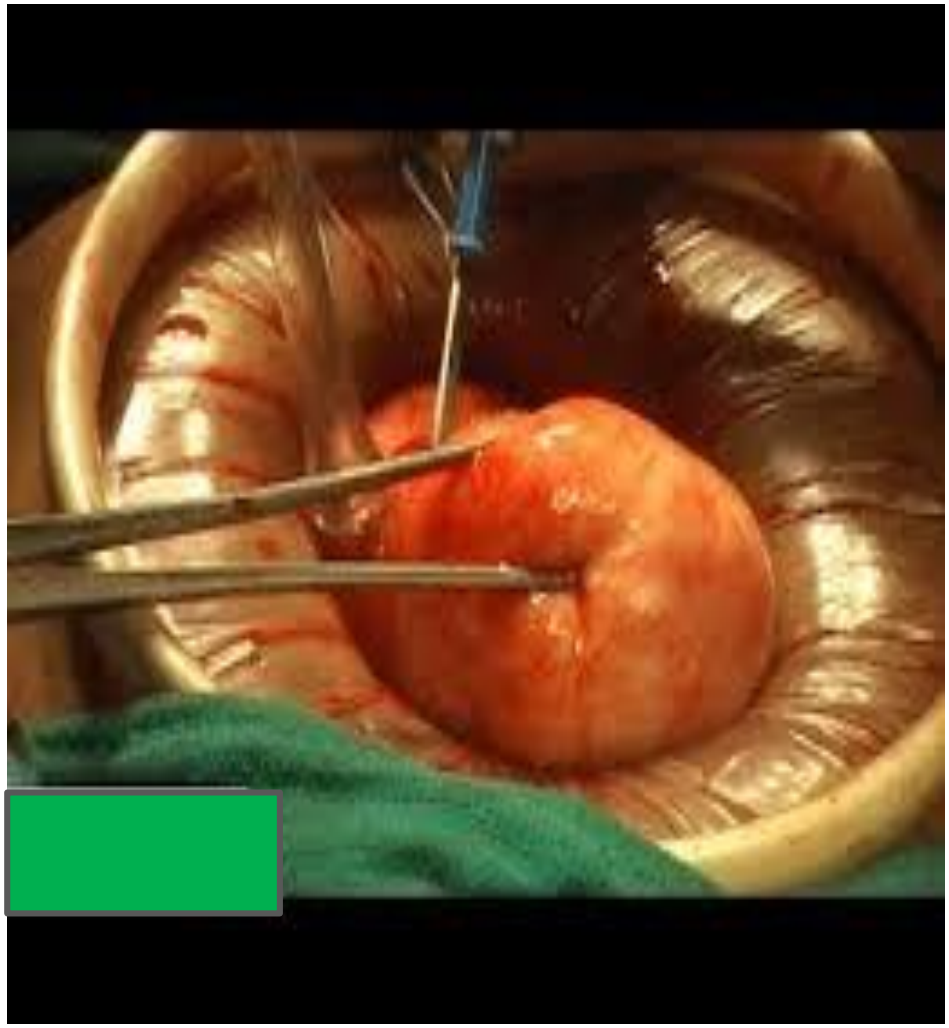
PROTRUSION, EVERSION AND ACHIEVING THE DIFFICULT STOMA

- Ileostomies should ideally protrude 2 cm
- Colostomies slightly above the skin
- Challenging in Obesity, and foreshortened mesenteries (e.g. Crohns, carcinoid tumours)





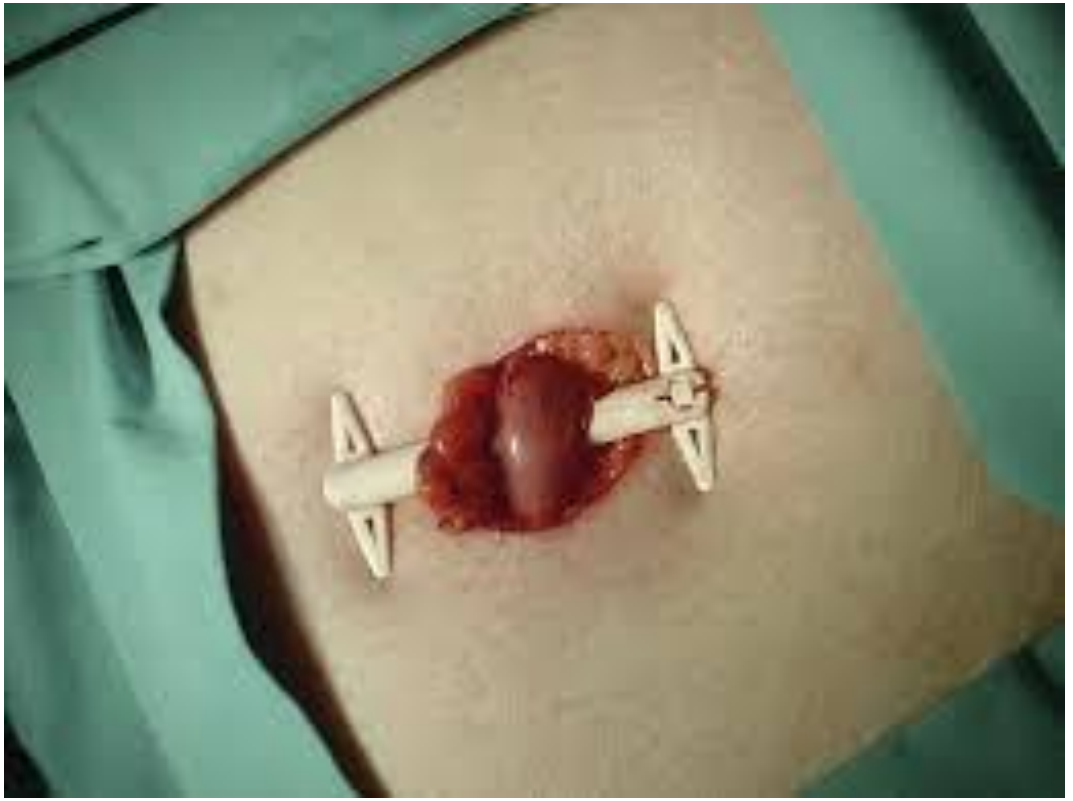
TECHNICAL STRATEGIES



- Selective mesenteric vessel ligation
- Use of a small wound protector through the stoma exit site to assist passage
- Marking additional stoma sites preoperatively in the obese, particularly supraumbilically where the abdominal wall is thinner.

CONTROVERSIAL TECHNIQUES SOMETIMES EMPLOYED IN STOMA CREATION INCLUDE:

- Use of stoma rods to prevent retraction
- Suture of bowel loops to abdominal fascia



Mmmm, Tastes like a combination of Who Cares?

&

So What?

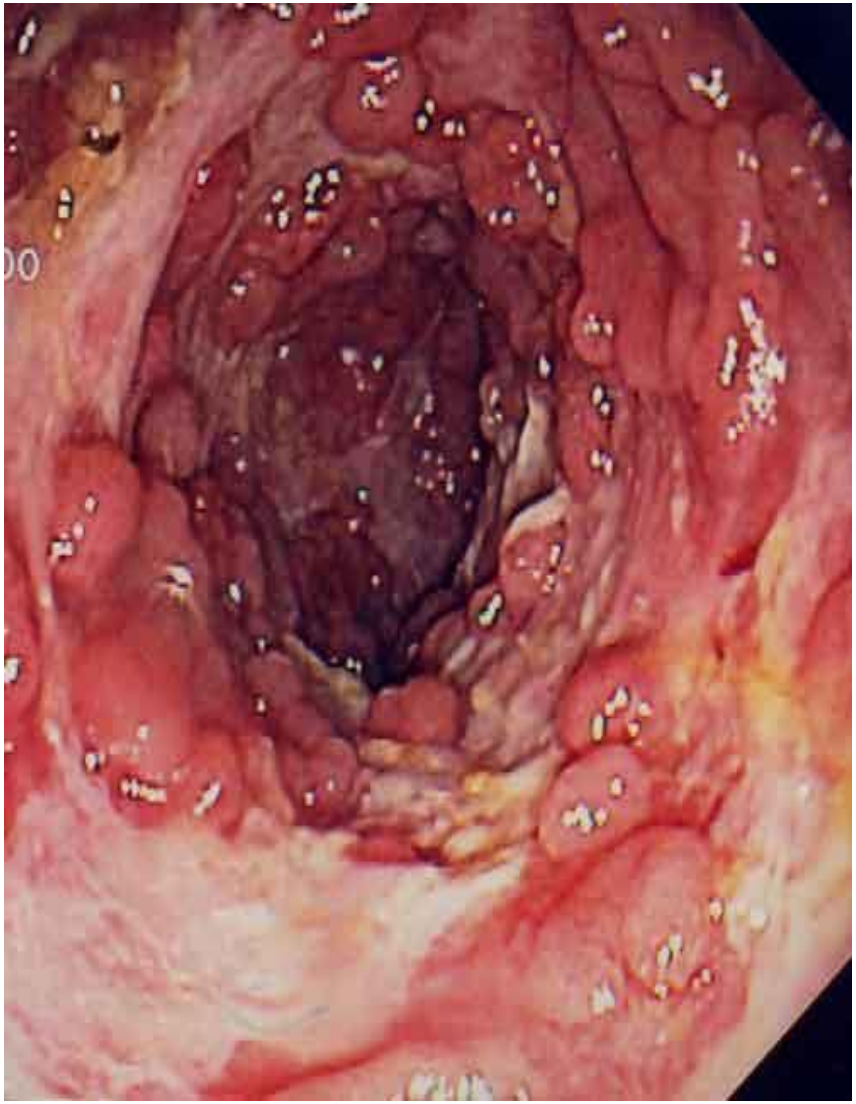
someecards
user card

POST-OPERATIVE COMPLICATIONS

High Stoma output ?

HIGH STOMA OUTPUT

Risk factors:



HIGH STOMA OUTPUT

Dehydration

- 30% of patients with new ileostomies
- Fluid and electrolyte replacement strategies
- Vitamin deficiencies and malnutrition
- Avoid kidney failure
- Dehydration and kidney failure are also the most common cause of unplanned readmission in stoma patients

Ileostomy consistency: Think TOOTH-PASTE!

COMPARISON BETWEEN STOMAS

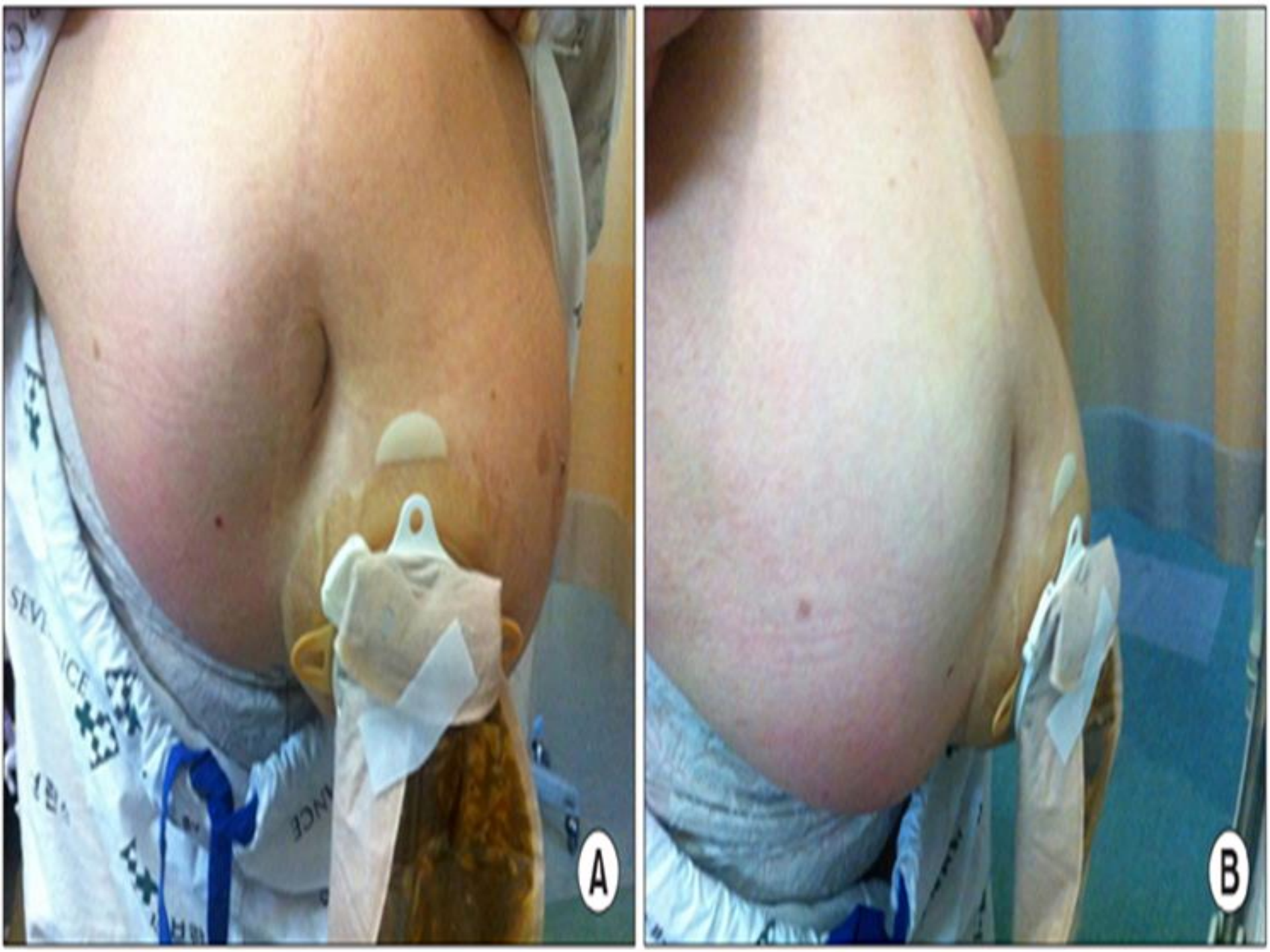
Table 1.

	Ileostomy	**Colostomy**
Site	Usually RIF	Usually LIF
Shape	Spouted. This is due to caustic nature of effluent which irritates surrounding skin (**high enzyme content**). Spout minimises this.	Flat/flush with skin
Effluent	Liquid to semi-liquid (small bowel contents)	Semi-solid to solid (faecal)
Output	**Low output:** 500 ml/day **High output:** 1 litre/day	200–300 ml/day (less with lower colostomies)

PARASTOMAL HERNIA

Risk factors:

- **Oversized apertures**
- **Obesity**
- **Advanced age**
- **Poor tissues / weak musculature**
- **Wound infections**
- **Smoking**
- **Increased abdominal pressure after surgery**


A
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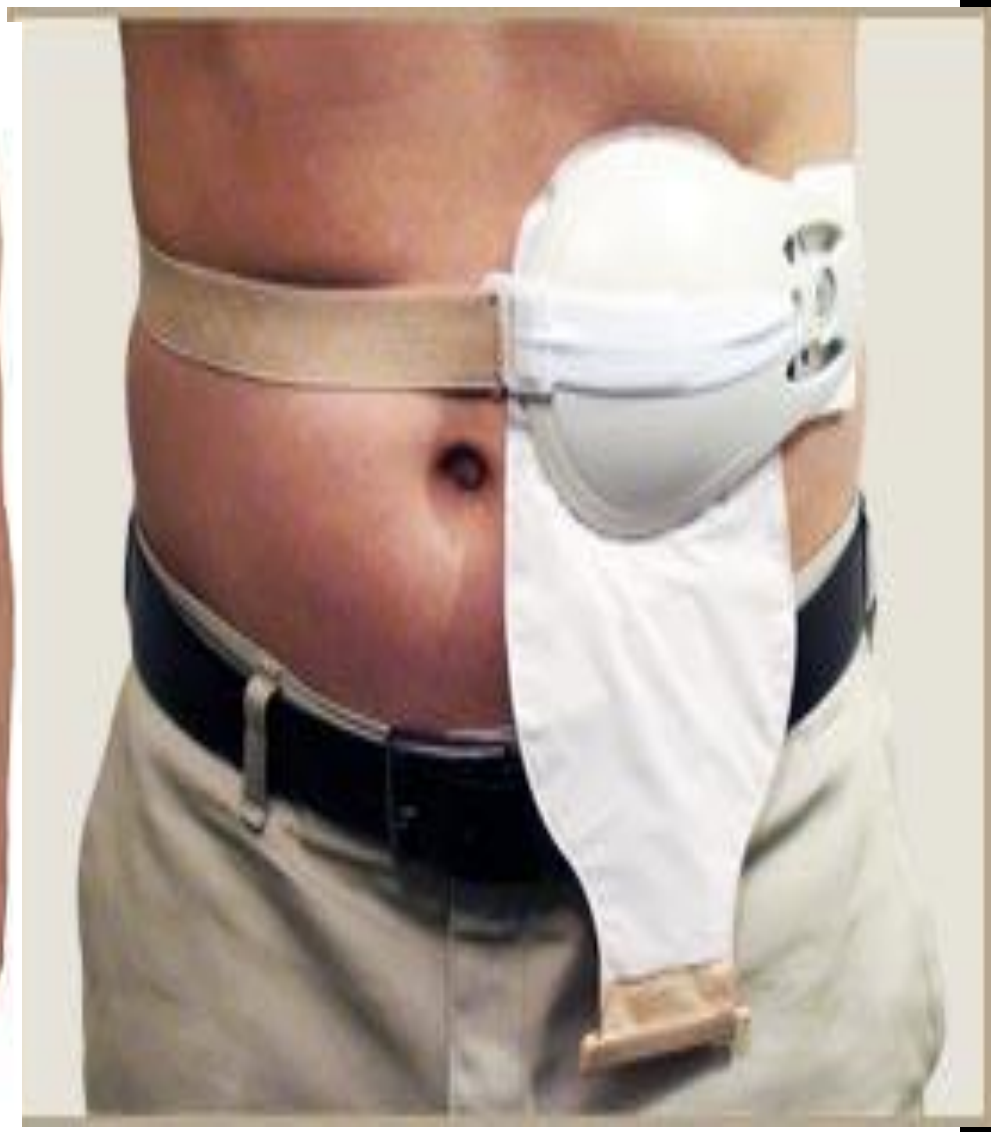
MANAGEMENT OF PARASTOMAL HERNIA



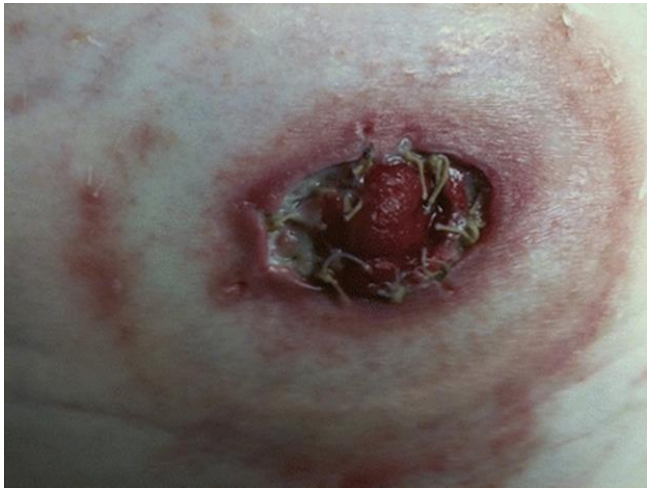
WHEN TO REFER?

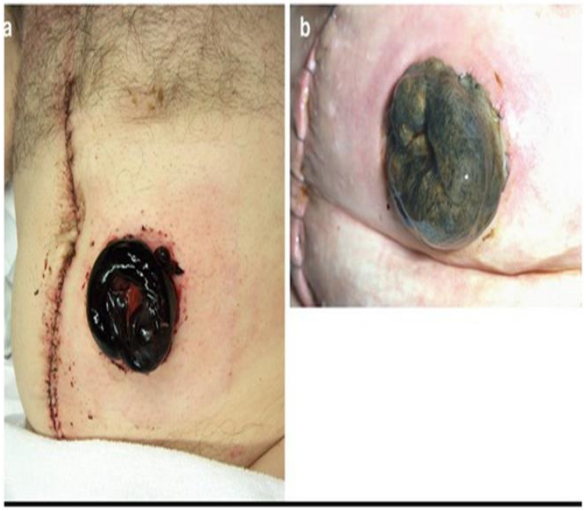
- Pain
- Bowel obstruction
- Incarceration/strangulation
- Other symptoms

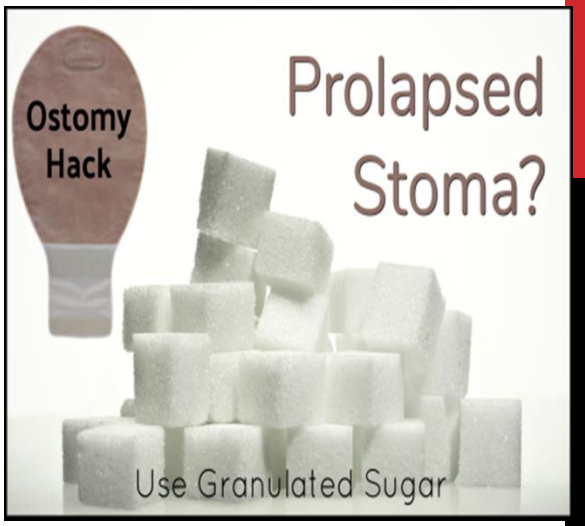
STOMAL BLEEDING

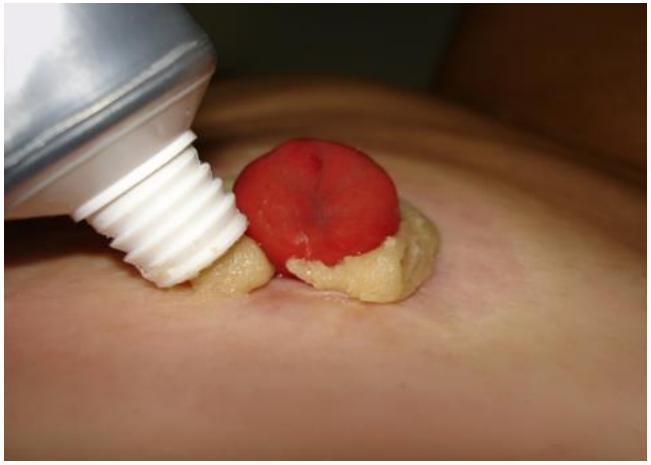
- Laceration and stomal bleeding most often occurs in patients with poor pouching technique
- Stoma rubs against an appliance resulting in trauma
- Stomal trauma is also more prevalent in patients with parastomal hernias and prolapse
- Management includes patient education and pouch resizing to eliminate the causative factors

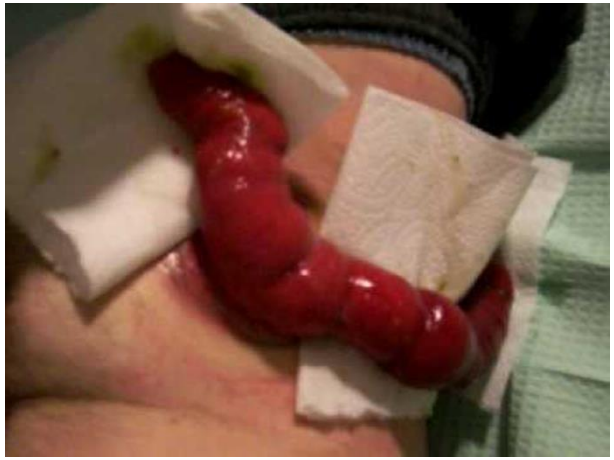
OTHER STOMAL COMPLICATIONS:

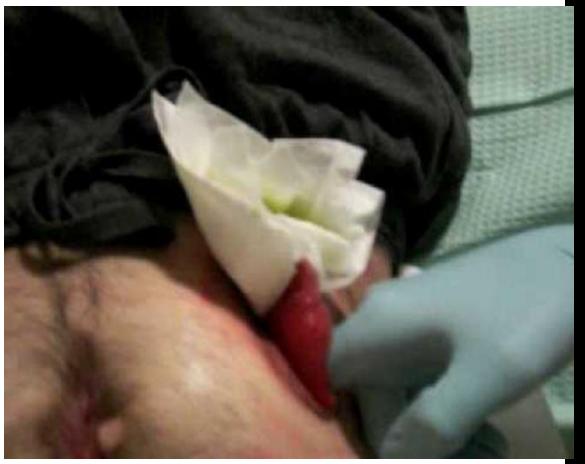


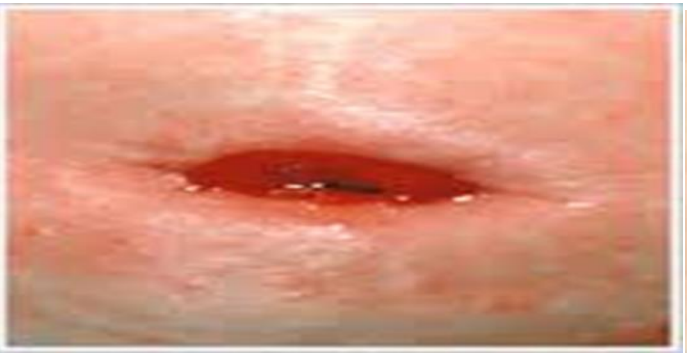


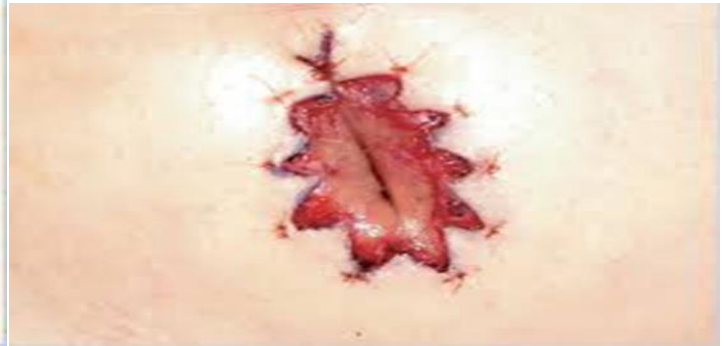








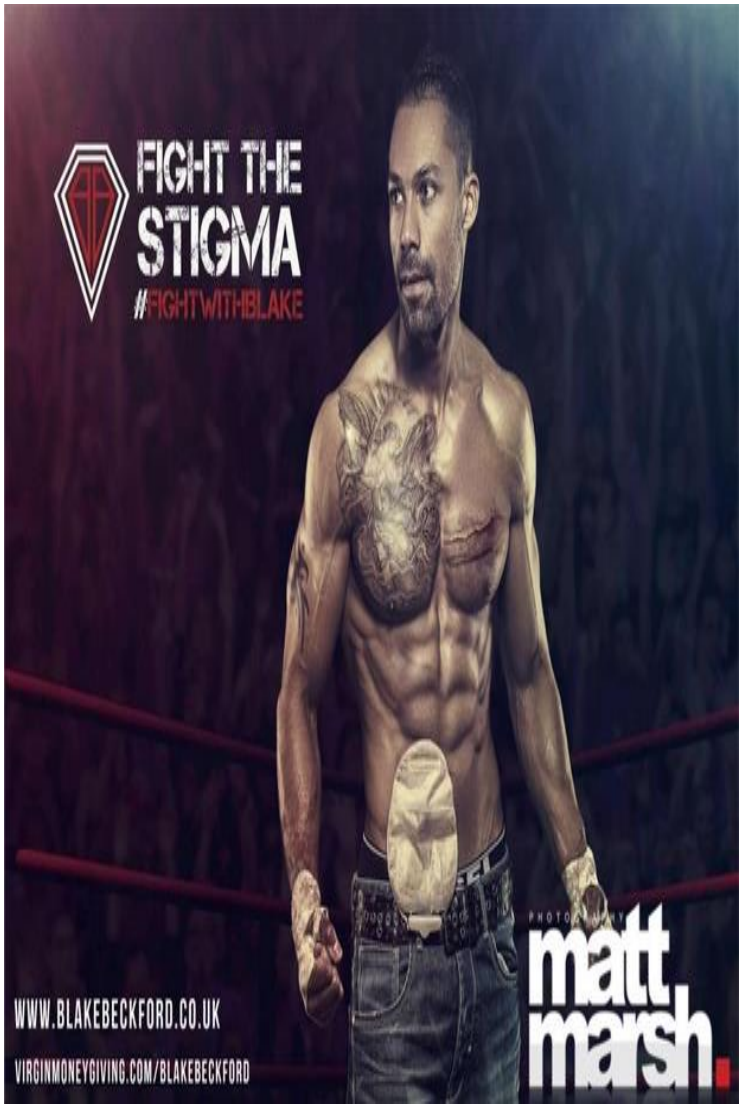


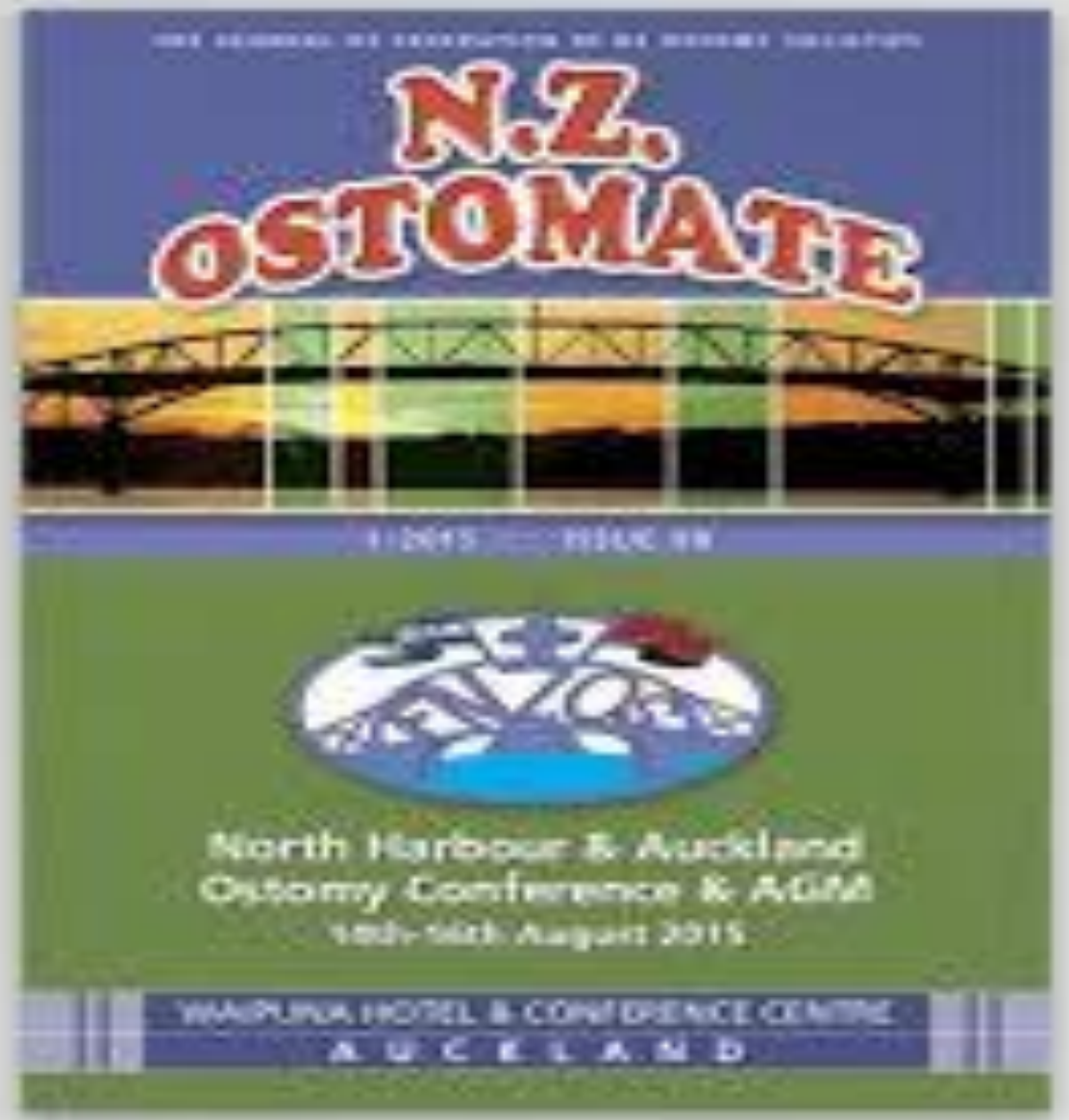


A PATIENT'S AND SOCIETY'S PERSPECTIVE

- Malodorous
- Noisy
- Unable to eat normal food
- Unable to exercise
- Unable to wear normal clothes
- Unable to bath, shower, or swim
- Unable to work
- Unable to travel
- Unable to have sex
- Loss of partner and friends

“THE STOMA EFFECT”




N.Z. OSTOMATE
North Harbour & Auckland
Ostomy Conference & AGM
WAIPUNA HOTEL & CONFERENCE CENTRE
AUCKLAND

My body tried to kill me. Yet I survived. But it left behind a constant reminder that I must look at daily. I know what it's like to see your reflection in the mirror and feel unattractive. I used to be disgusted at the very thing that restored my health. But then I realized, that anything that has the power to save a life can be nothing but beautiful.

-Gaylyn