

SURGERY FOR OPERABLE PANCREATIC CANCER

This fact sheet is for people diagnosed with pancreatic cancer who will be having surgery to remove the cancer. It describes the different surgical procedures that may be used, and the risks and benefits of having pancreatic cancer surgery. It also provides information on what to expect before you go into hospital, during your stay, when you return home and during your recovery from surgery.

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SURGERY FOR PANCREATIC CANCER

Surgery for pancreatic cancer falls into two main categories:

- surgery to completely remove the cancer
- surgery or other procedures that don't remove the cancer but help to relieve symptoms.

To decide what sort of surgery may be possible for you, your surgeon will use the results of your tests to look at:

- how big the cancer is
- where it is in the pancreas
- whether the cancer is in the tissues or lymph nodes (small oval glands containing lymph fluid) around the pancreas
- whether any of the major blood vessels around the pancreas are involved
- whether the cancer has spread to other parts of your body.



If you have been told that you will have surgery or a procedure to relieve symptoms, rather than remove the cancer, read our fact sheet about 'Surgery and other procedures to control symptoms', on our website – www.pancreaticcancer.org.uk/publications

Surgery for pancreatic cancer is a major operation and can be complicated. As with all major surgery, there are some risks (see page 11), and you will need to be fit enough to have it. Decisions about surgery also depend on the type of pancreatic cancer you have. You are most likely to have an exocrine cancer – more than nine out of ten people (95%) with pancreatic cancer have an exocrine cancer. The most common type of exocrine cancer is pancreatic ductal adenocarcinoma. Exocrine cancers may be treated with any of the types of surgery described in this fact sheet.

People with rarer endocrine cancers (also known as NETs or PNETs) may also have other surgical options available. You can find out more from the NET Patient Foundation – www.netpatientfoundation.org



Information about different types of pancreatic cancer is available on our website – www.pancreaticcancer.org.uk/types

SURGERY FOR RESECTABLE (OPERABLE) TUMOURS

If the tumour is:

- small, and
- there are no signs that the cancer has spread beyond the pancreas, and
- you are fit and healthy,

it may be possible to completely remove the tumour with surgery. This is known as a resectable (operable) tumour.

Surgery to completely remove a tumour is the most effective treatment for early stage pancreatic cancers. However, only 10-20 people out of a hundred (10-20%) can have surgery to remove the tumour. This is because pancreatic cancer is very hard to diagnose at an early stage when an operation is possible.

Some tumours may be very close to the major blood vessels that pass under the pancreas, or may even grow into them. Depending on how close the cancer is to these blood vessels, these tumours may be borderline resectable tumours. This means the surgeon may be able to remove the tumour, but it depends on which blood vessels are affected and how far the cancer has grown.

- If a main vein is involved it may be possible to operate by performing a vein resection (see page 9) at the same time as removing the tumour. This means that part of the vein is also removed.
- If one of the main arteries is affected it will not usually be possible to operate.

Sometimes surgeons may begin to operate to remove a tumour then find that removing it isn't possible, or that removing it might do more harm than good. This might be because the cancer has affected the major blood vessels close to the pancreas. Or the surgeons might find that the cancer has already started to spread to other areas. The surgeons may still carry out a different surgical procedure to help relieve symptoms by allowing bile or stomach contents to flow past the cancer. This is called bypass surgery. Or you may have another type of procedure after the operation to

help relieve symptoms. For example, inserting a stent (a flexible tube) into the bile duct to allow bile to flow, or into the bowel to allow stomach contents to pass through. You will usually then have chemotherapy to treat the tumour.

Chemotherapy and/or radiotherapy treatment may sometimes be used before surgery. The aim is to improve the chance of successful surgery by shrinking the tumour before the operation. In the UK this approach is being considered for locally advanced cancer (cancer that has spread to nearby structures, such as the blood vessels around the pancreas).



Fact sheets on 'Surgery and other procedures to control symptoms', 'Chemotherapy for pancreatic cancer' and 'Radiotherapy for pancreatic cancer' are available on our website – www.pancreaticcancer.org.uk/publications

WHO WILL DO THE OPERATION?

It is recommended that this type of surgery is only done by surgeons who are trained and experienced in pancreatic surgery. This means that people with resectable tumours will usually be referred to a regional pancreatic cancer centre where the surgical team operates on 100-200 patients a year. Research has shown that this gives patients the best outcomes.



There is a list of hospitals with specialist pancreatic teams on our website – www.pancreaticcancer.org.uk/specialistcentres

TYPES OF SURGERY

There are several different operations for pancreatic cancer. They all involve removing all or part of the pancreas, and sometimes other structures around it, in order to remove the cancer. Your surgeon will discuss with you which operation they think is most appropriate for you, depending on where the cancer is and how much of the pancreas is affected. They will also discuss the benefits of the surgery and the risks involved (see page 10) to help you make a decision about having the operation.

WHIPPLE'S OPERATION (PANCREATICODUODENECTOMY) (PD)

This is the most common type of surgery for tumours in the pancreas. It is most often used for tumours in the head of the pancreas that have not spread beyond the pancreas.

A Whipple's operation is done under general anaesthetic, which means you are asleep and won't feel anything during the operation. It takes about 4-7 hours.

The surgeon will make a cut in your upper abdomen (tummy). They will then remove the head of the pancreas, the lower end of the stomach, the duodenum (first part of the small intestines), the common bile duct, gall bladder and surrounding lymph nodes. They then attach the remaining part of the stomach and bile duct to the small intestines. The pancreas is attached to the small

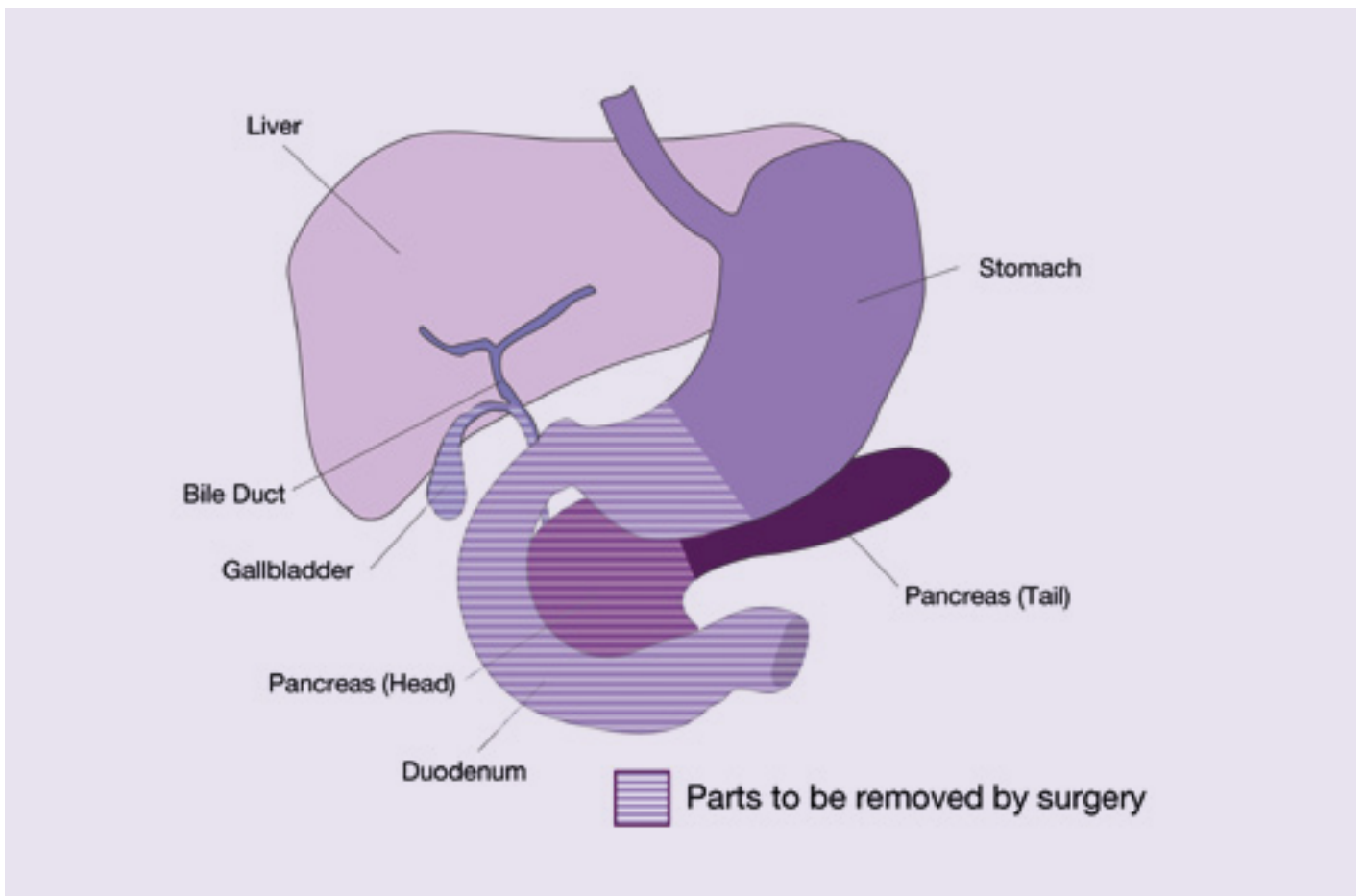
intestines or to the stomach. This means that pancreatic enzymes, bile and stomach contents will mix together and flow into the small intestines. These are all important for normal digestion.

At the end of the operation the surgeon will put drains (small tubes) in place to take away any blood or fluid that may collect in the space where the pancreas was situated. Finally they will close the wound with stitches or staples.

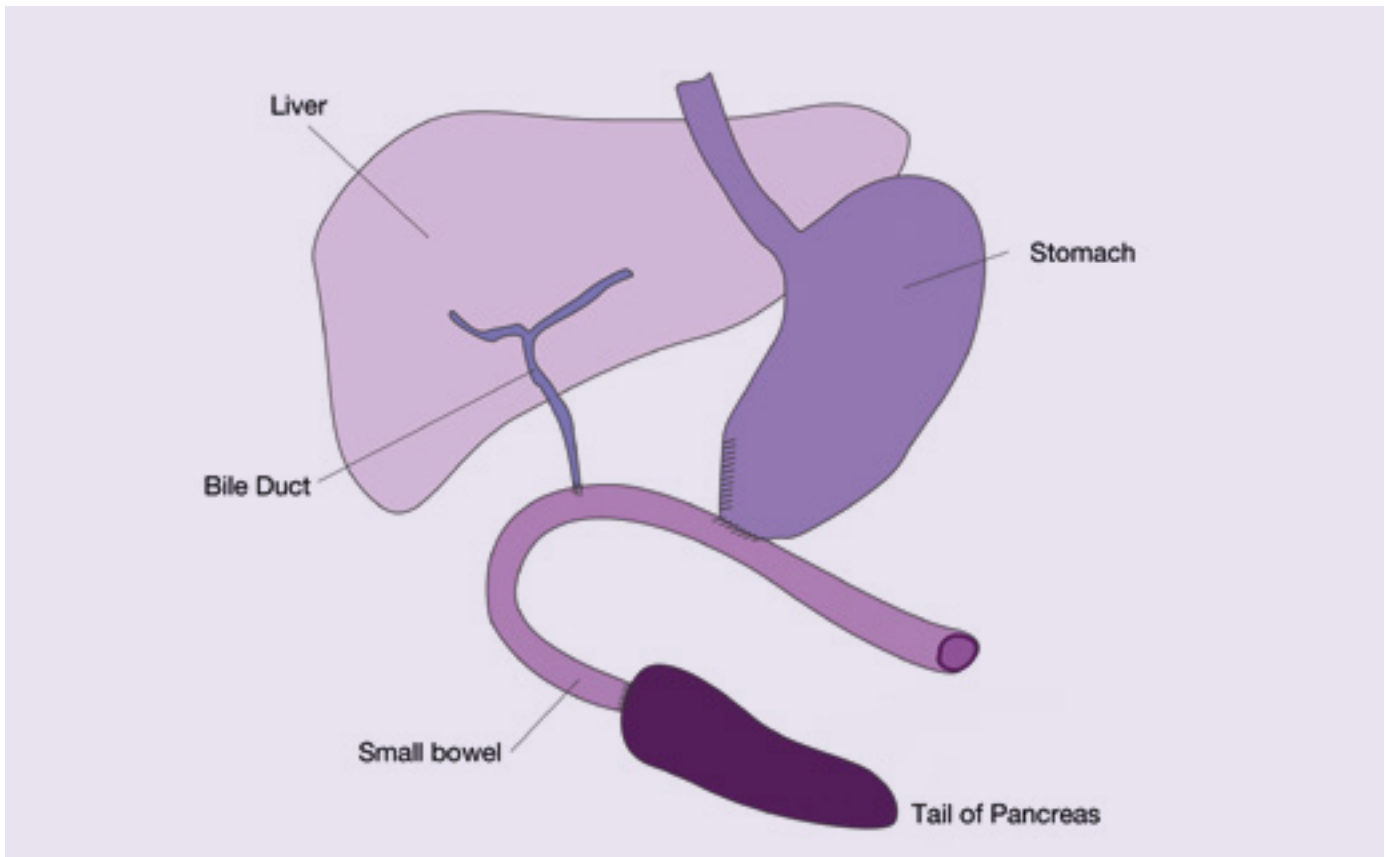
As part of your pancreas is removed, your digestive system will be affected and you will be prescribed enzymes, which help with the digestion of food (see page 16).

The diagrams below show the pancreas and surrounding structures before and after a Whipple's operation.

Pancreas and surrounding organs before Whipple's operation



Pancreas and surrounding organs after Whipple's operation



PYLORUS-PRESERVING PANCREATODUODENECTOMY (PPPD)

This operation is also for tumours in the head of the pancreas. It is very similar to the Whipple's operation. It is done under general anaesthetic and also takes about 4-7 hours. In this operation the surgeon doesn't remove the lower end of the stomach, leaving in place the stomach valve (the pylorus) that controls the passage of food into the duodenum.

The two operations have similar results. The choice between them depends on the surgeon's personal preference, and on technical factors such as how close the tumour is to the duodenum. The surgeon will discuss with you which operation would be most appropriate.

DISTAL PANCREATECTOMY

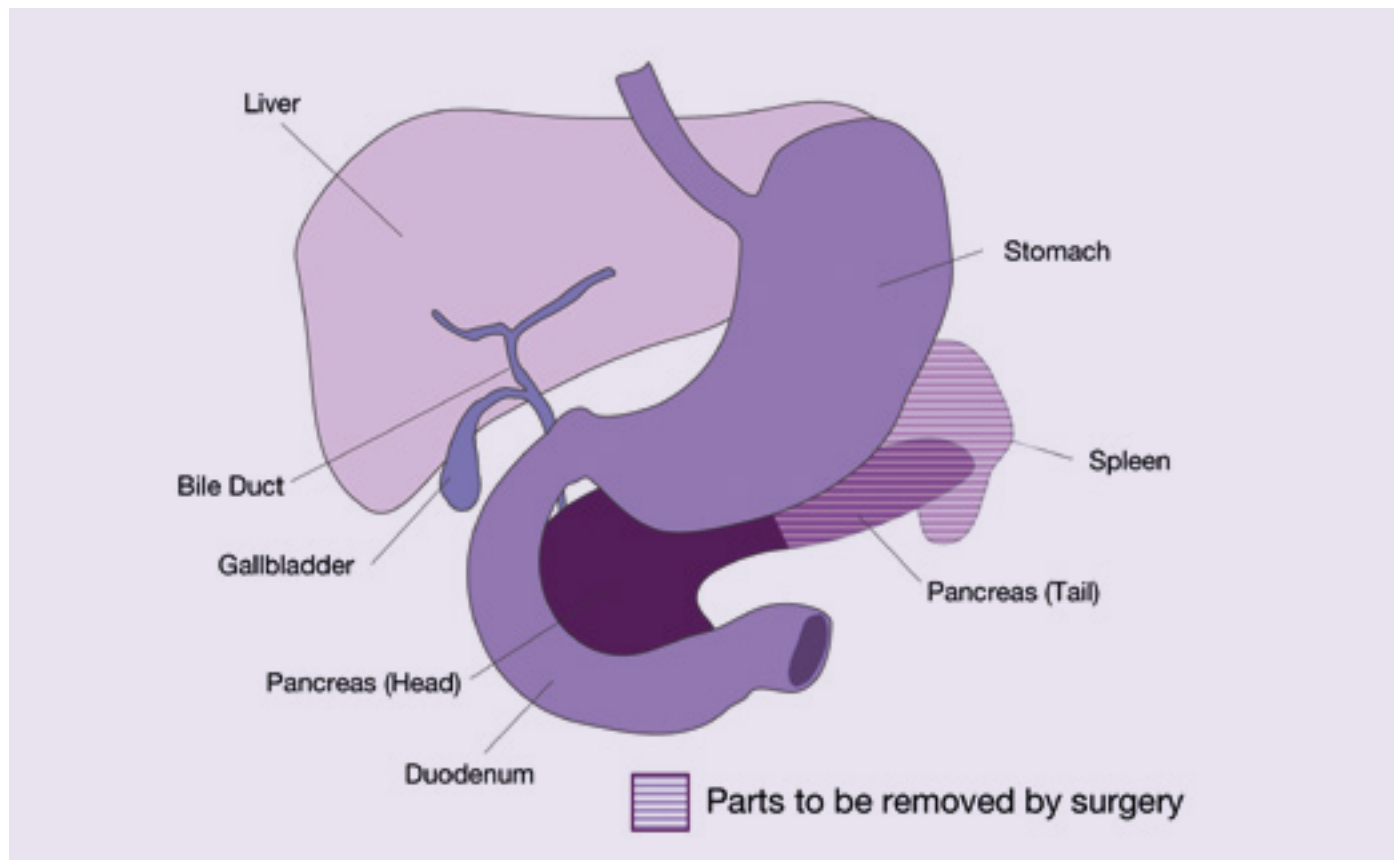
If the cancer is mainly in the tail of the pancreas you may have an operation called a distal pancreatectomy. This involves removing the body and tail of the pancreas – which is the part furthest away from the duodenum. The head of the pancreas is left in tact.

The surgeon often removes the spleen too, as it lies very close to the tail of the pancreas. If this is the case, the blood vessels to the spleen will also be removed. The spleen helps your body fight infections. If your spleen is removed, you will need to make sure your vaccinations are up to date. You will also need life-long treatment with antibiotics to prevent infections.

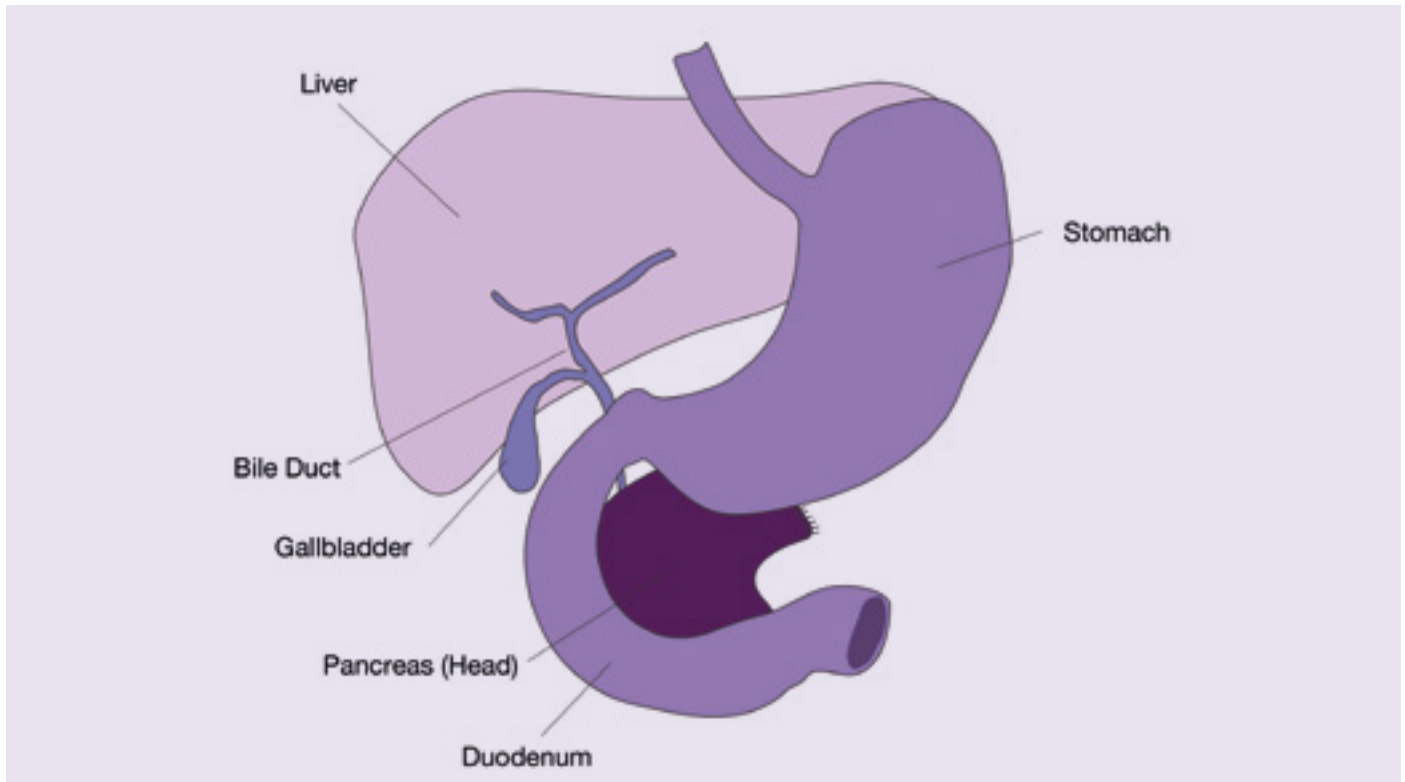
As part of your pancreas is removed, your digestive system will be affected and you will be prescribed enzymes to help with the digestion of food (see page 16). You will also have a significant risk of getting diabetes, and needing to take insulin to manage the diabetes.

The diagrams below show the pancreas and surrounding structures before and after a distal pancreatectomy.

Pancreas and surrounding organs before a distal pancreatectomy



Pancreas and surrounding organs after a distal pancreatectomy



LAPAROSCOPIC (KEYHOLE) SURGERY

This is a different way of doing a Whipple's operation or distal pancreatectomy. It is offered to a small number of patients in some specialist centres. It is more common for distal pancreatectomy and usually only carried out for small tumours. The main difference is that it is keyhole surgery rather than open surgery. It is still done under general anaesthetic and can take several hours.

The surgeon makes several small cuts in the wall of the abdomen. Small hollow tubes with valves are inserted through the cuts. Carbon dioxide gas is pumped into the abdomen to expand it to give the surgeon a clear view. A laparoscope (a long thin tube with a lighted camera on the end) is inserted through one of these tubes. The surgeon then inserts surgical instruments through the tubes, guided by the images from the laparoscope which are displayed on a screen in the operating theatre.

People may spend less time in hospital and recover more quickly than with conventional surgery. However, it is still quite a new way of doing pancreatic cancer surgery, and is only done by surgeons experienced in both keyhole surgery and pancreatic surgery. It is not suitable for all tumours.

TOTAL PANCREATECTOMY

This operation isn't done very often in the UK. This is because research has shown that it isn't any better at controlling the cancer than a Whipple's operation or PPPD.

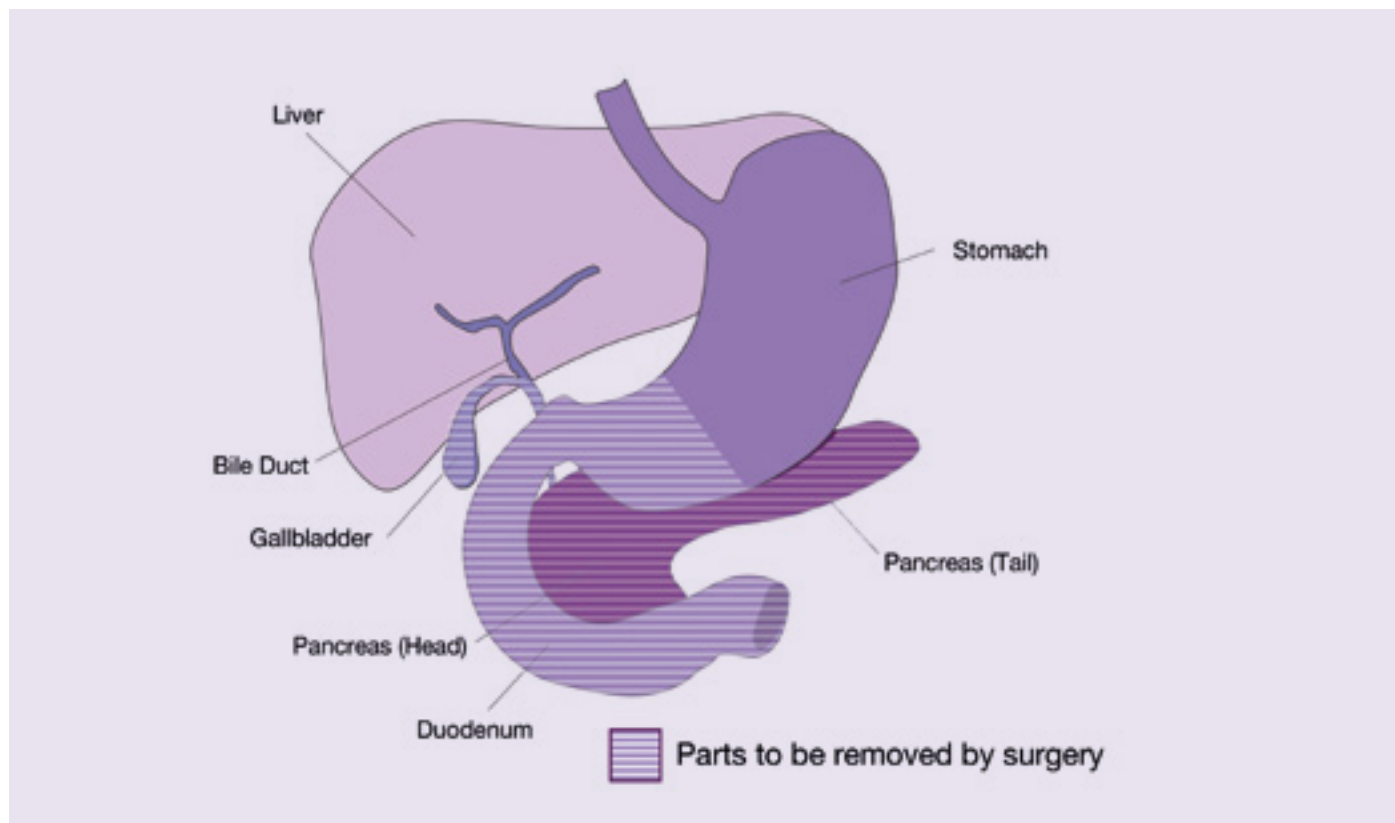
It may be necessary to remove the whole pancreas in certain situations:

- for large tumours
- where there is more than one tumour
- for some specific types of pancreatic cancer, for example intraductal papillary mucinous neoplasm – IPMN
- occasionally, for technical reasons.

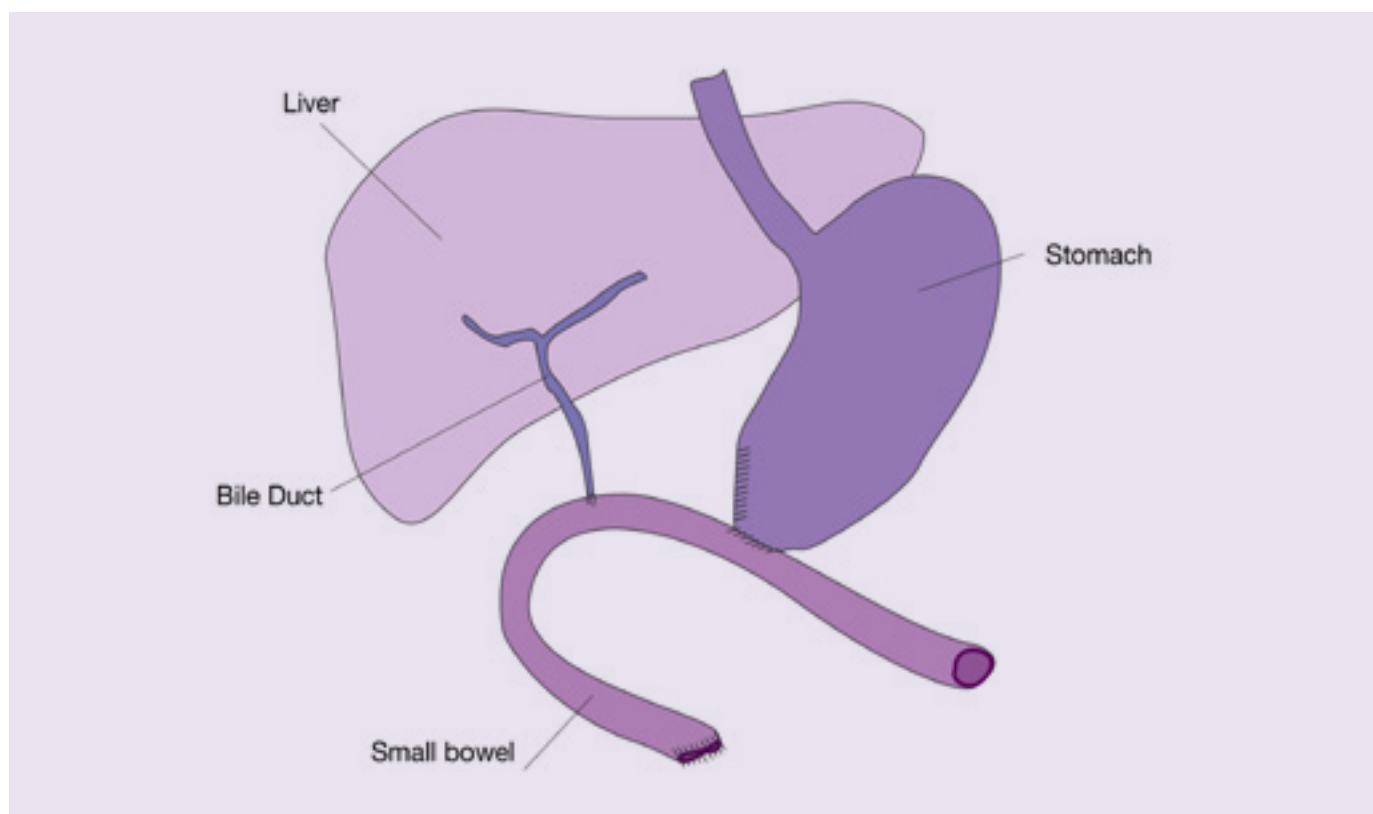
In this operation the surgeon removes the whole pancreas, the duodenum, part of the stomach, the gall bladder and part of the bile duct, the spleen and some of the surrounding lymph nodes.

The diagrams below show the pancreas and surrounding structures before and after a total pancreatectomy.

Pancreas and surrounding structures before total pancreatectomy



Pancreas and surrounding structures after total pancreatectomy



As the pancreas is completely removed your digestive system will be affected and you will need to take enzymes to help you digest food (see page 16). You will also get diabetes and will need insulin to control this (see page 16). As your spleen is removed, you will need vaccinations against certain bacteria and life-long antibiotic treatment to prevent infections.

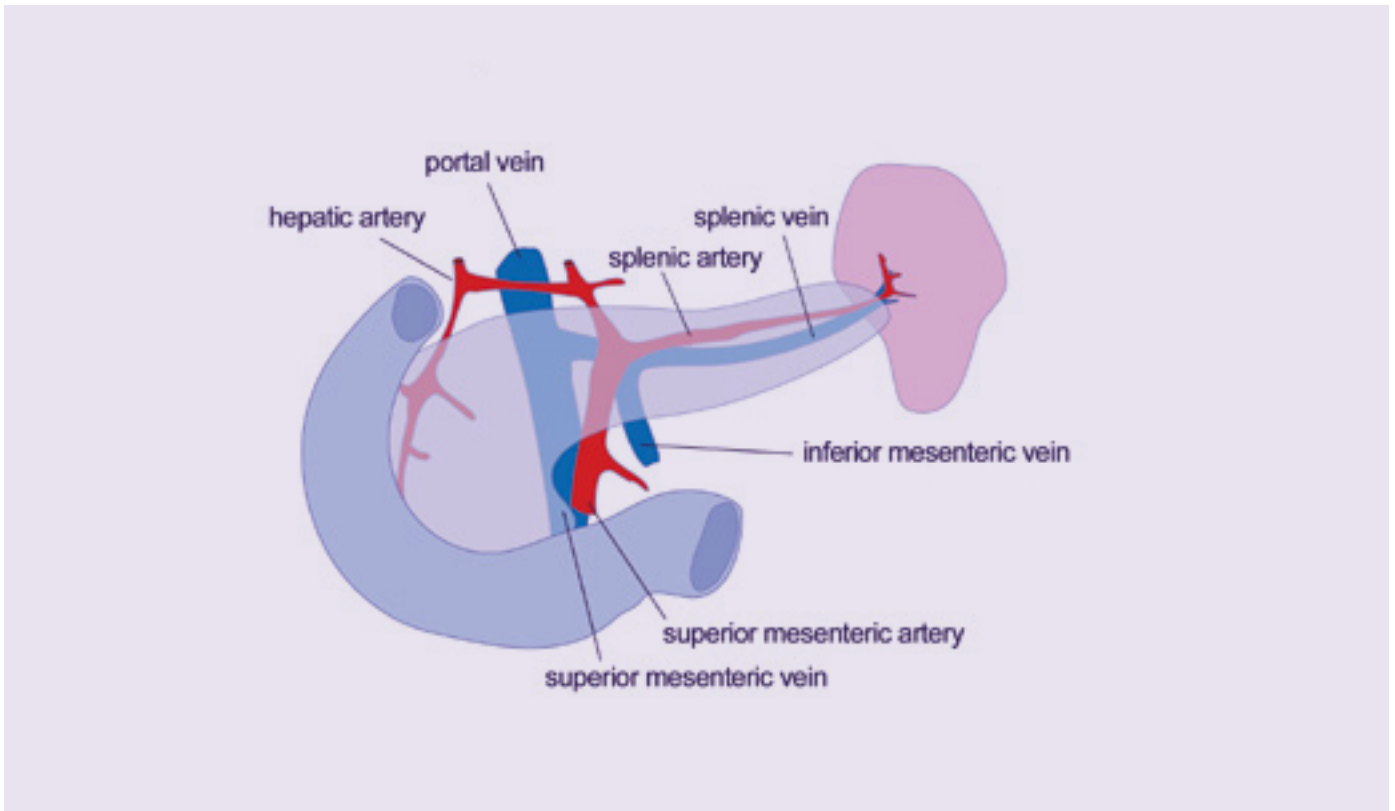
VEIN RESECTION

Sometimes the cancer grows into or around the major veins that lie next to the head of the pancreas. These are called the superior mesenteric and portal veins. To remove the cancer completely the surgeon may need to remove a section of these veins and then join them back together. This is sometimes done by inserting a section of vein (a graft) from somewhere else in the body. This is called vein resection and reconstruction.

A scan before your operation may show that the veins are affected. But sometimes the surgeon may only discover that the veins are involved after they have begun the Whipple's operation.

Vein resection makes the surgery to remove the cancer even more complicated. But depending on how much of the veins are affected, surgeons have found that it may be possible for it to be done safely without adversely affecting the outcome.

Pancreas with surrounding blood vessels



BENEFITS AND RISKS OF PANCREATIC CANCER SURGERY

There are risks and benefits with any type of surgery, and there are some that are specific to surgery for pancreatic cancer. Your surgeon will discuss the potential benefits, risks and possible complications, and your individual risk with you so you can decide whether to have surgery.

WHAT ARE THE LIKELY BENEFITS?

The aim of surgery to remove pancreatic cancer is to increase your life expectancy. Surgery is the most effective treatment for early stage pancreatic cancers and generally results in longer survival than where surgery is not possible.

There is still a risk of the cancer coming back (recurrence) after surgery, and you will have regular follow-up appointments to monitor this (see page 18). How likely this is to happen will depend on the type of tumour you have and how far it has spread at the time of the surgery. Most people will be offered chemotherapy after surgery to reduce the chance of the cancer coming back.

WHAT ARE THE RISKS AND POSSIBLE COMPLICATIONS?

Pancreatic surgery is major surgery so there is a small risk of dying as a result of the operation. Your surgeon will talk to you about the risk in your individual case.

General risks of major surgery include:

- bleeding
- chest infections
- incisional hernia, where part of the body pushes through the operation scar
- infection of the wound, areas where drains are inserted, or internal organs – you will be given antibiotics to reduce this risk
- blood clots in the lungs (pulmonary embolism) or veins (deep vein thrombosis or DVT).

There are also some specific risks for pancreatic cancer, which include:

- anastomotic leaks, which are leaks from the joins to other organs made by the surgeon
- the surgeon not being able to remove the cancer after all
- delayed stomach emptying causing feeling and being sick (nausea and vomiting) – this is usually only temporary and relieved with drugs
- getting diabetes (see page 16).

BEFORE AND AFTER SURGERY

The information in the following sections is a general overview, because practice varies in different hospitals and individual patients recover at different rates.

Some regional centres also use **enhanced recovery programmes (ERPs)** that aim to speed up recovery, reduce the length of time patients spend in hospital and improve patients' experience. You will need to be as well as possible before your operation, and your doctors will aim to identify any possible complications after it. Each centre has its own programme, which will include precise details of what should happen every day, both before you are admitted for your surgery and while you are in hospital. These might include what you should eat and drink, what exercise you should do, and how you will be monitored. Not all patients will be suitable for an ERP. If your centre offers you an ERP they will explain what is involved in detail some time before your planned surgery.

HOW LONG WILL I WAIT FOR MY SURGERY?

Once you have made the decision to go ahead with surgery to remove your cancer you will probably wait between two and four weeks for the operation to be done. Exactly how long depends on various factors, including:

- how fit you are in general, including whether you have lost weight and need a 'build-up' diet or nutritional supplements
- whether you need to wait for symptoms such as jaundice to improve
- when the surgeon is able to do your operation.

You also need to be prepared for the possibility of your operation being cancelled on the day, for example if there isn't an intensive care or high dependency care bed available.

GETTING READY AT HOME

Once you know you are going to be having surgery there are a few things you can do to prepare.

The fitter you are the better, so it's a good idea not to drink alcohol, to stop smoking, take some regular exercise if you can, and eat healthily. If you have lost weight and there is time before your surgery, you can try to put some weight on with a build-up diet – you could ask your specialist nurse or a dietitian for advice about how to do this. You may also be prescribed pancreatic enzyme supplements by your specialist to help improve your digestion and absorption of food. If you have jaundice, drinking plenty of fluid can help to keep your kidneys working properly and reduce the bilirubin level slightly.



You can find more information about diet and pancreatic cancer on our website – www.pancreaticcancer.org.uk/diet

Pancreatic cancer surgery is major surgery and you will need time to recover. It can be helpful to get things ready for when you come home. You might want to stock the freezer with meals, or ask friends and relatives in advance about doing some of the heavier jobs like changing your bed sheets or vacuuming.

If you live on your own or think you'll need extra help at home after your operation, talk to your specialist nurse. They should be able to help with arranging the right sort of support for when you are ready to go home, for example a district nurse to help with looking after your wound, or a carer to help with dressing or washing. You may need to be assessed while you are in hospital to make sure you have enough support when you go home.

GOING INTO HOSPITAL

You will go into hospital a day before your operation or early on the morning of the operation, and you will be admitted to a ward. You will probably have some of the following tests to check your fitness for surgery. In most centres you will have these tests at a pre-admission clinic a couple of weeks before your operation:

- your temperature, blood pressure, respiration rate (breathing), height, weight and urine will all be measured
- an electrocardiogram (ECG) to check your heart rhythm
- a blood test to check your full blood count and clotting, and your liver and kidney function
- some form of cardiopulmonary (heart and lung) exercise test, such as cycling on a stationary bike for a short period.

You will also be told how long before your surgery you must stop having anything to eat and drink, and will be advised about taking any regular medication.

BEFORE YOUR OPERATION

Before you go to the operating theatre you will:

- see your surgeon, who will make sure you understand exactly what is going to happen and ask you to sign a consent form, if you haven't already
- see the anaesthetist, who will talk to you about the anaesthetic for your surgery and pain control afterwards (see below for more information)
- have a bath or shower
- need to take off make-up, nail polish and jewellery, and remove dentures and piercings.

DURING YOUR OPERATION

Most operations to remove pancreatic cancer last from 4-7 hours. Your surgeon will be supported by a team including other doctors (registrars), the anaesthetist and theatre nurses.

AFTER YOUR OPERATION

When you wake up after your surgery you will be in the intensive care (ITU) or high dependency unit (HDU) for the first 24-48 hours. This is so that the nurses can monitor you closely.

You will have had various tubes or drains put in while you were under the anaesthetic. These might include a tube in a vein in your arm or neck for giving you fluids or medication. You may have drains under the skin near your wound to drain off fluid to prevent internal infection. You will have a thin tube (catheter) through your urethra (the tube you pass urine through) into your bladder. You may have a feeding tube either in your nose, or in your abdomen (tummy). These will all be removed as soon as they are no longer needed.

You will be given antibiotics to prevent any infections. You will also have drugs to control your pain. At first you may have an epidural (painkillers delivered continuously through a drip in your back), or a PCA (patient-controlled analgesia) device where you press a button when you need painkillers. As time goes on the epidural or PCA will be stopped and you will be given painkillers by injection, suppository (medication inserted into your back passage) or tablet instead.

You will have a wound across the top of your abdomen below your ribs. The nurses will change the dressings and tell you how to look after the wound when you go home. Your stitches or staples (clips) will be removed about 10 days after your operation. If you have already left hospital this may be done at your GP surgery or by the district nurse.

Once the doctors are happy with your progress you will spend 5-12 days recovering on the ward. You will probably feel very weak after your surgery and it may come as a bit of a shock. While you are in bed you will be encouraged to move regularly so you don't get pressure sores. The nurses will get you up and about as soon as possible to avoid complications such as blood clots (DVTs) or chest infections.

EATING AND DRINKING

Your bowel and pancreas need time to recover and heal from the surgery so you won't be able to eat or drink for a few days after your operation. In some centres you will be fed a liquid diet through a small feeding tube in your nose (nasojejunal) or abdomen (jejunostomy) until you are able to start eating and drinking again. However, some surgeons prefer to encourage patients to eat and drink as soon as they can. Feeding tubes can be uncomfortable and occasionally cause complications. You will also have had a tube inserted that passes down your nose into your stomach. This should make you more comfortable as it removes excess digestive juices from your stomach, which may make you vomit.

When you are ready to eat and drink again you will start with fluids before gradually moving on to solid foods. You should see the dietitian during this time. Removing part or all of the pancreas will affect how well it works and can result in various symptoms related to diet and nutrition, including diabetes. The dietitian will be able to advise you on taking pancreatic enzyme supplements to help with digestion, and nutritional supplements if you have lost weight. They can also help you manage diabetes if you have become diabetic as a result of your surgery.



You can find more information about pancreatic cancer enzyme supplements on our website – www.pancreaticcancer.org.uk/diet

GOING TO THE TOILET

During the operation you will have a catheter (fine tube) put into your bladder that drains your urine into a bag. This allows the nurses to check how much urine you are producing. The catheter will be taken out once you can get out of bed to use the toilet or when your epidural is removed.

Your bowels won't start working properly for a few days. When they do open you may have diarrhoea (loose watery stools), though this should settle down.

Your stools may be pale, oily and smell unpleasant. This is called steatorrhoea. It happens because the pancreas can't produce enough enzymes to digest the fat in your diet. Your specialist or GP can prescribe pancreatic enzyme supplements to help with this.

SEEING THE PHYSIOTHERAPIST

A physiotherapist will come and see you soon after your operation. They will check your chest and teach you some breathing exercises to help get your lungs working properly after the anaesthetic. They will also encourage you to get out of bed, sit in a chair and start walking. This will all help to get your circulation and your digestive system moving again.

GOING HOME

You will probably spend 10-14 days in hospital in total, but it may be as little as a week or perhaps as long as three weeks. This will depend on how well your recovery goes and whether you are managing to eat and drink normally.

What support you have when you go home will also make a difference, and the nurses will discuss this with you before and after your surgery. For example, in the early days you may need help to get washed or dressed or to cook a meal. You won't be able to do household tasks such as vacuuming or carry heavy shopping for some time. So if you will need some extra help at home you should tell the ward nurses as soon as possible so that they can make arrangements for your needs to be assessed by social services.

On the day you are discharged from hospital you will need someone to come and pick you up by car. You won't be able to travel on public transport or drive yourself.

GETTING BACK TO NORMAL

Making a full recovery from surgery for pancreatic cancer is different for everyone. It will take several months, perhaps even up to a year. So it's important not to underestimate how long it might take you to get back to normal activity levels.

You will feel tired and weak at first, which is normal after a big operation. Try to find a balance between being active and resting. It's a good idea to get up and dressed every day, but to take a short nap during the day if you need to.

As well as feeling weak, people often feel low or depressed after surgery. So be kind to yourself and don't expect too much too soon. Aim to gradually get back to daily activities such as walking, household tasks and shopping. You should find you become stronger and more active week by week.



You can read about other people's experiences of recovering from surgery on our website – www.pancreaticcancer.org.uk/stories

CARING FOR YOUR WOUND AT HOME

Your specialist nurse or ward nurses will arrange for a district nurse to visit you if you have dressings that need changing or your stitches need to be removed.

It won't hurt to get your wound wet, but showering is better than a long soak in the bath. It is best not to use bubble bath or anything else in your bathwater until the wound has healed. Make sure you dry the wound area well.

The area around your wound may be sore for several weeks. You can take regular painkillers to ease this. If the wound itself becomes sore or inflamed or is leaking, get in touch with your district nurse or GP as this might mean it has become infected.

PAIN

You may have some pain or discomfort in the first few weeks after your surgery. You will be prescribed painkillers to manage this and you should take them regularly as advised.

Talk to your GP if the medication you have doesn't control your pain.

Your pain will ease over time. You should be able to reduce the amount of painkillers you take and eventually stop taking them altogether. Your GP will be able to tell you the best way to do this.

EATING AND DRINKING

After pancreatic surgery it is common to have a reduced appetite, to feel full after only small amounts of food and to find that foods taste different. But it's important to try to eat a well-balanced diet and aim to put back any weight you may have lost before your surgery.

You'll probably find it easier to eat frequent small meals and snacks throughout the day. Your dietitian can give you tips about eating to gain weight.

If you need extra help with putting on weight your GP or dietitian can give you advice about nutritional supplements.

You should be prescribed pancreatic enzyme supplements to help with the absorption of food. If you have any diet-related symptoms, such as wind, stomach pain, diarrhoea or steatorrhoea, you may need to adjust the amount of supplements you take to help relieve them.

You may also be prescribed vitamin and calcium supplements, which help replace nutrients you can't absorb after surgery.

Talk to your dietitian or specialist nurse if you continue to have dietary-related symptoms.



You can find more information about diet-related issues and how pancreatic enzymes may help on our website – www.pancreaticcancer.org.uk/diet. Read about how other people manage their diet after pancreatic cancer at www.pancreaticcancer.org.uk/stories

DIABETES

You may develop diabetes as a result of the surgery to remove the cancer. This will need to be managed to control the sugar levels in your blood. Some people who have had pancreatic surgery may be able to do this with tablets, while others may need insulin injections. People who have had a total pancreatectomy won't produce any insulin themselves. They can find managing the diabetes very difficult, and will need good diabetes support.

You can get expert help from a diabetes nurse specialist. They can talk to you about managing the condition in general and give you advice about managing your medication or injections. You may also find it helpful to contact Diabetes UK for general information on managing diabetes – www.diabetes.org.uk

If you haven't been diagnosed with diabetes but you have symptoms such as being very thirsty and passing lots of urine, then you should go and see your GP.

DRIVING

You shouldn't start driving until you have got your strength back and can move normally as you must be able to stop in an emergency. You also need to make sure you can concentrate and any painkillers you are taking don't make you sleepy. You might also need to tell your insurance company that you've had surgery to make sure you are still covered.

SEX

It is fine to have sex once your wound is fully healed and you feel well enough. If you are anxious about it, give yourself time and talk to your partner about your concerns. Talk to your GP if you experience any difficulties in the longer term.

EXERCISE

Being physically active after cancer treatment can improve how you feel physically and mentally, and reduce the risk of getting other health problems. So doing some gentle exercise will help you feel better and speed up your recovery.

The best form of exercise is probably walking, even if it's just round the garden or down to the local shops at first. If the weather is bad, try walking up and down the stairs. Walking is easy because you don't need any special equipment or to go anywhere to do it, but there's no single activity that's best for everyone, so choose something you enjoy and that fits in with your life.

Whatever exercise you do, it's important to start slowly and build up your fitness gradually. For example, if you choose walking, gradually try to do a little more each week, going a bit further or a bit faster. Once you are fully recovered you will probably be able to do at least as much exercise or sport as you did before you were ill – you might even feel like doing more.

Macmillan Cancer Support has produced a DVD called Get Active, Feel Good with a simple exercise to music programme and stories from people describing how becoming active has helped them. Together with a support pack it's free from Boots stores or from be.macmillan.org.uk

GOING BACK TO WORK

If you were working before your surgery it will probably be at least three months before you are ready to go back, although some people return to work sooner. It will depend on the type of work you do, and you may need to talk about it with your GP as well as your employer. If you are having chemotherapy after your surgery you may not feel like working until this has finished.

You might want to talk to your employer about working flexibly, such as working reduced hours to begin with and building up your hours gradually. Macmillan Cancer Support's website has lots of advice on work and cancer for both employees and employers www.macmillan.org.uk

FOLLOW-UP AFTER SURGERY

Your surgeon will talk to you after the operation to tell you what they found.

They will also send the parts of the pancreas and other organs removed for testing (histology) in the laboratory. The results are usually discussed in a meeting of the multidisciplinary team, involving surgeons, radiologists, gastroenterologists and oncologists. This will confirm what they found and help with the decision about further treatment such as chemotherapy. It usually takes about two weeks for the histology results to come through. You will have an outpatient appointment about two to four weeks after you leave hospital to discuss the results with your specialist. This is also a chance to discuss any problems or concerns you are having.

Long-term follow-up (check ups) vary between different centres. Most patients go on to have chemotherapy, so longer-term follow-up, including scans, may be done by your oncologist, or may be shared between the surgeon and oncologist.

Your specialists will explain your appointments for support with diet, enzyme supplements and other medications. If you have no further problems you will probably have an outpatient appointment every three to six months after your surgery for the first two years. After two years you will usually only have an appointment every year, for up to five years. If you experience any problems you can ask for an appointment sooner.

QUESTIONS TO ASK

- Can I have surgery to remove the tumour?
- Is the cancer affecting any of the major blood vessels?
- Which type of operation do I need?
- How experienced is the surgeon at performing this type of operation?
- Why can't I have the operation at my local hospital?
- What are the benefits and risks of surgery?
- How much of my pancreas will be removed?
- What are the after effects of surgery?
- Will I be on an enhanced recovery programme (ERP)?
- Will I have to go on any medication after surgery?
- Will I need to change my diet following surgery?
- What other treatment options do I have?
- How long will it take me to recover from the surgery?
- Will I need extra help at home following the surgery?
- How soon will I be able to go back to work?

FURTHER INFORMATION AND SUPPORT

PANCREATIC CANCER UK

Pancreatic Cancer UK is the only national charity fighting pancreatic cancer on all fronts: Support, Information, Campaigning and Research. We are striving for a long and good life for everyone diagnosed with pancreatic cancer.

DEDICATED PANCREATIC CANCER SUPPORT AND INFORMATION SERVICE

- We run a confidential Information and Support Line for anyone affected by pancreatic cancer. Our Specialist Nurses can provide individual specialist information about pancreatic cancer, treatment options and managing symptoms and side effects. We can also listen to your concerns and provide support.

Freephone: 0808 801 0707

Email: support@pancreaticcancer.org.uk

The service is available Monday to Friday 10am-4pm

- We run online discussion forums for pancreatic cancer patients, their carers and families to enable them to share experiences, information, inspiration and hope.
<http://forum.pancreaticcancer.org.uk>
- We provide easy access to the best and most up-to-date information on pancreatic cancer – www.pancreaticcancer.org.uk

OTHER SOURCES OF INFORMATION AND SUPPORT

Healthtalkonline

www.healthtalkonline.org/Cancer/Pancreatic_Cancer

Personal experiences presented in written, audio and video formats.

Macmillan Cancer Support

www.macmillan.org.uk

Freephone Support Line 0808 808 00 00 (Mon-Fri 9am-8pm)

Provides practical, medical and financial support for anyone affected by cancer.

Maggie's Centres

www.maggiescentres.org

Centres around the UK, and online, offer free, comprehensive support for anyone affected by cancer.

NET Patient Foundation

www.netpatientfoundation.org

Call free on 0800 434 6476

Information and support for people with neuroendocrine tumours (NETs).

This fact sheet has been produced by the Support and Information Team at Pancreatic Cancer UK. It has been reviewed by healthcare professionals and people affected by pancreatic cancer.

References to the sources of information used to write this fact sheet and an acknowledgement of the health professionals who reviewed the fact sheet are available on our website – www.pancreaticcancer.org.uk/surgery

Pancreatic Cancer UK makes every effort to make sure that its services provide up-to-date, unbiased and accurate information about pancreatic cancer. We hope that this information will add to the medical advice you have received and help you to take part in decisions related to your treatment and care. Please do continue to talk to your doctor, specialist nurse or other members of your care team if you are worried about any medical issues.

Give us your feedback: We hope you have found this information helpful. If you have any comments or suggestions about this fact sheet or any of our other publications, you can email publications@pancreaticcancer.org.uk or write to the Information Manager at the address below.

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Pancreatic Cancer UK is a charity registered in England and Wales (1112708)

