

## Cellular Phones

Over the years as cellular phones have become more popular, studies were conducted by manufacturers of pacemakers and implantable defibrillators to determine the effect of the phones on these medical devices. Many pacemakers and implantable defibrillators are engineered specifically to resist the effects from cellular phones, however, cellular technology is constantly changing. The studies determined that to avoid any potential effects, individuals using cellular phones are advised not to hold the phones directly over their pacemaker or implantable defibrillator.

When certain cellular phones are held too close (within 6 inches or 15 centimeters) to some heart devices, studies indicate that there may be some temporary effects. Potential effects are due to the radio frequency signal of the phone. Any effect would be **temporary** and simply moving the phone away will return the pacemaker or implantable defibrillator to its previous state of operation.

Because cellular phone technology continues to evolve, and because of the great variety of cellular phones, pacemakers, and implantable defibrillators, an absolute recommendation cannot be made to cover every phone and every patient. Therefore, to ensure no adverse effects are encountered, the following standard use guidelines have been developed by the industry:

- Maintain a distance of 6 inches (15 centimeters) between a hand-held personal cellular phone and the heart device. For phones transmitting above 3 watts (such as some portable and mobile cellular phones), a distance of 12 inches (30 centimeters) between the antenna and the heart device is advised.
- Hold the phone to the ear opposite the side of the heart device.
- Do not carry the phone in a breast pocket (if your heart device is implanted in your chest) or on a belt (if your heart device is implanted in your abdomen) over or within 6 inches (15 centimeters) of the heart device as some phones emit signals when they are turned ON but not in use (i.e., in the listen or standby mode). Storing the phone in a location opposite the side of your heart device is recommended.



**Note:** Medtronic, Inc. includes the standard labeling with their heart devices. If your heart device is from another manufacturer, or if you have specific questions about your heart device and its potential interaction with cellular phones, please consult with your physician.

**Q** Can I use a cellular phone?

**A** Yes. You may already have a pacemaker or implantable defibrillator that is engineered with technology to specifically resist potential effects by a cellular phone. Even if it does not, or if you are uncertain, simply follow the standard guidelines in this brochure when using the phone. These guidelines apply to all cellular phones including pocket phones, portable bag phones, and car phones.

**Q** Does a digital cellular phone affect my heart device more than an analog cellular phone?

**A** Somewhat, but the guidelines for use in this brochure remain the same for both. Digital phones currently on the market emit a series of pulsating radio frequency signals. Analog phones emit a continuous signal. Pacemakers and implantable defibrillators tend to be more sensitive to **pulsating digital signals** because these heart devices are designed to detect similar signals from the heart.

This is how your heart device knows if and when to deliver your programmed therapy. (For this reason, some medical professionals may recommend an analog phone for pacemaker dependent patients.)

**Q** What are medical device developers and wireless industries doing about this?

**A** New medical devices may be engineered with technology that even further resists the effects of cellular phones. Also, new cellular phones will carry a label about the potential effects on your heart device.

If you have specific questions regarding cellular phones, please ask your doctor or nurse. You can also call Medtronic Patient Services toll-free at 1 (800) 551-5544, x41835 (7:00 a.m. to 6:00 p.m., Monday – Friday, Central Time) with non-medical questions.

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24-hour information available  
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