

Radiotherapy for pancreatic cancer

This fact sheet is for people with pancreatic cancer who are having radiotherapy to treat their cancer, or to manage pain. Family members may also find it helpful. It explains what radiotherapy is, how it is used depending on your diagnosis, how it is given, and the possible side effects and ways to manage these.

Each hospital may do things slightly differently, so use this fact sheet as a general guide. If you have any questions, speak to your doctor, nurse or another member of your radiotherapy team.

Contents

What is radiotherapy?	2
Who can have radiotherapy?	2
Advantages and disadvantages of radiotherapy	4
Types of radiotherapy	5
How is radiotherapy given?	6
Side effects of radiotherapy	9
Check-ups after radiotherapy	12
Questions to ask your doctor or nurse	13
More information and support	14

What is radiotherapy?

Radiotherapy uses radiation to destroy cancer cells. A machine called a linear accelerator (linac) is usually used to deliver radiotherapy for pancreatic cancer. This directs beams of radiation at the cancer from outside the body, destroying the cancer cells.

If you have pancreatic cancer, you may have radiotherapy on its own, or together with chemotherapy. This is called chemoradiotherapy (see page 6).

Who can have radiotherapy?

Radiotherapy is used in different ways depending on your diagnosis and the stage of the cancer. Speak to your doctor or nurse about whether it might be suitable for you.

Radiotherapy for borderline resectable pancreatic cancer

Borderline resectable cancer is cancer that has grown very close to the major blood vessels near the pancreas. It may be possible to remove the cancer, but it depends which blood vessels are affected and how far the cancer has grown.

Chemotherapy with radiotherapy (chemoradiotherapy – see page 6) may be suitable for some people with borderline resectable pancreatic cancer. Sometimes radiotherapy may be used on its own, but this is less common. These treatments aim to shrink the cancer enough to make it possible to remove it with surgery.

Radiotherapy for locally advanced pancreatic cancer

Locally advanced pancreatic cancer is cancer that has spread to the large blood vessels near the pancreas, or to several lymph nodes.

You may be offered radiotherapy with chemotherapy (chemoradiotherapy – see page 6). Chemoradiotherapy may help control the cancer and slow down its growth.

For a very small number of people with locally advanced pancreatic cancer, chemoradiotherapy may shrink the cancer enough so it can be removed with surgery. A CT scan is usually done 12 weeks after chemoradiotherapy to see if surgery may be possible.

Another option may be a type of radiotherapy called SABR (stereotactic ablative body radiotherapy). This is very precise radiotherapy that delivers higher doses of radiation in a shorter time – usually five sessions. The aim is to help control the cancer and slow down its growth. You will have at least three months of chemotherapy before having SABR. The SABR will start at least two weeks after the last dose of chemotherapy, and you won't have any chemotherapy during SABR treatment. You should have a CT scan six to eight weeks after treatment to see if the cancer has shrunk enough to have surgery.

SABR was approved for use in the NHS in England in October 2021.

Radiotherapy for advanced pancreatic cancer

If you have cancer that has spread to other parts of the body (advanced or metastatic cancer) it may cause pain by pressing on other organs or nerves near the pancreas. You may be able to have radiotherapy to help the pain. This is called palliative radiotherapy.

Palliative radiotherapy may also be helpful if the cancer has spread to other areas such as the bones.



Read more about chemotherapy in our fact sheet:

Chemotherapy for pancreatic cancer

Or on our website at: pancreaticcancer.org.uk/chemotherapy

Read about surgery in our fact sheet:

Surgery to remove pancreatic cancer

Or at: pancreaticcancer.org.uk/surgery

Read more about ways to manage pain in our booklet:

Pain and pancreatic cancer

Or at: pancreaticcancer.org.uk/pain

Advantages and disadvantages of radiotherapy

If you are offered radiotherapy, speak to your doctor about the advantages and disadvantages of this treatment. We have a list of questions to ask that might help on page 13.

Advantages

- The main advantage of radiotherapy is that it may help to control the growth of the cancer.
- For a small number of people with borderline resectable cancer and locally advanced cancer, radiotherapy may help to make surgery possible.
- Each treatment session will take about 30 minutes, or about an hour for SABR. You won't usually need to stay in hospital.
- You may be able to carry on with your daily life, such as going to work, if you feel up to it.
- If you have advanced cancer, radiotherapy can help control symptoms and relieve pain.

Disadvantages

- Radiotherapy can cause side effects, including tiredness, sickness and runny poo (diarrhoea). But these are often mild.
- If you have chemoradiotherapy, you may also get side effects from the chemotherapy. There are ways to manage side effects.
- If you have borderline resectable or locally advanced cancer, you may have to go to hospital five days a week for several weeks for your treatment, though this may vary.

Types of radiotherapy

Radiotherapy for pancreatic cancer is usually image guided radiotherapy (IGRT). This means you will have scans or X-rays taken while you are having radiotherapy to check that you are in exactly the right position during treatment.

The different types of radiotherapy all aim to focus the radiation on the cancer and limit the amount of radiation to surrounding organs and healthy tissues. These types of radiotherapy are used for pancreatic cancer in the UK.

- **Intensity modulated radiotherapy (IMRT)** uses at least five radiation beams arranged at different angles so that the tumour gets the maximum amount of radiation.
- **Volumetric modulated arc radiotherapy (VMAT)** is a type of IMRT that focuses the radiation on the cancer and reduces treatment time. It normally involves one single beam of radiation, sometimes more, delivered as the machine rotates around you.
- **Stereotactic ablative body radiotherapy (SABR)** or stereotactic body radiotherapy (SBRT) is a type of very precise radiotherapy. It delivers higher doses of radiation in a shorter time. It may be an option to treat locally advanced pancreatic cancer, following chemotherapy.
- **3D conformal radiotherapy** also shapes the radiation beam to the cancer. It may be used for palliative radiotherapy.

Clinical trials for radiotherapy

Clinical trials are medical research studies that involve patients. You could ask your doctor about any clinical trials using radiotherapy or chemoradiotherapy that might be suitable for you. We also have information about current clinical trials for pancreatic cancer in the UK.



You can speak to our specialist nurses on our confidential Support Line with any questions about radiotherapy.



Read more about clinical trials and find out about current trials in the UK on our website at: pancreaticcancer.org.uk/clinicaltrials

How is radiotherapy given?

Radiotherapy treatment will vary depending on your pancreatic cancer diagnosis and the type of radiotherapy you are having. You will go to the hospital radiotherapy department for each treatment but you won't need to stay overnight.

Each treatment session is called a fraction. You will usually have radiotherapy every day, Monday to Friday. Most treatment courses last three to six weeks (15-30 fractions). This will vary with the type of radiotherapy you have and the hospital where you are being treated. For example, if you have SABR you will have five fractions over one to two weeks.

If you are having palliative radiotherapy, you will usually have fewer treatment sessions (one, five or ten). The overall dose is usually lower which can reduce the risk of side effects, though you may still get some short term side effects, depending on the area being treated.

What is chemoradiotherapy?

Chemoradiotherapy is chemotherapy together with radiotherapy. The chemotherapy may make the cancer cells more sensitive to the radiotherapy, making it more effective.

You will usually have chemotherapy on its own for three to six months to begin with. You will then have a CT scan. If this shows that the cancer has not grown, you will start chemoradiotherapy.

The chemotherapy drug most often used with radiotherapy is capecitabine, which is a tablet that you can take at home. You will have radiotherapy and capecitabine every day from Monday to Friday, for five to six weeks.

Ask your oncologist if chemoradiotherapy is a suitable treatment for you, and if it's available in your specialist centre. You could also ask about clinical trials using chemoradiotherapy.



You can speak to our specialist nurses on our confidential Support Line with any questions about radiotherapy, chemoradiotherapy, or your treatment options.



Read more about chemotherapy in our fact sheet:
Chemotherapy for pancreatic cancer

Read about capecitabine on our website at:
pancreaticcancer.org.uk/capecitabine

Who are the radiotherapy team?

The team who will plan and deliver your treatment may include these health professionals.

- A **radiologist** is a doctor who reads and understands images such as X-rays, MRI and CT scans.
- **Oncologists** are doctors who use radiotherapy (clinical oncologists) and chemotherapy (medical oncologists) to treat and manage cancer. They will be responsible for your treatment.
- A **therapy** or **therapeutic radiographer** is a technical specialist. They take X-rays and scans, help with treatment planning, and deliver the radiotherapy treatment.
- **Dosimetrists** help create a personal radiotherapy plan. This is to make sure the cancer gets the maximum dose of radiotherapy while reducing the dose to the surrounding organs.
- A **medical physicist** is a healthcare scientist who helps work out the doses of radiotherapy and checks all aspects of your treatment plan.

They will work together to make sure your radiotherapy is delivered accurately and safely.

What happens during treatment?

Planning the radiotherapy

Before your radiotherapy starts you will normally have a planning session. This is to work out how much radiation is needed, and the exact position you will need to be in on the radiotherapy table during treatment. The planning session can take up to two hours.

You will have a CT scan, and the radiographers will make tiny permanent dots (tattoos) on your skin around the area being treated. They will use the scan and the tattoos to help them get you into exactly the right position for each treatment session.

If you are having SABR, there will be further steps, such as asking you to hold your breath during the scan and treatment.

Different hospitals do things slightly differently and your oncologist and the radiotherapy team will discuss the process in detail with you. Ask them any questions you have about what will happen.

Some people may also have an MRI scan to help with planning.

You may be asked not to eat for two hours before your planning session, but you might be given some water to drink. To make sure everything is exactly the same for treatment, you will normally have to do this before each treatment session.

After the planning session, the radiotherapy team will produce a computerised treatment plan for you. This means there will usually be a gap of two to three weeks between planning and the start of treatment. Your radiotherapy team will be able to tell you exactly how long you may need to wait.



Read more about CT and MRI scans on our website at:
pancreaticcancer.org.uk/tests

Having treatment

The radiographers will position you on the radiotherapy table (often called a couch). They will move the radiotherapy machine (called a linear accelerator or linac) around you to different angles to check the measurements. You should try to relax and lie as still as you can.

The radiographers will leave the room to deliver your treatment but will watch you using cameras. They can talk to you over an intercom and you can talk to them. You might feel the couch move as they adjust the position from outside the room.

Radiotherapy machines are very big and can be noisy. When your treatment is delivered the machine will move around you. It may come close to you but will not touch you. The treatment isn't painful.

With most standard radiotherapy machines, you will have a scan before the treatment is delivered. This is to help make sure the radiotherapy is delivered accurately, but it won't check how well the treatment is working.

The whole process will take about 30 minutes. For SABR it will be longer – 45 minutes to more than an hour. The treatment itself only takes a few minutes. You can go home as soon as each treatment session is finished. After radiotherapy, it's safe to be around other people, including pregnant women and children.

Radiotherapy and chemoradiotherapy can be tiring, so having someone to drive you to hospital can be helpful, especially towards the end of treatment. You may be able to get financial help towards hospital parking or travel costs – ask your medical team.

Side effects of radiotherapy

Radiotherapy does cause side effects, although they affect everyone differently. Many people will only have mild side effects, and severe side effects are not common. If you have chemoradiotherapy, you may also get side effects from the chemotherapy.

Your doctor will explain the possible side effects before treatment starts. Ask them how they will plan your treatment to reduce these. Side effects can usually be managed, and you will have regular check-ups during treatment where you can discuss them. Let the radiographers know as soon as you start to get any side effects.

Side effects usually last for a few weeks after your treatment has finished but can sometimes last longer. They may get worse after your final treatment before they start to get better.

If you have any questions about side effects or how to manage them, speak to your doctor or nurse.



Or speak to our specialist nurses on our free Support Line.



Read about the side effects of chemotherapy in our fact sheet:
Chemotherapy for pancreatic cancer

There is information about the side effects of the chemotherapy drug used in chemoradiotherapy, capecitabine, on our website at: **pancreaticcancer.org.uk/capecitabine**

Fatigue (extreme tiredness)

Fatigue is a common side effect of radiotherapy for pancreatic cancer. Travelling to hospital every day can make it worse. Tiredness can last for several weeks or months after treatment has finished.



Read about managing fatigue on our website at:
pancreaticcancer.org.uk/fatigue

Feeling and being sick (nausea and vomiting)

During radiotherapy, organs such as the stomach and bowel will get some of the radiation. This may make you feel sick (nausea). A few people might actually be sick (vomiting). Nausea or vomiting may get worse as treatment goes on, and last for a few weeks after treatment. It may be worse if you have chemoradiotherapy.

What helps?

- You may be given anti-sickness medicines. Your medical team will tell you how to take these.



Read about coping with nausea and vomiting on our website at: **pancreaticcancer.org.uk/sickness**

Runny poo (diarrhoea)

You might get diarrhoea because the stomach and bowel get some of the radiation during treatment.

What helps?

- Try to drink as much fluid as you can to avoid getting dehydrated (where your body loses more water than it takes in).
- If you have diarrhoea more than four to six times a day or if you can't drink much fluid, speak to your medical team. They can give you tablets to control the diarrhoea.
- Ask a dietitian at the hospital about any changes to your diet that might help.



Read our tips for coping with diarrhoea on our website at:
pancreaticcancer.org.uk/tips00

Problems with eating and drinking

You might not feel like eating and may lose weight. Keeping your weight stable may improve how you feel and help you cope better with pancreatic cancer and any treatment you are having.

Some people also find that they have indigestion or heartburn after radiotherapy. Talk to your medical team about this if it's a problem. They might be able to give you medicine to help.

What helps?

Speak to your dietitian, nurse or doctor if you are struggling to maintain your weight. They can give you advice. They can also prescribe pancreatic enzymes if you haven't already been given them, which might help. If you haven't seen a dietitian, ask to be referred to one.



Read more about eating, pancreatic enzymes and dealing with weight loss in our booklet: **Diet and pancreatic cancer**
Or on our website at: pancreaticcancer.org.uk/diet

Skin reactions

Some people's skin can react to radiotherapy, though this is rare. The skin may become drier and more rarely, sore, itchy or darker, often on your back. Any skin reaction will usually settle down two to four weeks after treatment finishes.

Your medical team may suggest you use moisturiser to reduce the risk of skin problems. If you do get any skin reactions, your medical team can give you advice on managing them.

Bowel damage

It is very rare, but there is a small risk of long term bowel damage from radiotherapy. This can occur months or years after treatment. Symptoms include severe tummy pain, persistent nausea and vomiting, vomiting blood, or poo like black tar. If you have any of these symptoms at any time, go to A&E straight away.

If you have any questions or concerns during or after treatment talk to your nurse or treatment team.



You can also speak to our specialist nurses on our free Support Line. They can answer questions and talk through any worries.

Check-ups after radiotherapy

Locally advanced pancreatic cancer

If you have locally advanced cancer, you will usually have your first check-up (follow-up appointment) with your oncologist four to six weeks after you finish radiotherapy treatment. This may vary depending on what treatment you have had.

Radiotherapy may continue to affect the cancer after treatment has finished. You will have a CT scan about 12 weeks after radiotherapy to check how well the treatment has worked. If you have had SABR, you may have a CT scan six to eight weeks after treatment. Ask your doctor or nurse when you will have a scan.

You can use the check-up appointment to discuss any questions or concerns. It's a good idea to write down any questions you have before the appointment.

Palliative radiotherapy

If you have had palliative radiotherapy to control symptoms, you will continue to be cared for by your oncologist or palliative care team. They will check how well the radiotherapy has worked, whether you need any more radiotherapy, and help manage any other symptoms you have.

The palliative care team provide specialist care which aims to prevent and manage complex symptoms, including pain, and emotional symptoms, such as depression and anxiety. They also offer people practical and spiritual support, and support for family members.



You can speak to our specialist nurses about your follow-up on our free Support Line.



Questions to ask your doctor or nurse

Why is radiotherapy recommended for me?

Will radiotherapy help control my cancer?

Will radiotherapy help me to live longer?

Will radiotherapy help any of my symptoms?

Will I have chemotherapy as well as radiotherapy?

What side effects might I get?

How can the side effects be managed?

Who do I contact if I have side effects?

Will I have any long term side effects?

Which hospital will I go to for radiotherapy?

Are there any clinical trials using radiotherapy or chemoradiotherapy that I could take part in?

How soon will I know if the treatment is working?

Are there any other treatment options that would be suitable for me?

More information and support

Pancreatic Cancer UK services

We are here for everyone affected by pancreatic cancer.

Our specialist nurses are here to talk now

If your world has been turned upside down by a pancreatic cancer diagnosis, we are here to talk now. We can answer your questions, recommend practical steps and provide the emotional support you and those close to you need, when you need it most.

Call free on **0808 801 0707** or email **nurse@pancreaticcancer.org.uk**

Expert information

Our free information covers everything about pancreatic cancer to help you understand your diagnosis, ask questions, make decisions and live as well as you can.

Go to: **pancreaticcancer.org.uk/information**

Download or order our free publications at:
pancreaticcancer.org.uk/publications or call **0808 801 0707**

Our online forum

The forum is a supportive online space where everyone affected by pancreatic cancer can be there for each other at any time.

Go to: **forum.pancreaticcancer.org.uk**

Living with Pancreatic Cancer Online Support Sessions

Our online support sessions are hosted by our specialist pancreatic cancer nurses and will give you the chance to connect with others who have also been diagnosed.

Go to: **pancreaticcancer.org.uk/supportsessions**

Real life stories

Read other people's experiences of pancreatic cancer to find out how they coped with their diagnosis and treatment and their tips on looking after themselves.

Go to: **pancreaticcancer.org.uk/stories**

Useful organisations

Cancer Research UK

www.cancerresearchuk.org

Helpline: 0808 800 4040 (Mon-Fri 9am-5pm)

Information for anyone affected by cancer.

Healthtalk.org

Personal experiences presented in written, audio and video formats, including people talking about pancreatic cancer.

Macmillan Cancer Support

www.macmillan.org.uk

Support Line: 0808 808 00 00 (Every day, 8am-8pm)

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

Maggie's Centres

www.maggies.org

Tel: 0300 123 1801

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

National Institute for Health and Care Excellence (NICE)

www.nice.org.uk

NICE provide guidance, advice and information for health professionals. They have produced guidelines for the diagnosis and care of people with pancreatic cancer:

www.nice.org.uk/guidance/ng85

This fact sheet has been produced by the Support and Information Team at Pancreatic Cancer UK.

We make every effort to make sure that our services provide up-to-date, accurate information about pancreatic cancer. We hope this will add to the medical advice you have had, and help you make decisions about your treatment and care. This information should not replace advice from the medical team – please speak to your doctor, nurse or other members of your medical team about any questions.

Email us at **publications@pancreaticcancer.org.uk** for references to the sources of information used to write this fact sheet.

Give us your feedback

We hope you have found this information helpful. We are always keen to improve our information, so let us know if you have any comments or suggestions. Email us at **publications@pancreaticcancer.org.uk** or write to our Information Manager at the address below.

Pancreatic Cancer UK

Westminster Tower
3 Albert Embankment
London SE1 7SP

020 3535 7090
enquiries@pancreaticcancer.org.uk
pancreaticcancer.org.uk

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