

Airport security X-rays may damage diabetes devices

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Photo courtesy: U.S. Transportation Security Administration

Experts warn of malfunction potential for insulin pumps, continuous glucose monitors.

(HealthDay)—Full body X-ray scanners and luggage X-rays may damage some insulin pumps and continuous glucose monitors, both used by many people with diabetes to manage their conditions.

It's likely that every day, [large numbers](#) of travelers expose these diabetes care devices to [X-rays](#) while going through [airport security](#) "and some may unknowingly experience mild [or worse] malfunctioning as a result," wrote the authors of a recent editorial in the journal *Diabetes Technology & Therapeutics*.

They recommend carrying a letter that details all of the medical supplies someone with diabetes needs to carry on board with them. They also recommend that if someone wears an [insulin pump](#) or continuous

glucose monitors, the letter specifically state that these devices shouldn't be subjected to X-rays, either from a full body scanner or the X-ray machine that scans carry-on [luggage](#). Instead, these devices should be hand-checked, according to editorial co-authors Andrew Cornish and Dr. H. Peter Chase, from the University of Colorado Denver.

Dr. Tracy Breen, director of diabetes care for North Shore-LIJ Health System in New Hyde Park, N.Y., agreed with this advice.

"I always recommend that people living with diabetes travel with a letter from their doctor stating their diagnosis of [diabetes](#), what their travel needs are and what supplies they are traveling with," Breen said. "Since we really don't know what can happen to an insulin pump or [continuous glucose monitoring] device when it is passed through an imaging device, it is important to follow the manufacturer's recommendations."

Breen added, "It's also important for people and their doctors to be well versed in Transportation Safety Administration (TSA) guidelines and to consider incorporating those guidelines into the text of their travel letter."

The editorial described the experience of a 16-year-old patient who was told to wear her insulin pump through a full-body scanner by the TSA. As a result of the X-ray exposure, the pump's manufacturer advised the young lady to disconnect the pump, because they couldn't be sure whether or not damage had occurred.

Any pump that uses what's known as direct current motor technology is at risk from X-ray exposure, according to the editorial. Insulin pumps made by Medtronic, Animas and Tandem [Diabetes Care](#) use direct current motor technology.

"Like the rest of the insulin pump industry, we recommend the t:slim

pump be removed when entering a full body scanner," said Susan Morrison, director of corporate investor relations at Tandem in San Diego. Morrison said that Tandem also recommends that the t:slim pump not be exposed to luggage X-ray machines.

Currently, the only FDA-approved insulin pump that doesn't use direct current motor technology is the OmniPod by Insulet. That pump uses shape-memory alloy wire technology, which according to the company, isn't affected by X-ray exposure. Insulet's user manual says that both the pods, which hold insulin and are attached to the body, and the wireless device that controls the insulin delivery can be X-rayed.

Medtronic also cautions against allowing their continuous glucose monitoring device to go through any type of X-ray scanning.

None of the pump companies expressed concerns about passing these devices through the metal detectors in the airport.

The editorial noted that on an airplane, the increased pressure in the cabin can cause some insulin pumps to deliver slightly more insulin. In general, this isn't a significant concern for teens or adults because the potential amount of extra insulin isn't large enough to make a big difference in blood sugar levels.

But, in young children who use very small amounts of insulin, the extra insulin could cause a drop in blood sugar levels. Parents who are aware of this potential can monitor their children more carefully while flying to avoid unexpectedly low blood sugar levels.

In addition, the sensitivity of continuous glucose monitors may be affected by changes in air cabin pressure, with extra pressure possibly causing lower readings.

The authors of the editorial said that more research is needed to determine exactly how much [insulin](#) delivery and continuous glucose monitor readings are affected by air cabin pressure.

More information: Read more about traveling with diabetes from the [U.S. Transportation Security Administration](#).

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