

Do Lead Aprons Still Serve A Purpose?



In the x-ray room, lead apron has been a common fixture used to shield patients from radiation.

While this ritual of covering reproductive organs and foetuses during x-rays has been done since the 1950s, in recent years questions have been raised as to the value or efficacy of this practice.

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Experts, including radiologists and medical physicists, are now saying that lead shields – which are difficult to position accurately – can impair the quality of diagnostic tests and at times may increase a patient's radiation exposure.

The about-face comes amidst advances in imaging technology and improved knowledge on the effects of radiation. Of note, the amount of radiation needed for an x-ray is about one-twentieth of what it was in the 1950s.

Also, as shown in research studies, radiation exposure through diagnostic imaging has not caused measurable harm to ovaries and testicles of patients.

Further, researchers have found that shielding doesn't protect against the greatest radiation effect. They note that "scatter" occurs when radiation ricochets inside the body, including under the shield, eventually depositing its energy in tissues.

"What we know now is that there is likely no risk at all," according to Dr. Donald Frush, a radiologist at Lucile Packard Children's Hospital Stanford in Palo Alto, California who chairs the Image Gently Alliance, referring to hereditary risk.

The alliance, which promotes safe paediatric imaging, and the [American College of Radiology](#) are among the groups supporting the American Association of Physicists in Medicine's recommendation that shielding of patients be "discontinued as routine practice."

Meanwhile, the National Council on Radiation Protection and Measurements, which provides guidance to regulatory bodies, is expected to release a statement supporting a halt to patient shielding.

Some hospitals have started the move towards the discontinuation of [shielding during medical imaging](#). A notable example is Lurie Children's Hospital. Its ongoing "Abandon the Shield" campaign is helping to educate staff, patients and caregivers before the hospital does away with shielding beginning this spring.

However, experts do recognise that more concerted efforts are needed to undo the decades-old practice of shielding, especially in the area of dental imaging. With hospitals taking steps to discontinue shielding during x-rays, the experts say public confusion might develop if dentists

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continue to shield. Data show that in 2016, some 320 million dental x-rays were performed in the United States, compared to 275 million medical x-ray exams.

Mahadevappa Mahesh, chief physicist at Johns Hopkins Hospital, has lamented that not much effort has been made to reach out to dentists on the topic. "It's high time we bring them into the discussion," he pointed out. The American Dental Association, for its part, said its guidance on shielding is currently under review.

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