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PACEMAKERS

A normal heartbeat is the result of electrical signals that are generated by a small group of cells called the "sinoatrial node", or SA node. The SA node generates an electric signal that normally travels down a specific path to reach the ventricles of the heart.

If your heart beats too fast, too slow, or irregularly, you may be a candidate for a "pacemaker".

What is a pacemaker?

A pacemaker is a device that changes the pattern of the heart's contractions by generating its own electrical impulse. A pacemaker uses batteries to send electrical impulses to your heart to help it pump properly. An electrode is placed next to your heart wall and small electrical charges travel through the wire to your heart. Most pacemakers turn themselves on and off as needed. These are called "demand" pacemakers.

What cautions should I be aware of if I have a pacemaker?

Since your pacemaker generates its own electrical signal, you need to be aware of things in your surroundings that could affect that electrical signal. You should always carry a wallet I.D. card with you, and let any medical or dental personnel know that you have a pacemaker before any procedure.

In the home:

Most home appliances are safe. They have shown not to damage pacemakers. Some common household devices have the potential to inhibit an occasional single beat. This is generally not a problem.

Cellular phones:

The type of cellular phones currently used in the United States are safe to use for individuals with pacemakers. They are currently based on technology using less than 3 watts. As technology changes, you should investigate any possible new risks to your pacemaker.

Heavy equipment:

Power-generating equipment and arc welding equipment can inhibit your pacemaker. If you work near this type of equipment, you need to be aware of the associated risks. Again, if you have any questions, ask your doctor.

Medical/Dental equipment:

Several devices used in medicine can affect your pacemaker. Ask your doctor or healthcare provider about any risks to individuals with pacemakers before undergoing ANY medical or dental procedure. Some procedures can be done safely by reprogramming your pacemaker. If this is the case, careful followup for a period of time

after the procedure is required to ensure that your pacemaker continues to work correctly. The list below is a partial list of known medical devices that have the potential to interfere with your pacemaker:

MRI (Magnetic Resonance Imaging) devices use powerful magnets to generate images of soft tissue in the body. Powerful magnets, like those found in medical devices like MRI scanners, can seriously affect your pacemaker. You should discuss this with your doctor, and make sure all medical personnel are aware that you have a pacemaker prior to any procedure or test. Some pacemakers can be reprogrammed prior to the test so that the test can be performed safely.

Dental equipment appears to be safe for individuals with pacemakers.

X-rays used for diagnostic purposes do not appear to negatively affect pacemakers.

Radiation therapy (which uses X-rays to treat such things as cancer) can damage your pacemaker. The pacemaker should be shielded as much as possible during radiation therapy. An electrocardiogram (ECG) might be indicated in order to monitor your heart during radiation therapy. Your pacemaker should be tested before and after any radiation therapy session, and in the period following treatment.

Transcutaneous electrical nerve stimulation (TENS) is a method often used to relieve pain. If you have a bipolar pacemaker, TENS units generally do not affect your pacemaker in a negative manner. If you have a unipolar pacemaker, a TENS unit can interfere with your pacemaker. This can be resolved by reprogramming your pacemaker. If you are not certain what type of pacemaker you have, ask your doctor before undergoing therapy with a TENS unit.

If you have a serious arrhythmia, your doctor may propose a procedure called "RF ablation", or radiofrequency ablation. RF ablation appears to be safe with most pacemakers, but it can affect your pacemaker. Your doctor should carefully evaluate your pacemaker before, during, and after the procedure.

A popular treatment for kidney stones called "extracorporeal shockwave lithotripsy" (ESWL) uses shockwaves generated from an electrical source to disintegrate the stones. This procedure can be done safely in most cases with some reprogramming of your pacemaker.

Electroconvulsive therapy is used to treat certain mental disorders. Electroconvulsive therapy appears to be safe for individuals with pacemakers.

Short-wave or microwave diathermy (di-ATH'er-me) uses high-frequency, high-intensity signals. These may bypass your pacemaker's noise protection and interfere with or permanently damage the pulse generator.