Inferior vena cava (IVC) filter insertion – image guided

Information for patients

This leaflet explains IVC filter insertion. It covers what to expect on the day of the procedure, as well as the benefits, the possible risks and the alternatives.

Before you have the IVC filter put in, a clinical staff member will explain the procedure to you in detail. This leaflet is not meant to replace that discussion. If you have any questions or concerns, please do not hesitate to speak to the doctor who has referred you to the Interventional Radiology Department. It is important that you feel well informed before agreeing to the procedure and signing the consent form.

Confirming your identity

Before you have a treatment or procedure, our staff will ask you to confirm your name and date of birth and check your ID band. If you do not have an ID band, we will ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

What is inferior vena cava (IVC) filter insertion?

It is a procedure that allows us to put a filter – a small, metal device about 3cm long, shaped like the spokes of an umbrella – into the inferior vena cava/IVC, the large vein in your belly which brings blood back from your legs and pelvis to your heart. The filter traps blood clots and prevents them from travelling to your lungs and causing a life-threatening blockage (pulmonary embolism/PE).

You usually have this procedure under local anaesthetic only, so you will be awake. If necessary, you can have sedation or general anaesthetic, as long as you are suitable for it.

You will also have a dye (contrast) injected which shows up on an x-ray machine. This is to ensure the filter is put in the correct place in your IVC.

Why do I need an IVC filter?

Tests may have shown that you have – or have had – clots in the veins in your legs, pelvis or lungs. Usually, these problems can be treated with blood-thinning drugs called anticoagulants. But sometimes these drugs do not work or it is not safe to use them. This may be the case if you have a risk of serious bleeding from elsewhere in your body or you are due to have planned surgery. In these cases you have an IVC filter put in to prevent blood clots travelling from the veins in your leg to your lungs and causing a pulmonary embolism.

Sometimes, you have the IVC filter left in permanently, but it is usually taken out when you no longer need it, such as when you start taking anticoagulation medication again after surgery. All of the IVC filters we use can be taken out or used permanently, if required.

What are the risks?

This is a safe procedure and major complications are rare. But there are some potential risks that your doctor will explain to you before you sign the consent form.

During the procedure

Bruising: We insert the filter through a vein in your neck or groin using a thin plastic tube called an access sheath. You may have a small bruise around the area where this is put in.

Artery/nerve damage: You may have some local damage to arteries or nerves near the vein in your groin or neck where we inserted the access sheath. We use ultrasound scans to minimise this risk.

Blood clots in your lungs: It is possible that small clots may reach your lungs despite having of an IVC filter as it may not trap all blood clots. But it will trap the large clots which are the most dangerous.

Blood clots elsewhere: Although an IVC filter protects you from clots reaching your lung, having one put in may increase the risk of clots forming in the IVC itself or in your leg veins.

After the procedure

Generally, the complications at this stage are more likely the longer the filter is inside your vein. We usually aim to remove the filter as soon as you can start taking your anticoagulation medicine again.

Blood clots: The filter may gradually fill with clots and block your IVC. You may not have any symptoms but it can cause your legs to swell. To help prevent this, you are usually given anticoagulation medicine as soon as it is safe to do so.

Vein damage: The filter may cause problems in your IVC with the filter ‘spokes’ piercing the wall of this vein or causing scarring and narrowing.

Filter breaks: This is rare. If it does break, it does not usually cause any problems. But the filter – or parts of it – could move through your vein to other parts of your body (migration).

Radiation: Your doctor will use x-rays to ensure they can carry out your procedure safely. X-rays are a type of ionising radiation. Your exposure to radiation from this procedure is very low and any potential increased risk of developing cancer later in life is slight.

Contrast: We inject a dye (contrast) that shows up on x-rays so we can get a clear view of your IVC and safely place the filter in the correct place. Before your procedure, your doctor will complete a checklist with you to ensure it is safe for you to have the dye and then ask to sign this form as consent. The side effects of the dye will be shown on this checklist.

What are the benefits?

Having the filter fitted makes your surgery safer as you are much less likely to develop/it will prevent you from developing life-threatening blood clots in your lungs.

Are there any alternatives?

The consultant in charge of your treatment, the doctor putting in your IVC filter and often a blood-clotting specialist (haematologist) will have discussed your case and decided that this procedure is your best option. You will be able to discuss your options with your doctors and you can decide not to have the procedure.

Where will I have the procedure?

You will have the procedure at one of two places:

- Interventional Radiology Department, 1st Floor, Denmark Wing, King's College Hospital (KCH), Denmark Hill; or
- Interventional Radiology Department, 1st Floor, South Wing, Princess Royal University Hospital (PRUH).

When will I have the procedure?

You usually need to have this procedure urgently so you are often already in hospital when your doctors decide it is necessary.

How can I prepare for the procedure?

If you have had clots on your lungs in the past and are taking anticoagulation medicines we sometimes place the IVC filter routinely before surgery. You are usually admitted to hospital a day or so before the planned surgery to have the filter put in.

Drugs and alcohol: Do not use any recreational drugs or drink alcohol for 24 hours before the procedure.

Medications: Please make sure the doctor or nurse knows if you are taking any of the following blood-thinning medications (anticoagulants or antiplatelets): aspirin, clopidogrel, warfarin, apixaban, rivaroxaban, edoxaban, ticagrelor, prasugrel, phenprocoumon, acenocoumarol, dagibatran, argatroban, heparins, fondaparinux, enoxaparin.

You usually need to stop taking these medications a few days to a week before the procedure. But your doctors will carefully assess the risks and benefits if it is not possible for you to stop the medications within this time because of your urgent need to have this procedure. Do not stop taking them on your own without talking to your doctor first. They will tell you when to stop and when it is safe to start taking them again.

If in doubt, please bring with you all the medications you are taking, whether they have been prescribed for you or if you have bought them over the counter at your local chemist.

Will I be admitted to hospital for the procedure?

If you are not already in hospital, you will be admitted on the day of your procedure and go home the same day. Very rarely, you may need to stay in overnight, after your procedure.

What to bring with you: Please bring a small overnight bag, all your medications and something to read.

What not to bring with you: Do not bring valuables, jewellery or large sums of money with you. If this unavoidable, please ask a relative or friend to take them home for you. The hospital cannot accept liability for the loss of such items.

What happens on the day of the procedure?

Eating and drinking: Do not eat for six hours before your procedure. You can drink clear fluids up to **two hours** before your procedure.

Medications: Keep taking your regular medications, except for any blood-thinning ones. Remember to take your blood pressure medication on the morning of the procedure (if applicable). If your blood pressure is too high on the day of the procedure, you might need to have the procedure on another day.

What happens before my procedure?

One of the ward nurses will ask you to change into a gown. They will check your blood pressure, heart rate and temperature, and ask you some questions. They will put a small, thin tube called a cannula into a vein in your hand or arm so we can give you medications such as pain relief if you need them during or after the procedure.

The ward staff will ensure that you are ready for the procedure and escort you to Interventional Radiology where you will have the procedure.

What happens during the procedure?

An interventional radiologist – a specialist doctor trained in image-guided procedures – will carry out your procedure. They will explain the procedure to you, ask for your consent and then start your IVC filter insertion.

They will ask you to lie flat on your back on an x-ray table and ensure you are in a comfortable position before they start. A nurse will attach you to a monitoring device to check your heart rate, breathing, blood oxygen level and blood pressure during the procedure. They will also give you oxygen through a mask if you are having sedation.

The doctor will clean the skin in your groin or neck and give you a local anaesthetic to numb the area. Using an ultrasound machine to guide them, they will make a small cut in the skin, through which they will put a needle into either the femoral vein in your groin or the jugular vein in your neck. They will then put a thin wire through the needle and into your vein.

They will take out the needle and then pass a fine plastic tube, called a catheter, over the wire and into the vein. They will next inject the dye through this catheter so they can take a picture of your inferior vena cava using the x-ray machine. When the dye goes in you may feel a warm sensation.

If this picture is ok, they will pass the filter down the catheter and place it in your IVC, where the filter will expand and grip onto the wall of your vein. The doctor will then take out the catheter and press firmly on your skin at the entry point for several minutes to prevent any bleeding.

Will the procedure hurt?

It is generally painless, apart from the brief sting and some minor discomfort when you have the local anaesthetic injection.

If you have any pain or discomfort, tell the doctors or nurses treating you and they will give you some painkillers.

How long will it take?

It can take up to one hour.

What happens after the procedure?

- If the access site is in your groin, you will need to lie flat on your back for about one hour.
- If the access site is in your neck, you can sit up almost immediately to reduce the risk of bleeding.

Nurses will monitor you regularly, checking your pulse and blood pressure to ensure there are no complications. They will also check the access site for any signs of bleeding, swelling or infection. If needed, they will give you pain relief, so please let them know if you have any discomfort.

If you are an inpatient, you will go back to the ward to continue your recovery.

When can I go home?

If you are a day case patient and there are no complications, you can usually go home soon after your procedure.

Important: You must arrange to be collected from the hospital and taken home by car or taxi (not public transport). You must not drive any vehicle for 24 hours after the procedure and you must make sure you feel well enough to drive after that time.

How do I care for the cut?

You will have a small dressing over the puncture site which you can change if necessary. If the dressing is heavily soiled, you can use a plaster to cover the cut instead. Keep the site dry for at least 48 hours, then remove the dressing and gently wash the area with soap and water. Avoid using lotion or powder. Make sure the cut has healed before bathing or soaking it in water.

When can I exercise and go back to work?

For the next seven days, avoid heavy lifting, contact sports and strenuous exercise. You should be able to go back to work after a few days to a week depending on the type of work you do.

When will I have the IVC filter taken out?

We usually take it out when you no longer get any benefit from it. This is also generally the best option to prevent any complications. We will arrange this procedure for you once you are back on your normal anticoagulant treatment, usually within a few months of the insertion but it can be much sooner.

What should I do if I cannot come for my procedure?

Please let us know as soon as possible by contacting Interventional Radiology, so we can arrange another date and time. This also enables us to offer your appointment time to someone else.

KCH, Denmark Hill, tel: **020 32993490**, **020 32996730**, **020 32993280** or
Princess Royal University Hospital, tel: **01689 863671**

Who can I contact with queries or concerns?

If you have any questions about your procedure, please contact the Interventional Radiology Nurses, 9am – 5pm, Monday to Friday:

- KCH, Denmark Hill, tel: **020 3299 3490** or **020 3299 2060**
- Princess Royal University Hospital, Orpington, tel: **01689 863671**

More information and support

- King's College Hospital: www.kch.nhs.uk
- NHS: www.nhs.uk, tel: 111
- British Society of Interventional Radiology: www.bsir.org (click on Patients, click on patient information leaflets, select leaflet)

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

MyChart

Our MyChart app and website lets you securely access parts of your health record with us, giving you more control over your care. Visit **www.kch.nhs.uk/mychart**to find out more.

Sharing your information

King's College Hospital NHS Foundation Trust has partnered with Guy's and St Thomas' NHS Foundation Trust through the King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas' hospitals. King's College Hospital and Guy's and St Thomas' NHS Foundation Trusts share an electronic patient record system, which means information about your health record can be accessed safely and securely by health and care staff at both Trusts. For more information, visit **www.kch.nhs.uk**

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

Tel: **020 3299 4618**
Email: **kings.pals@nhs.net**

If you would like the information in this leaflet in a different language or format, please contact our Interpreting and Accessible Communication Support on 020 3299 4618 or email kings.access@nhs.net

www.kch.nhs.uk

PL1299.1 October 2025
Review date October 2028

Networked Care
Comms: 4606