You may be prescribed antibiotics to help prevent infection. If prescribed, take medication as directed.

If you take Coumadin (warfarin), restart your regular dose on the evening after the procedure or as instructed at discharge. Continue to have your International Normalized Ratio (INR) checked as instructed by your physician. You may be asked to have it checked soon after the procedure.

You will have a two-week wound check at Penn State Hershey Medical Center. During this visit your incision and device will be examined. Thereafter, your device will be checked several times a year. Some device functions can be checked remotely through a telephone call or a computer connection.

Pacemaker batteries last between five and ten years, depending on frequency of use. An ICD battery lasts between five and seven years. Your doctor will replace the generator along with the battery before the battery runs down. The wires of your device tend to last longer than the battery, but may need to be replaced eventually.

LIVING WITH A PACEMAKER OR DEFIBRILLATOR

When you first get your device, you are given a temporary identification card to carry. A permanent card is mailed to you in about four to six weeks. This identification card contains important information about your device.

Show it to any doctor, dentist, or other medical provider you visit. Also, show it to security personnel (especially at airports), because pacemakers and ICDs tend to alarm metal detectors.

Body scanners and other security devices are thought to be safe, but you should discuss their use with your medical provider.

You can walk through security system metal detectors at your normal pace. Someone can check you with a metal detector wand as long as it is not held for too long over your device. You should avoid sitting or standing next to a security system metal detector.

WHAT TO AVOID

- Avoid very strong magnets such as those used for MRIs.
- When using a cellular phone, hold it to the ear opposite from your device. Do not carry cellular phones in your breast pocket.
- Do not store an iPod (or other MP3 player) in your breast pocket. If you strap it to your arm while listening to it, put the iPod on the arm opposite your device.
- Avoid strong electrical fields such as those made by radio transmitting towers, high-tension wires, and ham radios.
- Stay at least two feet away from industrial welders and electrical generators.
- Avoid close and prolonged contact with heavy-duty electrical equipment, such as power saws and engines.
- Use caution with medical treatments and procedures such as shock-wave lithotripsy, electrocauterization, or nerve stimulation.

Close and prolonged exposure to “electromagnetic interference” disrupts the electrical signaling of your pacemaker or ICD. This can cause the device to stop working or to work incorrectly.

WHAT IS OKAY

You can still use household appliances such as microwave ovens, computers, hair dryers, small power tools, stereo, radios, televisions, electrical blankets, heating pads, and vacuum cleaners.
Pacemakers and Implantable Cardioverter Defibrillators

Pacemakers and Implantable Cardioverter Defibrillators (ICDs) are devices that are placed permanently inside your body, usually under the skin of your chest. A pacemaker is a small device that uses electrical pulses to prompt the heart to beat at a normal rate. An ICD monitors your heart rhythm (the speed and pattern of your heartbeat). If you develop a dangerous heart rhythm (ventricular tachycardia or ventricular fibrillation) the ICD sends out electrical signals that help return the rhythm to normal. Both pacemakers and ICDs are connected to wires (or leads) that are attached to the heart. Leads send the electrical impulses from the device to the heart and send information about the heart's rhythm back to the device.

A specialized pacemaker, known as a biventricular pacemaker, uses cardiac resynchronization therapy (CRT) for treatment of heart failure. With certain conditions, CRT sends electrical signals to both sides of your heart, causing the two lower chambers to beat at the same time, as they should. Along with your heart medicines, CRT can improve your heart's ability to supply blood and oxygen to your body and make you feel better.

REASONS FOR A PACEMAKER

- Your heart is not able to set the correct pace for your heartbeat, or the electrical signals between your heart's upper and lower chambers are partially or completely blocked or slowed down.
- You have unusual lung, lightheadedness, or have passed out because of a slow heartbeat.
- You need to take certain heart medicines (such as beta blockers), but these medicines too drastically slow your heart's rhythm.

REASONS FOR A DEFIBRILLATOR

- You have had a dangerous, life-threatening heart rhythm.
- You have heart disease that puts you at risk for dangerous, life-threatening heart rhythms.

PREPARATION FOR PROCEDURE

- Tell your physician or nurse of any food or drug allergies at the time your procedure is scheduled.
- Tell your physician or nurse if you are taking any blood thinner medications.
- Tell your physician if you may be pregnant.
- You may need to have an EKG, blood work, chest X-ray, and/or urinalysis prior to the procedure. Certain insurance companies may require you to have this done by your primary care physician.
- You will be contacted by our staff the day before your procedure to tell you what time to arrive at the Medical Center, to provide you with additional instructions, and to review medications you should or should not take.

DAY OF PROCEDURE

- Do not eat anything after midnight.
- Do not take morning dose of diuretic (water pill).
- Take any morning medication (except diuretic) with a small amount of water.
- If you take insulin or oral medication for diabetes, you will be given instructions about modifying your dose.

DURING THE PROCEDURE

Placement of a pacemaker or defibrillator requires minor surgery in a room called an electrophysiology (EP) lab. This room offers the same sterile conditions found in an operating room. The procedure may last one hour to several hours.

You are given a sedative to help you relax and you may nearly fall asleep. You are given a local anesthetic so you will temporarily not feel anything in the area where the device is implanted. First, a small cut is made into your skin. Your doctor places a needle in a large vein, usually near the shoulder opposite your dominant hand. The doctor then uses the needle to thread wires into the vein and to the heart. Using X-ray guidance, your doctor places the wires in the correct location in the heart. Next, your doctor connects the wires to the pacemaker or ICD, places it under the skin, and tests the device. Once the device is in place, your doctor will close the incision.

RISK

Pacemaker and ICD implantation is a relatively safe procedure but carries some risks. Bleeding, blood clots, tearing of the vein or artery wall, and puncture of the heart or lung occur in approximately 1 percent of all cases. Risk of death is 1 in 1,000 cases. Other complications include swelling, bruising, or infection in the area where the device is placed, reactions to medicines used during or after the surgery, or mechanical complications with the device or the leads. Although infrequent, there are times when the device company detects flaws with the equipment and issues an advisory to patients and physicians. With ICDs, there is a risk of being shocked too often or at the wrong time. Although your doctor can reprogram the ICD or prescribe medicines to help prevent this, shocks can be painful and emotionally upsetting. Still, your medical provider will only recommend a pacemaker or defibrillator when the benefits outweigh the minor risks.

FOLLOWING THE PROCEDURE

Expect to stay in the hospital overnight so you can be monitored and your doctor can make sure your device is working properly. Before going home, your incision will be checked and your bandage will be changed. You may remove the dressing the day after you go home. The adhesive strips (steri strips) over the incision should fall off by themselves in about two to four weeks.

Keep the incision completely dry for four days. You can shower on the fourth day after surgery, but do not submerge in water until the steri strips are gone. Wash the incision with mild soap and water and keep it dry. Do not use lotions, creams, or powders in this area. Leave the incision uncovered.

For the first week, the incision may look puffy and feel sore. There may be discoloration of the skin due to bruising (skin may be blue, green, brown, or yellow). Call your health care provider if the incision site becomes red, more swollen (bulging up like a golf ball), warm, or hard; if it hurts more; if you see blood or fluid draining out; or if you have symptoms of chest pain, shortness of breath, lightheadedness, or fainting spells. Call your health care provider immediately if you have a temperature of more than 100 degrees.

Do not drive for at least two weeks after the procedure. Do not raise your arm above shoulder level, on the side of the device for six weeks. Limit heavy lifting (more than twenty-five pounds), pulling, or vigorous use of the arms (such as golfing) for six weeks following the procedure. At all times, avoid activity that involves rough contact with the pacemaker site.