



Subcutaneous Implantable Defibrillator (S-ICD) vector mapping

What is it?

An ICD is an implantable device that recognises and treats life-threatening rhythms. ICD stands for implantable cardioverter defibrillator and two types of systems are available.

Most patients receive a transvenous system, which means the leads pass through veins to the heart. With this system, the device is implanted under the skin and located under the collar bone.

The alternative is a subcutaneous ICD or S-ICD. Subcutaneous means 'under the skin' and with this system no veins are used. Instead both the device and the lead are implanted under the skin.

An S-ICD device is located about 10 cm below the left armpit. Before a decision can be made for an S-ICD system, a short test is needed to see if the device would recognise your heart beats correctly.

This is called vector mapping and helps your doctor decide which system is best for you.

Why is it done?

The procedure is necessary to confirm that the software in the device can correctly distinguish between a normal heart rhythm and a life-threatening one. This is important to make sure that the device delivers the correct treatment.

How is it done?

Your electrocardiograph (ECG) is recorded using four electrodes placed on your chest which mimic the lead of the S-ICD that would be implanted under the skin. You will need to undress to the waist (ladies can usually leave their bras in place).

If you would like a chaperone from the department please ask upon your arrival.

Your ECG is then recorded in four different positions, which represent day to day living as closely as possible:

- Lying down
- Sitting or standing up
- During times of increased heart rate
- After exercising, but before your heart rate returns to normal

In order to increase your heart rate, you will be asked to exercise until the workload becomes too much, usually on a treadmill. Your heart rate and blood pressure will be monitored during exercise.

Information for Patients

In most cases, the screening process will be followed by a meeting with a device nurse. Device nurses specialise in looking after heart patients who have a device implanted and you will be able to discuss your personal situation with an opportunity to ask questions.

Risks or side-effects

The risk of this test is very low as with any moderate level of exercise. Not enough tests have been done so far to tell exactly how low. One possible side-effect is skin irritation from the electrodes we use.

Please use the space below to write down any questions you may have and bring this with you to your next appointment.

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