Very Low Health Risks from Full-Body X-ray Scanners

Be it in airports, court buildings, or other venues, Americans are increasingly encountering full-body imaging systems, the new wave in electronic security screening.

General-use X-ray security screening systems represent one of two full-body scanning technologies currently being put into widespread use to check people for concealed weapons, explosives, or other contraband without having to make physical contact.

Extensive use of full-body scanning technologies, including the general-use X-ray systems, is a relatively new development. Thus it's natural for people to have questions—including questions about whether these systems pose any health risks.

However, FDA Engineer Daniel Kassiday says, "The dose from one screening with a general-use X-ray security screening system is so low that it presents an extremely small risk to any individual."

Very Small Amounts of Energy

General-use X-ray security systems found in U.S. airports are also called "backscatter" systems. They use very small amounts of X-ray that are "bounced" off the person being screened. The reflected energy is received by an array of sensitive detectors and then processed by a computer to form an image.

Full-body scanners are large in size, and require individuals to step into the machine and remain still for a few seconds while the scan takes place.

Kassiday explains, "A person receives more radiation from naturally occurring sources in less than an hour of ordinary living than from one screening with any general-use X-ray security system."

The other type of advanced imaging technology being put in general use employs millimeter wave technology. It uses non-ionizing electromagnetic waves to generate an image based on the energy reflected from the body.

FDA scientist Abiy Desta says, "Millimeter wave security systems that comply with the limits set by the Institute of Electrical and Electronics Engineers in the applicable non-ionizing radiation safety standard cause no known adverse health effects."

General use X-ray full-body security systems are in use at many secured locations. People being screened step through the walkway between the two large panels.

New Webpage on Full-Body Scanners

FDA, which regulates the manufacturers of radiation-emitting electronic products sold in the United States, has launched a new webpage on full-body security scanners.

Named "Products for Security Screening of People," the site provides information for the general public and professionals, guidance for industry, and links to other resources.

It is available at *www.fda.gov/RadiationEmittingProducts/RadiationEmittingProductsandProcedures/SecuritySystems/ucm227201.htm*.

The webpage aims to inform the public about these new systems, and to provide people with the resources to separate the facts from the myths.

Metal Detectors Still in Use

Meanwhile, people need to be aware that metal detectors are still being used for security screening at many facilities.

Metal detectors, which can be walk-thru portals or hand-held wands, have the potential to affect the function of certain medical devices such as implanted cardiac pacemakers, implantable cardioverter/defibrillators, and spinal cord nerve stimulators.

Although the number of significant injuries due to this is very low, individuals who use an electronic medical device are advised not to stay near a metal detector longer than necessary or lean against the metal-detecting system.

If scanning with a hand-held metal detector is necessary, warn the security personnel that you have an electronic medical device and ask them not to hold the metal detector near the device longer than necessary. You may also ask for an alternate form of personal search.

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