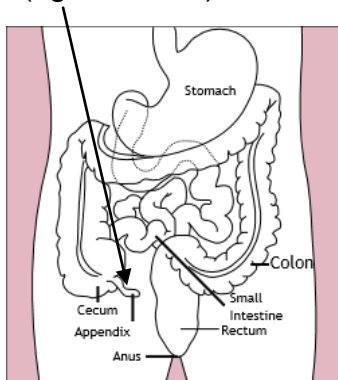


# Appendicitis treatment

## What is the appendix?

Appendix is a 2 – 4 inches long thin tubular organ that comes off the large gut (colon) wall at its start at the right lower part of the tummy. Actually, it is a small dead-end narrow gut (figure below).

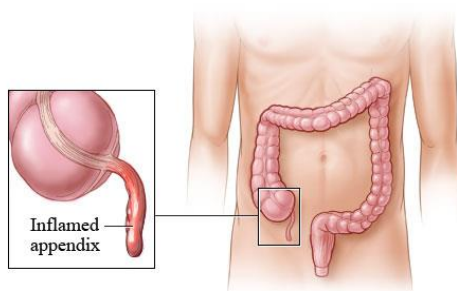


## What is appendicitis?

Appendicitis is one of the most common surgical problems. One out of every 2,000 people has an appendectomy sometime during their lifetime.

Appendicitis is inflammation of the appendix (figure below). The cause of inflammation and infection of the appendix is unclear.

Complications of infected and ruptured appendicitis such as an abscess or generalizing bacterial inflammation of the inner layer of the tummy (peritonitis) can be very serious.



## How is appendicitis treated?

Surgery under general anaesthesia is the only standard treatment for appendicitis. The goal of surgery is to remove the appendix. This operation is called an appendectomy.

Antibiotics are given before an appendectomy to fight infection or to prevent further spreading of infection. If the patient cannot have the operation due to particular complications of the appendicitis or due to particular illness or illnesses, antibiotics will be given to fight infection arising from the appendix.

## Removal of the appendix

There are two approaches regarding appendectomy method – ‘key-hole’ surgery and open.

Key-hole surgery for appendicitis is often called as a laparoscopic appendectomy. If a surgeon would mention this technical term to you, do not be confused.

Open surgery is conventional surgery. It means that the appendix is removed through a 3 or 4-inch long incision in the right lower area of the tummy.

However, if your surgeon would think that an incision in the middle of your tummy would be a much better option for removal of appendix and for washout of your infected tummy, he / she would have to explain that to you very clearly.

It is important to tell you that if you have infected fluid or pus in the tummy around the appendix, the abdomen will be irrigated and drained of pus.

For majority of the patients admitted for treatment of appendicitis, a laparoscopic appendicectomy can be recommended as preferred approach.

## Why is 'key-hole' surgery better than open surgery?

A '**key-hole**' appendicectomy is associated with less pain and quicker recovery to normal social and professional activities. These two advantages of 'key-hole' surgery are most significant over conventional open surgery.

In addition, there are more advantages of a '**key-hole**' appendicectomy. These include a fewer wound complication rate, reduced hospital stay, less postsurgery scarring and better cosmetic result because of one key thing – smaller skin incisions for '**key-hole**' surgery.

Never the less, it is not always possible to continue or finish the 'key-hole' surgery due to anatomical, technical reasons or very high risk of complication. In such circumstances, your surgeon will discontinue a laparoscopic surgery and will make a conventional cut for open removal of the appendix.

This happens in approximately 10% of patients (1 of 10 patients). It is not a complication.

## What are the benefits of surgery aimed to remove the appendix?

- ✓ To confirm the diagnosis
- ✓ To treat the patient with appendicitis
- ✓ To prevent the complications of appendicitis.
- ✓ To treat other conditions related to gut or female pelvic organs.

## What are the risks of complications of appendicectomy?

Most people will not experience any postoperative complications.

Some discomfort around tummy button or around the cut in right side of the abdomen is normal.

The risks are for:

1. Complications from anaesthesia
2. General complications of any surgery
3. Complications of any key-hole surgery
4. Procedure specific complications

### 1. Risks of complications from anaesthesia

Anaesthetist will discuss them with the patient.

### 2. General complications of any surgery

There are intraoperative and postoperative complications. Intraoperative complications mean complications during the surgery. Postoperative complications mean complications after the surgery.

Following intraoperative complications may occur:

- ✓ Bleeding
- ✓ Injury to internal organs (bowel, bladder, ovary, fallopian tube, ureter)

Postoperative complications include:

- ✓ Bleeding
- ✓ Collection of blood within the wound
- ✓ Wound infection
- ✓ Wound dehiscence
- ✓ Chest infection
- ✓ Infection inside the tummy
- ✓ Blood clots in the veins of legs (deep vein thrombosis / DVT)
- ✓ Blood clots in the veins of lungs (a pulmonary embolism / PE)
- ✓ Bowel blockage due to internal scarring (adhesions)

✓ Hernia in the area of the cut / scar  
The occurrence of wound infection following an open appendicectomy is 7%. It is two times less following a laparoscopic appendicectomy – 3.5%.

### 3. Complications of key-hole surgery

- ✓ Spreading of gas within then tissues of abdominal wall (common). That would cause crackling sensation in the skin due to trapped gas; it settles quickly and is not serious.
- ✓ Spreading of gas (carbon dioxide) into the chest (very rare) That would cause a compression of the lung. Can be treated by insertion of chest drain.
- ✓ Injury to internal organs and anatomical structures (bowel, bladder, ovary, fallopian tube, ureter).

For instance, it can occur when placing instruments into the tummy (risk is 1:1000). However, the risk is higher in patients who have previously had surgery.

If an injury to the bowel happens, a longer cut and open surgery would be the best option for most of the cases.

- ✓ Spreading of gas into the vessels of the lungs (gas embolism) (very rare)
- ✓ A risk of bleeding from the abdominal wall.
- ✓ A risk of port site complications (blood seroma within the surgical wound, infection, and hernia).

### 4. Appendicectomy specific complications

- ✓ Blood collection inside the tummy
- ✓ Abscess formation in the tummy

The occurrence of an abscess inside the tummy following an open appendicectomy is 1%.

However, it is more than two times higher following a laparoscopic appendicectomy – 2.5%.

- ✓ Incomplete removal of the appendix (very rare)
- ✓ Leak from the large bowel and spreading infection (rare).
- ✓ Injuries (damage) to adjacent organs and vessels.

The risks do increase for the elderly, people who are overweight or for those who already have heart, lungs or other medical conditions such as diabetes or kidney failure.

### What are the alternatives to surgery?

Surgery is the usual way of management of appendicitis. However, there are two complications of appendicitis treatable differently:

1. An inflammatory mass is usually treatable with antibiotics.
2. A large abscess can be treated with drainage by X-ray guidance and antibiotics.

Very unfit elder or frail patients with high risk for general anaesthetic may be treated with antibiotics.

### What to expect after the operation

#### Discharge

The patient should be either kept in hospital for about 24 hrs after a laparoscopic appendicectomy, or for about 48 hours after an open appendicectomy.

#### Scars after a key-hole surgery

You'll have three small cuts at different points on your abdomen (picture below). Each cut will be small.

These small wounds may be closed in various ways, including dissolvable stitches or skin glue.



### Scar after an open appendicectomy

You will have 3-inches long scar on your abdomen (picture below).



### Stitches

If you have skin clips or stitches which need to be removed, this can usually be done by the practice nurse at your GP surgery, 7-10 days after your operation.

### Dressings

You do not need to keep the scars covered after a key-hole surgery, though some people find it more comfortable to do so. You do not need to worry about getting the scar wet.

Many patients have concerns that standing up straight will pull at the stitches. Don't worry about this.

Getting out of bed and standing up straight will actually help you to recover more quickly. However, it is advisable to keep the scar covered after an open appendicectomy.

### Discomfort

You will experience pain and discomfort around the cuts (cut), especially for the first few days.

### Painkillers

Painkillers will be prescribed for you for about 5-7 days.

They may well cause constipation, so it's important to get plenty of fibre in your diet while you are recovering.

Fresh fruit and vegetables will help to keep your bowels moving regularly.

### Things that will help you recover more quickly

#### Keep a routine

Get up at your normal time in the morning, get dressed, and move about the house.

If you get tired, you can rest later. Eat a healthy diet. Do not smoke. Talk to your friends.

#### Build up gradually

As you build up your activities, you may feel more tired than normal. If so, stop and rest until your strength returns.

If you feel pain, you have probably just overdone it a little. Ease back and then gradually increase again. If you are concerned, consult your GP.

### Returning to work

#### Remember: Work can be part of your recovery

Getting back to your normal work routine sooner rather than later can actually help you to recover more quickly.

#### Getting back to work

How quickly you return to work depends on a number of things:

- ✓ How you heal
- ✓ How you respond to surgery
- ✓ The type of job you do

People whose work involves a lot of heavy lifting, or standing up or walking for long periods of time, will not be able to return to

work as quickly as those who have office jobs which are less demanding physically.

### **How soon can I go back?**

In most cases it's usually safe to return to work 10 – 14 days after the laparoscopic operation and 14 – 21 day after the open appendicectomy.

You do not need your GP's permission to go back to work - this is ultimately your decision.

### **Three golden rules for a speedy recovery:**

1. Stay active
2. Keep a normal daily routine
3. Keep social contact with people

### **Driving**

Before resuming driving, you should be free from the sedative effects of any painkillers you may be taking.

You should be comfortable in the driving position and able to safely control your car, including freely performing an emergency stop.

### **Driving - An exercise**

It is advisable not to restart driving for about 5 days after a laparoscopic appendicectomy and 14 days after an open surgery.

However, after about a week, you might want to test your fitness to drive.

Do this in a safe place without putting the keys in the ignition: simply sit in the driving seat and practise putting your feet down on the pedals.

Again, build up gradually. If you feel pain, stop immediately. If you feel sore afterwards, you may need to wait a day or two and try again.

Only when you can put enough pressure on the pedals to do an emergency stop - without feeling any pain or soreness afterwards - should you think about driving again.

It is advisable not to restart driving with a long journey.

### **When do I have to contact doctor if I have concerns or questions?**

Call your doctor if you have:

- ✓ Increased or persistent pain not relieved with pain relief medications
- ✓ Redness or swelling around the wound
- ✓ Discharge of pus or blood from the wound
- ✓ Increased pain in the abdomen
- ✓ Persistent fever
- ✓ Temperature above 38°C
- ✓ Shakes, swelling, chills, rigors
- ✓ Uncontrolled vomiting
- ✓ Persistent bloating of the stomach
- ✓ Inability to have a bowel movement after four days
- ✓ Dizziness/feelings of faintness
- ✓ Blood in your vomit, urine, or cough

### **Who do I contact if I have questions or concerns?**

- A. Contacting during working hours (9am - 5pm in the working week)

Please contact the secretary and leave a message for the surgical team.

If you think that your condition is serious then it is best to come straight to Aintree Accident & Emergency department\*.

- B. Out of hours (after 5pm during working week/weekend/bank holiday)

Please seek advice from your GP for minor complications. If you are not sure or if you think it is a serious problem, please come to Aintree

Accident & Emergency department\*  
for a review.

Hospital switch board tel: 0151 529 5980.

**\*When you come to the hospital  
please bring this and any other  
relevant discharge documents that  
you may have been given at the time  
of discharge to help the A&E doctors  
to decide your management.**

### **Are there any other sources of information?**

Here is a list of websites that offer safe,  
sensible, useful information:

[http://www.patient.co.uk/health/Appendicitis  
.htm](http://www.patient.co.uk/health/Appendicitis.htm)

[http://www.healthcommunities.com/appendi  
citis/what-is-acute-appendicitis.shtml](http://www.healthcommunities.com/appendicitis/what-is-acute-appendicitis.shtml)

[http://emedicine.medscape.com/article/773  
895-overview](http://emedicine.medscape.com/article/773895-overview)



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**Tel No: 0151 529 2906**

**Email: [interpretationandtranslation  
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