

New research shows that iPods do not interfere with cardiac pacemakers

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A report in the open access journal BioMedical Engineering OnLine refutes claims that portable music players, such as Apple's iPod, interfere with cardiac pacemakers.

Howard Bassen, a researcher with the U.S. Food and Drug Administration in Rockville, Md., led a research team that measured the magnetic fields produced by four different iPod models: a fourth-generation iPod and an iPod with video, and an iPod nano and iPod shuffle. They also measured the voltages delivered inside the pacemaker by the magnetic fields from the iPods. All measurements indicated there would be no effects on users with cardiac pacemakers.

Over the past year, a spate of media reports speculated on iPod interference with cardiac pacemakers. These reports, however, were based on a single incident where a patient with a cardiac pacemaker suffered dizziness while using an iPod. Cardiologists operated an iPod during the patient's examination, and noted interference with the pacemaker.

The cardiologists published their results in the medical journal, Heart Rhythm.

After publication, there was talk of warning labels for portable music and video players, although a subsequent clinical study failed to show any dangerous connection between the music devices and patients with pacemakers.

Now, Bassen's more detailed study demonstrates that iPods are not capable of producing electromagnetic interference in implanted pacemakers.

Using a 3-coil sensor, the team measured the magnetic field produced by the iPod at a distance of around 5 to 10 millimeters. They obtained readings for the magnetic field at various specific and small regions 10 mm from an iPod. The peak magnetic field strength was 0.2 millionths of a Tesla, a value hundreds of times lower than the levels capable of interfering with a pacemaker.

In addition, Bassen's team attempted to detect any voltages these fields might produce within the protective "can" of a pacemaker. The can was placed inside a simulated human torso used by pacemaker manufacturers for interference testing. Bassen and his team found that the voltage levels within the pacemaker can were well below the detection limits of their highly sensitive equipment.

"Based on the observations of our in-vitro study we conclude that no interference effects can occur in pacemakers exposed to the iPods we tested," Bassen concluded.

Source: BioMed Central

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