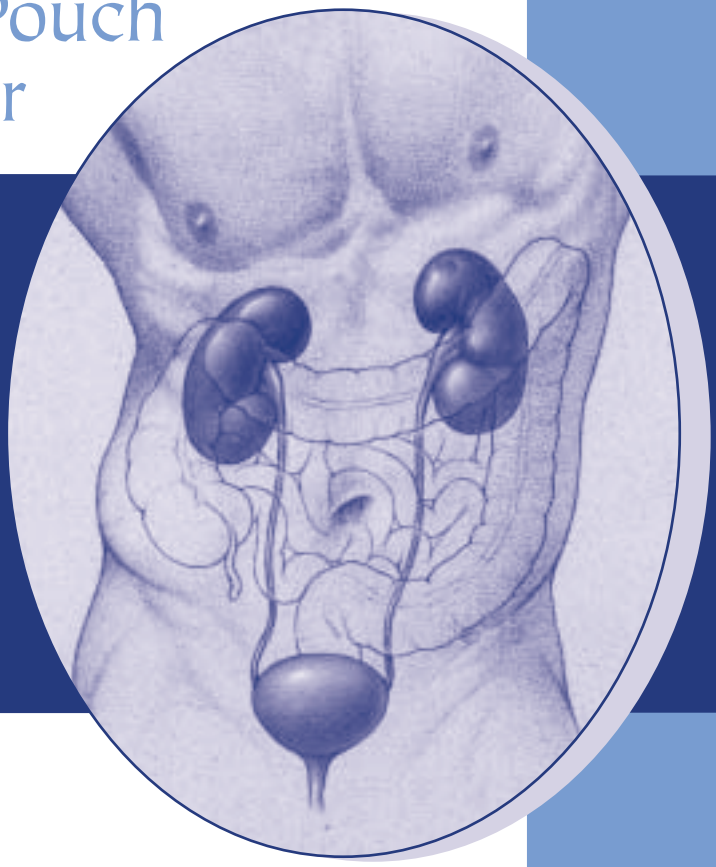
UROLOGIC
Limited

Urinary Diversion - Formation of a

Urostomy, Indiana Pouch and Ileal Neobladder



A Guide *for Patients*

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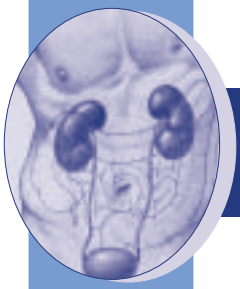


URINARY DIVERSION – FORMATION OF A

• UROSTOMY (ILEAL CONDUIT) • INDIANA POUCH • ILEAL NEOBLADDER

This information is designed to help you, your family and friends prepare for your surgery. It will also help you plan how to take care of yourself in the weeks following your discharge from hospital.

WHAT IS A URINARY DIVERSION AND WHY IS IT NEEDED?

A urinary diversion is an operation performed to divert urine away from the bladder. Urine is made by the kidneys and drains down the ureters and is stored in the bladder until it is convenient for the person to empty it.

There are several reasons why a urinary diversion may be needed, these include:

- If a person develops cancer of the bladder or uncontrolled bleeding from the bladder after radiotherapy or some drugs, sometimes the only way to stop the bleeding or effectively rid the body of cancer is to operate and remove the bladder. This operation is called either a **Radical Cystectomy** in females or a **Radical Cystoprostatectomy** in males. **Radical** means complete, **cyst** means bladder, **prostat** refers to the prostate in males, and **ectomy** means removal of. If the operation is done for bladder cancer in females the uterus, ovaries, uterine tubes and the front wall of the vagina are also removed. For males, the prostate is removed. This is done because the bladder is situated next to all of these structures and in an attempt to fully rid the body of cancer the entire area needs to be cleared during surgery.
- In some conditions the bladder can only store urine in very small amounts. It may be unable to store urine at all so the urine runs away continuously, or it may not empty itself completely. Sometimes it is not possible to overcome these problems with drugs so surgery may be needed to keep the person dry by diverting the urine away from the bladder. Usually in this situation the bladder does not need to be removed.
- There may be damage to the nerve supply to and from the bladder to the brain. If the nerves that send messages between the bladder and brain do not function correctly, a number of problems can occur. There may be leakage of urine, or incomplete bladder emptying which can lead to loss of kidney function so bypassing the bladder resolves these problems.

WHAT TYPES OF URINARY DIVERSION ARE THERE AND HOW ARE THEY MADE?

All urinary diversions use an abdominal incision that runs from above the umbilicus to the pubic hair line. There are two forms of diversion; **incontinent diversions** are involuntary and have urine flowing from them constantly and **continent diversions** are under voluntary control and keep a person dry.

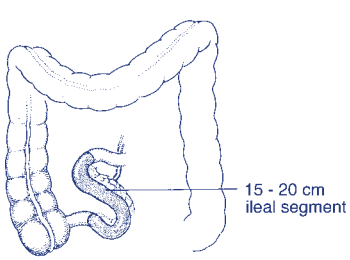
INCONTINENT DIVERSION

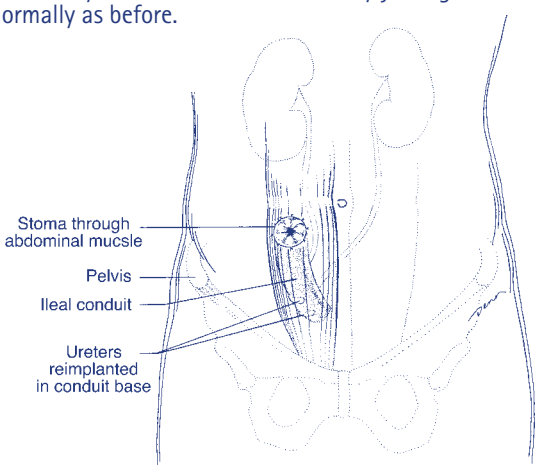
ILEAL CONDUIT

The most common method of diverting urine from the bladder is to form an **ileal conduit**. **Ileal** pertains to the small bowel and **conduit** is a passage for fluid. This is the simplest type of urinary diversion and has the shortest operating time. If it is done solely to divert urine and the bladder does not have to be removed the operation takes approximately 2-3 hours, however if the bladder needs to be removed the operation takes 5-6 hours. The usual hospital stay for surgery is 7-10days.

An ileal conduit is formed by using a piece of small bowel about 10-15cm long and implanting the ureters into it. One end of the conduit is sewn closed and the other end is brought through to the skin surface. This opening is called a stoma and is similar in colour and texture to the inside of the lips. The stoma in this case if often referred to as a **urostomy – uro**, pertaining to urine and **stomy**, pertaining to opening for.

A watertight pouch is placed over the stoma of the ileal conduit. Urine flows down the ureters, through the conduit (piece of small bowel) to the outside through the stoma and into the pouch that can be emptied at will. Once the piece of small bowel has been taken to make the ileal conduit the continuity of the bowel is restored by joining the two remaining ends together and the bowel continues to function normally as before.





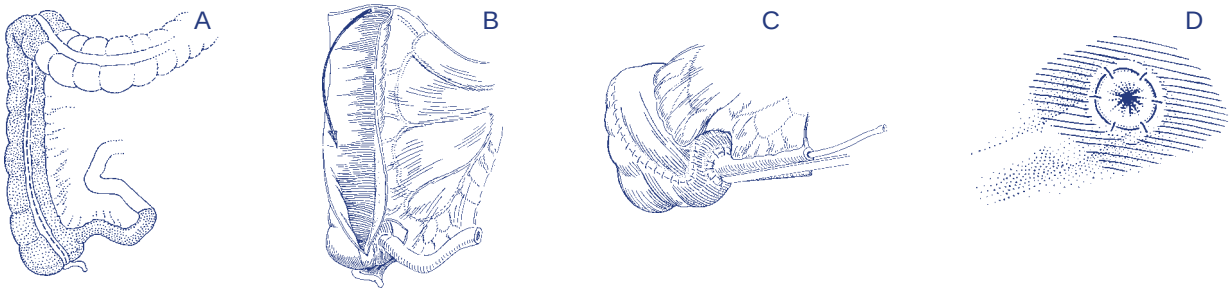
EVERY person who is having any form of urinary diversion because of bladder cancer is sited for an ileal conduit. This is because for people having a cystectomy due to bladder cancer the first part of surgery involves removing the pelvic lymph nodes. The lymph nodes are part of the lymphatic system, which is the cleansing system of the body. The pelvic lymph nodes supply the bladder and if the cancer spreads from the bladder, the lymph nodes are the first port-of-call. The lymph nodes are removed through the abdominal incision at the start of the surgery, they are sent directly to the laboratory where they are examined for any signs of cancer spread. If the lymph nodes are clear the urologist then goes on to remove the bladder and perform the urinary diversion that had been planned for. In the unlikely event that there are any signs of cancer spread in the lymph nodes, surgery would either stop, if the spread was extensive, or the bladder would be removed and an ileal conduit would be formed as this is the quickest, simplest surgery. It involves a shorter anaesthetic and operation time which reduces the anaesthetic and operative risks and major urinary diversion surgery would not be warranted in this situation.

CONTINENT DIVERSION:

There are many forms or variations of continent diversions available today, the two most common forms used are the Indiana Pouch and the Ileal Neobladder. Both of these operations take from 6-8 hours to perform if the bladder needs to be removed. If the bladder does not have to be removed the operation takes 4-5 hours to perform. The usual hospital stay for these operations is 10-14 days.

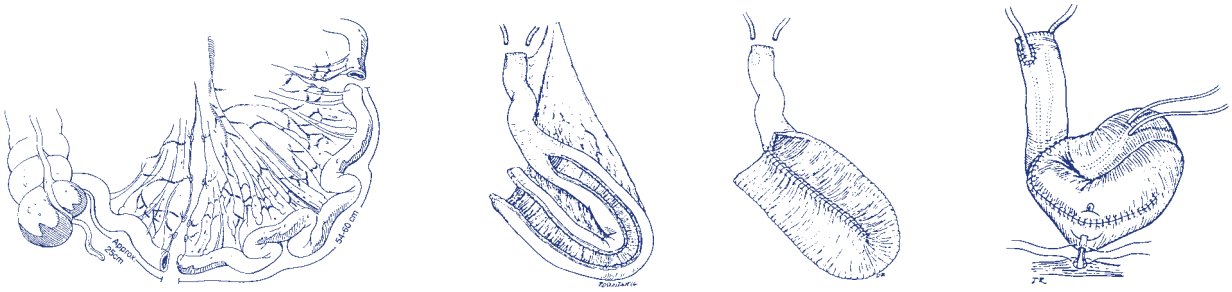
INDIANA POUCH

With an indiana pouch, 8-10cm of small bowel and 25-30cm of large bowel are used to construct a reservoir or pouch for urine. The two pieces of remaining bowel are joined back together and the appendix is removed from the large bowel that is to be used. At the end of the small bowel where it joins to the large bowel there is a naturally occurring valve. The large bowel pouch acts like a bladder and stores the urine which means you stay dry. The area of the valve is partly closed which stops the urine from running out of the pouch and the end of the small bowel is brought out onto the surface of the skin, usually in or around the umbilicus area. This opening, known as a 'flush stoma', is used to pass a catheter to drain the pouch.



ILEAL NEOBLADDER

This uses 50-60 cms of small bowel to make a new bladder, **neo** meaning **new**. Once the neobladder is created out of the small bowel it is joined back to your urethra. No external collection appliances are needed and you go to the toilet in the same way as you do now.



All types of urinary diversion produce mucous as this is a natural function of the bowel. The ileal conduit produces the least amount of mucous as it uses the smallest piece of bowel. The mucous it produces drains away freely through the stoma and into the urostomy appliance. The mucous produced by the indiana pouch and the neobladder needs to be flushed out. This is done by passing a catheter into the pouch or neobladder and using a syringe to flush the mucous out. This needs to be done to ensure the mucous doesn't obstruct the free flow of urine.

The type of urinary diversion you have will depend entirely on your individual situation. No single technique is ideal for all people. A decision is based on a persons underlying disease, their general state of health, age and their personal preference. All of these matters would be very carefully considered before surgery and the options would be fully discussed with you and your family prior to your operation.

YOUR CONSENT

We need your permission for your operation to go ahead. Before you sign the consent form it is important that you understand the risks and effects of the operation and anaesthetic. This will be discussed with you by your doctor and the nurse, should you have any questions, your nurse or doctor would be happy to answer these.

There is a chance with this operation that you will need a blood transfusion. However, if you do need a blood transfusion

and you want to refuse one, it is vital that you tell your surgeon and nurse prior to your operation. It is sometimes possible to donate some of your own blood prior to surgery. If you would like to do this please discuss it with your surgeon.

If your bladder needs to be removed and you would like it returned to you for personal reasons, please discuss this with your family and inform your nurse and surgeon before your operation.

ABOUT YOUR ANAESTHETIC

You will NOT be allowed to eat or drink anything for at least six hours before your surgery. This includes chewing gum and sweets.

There are two main types of anaesthetic used for this surgery;

- *General Anaesthetic*: With a general anaesthetic you will be asleep throughout the operation and remember nothing about the operation.
- *Regional Anaesthetic e.g. Spinal, Epidural or Caudal:*
  A needle is placed into your back and a solution is injected that will numb your body from the waist down. This is usually done in addition to a general anaesthetic.

After most urinary diversion operations when the bladder is removed, the first one to two days after surgery are spent in intensive care unit or the high dependency unit. A very small number of people after major surgery may need to be ventilated for a short time to help keep their breathing controlled and their lungs functioning optimally. The ventilation tube passes through the voice box which means the person is unable to speak but can still communicate by nodding or using facial expressions. Most people do not require ventilation and those that do are usually only ventilated for a short period of time.

If you do not have an epidural anaesthetic you may have a P.C.A pump attached to your drip. P.C.A stands for Patient Controlled Analgesia. It is a computer-controlled machine that delivers pain relief through your drip. You control the amount of pain relief given but the anaesthetist prescribes the maximum dose. The P.C.A. is connected to your drip once you are awake enough to operate it. You will receive more information about the P.C.A. pump and your anaesthetic at the pre-assessment clinic.

Feel free to discuss your anaesthetic and the above situations and any questions you may have with the anaesthetist.

BEFORE YOUR OPERATION

Two days before your operation you will have to be on a special low residue, low fibre diet. This is to clean your bowel prior to surgery. You will be given further information and instructions about this diet prior to your operation.

You will be admitted to the hospital the day prior to your operation. On this day you will: -

- Only be allowed to drink clear fluids and you will be given some liquid to drink that will help clear you bowels in preparation for surgery. The evening prior to your operation you may have a drip inserted to keep you well hydrated prior to the operation, because from midnight you are no longer able to eat or drink anything.
- Be seen by the physiotherapist who will teach you special deep breathing and leg exercises that you should do after your operation.
- Have a mark placed on your abdomen in the spot where the opening of your indiana pouch or ileal conduit will be. This is to find a position which is comfortable and does not interfere with the waistline of skirts and trousers.

ON THE MORNING OF SURGERY

You maybe fitted with T.E.D. stockings which help aid circulation and prevent blood clots which there is always a slight risk of with open surgery. A shave of the surgical site is required for surgery, this is usually done just prior to going to theatre or in theatre itself once you are asleep. You may be given some tablets before theatre. These are charted by the anaesthetist and may include tablets for tension, nausea and pain prevention.

You will be escorted on your bed to theatre, where you will be transferred to the theatre table. Anaesthetic staff will then attach various monitoring devices. Once you have been completely prepared and given your anaesthetic, surgery will begin.

When the operation is completed you would usually be taken directly to intensive care or the high dependency unit. There you will be cared for until you are ready to return to the ward, which is usually one or two days after surgery.

AFTER SURGERY

After any form of urinary diversion you are not able to eat or drink for 3-5 days. This is because when the bowel is handled during the operation it stops working. This is a natural bodily reaction and once the bowel is ready to work again you will start to pass wind and your stomach will start to rumble. Once this happens, you will be allowed to drink small amounts and once you are tolerating fluids you will be started on a light diet. Until you start eating your drip will give you all the fluid and nutrients you need. Your drip will either be in a vein in your arm (intravenous line) or it may be in one of the larger veins in you neck (central venous line). Immediately after surgery you may also have a tube coming from your stomach, through your nose that drains into a bag. This tube is called a naso-gastric tube. It drains away any fluid that is made in your stomach, as that can make you feel nauseated. The naso-gastric tube is removed once you are starting to tolerate fluids.

You will be kept comfortable with a P.C.A. as mentioned earlier or with an epidural. You will also be given other regular medication to keep you comfortable and antibiotics to prevent infection. You will be out of bed within 1-2 days of surgery

to sit in a chair and within 3-4 days of surgery you will be walking and up showering. Your P.C.A. or epidural will stay in until you are comfortable enough to manage with out it, which is usually about the 4th-5th day after surgery.

DRAINS AFTER SURGERY

All urinary diversions have a wound drain to drain away any ooze from the operation site. One or two wound drains are left in place until there is little wound drainage from them, usually the 3rd - 5th day after surgery.

All urinary diversions have ureteric stents after surgery. These are fine tubes that run from the kidneys, down the ureters and exit out through the stoma or abdominal wall for the neobladder. The ends of the stents sit within a watertight collection bag that is stuck to the abdomen to collect the urine. This allows for healing of the areas that were joined and stitched during surgery. About 7-10 days after surgery dye is passed up the stents and x-rays are taken to see if all the joins have healed and that there are no leaks. If everything has healed and there are no leaks the stents can be removed.

People who have an Indiana Pouch formed also have -

- A malecot drain that sits within the pouch and exits next to the stents to drain any urine that collects in the pouch. It is also used to flush the pouch after surgery to clear out any mucous. Flushing is done approximately 4 times a day in the first week after surgery and usually reduces to once a day by the third week post-operatively. The malecot drain is usually removed after the dye study has shown there are no leaks. Once the malecot drain is removed, flushing of mucous is done through the catheter that is used to empty the pouch. In the longer term flushing of the pouch may only need to be done every second day or even once a week but this varies with each person.

People who have an Ileal neobladder formed also have -

- A urethral catheter that goes up the urethra into the neobladder. It may be connected to a drainage bag or it may be plugged off. A malecot drain may also be present. This drains any urine that collects in the pouch that does not drain from the stents. It is used to flush mucous from the neobladder after surgery. This is done approximately 4 times a day in the first week after surgery and usually reduces to once a day by the third week post-operatively. Further flushing of the neobladder in the long term may be required by inserting a catheter via the urethra, although the mucous is often passed out with the urine when the bladder is emptied. The urethral catheter is removed approximately 3 weeks after surgery once a dye study of the neobladder is done to ensure everything has healed and there are no leaks. The malecot drain is clamped off and the catheter is removed. When the catheter is removed it is expected that you will experience incontinence of urine. You will be given pads and other supplies to manage the incontinence. Once your are passing urine and the neobladder is emptying the malecot drain is removed. As the healing progresses after surgery and the weeks pass you will find your continence improves and many people find they are dry within 6 months.

PRIOR TO DISCHARGE

If you have an ileal conduit you would be taught how to empty and change your urostomy appliance and how to care for your stoma. You would be given urostomy supplies to take home and arrangements would be made for further supplies to be provided by the hospital. Once you are comfortable with caring for your stoma you would be able to return home which is usually between 7-10 days after surgery.

If you have an indiana pouch or ileal neobladder you would be taught how to flush the mucous from the pouch or neobladder either via the malecot drain or the catheter. Once you are comfortable doing this you would be given supplies to carry this out at home and you would be able to be discharged. This is usually between 10-14 days after surgery. If the dye study hasn't been done while you are in hospital, you would return to the ward approximately a week later to ensure there are no leaks and have any remaining catheters or drains removed. People with an indiana pouch would be taught how to catheterise and people with ileal neobladders would be given incontinence products to go home with and also be taught how to irrigate your neobladder.

GOING HOME

Prior to leaving the ward you will be given appropriate supplies to take home and a District Nurse referral is sent so that the district nurse visits you at home. You will be given a discharge letter that contains helpful for when you get home. Your nurse will inform you about taking mild pain relievers, should you have any pain or discomfort after you return home.

Arrangements will be made for a week after discharge for people with indiana pouches or ileal neobladders to return the have their dye studies done and for any remaining drains to be removed.

You will be given or sent an outpatient appointment for follow-up with the specialist 4-6 weeks after your operation. We will send a letter to your own doctor about your operation and the details of your treatment while you were in hospital.

ONCE HOME

The district nurse will call to see how you are managing. You should take regular pain relief as instructed by the nurse prior to your discharge. This helps to keep you comfortable so you are able to get about easier, do more and hence feel better.

Your wound should heal in a week or so. However, beneath your skin the muscle layers will take longer to heal. For this reason it is important to avoid any strenuous activity, heavy lifting and straining for 6 weeks.

You can shower or bath at home, but you should not soak in the bath or use soap directly on your wound until it has fully healed. You may need to place a dry dressing over your wound to collect any slight ooze so it does not stain your clothing, however this should only be needed for a few days after surgery. It is important that your wound be kept clean and dry. It is important to place a dressing between any skin creases where your wound may remain moist, to separate the skin

and keep the area dry. Following surgery you need to follow a light diet that is not too high in fibre. This ensures that your bowel has time to rest and return to normal function. You may find that your motions are rather loose after surgery, if diarrhoea is a problem avoid vegetables of the cabbage and bean family, highly spiced foods and be careful with long fibre foods such as corn, peas, celery, rhubarb and asparagus which should all be chewed well. You can bulk stools by using mashed potato, boiled rice, pasta, grated apple, mashed bananas, smooth peanut butter and flat lemonade. If your motions remain loose you may require medications to help with bulking. These can be prescribed by your own doctor. If you have problems with constipation you should increase your fruit, vegetable and fluid intake. Stool softeners are readily available from your nearest chemist, ask your pharmacist for further advice.

Contact your own doctor if

- Your wound becomes red, hot, swollen, painful or continues to discharge. These are all signs of a wound infection.
- For any reason, your drains stop flowing prior to their removal.
- Your urine becomes cloudy, offensive smelling or you have any other signs of a urine infection.
- If you have any concerns at all.

Having a larger portion of the bowel used to store urine can alter the chemical balances within the blood. For this reason part of the long term follow-up after surgery involves regular monitoring of blood salts to ensure any imbalances are detected and treated appropriately. Symptoms of salt imbalances include weakness, fatigue, anorexia, nausea and vomiting. If you have these symptoms for no known reason you should consult your own family doctor for further assessment. Other effects of salt imbalances can be the formation of kidney or bladder stones and the formation of crystals on ileal conduit stomas. These stone and crystal formations can be avoided by keeping the urine acidic and maintaining a good fluid intake. Drinking cranberry juice or keeping a high vitamin C intake helps keep the urine acidic.

FURTHER INFORMATION

For those who have an ileal neobladder formed;

When you return to the ward/clinic to have your catheter/drain removed, the appointment is usually in the morning. Once the catheter is removed and you have passed urine several times you will be able to return home usually by midday. You can experience urinary incontinence as mentioned earlier. You will be given pads to use, however, it is a good idea to take an extra pair of undergarments and trousers with you to the appointment. Please remember to do your pelvic floor exercises. You will be given information about these exercises and have them explained to you prior to your surgery. These exercises help you get dry after your catheter removal.

In a small number of patients the area of the join between the bladder and urethra forms scar tissue. This scar tissue may cause your urine stream to diminish. If you notice anything like this, report it to your own doctor as soon as possible.

AFTER RADICAL CYSTECTOMY

Males experience impotence, or loss of penile erection, this is common after surgery even if the nerves controlling your erection have been preserved. Most patients experience long term impotence, however in virtually all cases potency can be regained with the use of tablets, injection therapy, vacuum devices or implants. Ask your surgeon about these options at one of your follow-up visits. These treatments can often be started as soon as 3 months after your surgery.

Females may find intercourse difficult or impossible if a larger area of the front wall of the vagina needs to be removed during surgery. Some females are able to continue with intercourse after surgery and those unable to can have reconstructive surgery if they choose to enlarge the vagina to allow for intercourse.

Don't be afraid to ask your nurse or doctor questions about the incontinence and sexual changes that may result from your operation, these issues need to be talked about openly.

After surgery you will have regular follow-up with the urologists. Blood tests, ultrasound scans and other examinations are done as part of your follow-up in the years after surgery. Your kidney function, blood levels and urinary diversion will be monitored closely. One of the reasons for follow-up with ultrasound scan is that a complication of any urinary diversion is that the join between the ureters and the bowel may form scar tissue and cause a narrowing otherwise know as a stricture at this join. This is usually treated quite simply with minor surgery. The ultrasound scan is able to detect early or late complications after surgery such as the deterioration of the upper urinary tract due to reflux of urine up the ureters and small tumours on the bowel wall. When using bowel for bladder substitution there is a very slight risk of developing a tumour of the bowel lining because of its constant contact with urine. This is a very rare occurrence and monitoring is done regularly so growths are found early and easily treated.

The important thing to remember is that you're not alone....

Many people like yourself have undergone this operation with a high degree of success. A positive attitude on your part will make everything easier. There is every reason to believe that you will experience a successful outcome. If you would like to talk to or meet with other people who have had radical bladder surgery or a urinary diversion please let your nurse know so this can be arranged for you.

While you are in hospital we will do everything we can to make your stay as comfortable as possible. The important thing to remember is that you're not alone. A positive attitude always aids a speedy recovery and the nursing and medical staff are always available to help with whatever needs you have. If you are worried about anything before or after your surgery, or if you have any further questions or would like more information, please do not hesitate to ask your nurse who will be more than happy to help.