Imperial College Healthcare NHS Trust

Hepato-pancreatico-biliary (HPB) surgery

Pancreaticoduodenectomy surgery: The Whipple's procedure

Information for patients, relatives and carers

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Introduction

Your doctors have recommended that you have an operation called a pancreaticoduodenectomy, also known as a pancreatic resection. Your consultant surgeon will discuss the exact reasons for your operation with you.

We understand that you may have questions about your condition and your operation. We hope this booklet will help you and those supporting you. If you have any further questions please do not hesitate to ask us.

Hammersmith Hospital

Hammersmith Hospital is a specialist centre for hepato-pancreatico-biliary (HPB) surgery. You will be looked after by our team of specialists who carry out around 80 pancreatic resections each year. Studies have shown that being treated at a specialist centre, such as Hammersmith Hospital, results in better outcomes and lower rates of complications for patients.[1] [2] [3] [4] [5]

[1] NICE Guideline NG12 (2021). Suspected cancer: recognition and referral.

[2] NICE Guideline NG85 (2018). Pancreatic cancer in adults: diagnosis and management.

[3] Federation of Specialist Hospitals (2014). A report on the outcomes achieved by specialist hospitals.

[4] T van Heek, et al, 'Hospital Volume and Mortality After Pancreatic Resection', Ann Surg. 2005 Dec; 242(6): 781–790;

[5] EA Halm, C Lee, MR Chassin, 'Is volume related to outcome in health care? A systematic review and methodologic critique of the literature', Ann Intern Med, 2002 Sep 17;137(6):511-20

Understanding your condition and surgical treatment

The pancreas

The pancreas is a gland that lies at the back of the upper abdomen, behind the stomach. It does two important jobs:

1. Making enzymes (or digestive juices): to enable you to breakdown and absorb nutrients from the food you eat.
2. Producing hormones such as insulin: to control the level of glucose (sugar) in your blood. A lack on insulin can cause diabetes.

Your pancreas is an important part of your digestive system and is linked to large blood vessels and several organs including the liver, kidneys and spleen.

What is a pancreatic resection?

A pancreatic resection is also known as a **pancreaticoduodenectomy.** There are **two types** of operation:

- a **Whipple's** procedure or a
- a **pylorus preserving pancreaticoduodenectomy** (**PPPD)** procedure

Both operations involve removing the head of the pancreas, a portion of the bile duct, the gallbladder and the duodenum. In a Whipple's procedure, part of the stomach is also removed.

Depending on the type of technique used, the remaining pancreas is either rejoined to the stomach (known as a pancreaticogastrostomy) or a part of the small bowel called the jejunum (known as a pancreaticojejunostomy). The bile duct and stomach are rejoined to the jejunum. This allows pancreatic juice, bile and food to flow back into the gut so that digestion can continue normally.

The diagrams on page 5 and 6 show the normal anatomy of the pancreas and its relationship to nearby organs. The areas marked by a dotted line highlight the parts of the organs removed during the Whipple's or PPPD procedure. Your consultant pancreatic surgeon will explain the type of operation that you will have and the technique that will be used.

The Whipple's procedure.

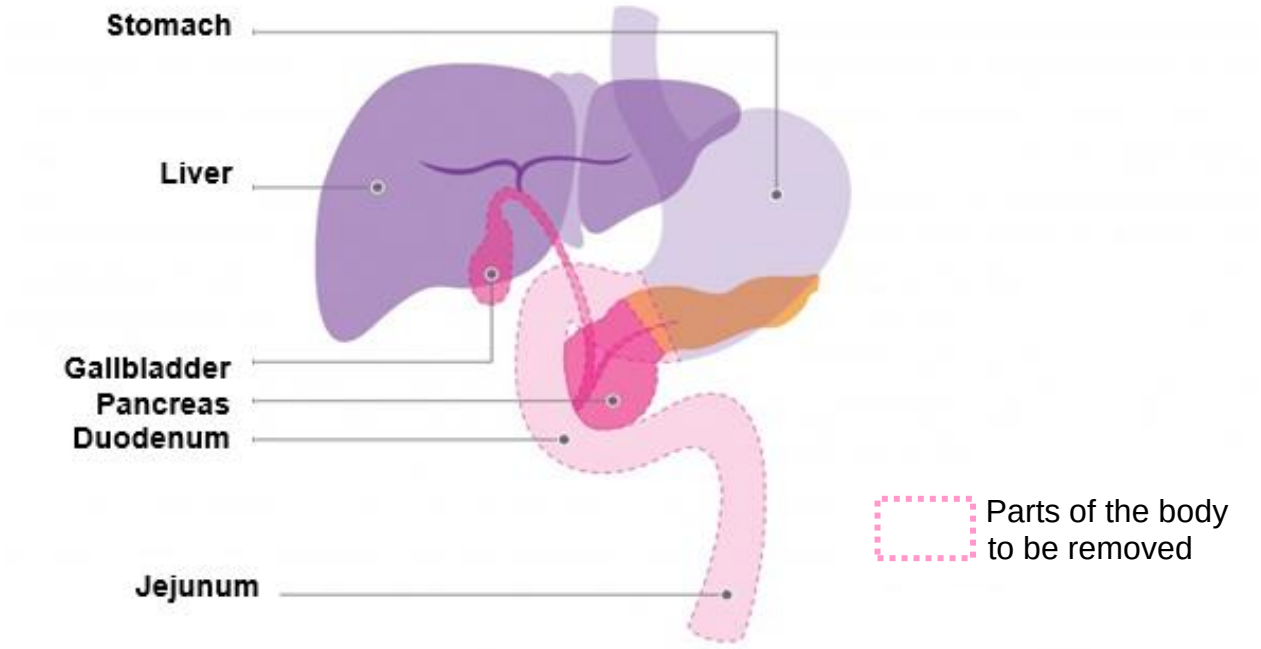
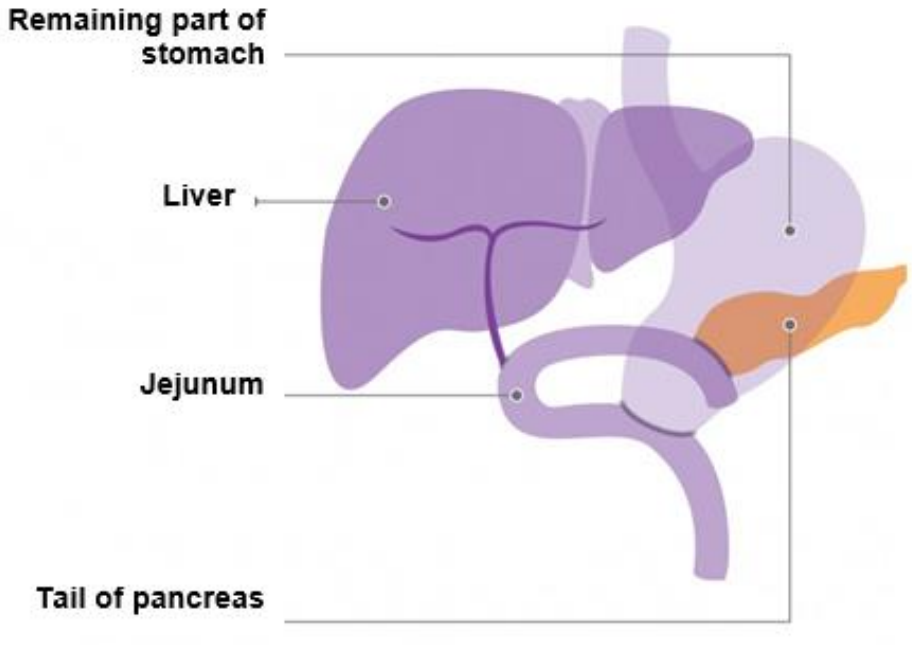


Diagram showing the parts to be removed during the Whipple's surgical procedure.



After the Whipple's procedure, showing the pancreaticojejunostomy technique.

With thanks to Pancreatic Cancer Action for permission to use the above images.

The pylorus preserving pancreaticoduodenectomy (PPPD) procedure.

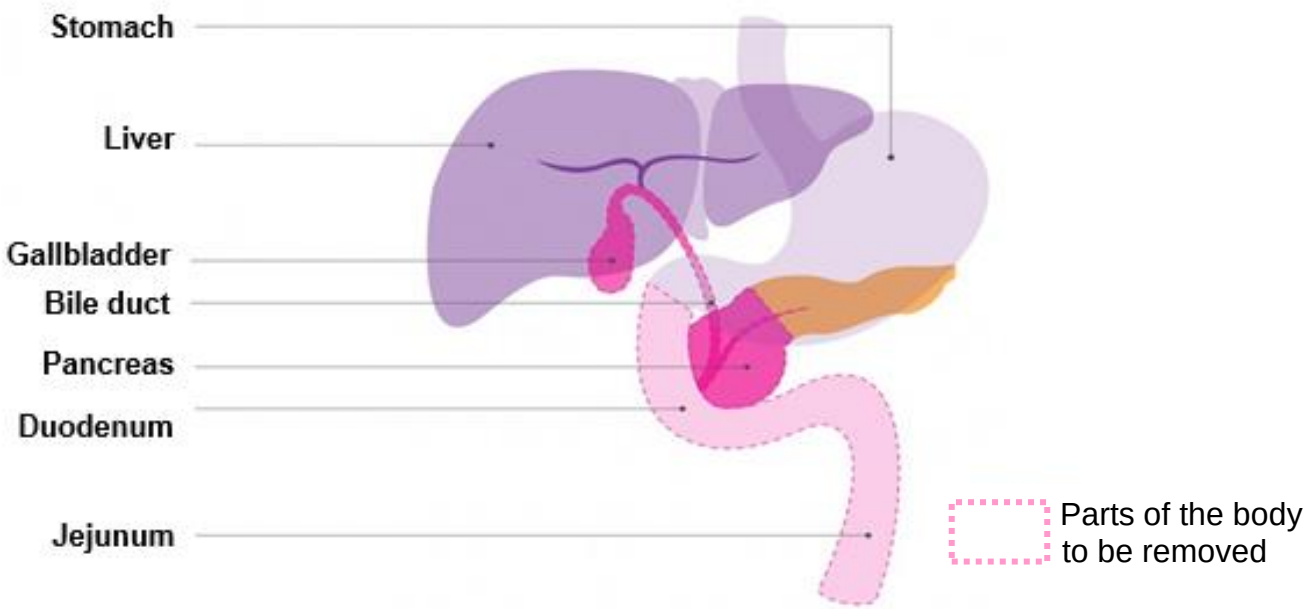
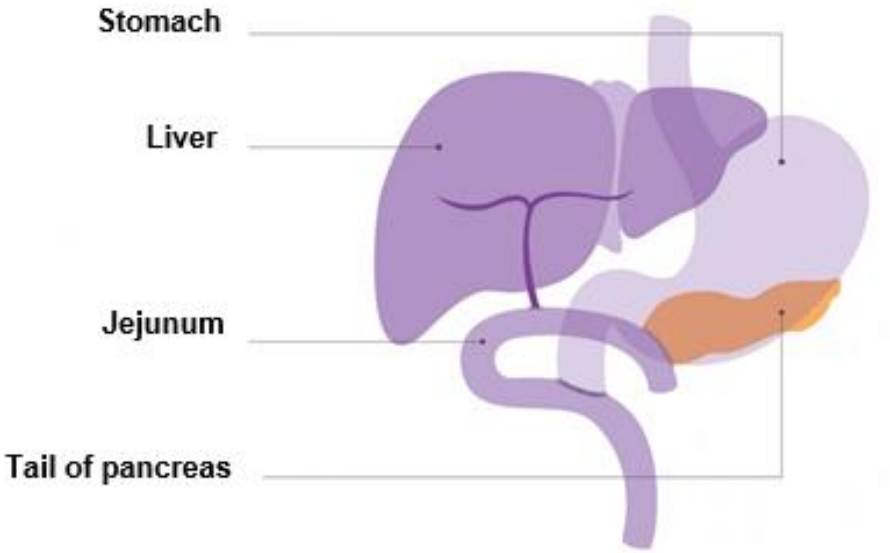


Diagram showing the parts to be removed during the PPPD surgical procedure.



After the PPPD procedure, showing the pancreaticojejunostomy technique.

With thanks to Pancreatic Cancer Action for permission to use the above images.

Why do I need to have a pancreatic resection?

A pancreaticoduodenectomy operation is usually performed to treat:

- cancers in the head of the pancreas
- other tumours, polyps or non-cancerous (benign) lumps in or near the pancreas
- cancers of the bile duct or small bowel
- benign disorders such as chronic pancreatitis
- jaundice, which is caused by a blockage in the bile duct (your skin and eyes will have a yellow tinge and your urine will be darker in colour)

In the operation we will plan to remove all primary tumours if there is no spread outside the pancreas to another organ.

Risks and complications

As with all major surgery, there are some risks and complications associated with the procedure.

The risks involved are different for each person and depend on any other health problems you have, your age, whether you smoke and how fit you are. Your consultant surgeon will discuss your individual risks with you before your surgery. It is important that you understand these before you sign your consent form so please feel free to ask any questions you have.

There are some specific risks with pancreaticoduodenectomy surgery:

Pancreatic leak: Occasionally, a small amount of fluid leaks through the join between the pancreas and the small bowel after the operation. Usually this is managed with a drain and medication. Although rare, a leak is the most serious complication after this type of surgery. On rare occasions you may need to go back to the operating theatre.

Bile leak: This occurs when the join between your bile duct and your small bowel does not heal very well. Sometimes bile leaks need to be managed with an additional drainage tube and / or a percutaneous transhepatic cholangiogram (PTC) – a test that uses x-rays to look at the bile duct.

Post-operative ileus: This occurs when your bowel does not function for a little while after the operation. This is common and can last for a day or two or, occasionally, for a couple of weeks. You may feel sick (nauseated), you may vomit, your abdomen may feel swollen and you will not be able to eat anything. This settles with time. If it lasts longer than a couple of days we will feed you directly into your veins with artificial liquid nutrition (known as parenteral nutrition).

Delayed emptying of the stomach: Some patients experience slower recovery of digestion, which means it can take longer to get back to normal eating and drinking. This usually occurs around 7 – 10 days after your operation. You may feel nauseated (sick), feel full especially after eating and drinking and you may vomit. This is called delayed gastric emptying. If this happens, you may need a drip going into your vein to keep you hydrated with fluids. You may also be given parenteral nutrition (see page 19).

Any complications will be discussed with you if they occur. We will explain how we propose to manage your care during this time. If you are unsure about anything please ask as we understand that this can be a worrying time for you and your family.

General risks of surgery

As with all operations, there are a number of generic risks which include:

- a wound infection
- chest infection
- a blood clot
- bleeding

Diabetes

The pancreas produces insulin which is needed to control your blood glucose (sugar) levels. As a large amount of the pancreas is removed during a pancreaticoduodenectomy operation, there is a risk you will develop diabetes. This is known as pancreaticogenic, or type 3c, diabetes. If you find that you have increased thirst, increased urination and/or unexplained weight loss after your surgery, you should seek immediate advice from your GP.

If you are not diagnosed with diabetes after your operation, you will be monitored on a yearly basis by your GP for raised blood glucose levels.

Before your operation

How to best prepare for surgery

Our research shows that patients who are fit and well-nourished before they undergo pancreaticoduodenectomy surgery at Hammersmith Hospital, stay in hospital for a shorter length of time and have a reduced risk of developing complications after their operation, compared to those who are less fit or undernourished.

There are several ways you can improve your physical, nutritional and mental wellbeing before major surgery.

i. Smoking

If you smoke, it is important that you stop before any big operation. People who smoke are more likely to suffer complications during and after surgery. There is evidence to suggest the following benefits if you stop smoking before treatment[6]:

- reduced risk of heart and lung post-operative complications
- faster wound healing time
- shorter stay in hospital

ii. Alcohol

If you are used to drinking more alcohol than the recommended guidelines, it is helpful to reduce the amount that you drink. Alcohol can reduce the function of your heart and it also causes mild dehydration. Stopping a high alcohol intake suddenly when you come into hospital can cause serious health problems, so it is better to cut down well in advance.

iii. Exercise

Evidence suggests that patients who exercise before surgery have a reduced risk of complications afterwards and a shorter stay in hospital[6] [7] [8] [9]

Exercising regularly will help strengthen your muscles and improve your stamina for surgery. If you are not used to exercise try walking or swimming. Please do not take up any vigorous exercise without consulting your doctor.

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[6] Yoong SL et.al. Tobacco and postsurgical outcomes: WHO tobacco knowledge summaries. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.

[7] Luther A et al., The impact of Total Body Prehabilitation on Post-Operative Outcomes After Major Abdominal Surgery: A Systematic Review. *World J Surg*. 2018; 42(9):2781-2791. doi:10.1007/s00268-018-4569-y96

[8] Moran J et al., The ability of prehabilitation to influence postoperative outcome after intra-abdominal operation: A systematic review and meta-analysis. *Surgery*. 2016; 160(5):1189-1201. doi:10.1016/j.surg.2016.05.014 97

[9] Gillis C et al., Effects of Nutritional Prehabilitation, With and Without Exercise, on Outcomes of Patients Who Undergo Colorectal Surgery: A Systematic Review and Meta-analysis. *Gastroenterology*. 2018; 155(2):391-410.e4. doi:10.1053/j.gastro.2018.05.012).

iv. Breathing exercises

Breathing exercises performed before and after your operation can help to reduce the risk of lung problems by opening your airways and moving phlegm so that you can cough it out more easily.

Practising breathing exercises in the time before your operation will help to familiarise yourself with the exercises, making them easier to do after surgery.

Breathing exercises:

1. Sit supported in a chair.
2. Breathe in and out normally.
3. Take a slow, deep breath in so that your ribs expand sideways and your lungs fill up with air. Then exhale (breathe out).
4. Now take a slow, deep breath in and expand your lungs. Hold that breath for three seconds, then slowly exhale.
5. Repeat steps 2 to 4 three times.
6. If you feel dizzy or tired return to breathing in and out normally.

Try to practise these breathing exercises every day, every two hours, before your operation. After your operation you should practice these exercises every 1-2 hours, every day.

Breathing exercises, coughing and taking walks can prevent post-operative chest infections and help shorten your stay in hospital.

v. Eating well before your operation

Patients with pancreatic disease are at risk of malnutrition. You may lose weight because of a decreased appetite, an inability to eat or digestion problems preventing the absorption of nutrients. This is not unusual but it is important that we address this before your surgery. Often people try and eat extra fruit and vegetables to improve their health before an operation. This is fine unless you have been losing weight. A specialist dietitian will advise you on suitable foods and the best eating pattern for your symptoms. The specialist dietitian may also prescribe nutritional supplement drinks to help you to build up your strength and weight before surgery.

If you can eat normally and your weight is stable, you should continue to eat a normal diet. It is important that you do not try and lose weight before this operation unless you have been specifically advised to do so by the specialist dietitian. Losing weight too quickly before an operation can affect your recovery[10,11,12]

[10] Lobo DN et al., Perioperative nutrition: Recommendations from the ESPEN expert group Clinical Nutrition 39 (2020) 3211e3227

[11] La Torre M et al., Malnutrition and pancreatic surgery: Prevalence and outcomes. J Surg Oncol. 2013; 107(7):702–8.

[12] Gianotti L et al., Nutritional support and therapy in pancreatic surgery: A position paper of the International Study Group on Pancreatic Surgery (ISGPS). Surg (United States). 2018; 164(5):1035–48.

Pancreatic enzymes

Depending on the reason for your surgery and your signs and symptoms, you may be started on **pancreatic enzyme replacement therapy** (a medication known as Creon or Nutrizym 22) before your surgery. Some people need these before their surgery but all patients will need them afterwards. Enzymes help you to digest your food. They need to be taken with all meals and snacks. The specialist dietitian will explain how to take this medication correctly.

Diabetes screening before surgery

Where there is disruption to the normal functioning of the pancreas, for example due to disease or obstruction, this can lead to insufficient production of insulin and a risk of developing diabetes. In the weeks before your surgery, you will be screened for diabetes. It is important that we diagnose and treat diabetes before your operation to optimise your health and ensure the proper care pathways are in place throughout your hospital stay.

If you have diabetes before your operation and your blood glucose is above 10mmol/L before meals, please contact your GP and request a diabetes review. Please also mention this to the HPB team during your clinic appointment and during your pre-assessment appointment. Your medication will be reviewed as changes may be necessary.

Pre-assessment clinic

Before your operation and anaesthetic you will have an appointment at our pre-assessment clinic where several members of the team will assess your health.

i. Nursing staff

Your temperature, blood pressure, respiration rate, height, weight and urine will be measured to give the nurse a baseline (normal reading) to work with. You will have an ECG (tracing of your heart rhythm) and a chest x-ray. We will take a blood sample to see how well your liver and kidneys are working.

ii. Medications

A nurse will ask you several questions and examine you to help us assess your fitness for a general anaesthetic and the operation. The nurse will ask about any medicines you are taking, including herbal remedies and supplements you may have been prescribed or may have bought. Please bring a current list of your medications with you. Some medications (including aspirin, warfarin or clopidogrel) make your blood thin and may result in you experiencing excessive bleeding during the operation. We might ask you to stop taking these medications a few days before your operation. If you are unsure, please ask at pre-assessment clinic which of your usual medications to take on the morning of surgery.

iii. Enhanced recovery

The nurse will also give you information about your hospital admission, which includes the **enhanced recovery** protocol after surgery. This is a series of steps to help you recover from surgery, go home and returning to normal activity as soon as possible.

iv. Carbohydrate loading

Carbohydrate loading is the term given to ‘stocking up’ your liver with sugar. This is used by competitive athletes to give them an ‘edge’ in sports and the same principles apply in surgery.

Traditionally, patients were starved for long periods before operations. We now know this can result in a longer recovery and can contribute towards nausea (feeling sick) and poor nutrition after your operation.

During your pre-assessment clinic appointment, if you do not have diabetes or gastroparesis (where the food in your stomach empties slower than usual), we will give you some pre-operative drinks to take home which you should take the night before and in the early hours of the day of surgery before you arrive in hospital.

How to take pre-operative (carbohydrate loading) drinks:-

Night before surgery (before 21.00)

- Add two sachets of Pre-Load to 400 millilitres (ml) water
- Mix well until the powder has dissolved
- Sip slowly over 10 – 30minutes

Morning of surgery

- Add one sachet of Pre-load to 400ml water
- Mix well until the powder has dissolved
- Sip slowly over 10 – 30minutes
- Ensure you have finished this 2 hours before your operation.

If you receive carbohydrate loading drinks that are already prepared (Pre-Op), take two bottles in the evening and two bottles in the morning before you arrive in hospital.

v. Anaesthetist

You may see the anaesthetist as part of your pre-assessment programme. They will review the information gathered by the team, discuss the anaesthetic with you and discuss pain relief options.

Tests and scans

You will need to have blood tests and possibly some additional tests such as x-rays, heart scans, or a cardiopulmonary exercise test (CPET). This is performed on a special exercise bike and shows us how well your heart, lungs and muscles work. For some tests you may need to come back another day. Your visit to the pre-assessment clinic is an appropriate time for you to talk about any questions or worries you may have.

Postponing your operation date

Sometimes an operation may have to be postponed and rescheduled for a number for reasons. If this happens we will explain the reason for any delay and aim to carry out your surgery as soon as possible.

Preparing for your hospital stay

Transport home

Before your operation, please plan for someone to come and collect you by car on the day of your discharge home, as you will not be able to drive yourself or travel on public transport. Please speak to a member of the team before your hospital admission if you are unable to arrange for someone to come and collect you.

Help at home

It is a good idea to start thinking about how you will manage at home after your surgery. We encourage patients to arrange to stay with family or friends or to have a relative staying with them if possible.

If you live alone or need more support then we may need to help you make plans for a brief period of recovery and rehabilitation before you go home. The sooner we know this, the sooner we can start arranging something for you. Talk to your close family, friends and GP before the operation to see what options you have.

What should I bring to hospital?

Please use this checklist as a guide for to what to bring with you for your hospital stay:

Do bring

- ☐ All of your belongings in one bag if possible
- ☐ All of your usual medication
- ☐ Toiletries
- ☐ Towel
- ☐ Dressing gown with pockets □
- ☐ Pair of slippers
- ☐ Nightwear (loose fitting, preferably that buttons at the front)
- ☐ Day clothes

☐Glasses, hearing aids, dentures' case – and label them

☐Mobile phone (but on silent so as not to disturb other patients)

☐ Mobile phone power bank / charger pack / portable charger - preferably a charger that does not require regular use of a hospital electrical socket

☐Phone numbers to arrange visitors / someone to bring you home

☐Throat sweets, chewing gum and lip salve - whilst you are not eating and drinking properly

☐ Herbal teabags - if you normally drink these at home. Peppermint tea can help ease feelings of wind and bloating after surgery

☐Wedding ring can be worn but will be taped during the operation

☐Something to read or a puzzle book

☐ A small note pad and pen to write questions you wish to ask the doctors and members of the HPB team when they come to see you on the ward

Do not bring or wear

☐ valuables (wedding ring allowed)

☐ nail varnish on day of operation

☐ makeup on day of operation

☐ any jewellery (other than wedding ring) or any piercings during the operation

☐ too many electronic devices that require charging. There are a limited number of electrical socket points on the ward

Other tips

☐Write any questions down that you have forgotten to ask at pre-assessment (you will be able to ask the surgical team on the day)

☐Let staff know of any special dietary requirements

On the day of your operation

Eating and drinking

- You can eat up to six hours before your operation. After this time, no solid food (including any milk products) should be eaten. If you have a condition called gastroparesis (where the rate at which food empties from your stomach is slower than usual) your consultant surgeon will advise if you need to stop eating earlier than 6 hours before your operation.
- If you have been given carbohydrate loading drinks (not to be taken if you have diabetes), you will have taken the first before 21.00 the night before. The second drink can be taken up to 2 hours before your surgery
- You can drink clear fluids (e.g. water, squashes, black tea, herbal tea, black coffee) up to two hours before your operation
- For the two hours before your operation you should not take any fluids. A small amount (30ml) of fluid up to 30 minutes beforehand can be drunk if you need to take medications during this time

Arriving and checking in

You will be asked to arrive at the HPB Surgery Ward (A8 or Sainsbury's) at Hammersmith Hospital for 06.45 on the day of your surgery. The nursing staff will fill out your admission paperwork, pre-operative checklist, check your vital signs and measure your weight. A doctor will check that your blood tests are up to date and ensure everything is in place for your operation.

We will give you a hospital gown and some support stockings to wear. These stockings reduce the risk of developing blood clots in your legs and you should wear them the entire time you are in hospital.

Consent

Your surgeon or a member of their team will discuss your operation with you including all the potential risks involved, the alternatives to surgical treatment and the expected benefits of the operation. It is important that you understand the benefits and risks involved in the operation before you sign your consent form. If you have any questions or concerns, please ask the surgeon or nurse.

The operation

The operation can take up to 8 hours. Patients typically stay in hospital for around 14 days, but this depends on your recovery.

Cancelling your operation

It is rare that your surgery would be cancelled on the scheduled day of your operation but, if it is, this may be for several reasons including that there is no available bed on the intensive care unit after your surgery. If this happens, we aim to tell you as soon as we can.

After your operation

After your operation, you will be transferred to the intensive care unit for specialist care and monitoring for 1 - 2 days. When your consultant surgeon and the intensive care consultant are satisfied you no longer need intensive nursing care, you will return to the HPB surgical (A8 or Sainsbury's) ward.

The nurses will take your temperature, pulse and blood pressure at regular intervals to monitor your recovery and it will sometimes be necessary to wake you up to do this. It is especially important that we monitor your progress after your operation, so please be patient with the nursing staff during this time.

You may feel light-headed or sleepy after the operation. This is due to the anaesthetic and may continue until the next morning.

It is common to have a sore throat for two or three days after having a general anaesthetic. Several tubes, including a breathing tube, have been placed in your throat during the procedure. The positioning and removal of the tubes can cause irritation to the back of your throat.

Once you are allowed sips of water, you can try the following:

- suck on throat sweets
- drink cold water – small sips of very cold fluids help to soothe your throat

Medications can be prescribed to help if the pain does not ease within a few days.

Tubes, drains and dressings

During surgery we will attach a number of tubes to your body which may be a little uncomfortable but they are essential. We will remove them as soon as we can.

You may have some or all the following:

- tubes resting on your nostrils or a plastic mask to give you oxygen
- a tube in your nose going down into your stomach to collect excess acid and bile from your stomach
- a thin tube in your neck for drips, medication, monitoring blood flow and sometimes to give you special liquid food
- drips in your arms / hands to keep you hydrated
- multiple drains to collect excess fluid from the operation site
- dressings over the wound site which will either have been closed with stitches, surgical clips, or invisible absorbable stitches
- a catheter (a tube into your bladder to collect urine)

Pain relief

It is important that you are comfortable after your operation so you can take deep breaths, cough to clear your chest and move about as soon as possible. A small tube called an epidural will be inserted into your back during the operation.

You will be given strong painkillers through this tube to keep you as comfortable as possible. The epidural tube will be taken out after a few days and you can start taking regular tablets to help the pain. A nurse or doctor from the pain team will offer support and advice.

Getting up and about

You will be encouraged to get out of bed and **walk from day one** following surgery and then walk at least twice daily. The breathing exercises you practiced before your operation (see page 10) should be followed every 1 – 2 hours after surgery too. Breathing exercises, coughing, sitting out of bed and taking walks can help to prevent complications after your operation, like chest infections and blood clots. Research has shown that getting up and about as soon as possible after surgery reduces length of hospital stay. A physiotherapist will help you to get up and moving on day one post-surgery.

How long will it take for me to recover?

You can expect to be in hospital for around 14 days and sometimes longer.

Most people are back to their normal activities within three months of surgery. By this time, you should be eating and drinking normally (with enzyme supplements to help your digestion) and be able to enjoy a better quality of life than you would have done without the operation.

Eating and drinking after your operation

Food and fluids will be reintroduced gradually. The consultant surgeon will advise on when to start taking sips of water followed by more fluids, including nutritional supplement drinks and when you can progress to a soft diet.

Soft diet

The aim of the soft diet is to eat food that is soft, moist and relatively easy to break down. When you start a soft diet in hospital, it is normal to feel bloated and full much quicker than before. To overcome these symptoms, you are advised to:

- eat only a small amount of food at each mealtime i.e. do not eat everything on your plate
- relax - take time to eat, chew your food thoroughly and rest for 10 – 15 minutes after eating
- stop eating if you feel full and eat again later
- avoid drinking with meals as this can make you feel full. Leave a gap of at least 30 minutes between food and drink
- avoid lying down immediately after eating and drinking

Soft diet Moist foods with only soft lumps which can easily be chewed and digested	**Examples**: • Porridge • Corn flakes • Toasted rice cereal • Eggs • Mashed banana • Yogurt • 'Dunked' biscuits • Soup • Mashed/jacket potato (inside only) • Well-cooked pasta • Fish in sauce • Minced meat • Milky puddings • Custard • Yogurts • Ice cream • Jelly • Smoothies • Milkshakes
Food and drink to avoid	• Highly spiced foods • Food with pips/bits • High fat foods e.g. chips, fried fish • Dishes containing a large amount of cheese e.g. pizza, lasagne • High fibre foods e.g. Branflakes™, Weetabix™, wholemeal bread • Fizzy drinks All of these options can gradually be introduced back into your diet once you are home and eating well.

The specialist dietitian will visit you on the ward to guide you on what to eat whilst you are in hospital. It can take up to three months before your diet returns to normal. The specialist dietitian will provide information on what to eat once you are home.

Nutritional supplement drinks

You will need high energy, high protein supplement drinks or gels to help meet the high nutrient requirements you will have following major surgery. Research studies [7],[13] have shown that increasing protein intake after surgery promotes wound healing and faster recovery. You are recommended to take these supplements. There is a wide variety available so, if you do not like the first options prescribed, there will be different ones to try. Your specialist dietitian will recommend how and when to take these.

Enzyme replacement therapy

[13] Weimann et al. / Clinical Nutrition 36 (2017) 623e650 ESPEN Guidelines Clinical Nutrition in Surgery

A pancreaticoduodenectomy affects the way in which your body can digest and absorb food and drink. If you were not already receiving pancreatic enzyme replacement therapy (e.g. Creon or Nutrizym 22) before your surgery, you will be prescribed this medication on the day you start eating a soft diet. This medication will normally need to be taken for the rest of your life. It is designed to ensure you are digesting and absorbing the nutrition that you eat and drink and avoid malnutrition.

You are likely to need a medication known as a proton pump inhibitor (e.g. pantoprazole, omeprazole or lansoprazole). This medication reduces the amount of acid produced by your stomach and improves the efficacy of your pancreatic enzyme supplements. Your specialist dietitian will advise on how to take this medication correctly and will give you their contact details for ongoing support when you are at home.

Parenteral nutrition

You may receive liquid nutrition directly into your veins known as parenteral nutrition. If you need parenteral nutrition this will meet your nutritional requirements until you are able to eat and drink.

Nausea and vomiting

In the weeks after this type of surgery you may feel sick or, less frequently, you may vomit. This is normal and will ease over time. There are strategies that can help:

- you will have been prescribed anti-sickness medication by the doctor. This is prescribed in such a way that it is available to you whenever you need it. Whenever you are feeling sick or feel as though you cannot manage food because of this, ask your nurse for your anti-sickness medications
- try to eat small amounts of food regularly
- you may find that you can manage the cold options on the menu rather than hot food so speak to the ward hostess about these. Your dietitian can help with additional options
- if you are managing fluids better than food at this time, ensure that the fluids you drink also provide some nutrition e.g. full cream milk or the supplement drinks that will be prescribed for you

Your bowels

It is normal for your bowels to stop opening during the first few days after surgery. This is usually due to the major surgery itself as well as prescribed pain medications. If your bowels have not opened after the first week following surgery you may be started on some laxatives. Being mobile and ensuring you are hydrated will help your bowels to start opening again.

Personal hygiene

Due to the presence of multiple drains and your operation wound site, you will not be able to shower. A bowl of water, flannels, soap and towels will be brought to your bed side every

morning and, in the privacy of being behind fully closed curtains, you will be able to wash yourself.

Facilities on the ward

If you are staying on A8 ward there is a day room with a television and seating for you to use. We encourage you to regularly mobilise on the ward, so the day room can provide a target to reach and offers a different area away from your bedside.

Diagnosis and staging

The tissue removed during the operation will be sent to the laboratory for diagnosis and staging. The results of this will be available for you in your clinic appointment usually around 4-6 weeks after discharge.

Going home

On average you may be able to go home 14 days after surgery. Do not worry if you need to stay in hospital for longer than this. Each person's body heals at a different rate.

Your surgical wound

It is common for your wound to be red and uncomfortable for the first 1 – 2 weeks. Please tell us if your wound becomes inflamed, painful, or swollen or starts to leak fluid or pus.

You may find that the consultant surgeon is satisfied that you are ready to be discharged home with one or two of your drains still in place. This is normal and allows you to recover at home. If needed, we can arrange for a district nurse to help care for your wound and drains. You will need to attend clinic to see the consultant surgeon two weeks after your hospital discharge.

Transport

You should have arranged for someone to come and collect you by car on the day of your discharge home, as you will not be able to drive yourself or travel on public transport.
You will be expected to make your own arrangements for going home unless your doctor feels there are special reasons why you need hospital transport.

Medication

We will give you a two-week supply of medication to take home with you. Any further medication will need to be prescribed by your GP.

Discharge summary

We will give you your discharge summary which describes your stay in hospital and lists your medications. Your GP will also receive a copy. Keep this document in a safe place and please bring it to future clinic or hospital admissions.

Rest, mobility and activity

After any major operation it takes some time to get back to feeling yourself again. Once all the tubes and drains have been removed you may still feel tired. Try to be patient and allow yourself some time to get over your operation.

It is normal to feel tired and anxious when you first go home. You may feel frustrated if you are not able to do all the things you could do before you went in to hospital. It is important to reintroduce activities into your daily routine gradually.

Initially, you should avoid tasks which involve lifting, stretching, or pulling (such as pushing a shopping trolley, lifting, or carrying laundry) to allow the wounds to heal properly. If you have children, try to let them climb onto your lap when you are already sitting down, rather than lifting them up. You should also avoid anything which may strain your abdominal muscles as they will have been weakened by surgery.

It is often helpful to plan a rest period during the day at a time when you will not be disturbed. You may need to accept some help from family, friends and neighbours until you have regained your strength.

Rest is a vital part of the recovery process, **but activity is also important** to help you to regain your previous level of independence. Immobility after surgery can often be harmful and lead to complications.

Try to walk regularly as this is a good form of exercise to help you recover after surgery. Start with a short distance and go a little further each day, without exhausting yourself.

Sexual activity

In most cases, you can start having sex again once you have recovered from your operation and your wound is fully healed.

It is normal to be a little anxious at first, but try to be patient. If difficulties continue please discuss them with your doctor, who will be able to help and advise.

Driving

You should not drive until your levels of concentration, strength and mobility have improved enough for you to drive safely. It is important that you can perform an emergency stop; practise this on a quiet road when you feel ready. If you cannot do an emergency stop confidently then you cannot safely drive a car. It is always advisable to check with your insurance company and consultant before starting driving again.

Returning to work

How quickly you return to work will depend on the type of work you do. It can take up to three months or longer if you need to have chemotherapy after your surgery.

It is normal to get tired very quickly in the first few months after surgery. Concentration and decision making may be difficult to start with. We recommend asking if you can work part-time or on light duties for a few weeks when you first go back.

Your clinical team will be able to give you advice but it will also depend on how well you recover when you are back home. The nursing staff can provide you with a fit note (also known as a sick note) which will cover your time in hospital and your first two weeks at home. After that you will need to visit your GP to review this further.

Financial concerns

Your diagnosis may have an impact on your finances, particularly if you are still working. If your surgery is related to cancer, your designated clinical specialist nurse can advise you or refer you to a social worker at the Macmillan Centre who specialises in providing financial assistance. If you have an NHS payment exemption certificate, you may be entitled to a reduction in travel costs. All patients diagnosed with cancer are exempt from paying prescription charges.

Follow-up

You will usually be invited to see your consultant in the outpatients' department 4 – 6 weeks after your surgery or earlier depending on your clinical status at discharge. This will allow us to check that you are making satisfactory progress and to offer help if you need it.

At this appointment, the consultant will have the results of the tissue which was taken during the operation and will discuss these with you. If the results show cancerous cells, you may be referred to an oncologist (a doctor who specialises in treating cancer with chemotherapy). It is important that you understand your choices and you have the treatment which is most effective for you and your circumstances.

Depending on the reason for and the outcomes of your surgery you may be asked to see your consultant and/or the specialist nurse at regular intervals for up to five years after your surgery.

You will also be seen by the specialist dietitian when you attend your surgical outpatient appointment with your consultant. You will continue to see the dietitian until your weight is stable and you are eating well. You will be offered an open appointment with the dietitian thereafter.

Life-long medications

After this operation there are some medications that you will need to take for the rest of your life:

Proton pump inhibitors e.g. pantoprazole, omeprazole, or lansoprazole

This type of medication will help reduce the amount of acid your stomach makes and will help prevent ulcers form at the new joins your surgeon has made. This medication will also improve the efficiency of your pancreatic enzyme supplements.

Pancreatic enzyme replacement therapy e.g. Creon

You will need to take pancreatic enzymes with meals, snacks and milk-based drinks. Most people are prescribed Creon 25,000-unit capsules (two capsules with meals and one capsule with snacks as a starting point). Your specialist dietitian will provide more details.

Multivitamin and mineral e.g. Forceval

A multivitamin and mineral supplement reduces the risk of developing nutrient deficiencies caused by poor absorption after this operation. One capsule should be taken once a day with a meal.

Calcium and Vitamin D e.g. Adcal D3

This helps prevent thinning of your bones which can occur after this operation. Two tablets should be taken once a day away from food, usually last thing at night.

Further sources of support and information

Macmillan cancer navigator service at Imperial College Healthcare NHS Trust
This is a single point of contact for cancer patients at Imperial College Healthcare NHS Trust, and their family, friends and carers. The service is here to help you to navigate your care and resolve queries that you may have. Our Navigators can access information about your appointments, connect you to appropriate services and signpost you on to further support. They can also book you in for a telephone call back from your Clinical Nurse Specialist (CNS) if you have a question that needs clinical input.

The service is open Monday to Friday 08:30 to 16.30 excluding bank holidays. (The service is closed for training between 14.00- 14.45 on Thursdays.)

Call: **020 3313 0303**

Macmillan cancer information and support service at Imperial College Healthcare NHS Trust
The Macmillan cancer information and support service offers free support and information to anyone affected by cancer, including family and loved ones. The service has physical centres at Charing Cross and Hammersmith Hospitals, and also offers virtual and telephone support.

When you call or visit you can speak to one of the Macmillan cancer team one-on-one about whatever matters most to you. You can sign up to a range of weekly virtual groups that provide the opportunity to connect with other people with cancer in a relaxed environment. You can also speak to our Macmillan welfare and benefits adviser, who can offer patients of the Trust tailored advice on additional financial support.

The service is open Monday-Thursday (excluding bank holidays), with various drop-ins available within our physical centres. For more information please call us on **020 3313 5170** or email **imperial.macmillansupportservice@nhs.net**

Maggie's West London
Maggie's is a cancer charity that provides the emotional, practical and social support to people with cancer and their family and friends.

The centre offers a calming and beautiful space, a professional team of support staff, and the opportunity to talk and share with a community of people who have been through cancer too.

Maggie's centres are warm, friendly and informal places full of light and open space, with a big kitchen table at the heart of the building. Maggie's West London is located in the grounds of Charing Cross Hospital but is independent of our hospital.

The centre is open Monday to Friday, 09.00-17.00. For more information please call **020 7386 1750**.

Macmillan Support Line
The Macmillan Support Line offers confidential support to people living with cancer and their loved ones. This support line is a national line provided by Macmillan and is independent of our hospital.

The Support Line is open every day, 08:00 to 20:00. Please call: **0808 808 000** or visit www.macmillan.org.uk

How do I make a comment about my visit?

If you have any **suggestions** or **comments** about your visit, please either speak to a member of staff or contact the patient advice and liaison service (**PALS**) on **020 3312 7777** (10.00-16.00, Monday to Friday). You can also email PALS at imperial.pals@nhs.net The PALS team will listen to your concerns, suggestions or queries and is often able to help solve problems on your behalf. Alternatively, you may wish to complain by contacting our complaints department: Complaints department, fourth floor, Salton House, St Mary's Hospital, Praed Street, London W2 1NY

Email: ICHC-tr.Complaints@nhs.net
Telephone: **020 3312 1337 / 1349**

Alternative formats

This leaflet can be provided on request in large print or easy read, as a sound recording, in Braille or in alternative languages. Please email the communications team: imperial.communications@nhs.net

Wi-fi

Wi-fi is available at our Trust. For more information visit our website: www.imperial.nhs.uk

Tara Kenny in collaboration with the HPB MDT
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