

# Nicholas Gall MSc MD FRCP

## Consultant Cardiologist

**Central London Consulting Rooms:**  
London Bridge Hospital  
Cromwell Hospital  
London Independent Hospital

**NHS:**  
King's College Hospital

**Outer London Consulting Rooms:**  
Blackheath Hospital  
Chelsfield Park Hospital  
Shirley Oaks Hospital  
Sloane Hospital

### **INFORMATION FOR PATIENTS UNDERGOING A CARDIOVERSION (EXTERNAL OR INTERNAL)**

This procedure is used to attempt to return your irregular and perhaps fast heart rhythm to normal. Your heart is given a small electric shock to return the rhythm to normal. In some cases we do this from the outside which is simple and non-invasive or we do it from the inside which is invasive but can in some people be more effective.

#### **IMPORTANT**

- **We can only perform this procedure if you are taking warfarin and if your INR (a measure of your blood's thinness) has been over 2.0 for at least four weeks prior to the procedure. If this is not the case please phone us. We will also need to control your INR for the procedure. Please arrange to have your INR checked 3-5 days before your procedure. Phone us on that day so that we can advise you whether to stop the warfarin. If this coincides with a weekend, phone us at the earliest opportunity. Please have your yellow book to hand when you phone. You MUST tell us if you are taking warfarin for an artificial heart valve or a recent clot in the leg (deep vein thrombosis /DVT) or on the lung (pulmonary embolus /PE).**
- **Please take all of your other tablets on the day of your admission and bring them with you.**
- **If there is any chance that you may be pregnant please let us know.**
- **If you are taking antibiotics on the days leading up to your procedure, please let us know so that we can advise you what to do.**
- **If you are a tablet-controlled diabetic please do NOT take your diabetic medication on the day of your admission. If you are diabetic on insulin please take half your usual dose of Insulin; we will check your blood sugar when you arrive.**
- **You must not eat or drink for the 6 hours before your procedure.**

The procedure itself will take place in one of the cardiac catheter labs; there will always be a nurse available to explain what is happening.

If you are having an external cardioversion you will have a general anaesthetic. While you are asleep sticky pads are placed on your chest wall. Through these pads the shock can be given which is timed to return your heart to normal rhythm safely. Occasionally we may need to give one or two extra shocks if we need to give you certain medication to help your heart back into normal rhythm (sometimes the rhythm problem can be rather stubborn!).

For an internal cardioversion we have to pass a catheter into your heart. To get there we use a vein at the top of your leg or more rarely in your shoulder. We numb the skin with local anaesthetic first and then put a small tube into the vein (a sheath). We can then advance the cardioversion catheter up to your heart (you cannot feel it). This catheter has electrodes on it

through which the shock can be given. As the shock is given from the inside, which incidentally does not damage the heart, we only need to give a very small shock, so unlike external cardioversion you do not need to have a full general anaesthetic; we use a powerful sedative instead.

When the doctor is happy that the wire is in the correct position we give you the sedation. When you are fully asleep the shock is given. Sometimes the first shock doesn't work – we may need to give another one, sometimes after an injection of a medication to try and help the heart return to a normal rhythm. You will be asleep for all of the shocks. The procedure usually takes about 30 minutes.

At the end of the procedure, all the tubes are removed and the doctor will press on the hole for a few minutes to stop the bleeding. You may feel sleepy for a little while afterwards but you will be able to go home that evening if all goes well. Remember that with both types of cardioversion you should have someone with you to take you home.

Once you are discharged home you may bath or shower as normal and resume all your normal activities, although you should avoid heavy lifting and strenuous activity for 24 hours. You may have a small bruise in your groin area, which will go in a few days. Return to work will depend on the results, so discuss this matter with your doctor.

### **Complications**

It is not possible to perform these sort of procedures without an element of risk. Fortunately complications occur rarely; you should always remember that there can be complications by not having a procedure performed. You should discuss this with your doctor.

- **Vascular damage (damage to a blood vessel):** There is a small risk of damaging the blood vessel at the top of the leg if you have an internal cardioversion. This only happens in *approximately 1/500 patients* and can always be fixed with a small operation. It is for this reason that we control your INR so carefully.
- **Stroke.** There is a very tiny risk that clots inside the heart can move to the brain as a result of the shock, causing a stroke. This is the same risk as with external cardioversions and can also happen spontaneously. This is why warfarin is given and why we control your levels so carefully. If your warfarin is well-controlled the risks are very small indeed.
- **Failure.** The major risk of this procedure is that we do not manage to get you back to normal rhythm. This may happen in up to 10% of people. The chance of keeping you in a normal rhythm if we get you there is unaffected by this treatment – your medicines will do this.
- **Pneumothorax (air leak around the lung).** Occasionally we use the vein in your shoulder for the wire. In this case it is possible to nick the lung while accessing the vein. This causes air to leak around the outside of the lung. This may settle on its own but occasionally needs a drain. This may delay your stay in hospital by a day or two. This happens rarely – *1/100 cases*. If we use this vein we always perform a chest x-ray after the procedure to check.
- **X-rays.** Your examination and/or treatment involves a period of x-ray scanning that will give you a relatively small x-ray dose. In some cases where we need to do more extensive investigation and treatment, there is a small chance that you will get a skin reddening reaction like sunburn which will fade after a few days. Please ask the radiographer if you require further information.

### **Items which you should bring with you:**

Current tablets/medicines, details of your GP, next of kin and one other person (telephone numbers at home and at work). **Please also bring your yellow book.** You will also need a dressing gown and pyjamas/night dress.

### **You may also need:**

Slippers, shaving equipment, mirror, comb/brush, flannel/sponge, towel, cloths for travelling home, change for the phone, reading glasses and hearing aid (if required).

**You should not bring:**

Television, jewellery (except wedding ring), large amounts of money.

**When you come into hospital further information will be available from the doctors and nurses.**