

# Stoma formation

## Patient details

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## Notes

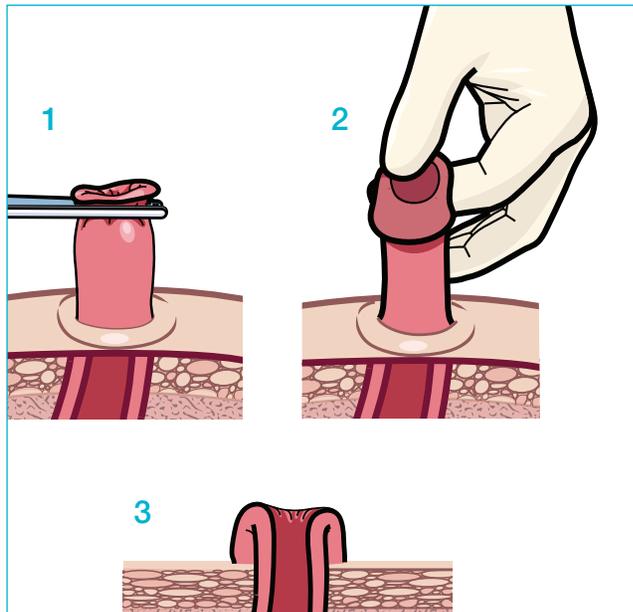
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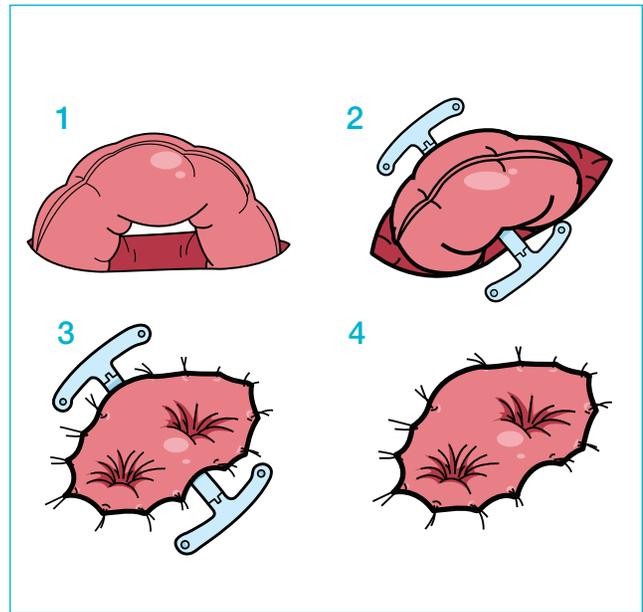
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### Formation of an end stoma



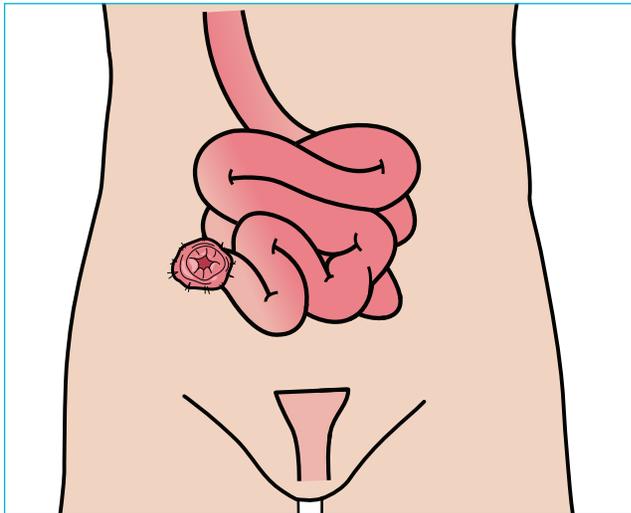
### Formation of a loop stoma



A stoma is a surgically created opening in the small or large bowel. A stoma may be either an end stoma or a loop stoma. An end stoma is made when just one end of bowel is brought through the abdominal wall, everted and stitched to the skin surface of the abdomen. A loop stoma is formed when a loop of bowel is brought through the abdominal wall and opened to reveal two ends. Sometimes a bridge or rod is passed underneath the loop to rest on the skin for 3 -10 days. Both end and loop stomas may be permanent or temporary depending on the diagnosis and the type of surgery you have had.

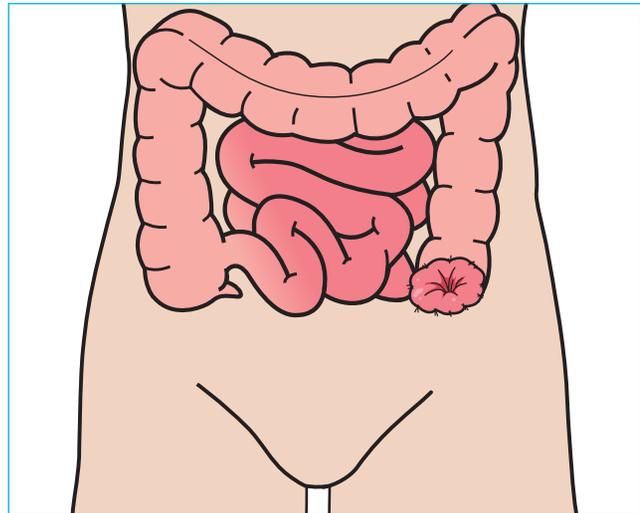
# Stoma formation

## 1. Ileostomy



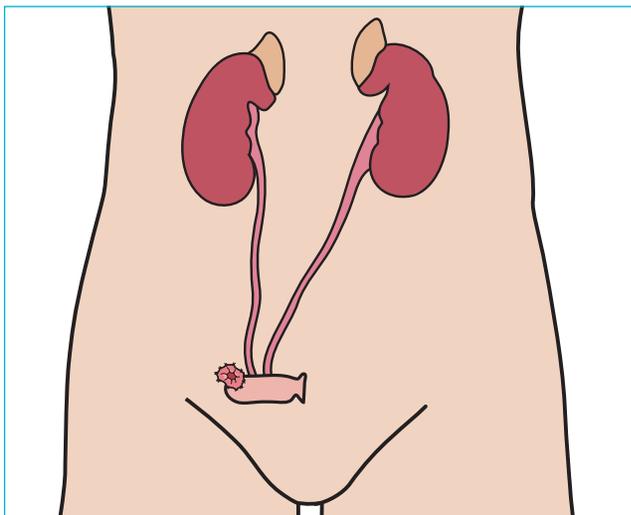
An ileostomy is the second most common type of stoma formed and is positioned in the small bowel. It is usually round or oval in shape and protrudes approximately 2.0–3.0 cm from skin level to form a spout. Output from an ileostomy is usually loose watery stools. An ileostomy may be either temporary or permanent, depending on the type of surgery you have had. Having an ileostomy means that you will need a bag to collect faeces as control of defecation is lost.

## 2. Colostomy



A colostomy is the most common type of stoma formed and is positioned in the large bowel. It is usually round or oval in shape and should protrude approximately 0.5–1.0 cm. Output from a colostomy will differ depending on where in the large bowel the stoma is positioned. It may be formed, similar to a normal stool, or slightly looser. Having a colostomy means that you will need a bag to collect faeces as control of defecation is lost.

## 3. Urostomy (Bricker bladder)



During a 'bricker bladder' procedure a section of bowel is isolated and made to act as an outlet for urine. The ureters are detached from the bladder and re-attached to a small section of bowel that has been isolated from the rest of the bowel. One end of the section is sewn up, while the other end is passed out to the abdominal skin as a stoma. The stoma usually protrudes 2.0 cm above skin level. The section of bowel is too small to function as a reservoir and there is no muscle or valve to retain urine and control urination. This means that you will need a urostomy bag to collect the constant flow of urine.

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# Abdomino-perineal excision of rectum

## Patient details

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## Notes

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## The digestive system

Oesophagus

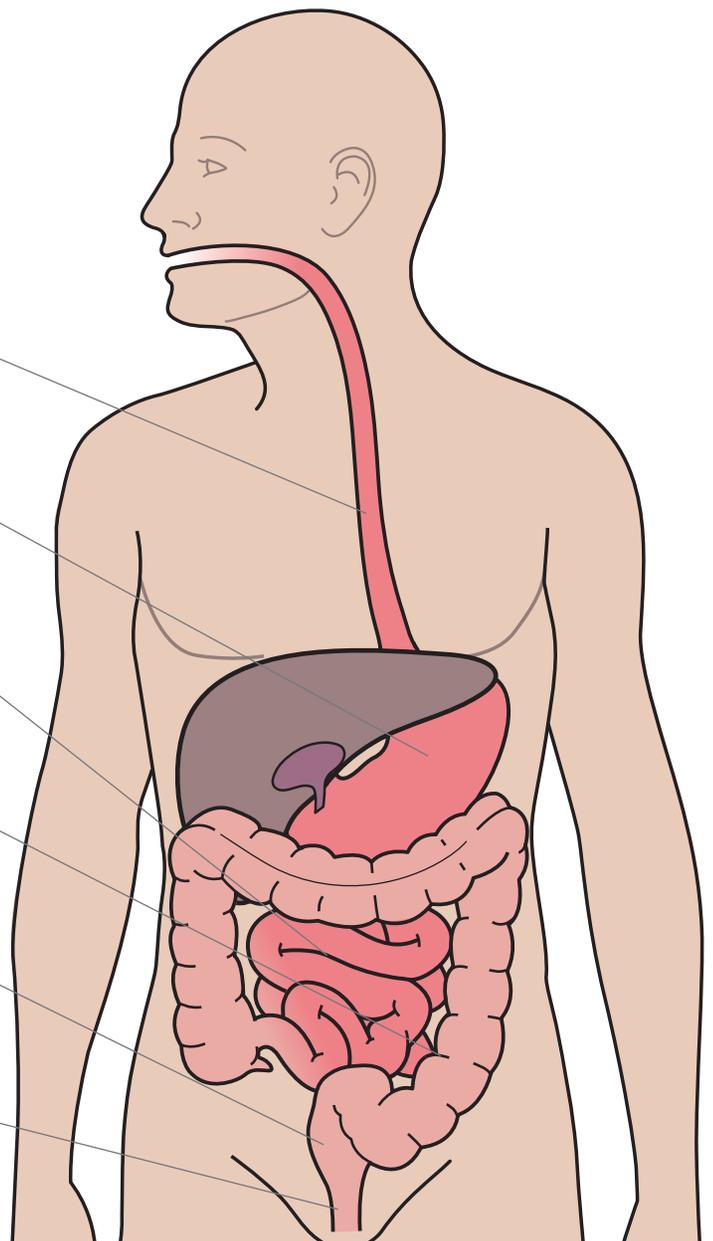
Stomach

Small bowel (ileum)

Large bowel (colon)

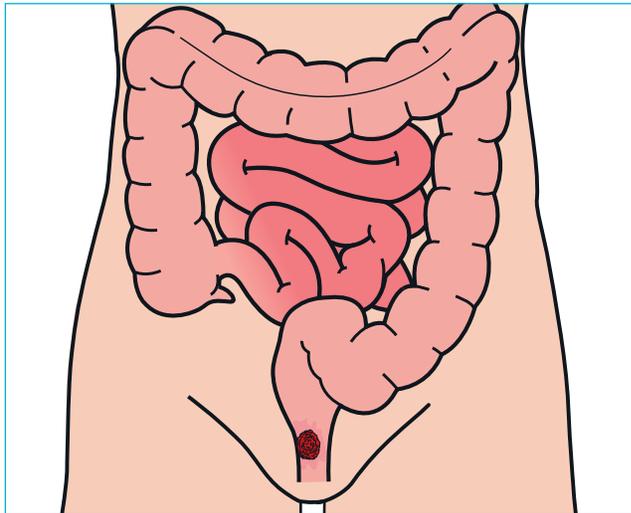
Rectum

Anus



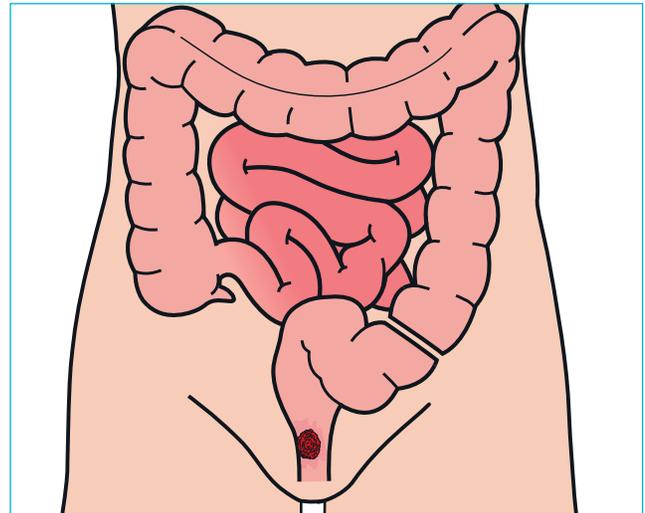
# Abdomino-perineal excision of rectum

## 1. Cancerous growth



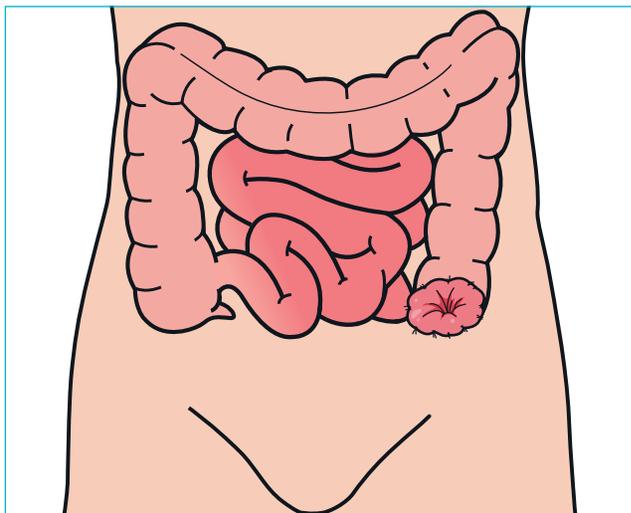
APER surgery is a procedure that involves removing the whole of the diseased part of the bowel including the rectum and anus. The rectum is removed by performing surgery through both the abdomen and the perineum (the area between the anus and the genitals).

## 2. Removal of rectum and anus



The surgical procedure includes removal of the diseased rectum, some of the colon, and the anus.

## 3. Colostomy



During surgery, part of the healthy colon is brought to the surface of the abdomen to form a stoma (an opening). This type of stoma is called a colostomy; it enables the body to expel waste matter after digestion.

# Hartmann's procedure

## Patient details

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## Notes

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## The digestive system

Oesophagus

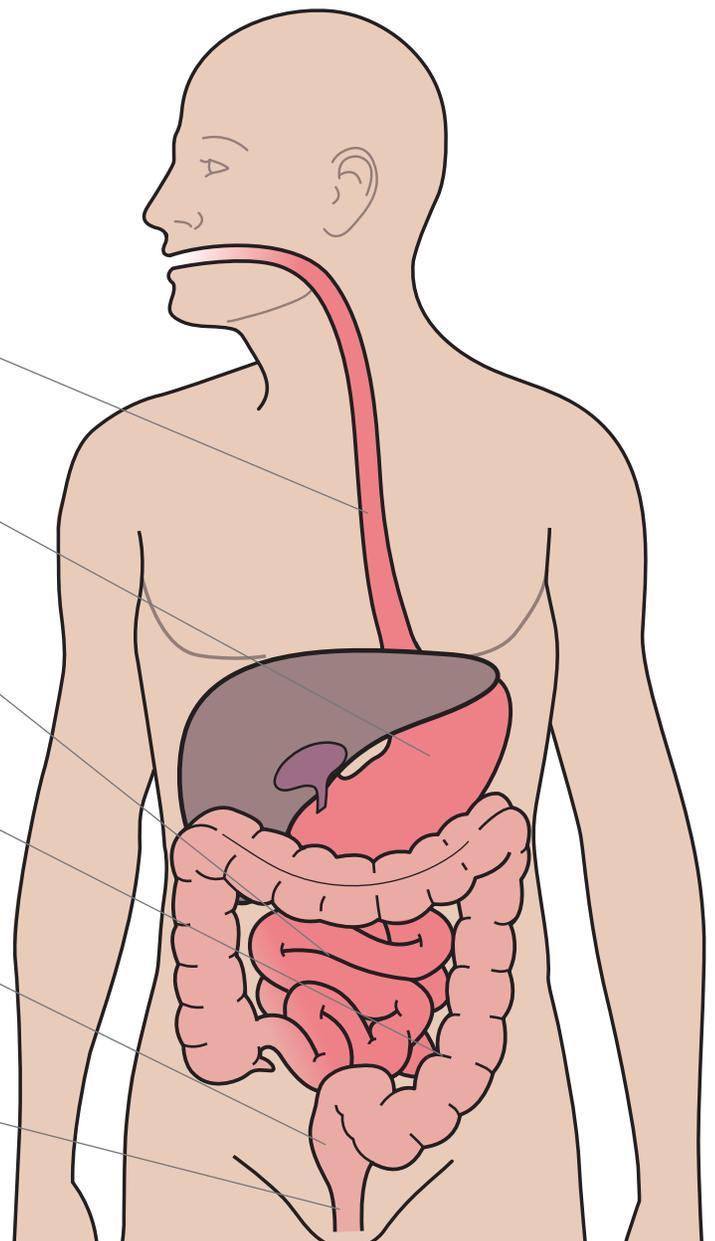
Stomach

Small bowel (ileum)

Large bowel (colon)

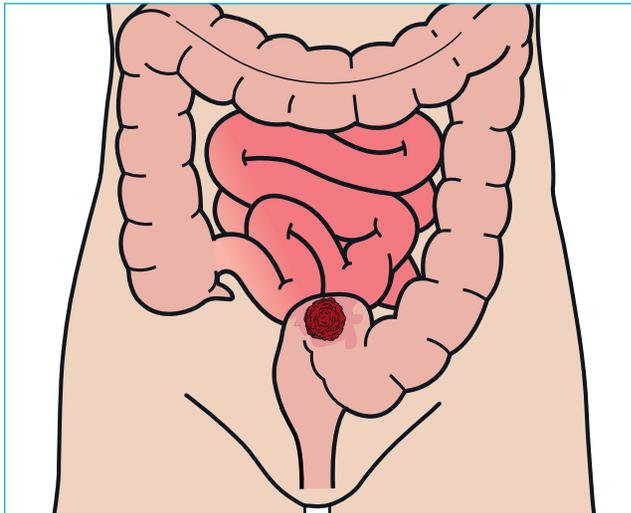
Rectum

Anus



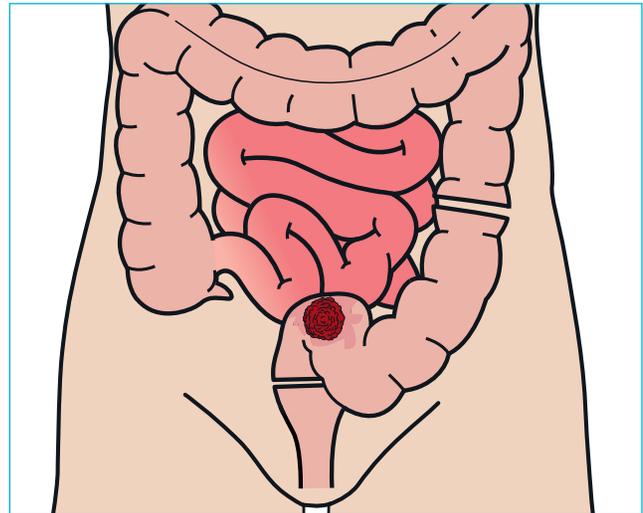
# Hartmann's procedure

## 1. Cancerous growth



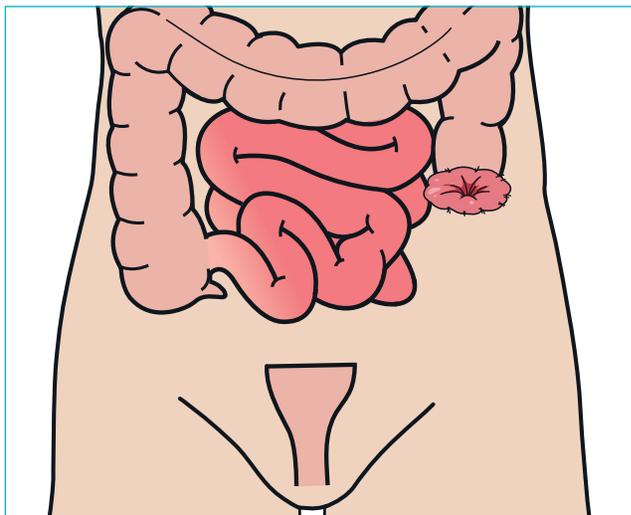
A Hartmann's procedure is a type of surgery used in a variety of bowel problems including cancer and diverticular disease.

## 2. Removal of colon and rectum



Surgery involves removing the diseased section of the bowel and creating an alternative path for faeces (waste matter) to be expelled.

## 3. Colostomy and non-functional end of bowel



Once the diseased part has been removed, the healthy end of the large bowel is brought to the surface of the abdomen to form a stoma (an opening), this is called a colostomy. The non-functioning end of the bowel is usually stapled shut inside the abdomen; in some cases it may be brought to the skin surface to drain (a 'mucus fistula').

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# Low anterior resection

## Patient details

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## Notes

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## The digestive system

Oesophagus

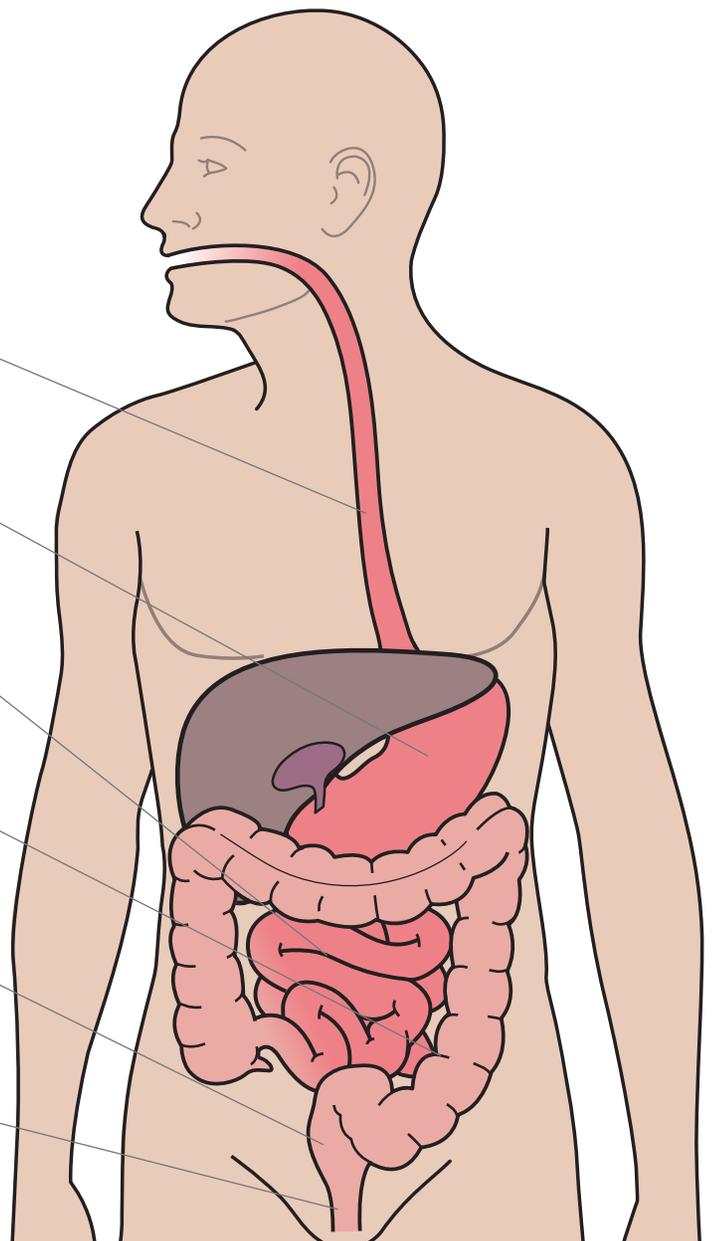
Stomach

Small bowel (ileum)

Large bowel (colon)

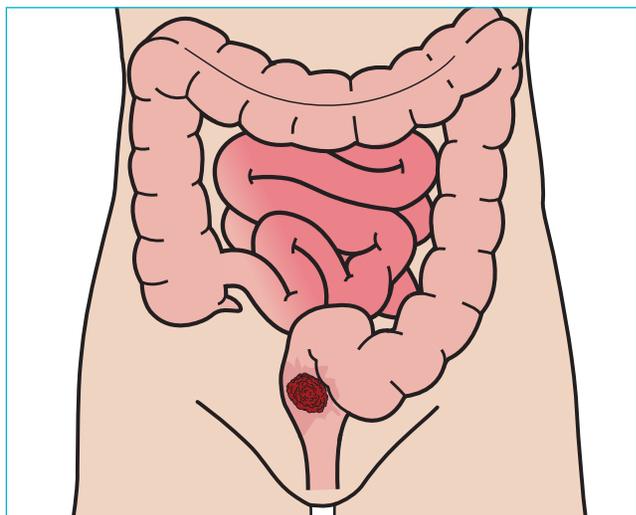
Rectum

Anus



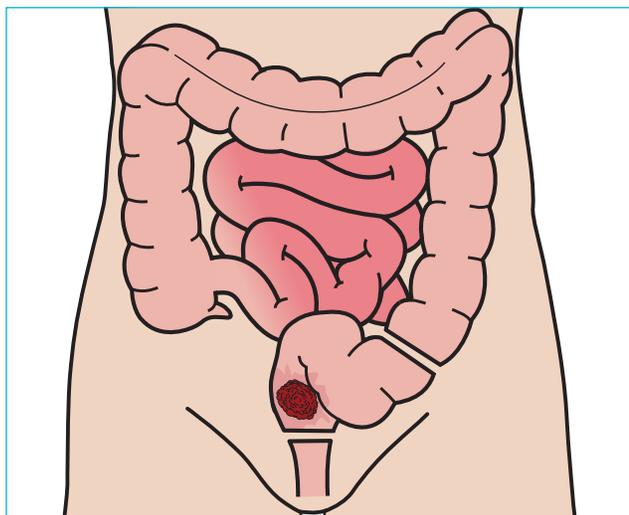
# Low anterior resection

## 1. Cancerous growth



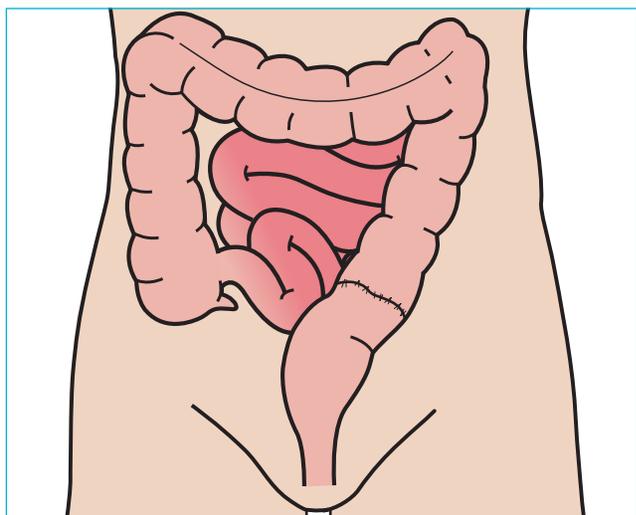
LAR is a type of surgery often used to remove a diseased part of the mid to lower rectum, where there is enough healthy bowel to join back together.

## 2. Removal of rectum



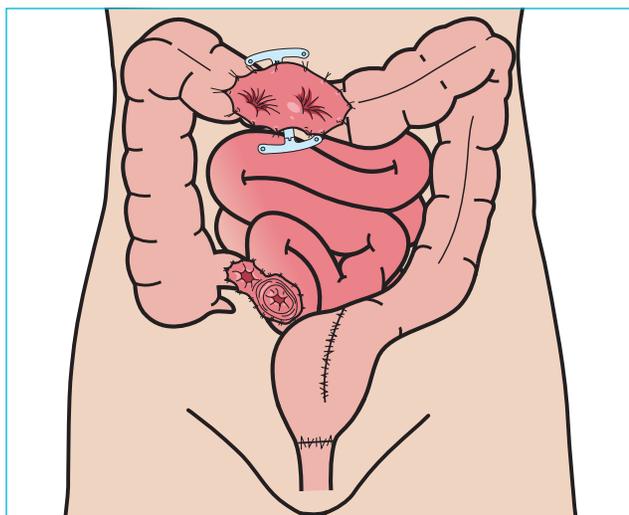
The surgical procedure is called 'total mesorectal excision' (TME): the diseased rectum and some of the colon are removed.

## 3. Large bowel is joined to the anus



The remaining part of the colon is joined to the anus.

## 4. Formation of pouch & temporary loop stoma



While the surgery is healing, faeces (waste matter) need to be expelled from the body by an alternative path. Usually this involves bringing a healthy part of the bowel to the surface of the abdomen to form a temporary loop stoma (an opening). In the small bowel the stoma is called an ileostomy, in the large bowel it is a colostomy. Sometimes a pouch is made from the colon, to avoid living with a stoma. When the join in the bowel or the new pouch has healed, the loop ileostomy or colostomy will be reversed.

# Total colectomy

## Patient details

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## Notes

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## The digestive system

Oesophagus

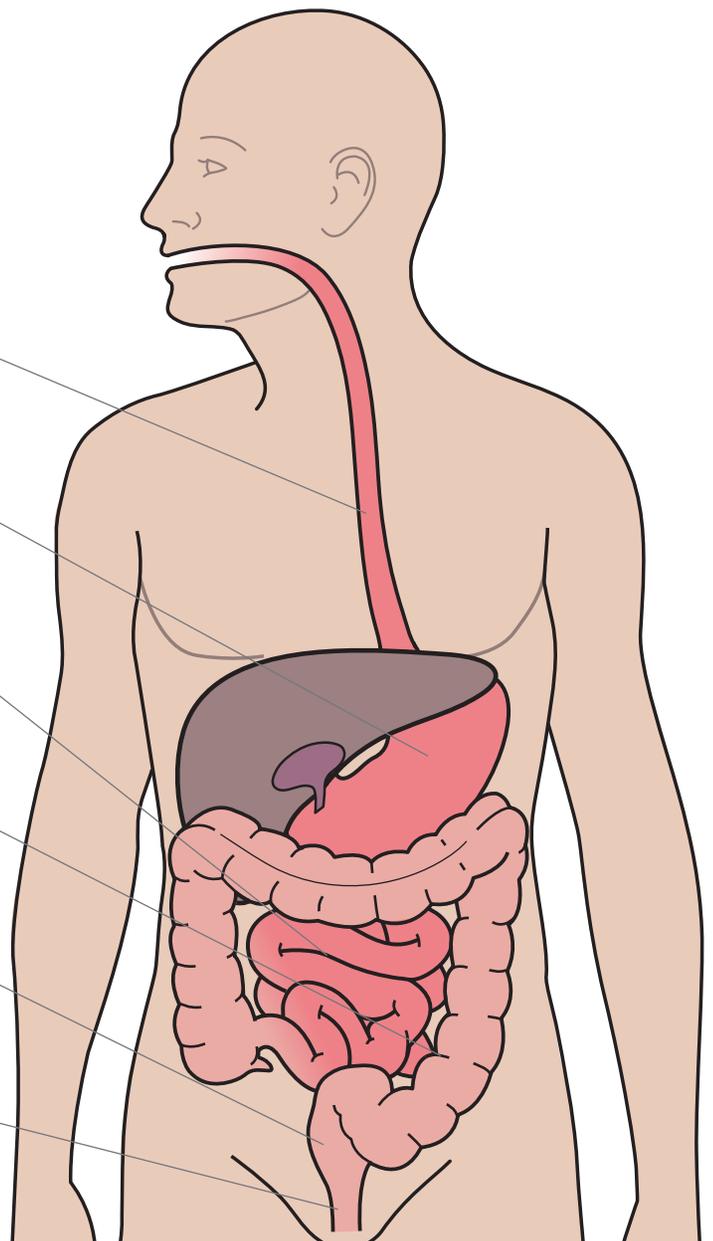
Stomach

Small bowel (ileum)

Large bowel (colon)

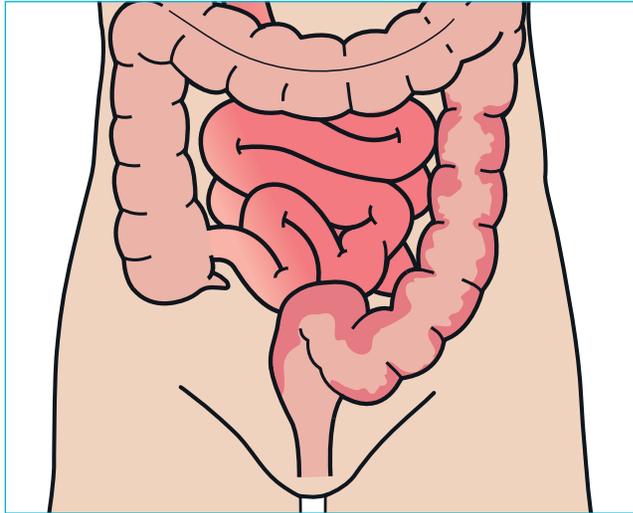
Rectum

Anus



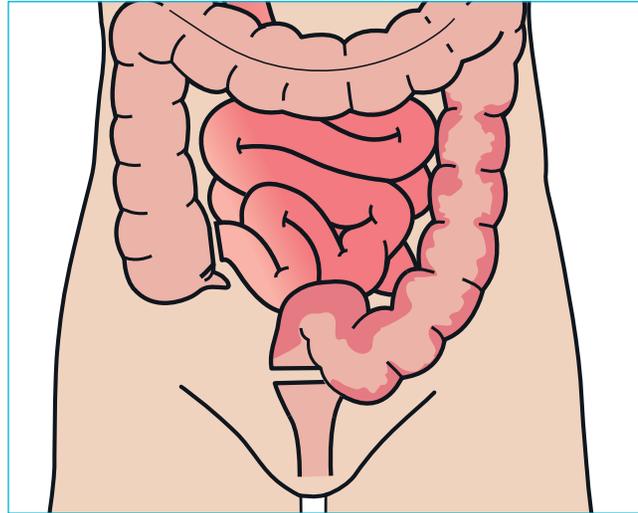
# Total colectomy

## 1. Diseased colon/rectum



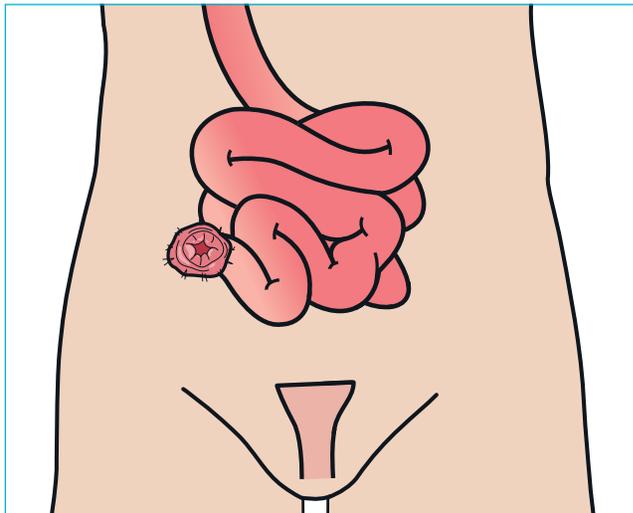
Some bowel problems such as cancers, Crohn's disease, and ulcerative colitis mean that all, or most, of the large bowel needs to be removed.

## 2. Removal of the large bowel



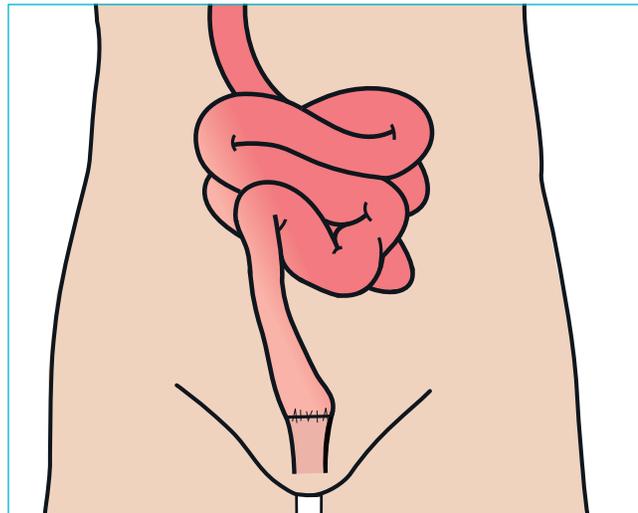
Surgery involves taking away the diseased large bowel; then either joining the small bowel to the anus (see image 4), or creating a new opening (a stoma) so that waste products from digested food can be expelled from the body (see image 3).

## 3. Ileostomy and non-functional end of bowel



When a stoma is formed by bringing the healthy end of the small bowel to the surface of the abdomen it is called an ileostomy. With a permanent ileostomy, the nonfunctioning part of the bowel (rectum) is usually stapled shut inside the abdomen. An ileostomy may be used temporarily, to deal with waste matter while a join or pouch is healing.

## 4. Small bowel is joined to anus



In some cases the healthy end of the small bowel can be connected to the anus. This reconnection may also include forming a pouch to help improve future bowel function.

# Pan-proctocolectomy

## Patient details

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## Notes

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## The digestive system

Oesophagus

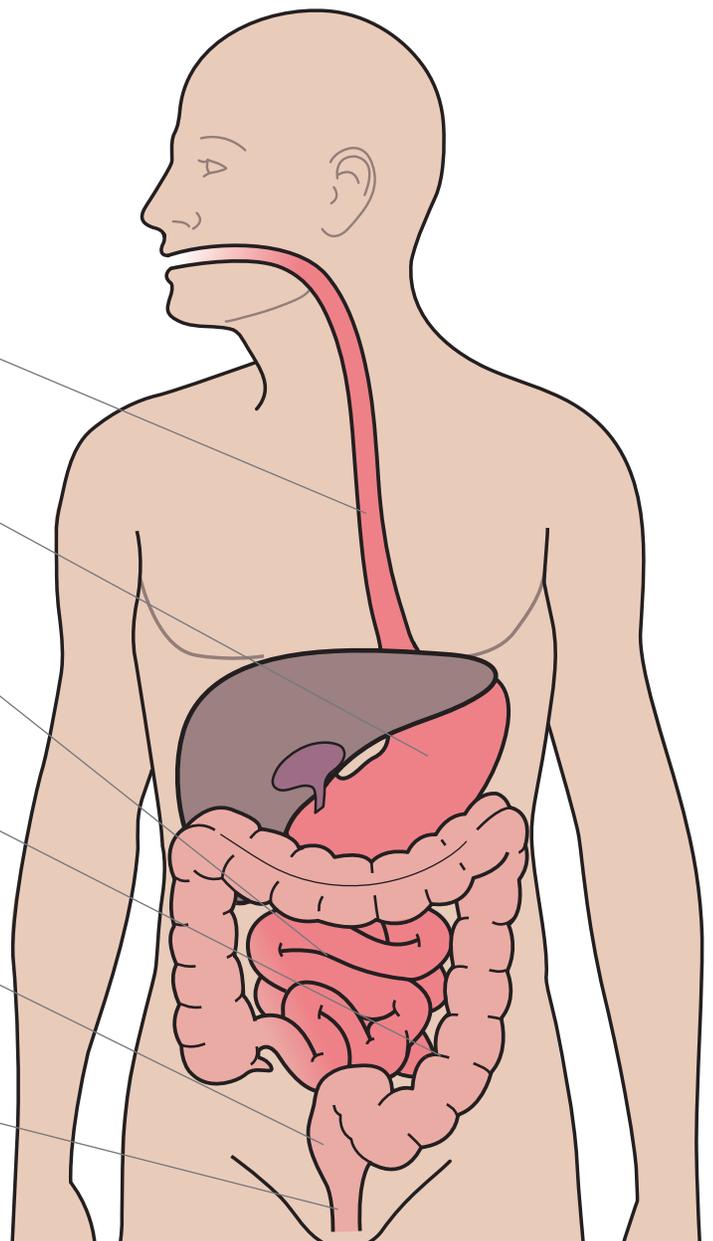
Stomach

Small bowel (ileum)

Large bowel (colon)

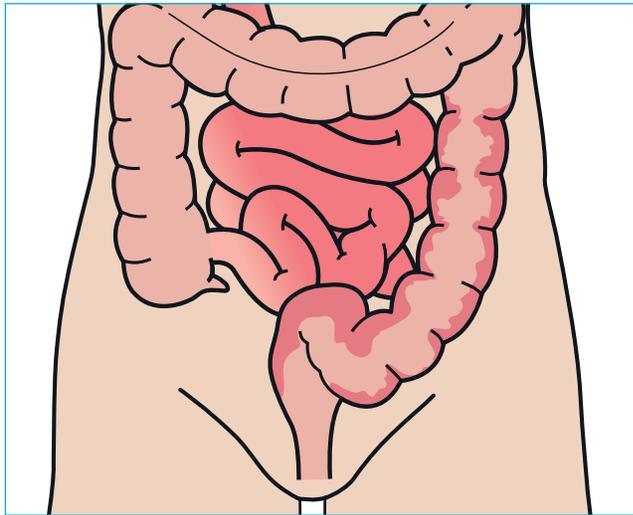
Rectum

Anus



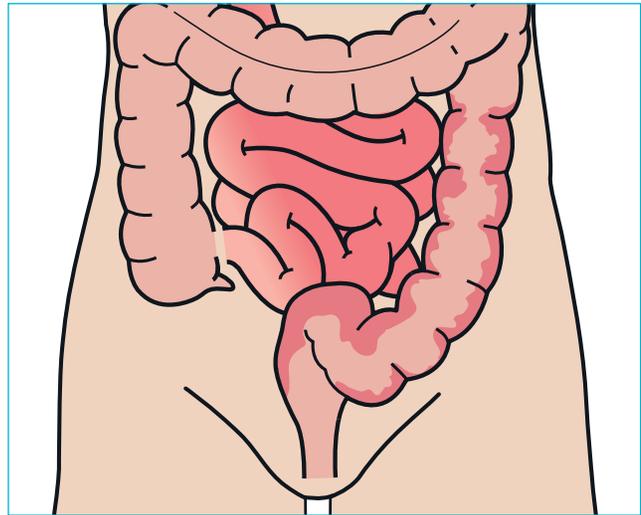
# Pan-proctocolectomy

## 1. Diseased large bowel (colon)



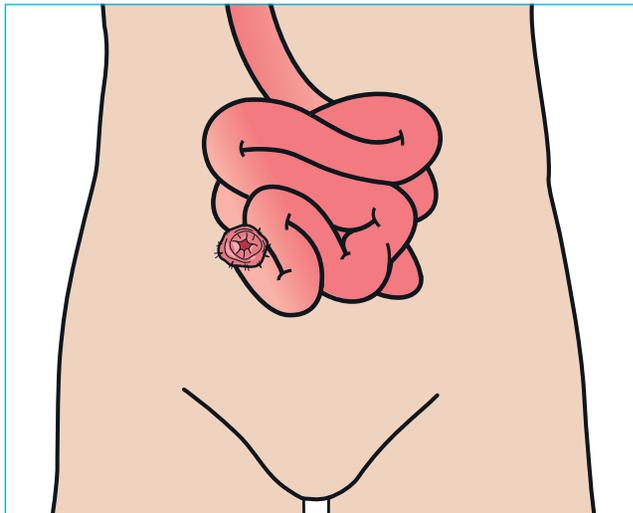
A pan-proctocolectomy is a surgical procedure used mainly in ulcerative colitis, Crohn's disease, familial adenomatous polyposis (FAP), or where there is widespread disease in the large bowel and rectum.

## 2. Large bowel and rectum are removed



Surgery involves removing the whole of the diseased large bowel, the rectum and the anus, then creating an alternative opening to complete the digestive system.

## 3. Healthy small bowel - Ileostomy



Once the large bowel and rectum have been removed, the healthy end of the small intestine is brought to the surface of the abdomen to form a stoma (an opening). This type of stoma is called an ileostomy, it enables the body to expel waste matter after digestion.

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# Indiana pouch

## Patient details

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## Notes

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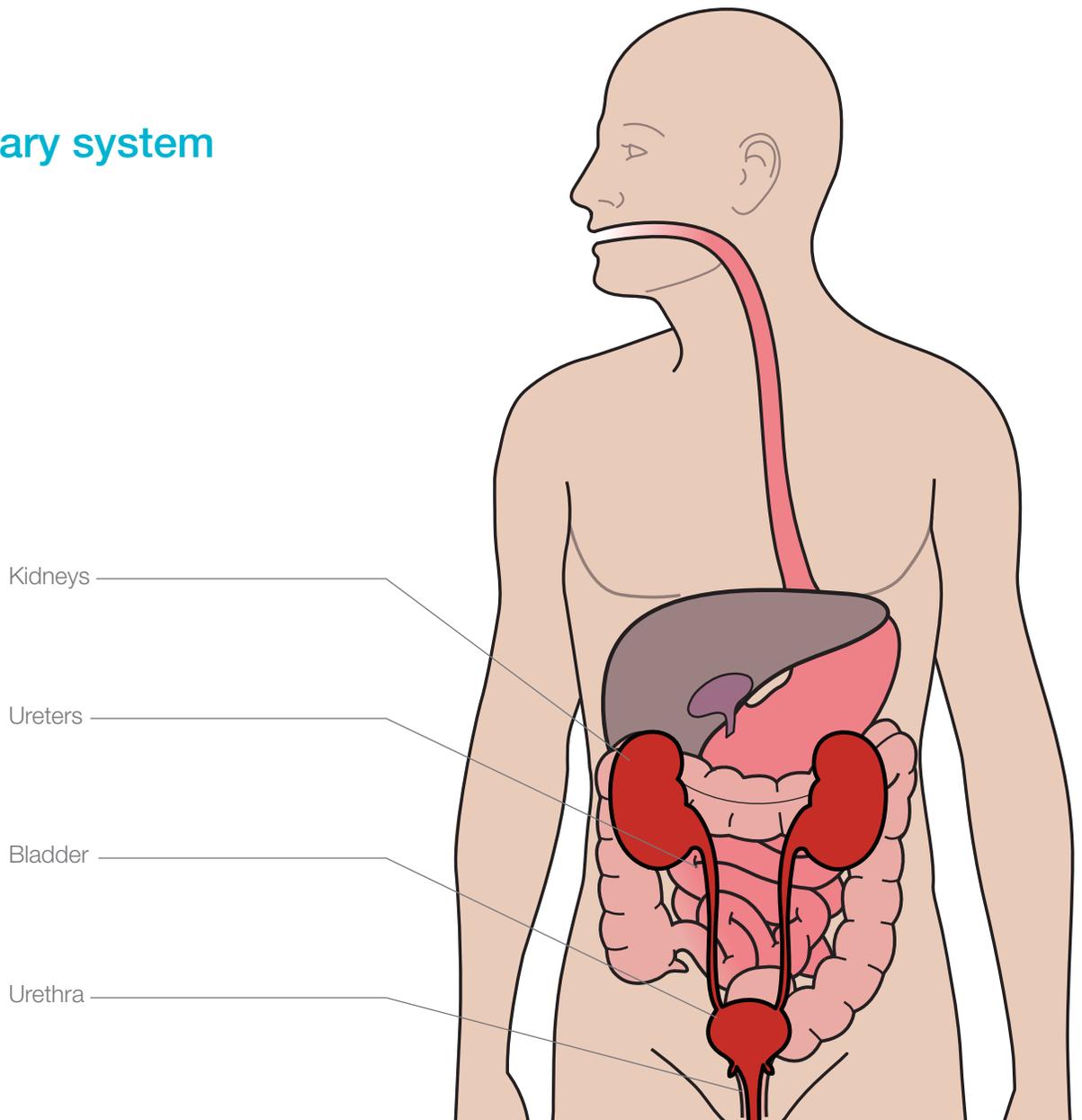
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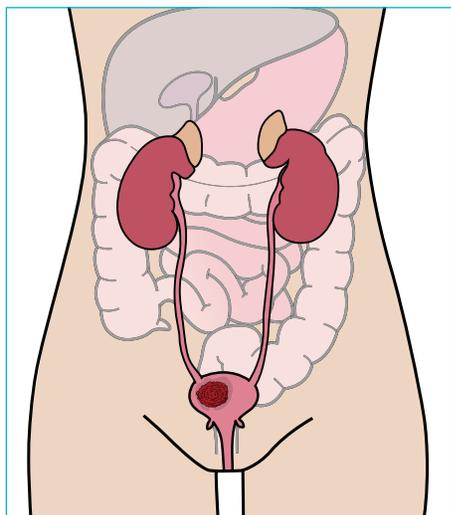
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## The urinary system



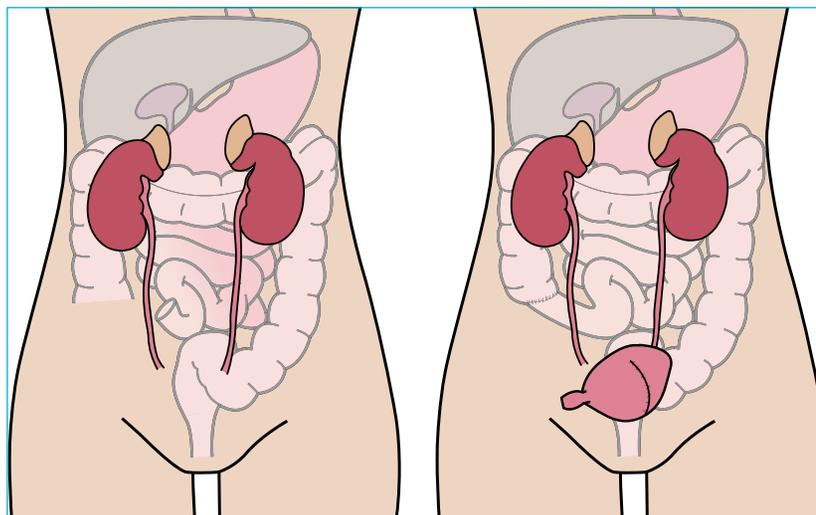
# Indiana pouch

## 1. Diseased bladder



The term 'Indiana pouch' is used to describe surgery where the bladder is removed and part of the small bowel (the ileum) is reconstructed and used to store and eliminate urine out of the body. The bladder is removed due to disease, injury or if a patient suffers from incontinence.

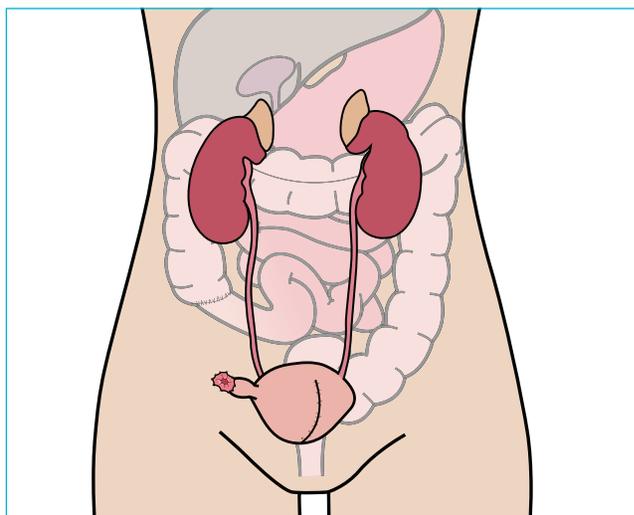
## 2. Reconstruction of the bladder



The bladder is surgically reconstructed by creating a reservoir or pouch.

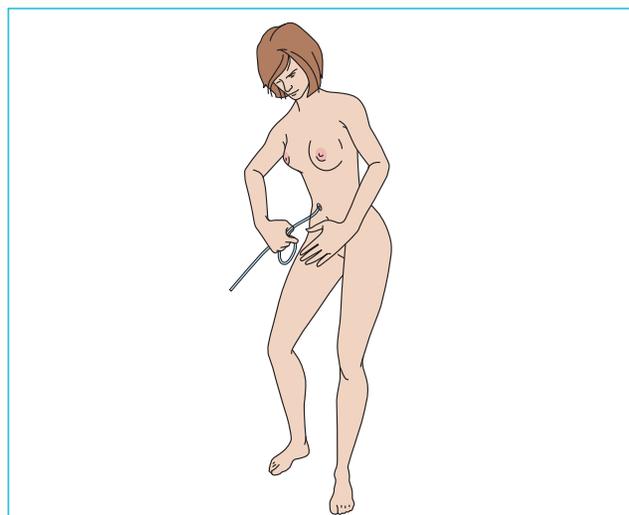
An Indiana pouch is constructed from the section of the bowel where the small bowel (ileum) meets the large bowel (colon). This section has a special valve that normally prevents faeces moving from the colon back to the ileum. An incision is made on either side of the valve to remove a short length of bowel, which is then used to form a reservoir. The two loose ends of the bowel are reconnected, ensuring normal bowel function is retained.

## 3. Forming a continent stoma



The ureters are connected to the new reservoir during surgery. Urine is then able to flow from the kidneys to the reservoir, where it is stored. The valve is diverted to the belly button or the right hand side of the abdomen, to form a continent stoma. This prevents urine from flowing out of the reservoir.

## 4. Emptying the reservoir



The reservoir is usually leak-proof and is drained by inserting a catheter into the stoma.

# Ileal conduit

## Patient details

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## Notes

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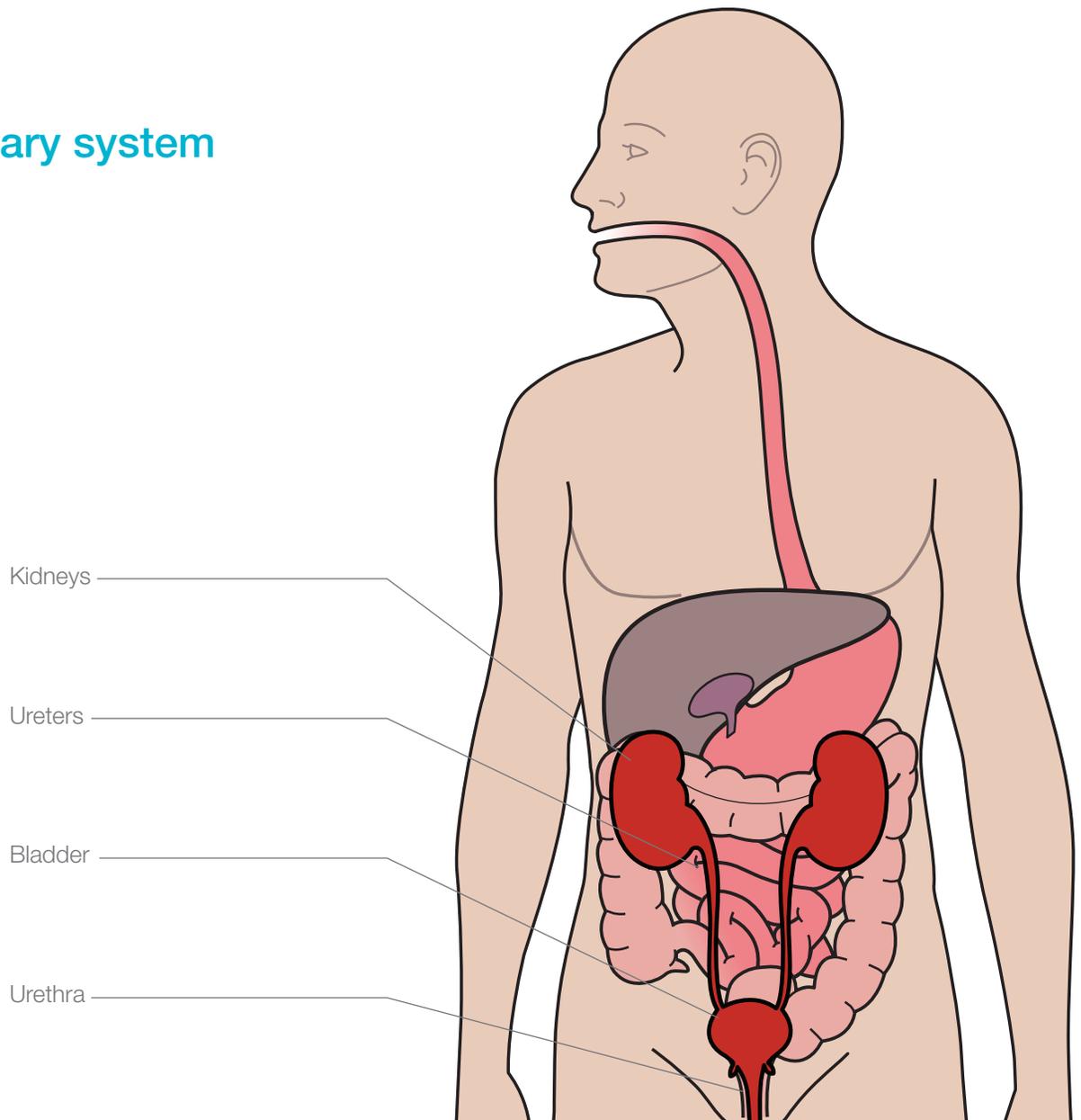
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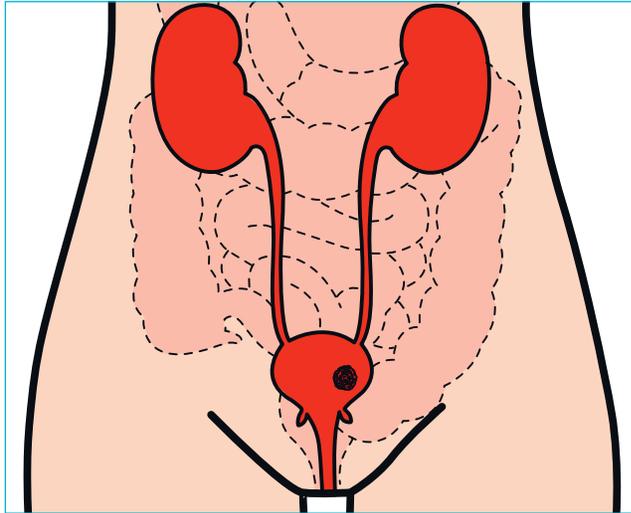
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## The urinary system



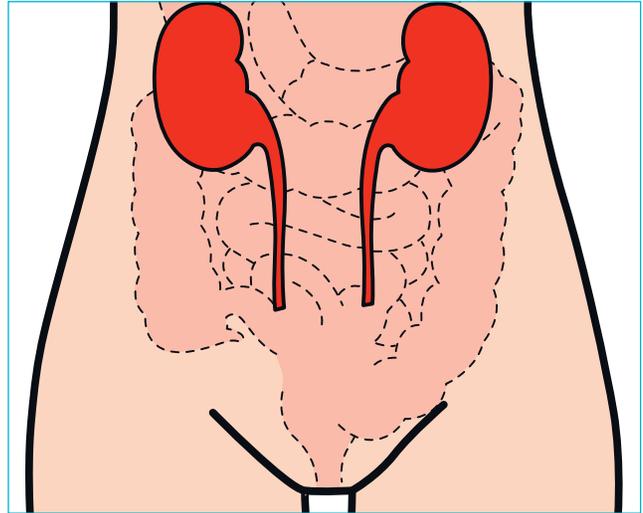
# Ileal conduit

## 1. Diseased bladder



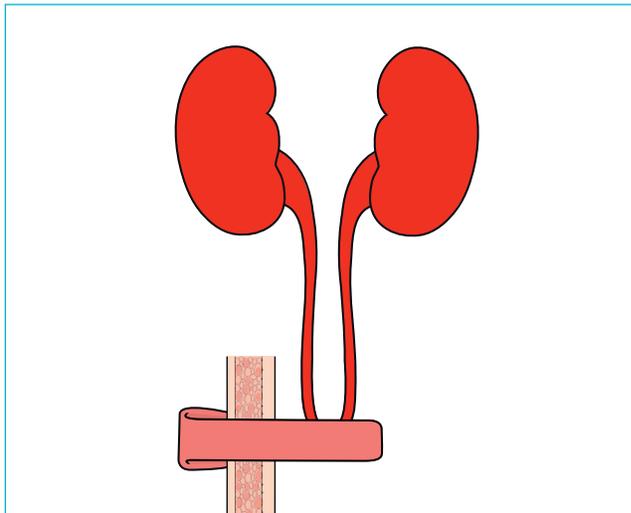
The term 'ileal conduit' is used to describe surgery where part of the small bowel (the ileum) is used to divert urine out of the body, bypassing the bladder.

## 2. Removal of the bladder



In many cases, the bladder is removed due to disease or injury, then a short piece of the small bowel is isolated and used to form a spout.

## 3. Formation of urostomy



One end of the spout is sealed, the ureters are attached and the open end of the piece of small bowel is brought to the surface of the abdomen to form a stoma (an opening). This is called a urostomy. The rest of the small bowel is rejoined so the digestive system functions as before.

# Restorative proctocolectomy

## Patient details

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## Notes

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## The digestive system

Oesophagus

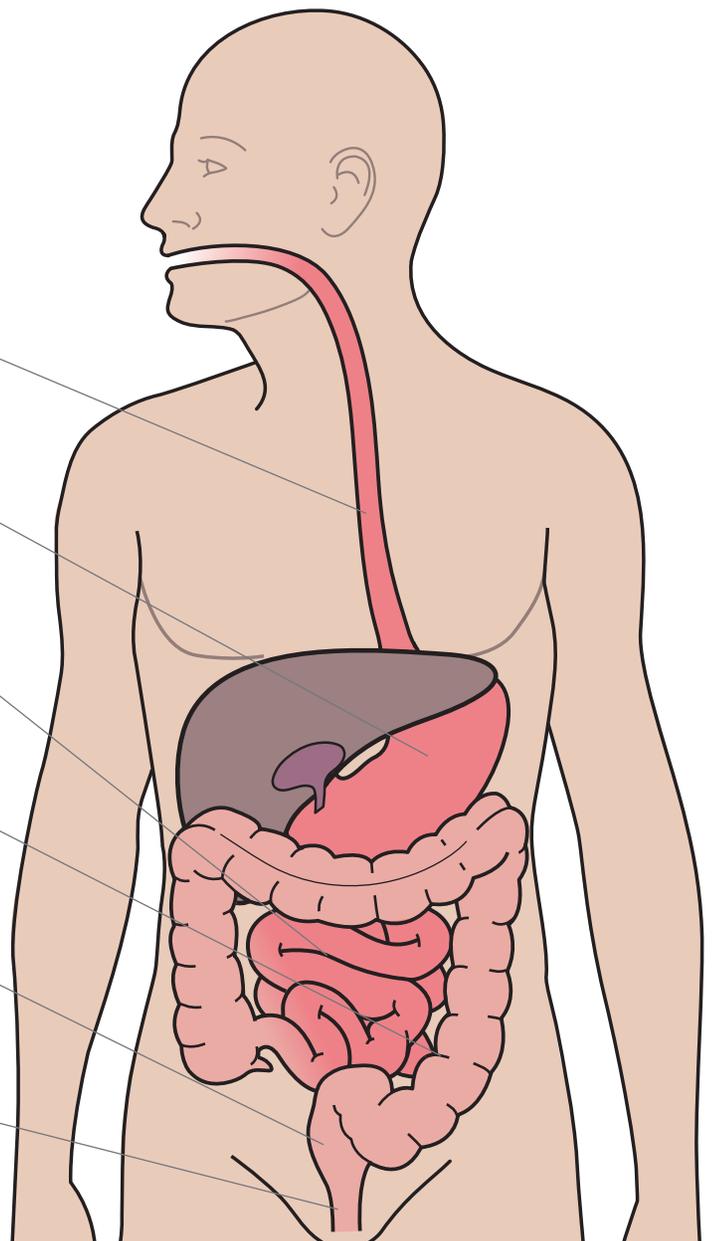
Stomach

Small bowel (ileum)

Large bowel (colon)

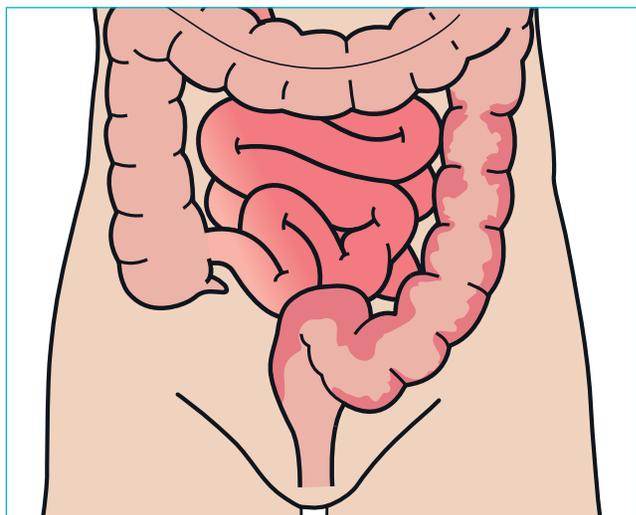
Rectum

Anus



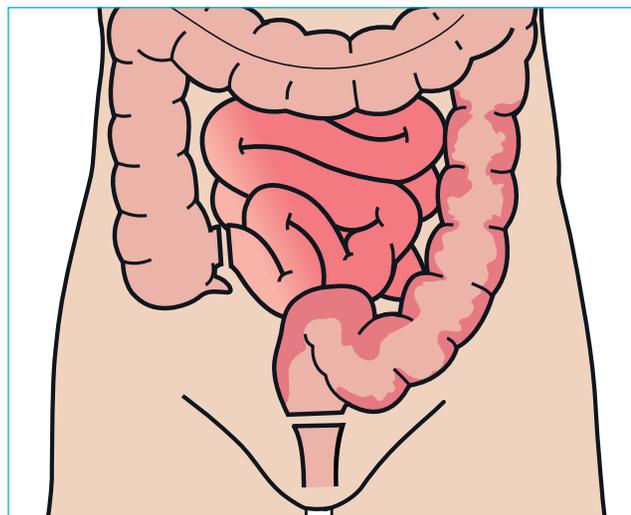
# Restorative proctocolectomy

## 1. Diseased large bowel (colon)



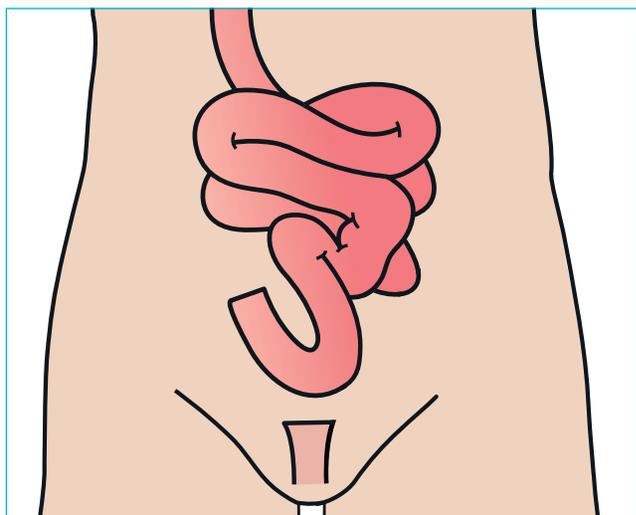
A restorative proctocolectomy is a surgical procedure that is mainly used in ulcerative colitis or familial adenomatous polyposis (FAP).

## 2. Large bowel and rectum are removed



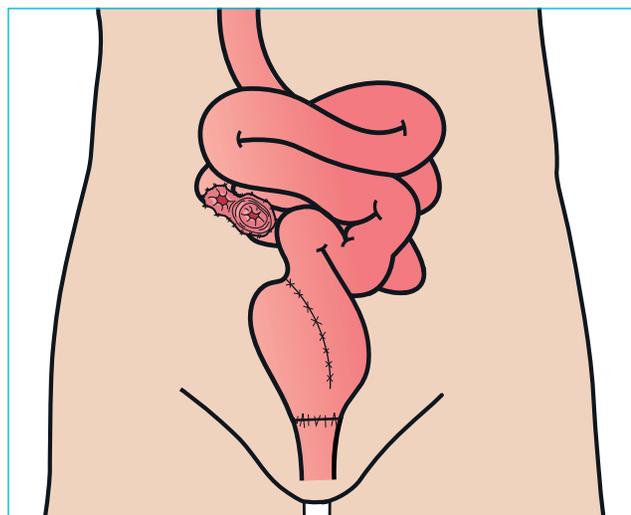
Surgery involves removing the whole of the diseased large bowel and the rectum, so that the digestive system can be reconnected to work without them, (that's why it's called 'restorative').

## 3. Healthy small bowel and anus



Once the large bowel and rectum have been removed, the small intestine can be joined to the anus.

## 4. Small bowel and pouch and temporary ileostomy



After the large bowel and rectum have been removed the healthy end of the small bowel is formed into a pouch and is joined to the anus. The pouch helps the bowel function by collecting faeces (waste matter) before they are expelled through the anus. While the surgery is healing, faeces are diverted out of the body by an alternative opening. This usually means bringing a healthy part of the bowel to the surface of the abdomen to form a temporary loop stoma (an opening), known as a loop ileostomy.

# Orthotopic neobladder

## Patient details

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## Notes

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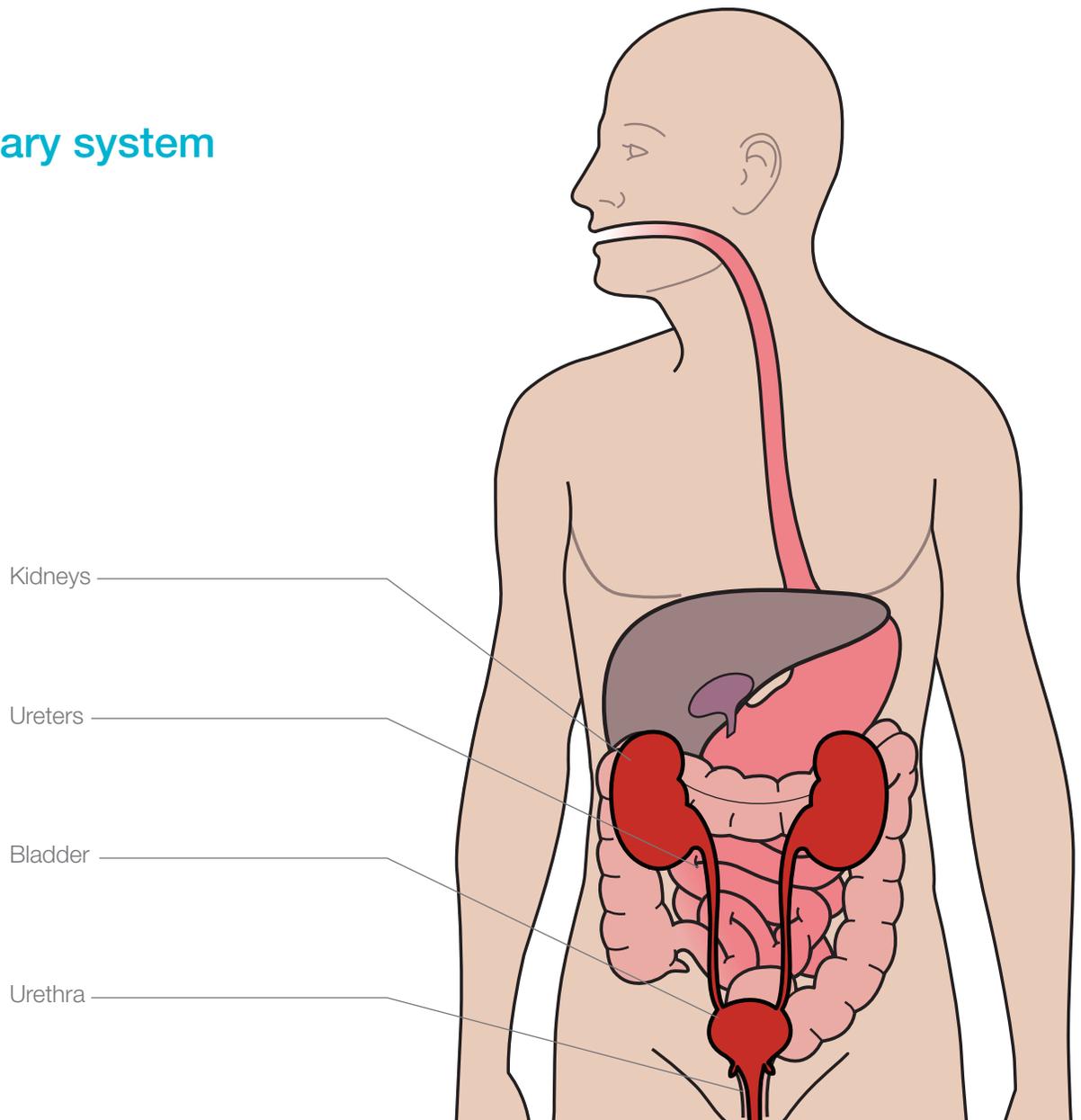
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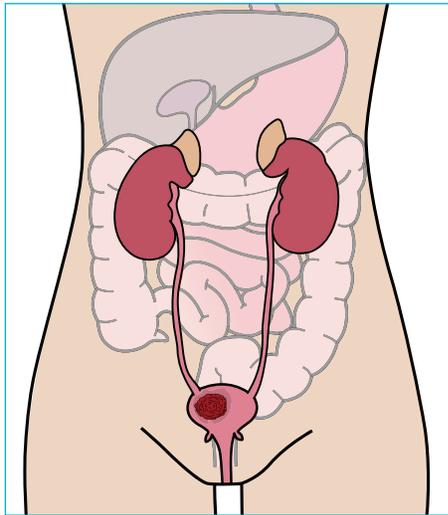
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## The urinary system



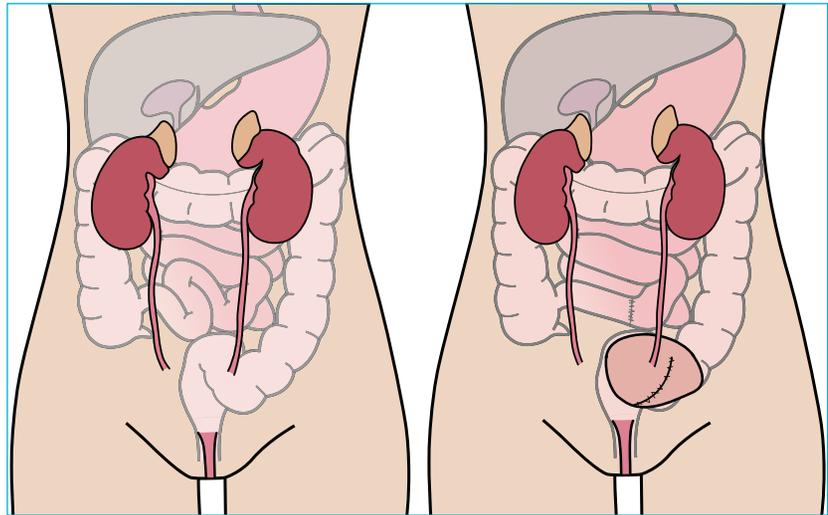
# Orthotopic neobladder

## 1. Diseased bladder



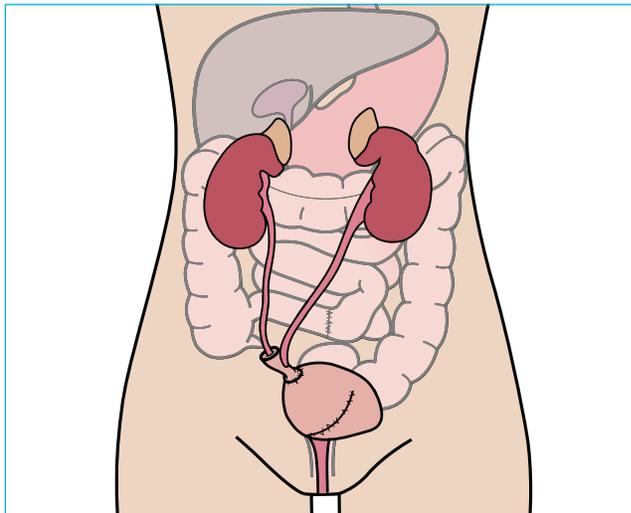
The term 'orthotopic neobladder' is used to describe surgery in which a 'new' or replacement bladder is made from a small section of the bowel.

## 2. Removal of the bladder



The bladder may be removed due to congenital deformity, disease or injury. Two incisions are made on a short length of the small bowel. This part of the bowel is removed and used to form the new bladder. The two remaining loose ends of the small bowel are reconnected, ensuring normal bowel function is retained.

## 3. Construction of a new bladder



The ureters are inserted through the wall and into the neobladder to prevent urine flowing back into the kidneys. The new bladder is also attached to the urethra so that urine is passed in the normal way.

## 4. Draining the bladder



The new bladder is drained every 3 to 4 hours by slight straining. You may need to learn to self catheterise to drain the new bladder fully. It is also important to exercise the pelvic floor muscles regularly to avoid incontinence.