



Background on Patient Shielding

When gonadal shielding was introduced many years ago, there was a belief that radiation could damage the reproductive cells and lead to infertility. However, this effect has never been observed in humans. In addition, medical imaging technology has improved, requiring far less radiation to produce a diagnostic-quality image.

In April 2019, the American Association of Physicists in Medicine (AAPM) issued a position statement recommending that health care professionals limit the use of fetal and/or gonadal shielding for patients receiving x-ray imaging. In January 2023, National Council of Radiation Protection and Measurements (NCRP) Report 177 recommended that thyroid shielding not be used if it interferes with obtaining a quality diagnostic image.

Today's x-ray procedures are highly focused on the point of examination resulting in very little radiation exposure to parts of the body that are not being imaged, including to a fetus that is not in the examination area. Some scatter radiation is produced when the x-rays enter the body, but this small amount of radiation comes from the body and therefore cannot be blocked by a lead apron. Placement of lead shielding can also cause imaging problems, as even a small amount of lead in the image may result in artifacts that reduce the diagnostic quality of the image and may increase the exposure settings (and therefore the dose to the patient).

The AAPM statement applies to patient fetal and gonadal shielding and the NCRP Report applies to gonadal shielding only. The NCRP is evaluating all patient shielding in dentistry that may have value in safety practices employed in other diagnostic imaging.

When to Shield Patients

Fetal, gonadal, and thyroid shielding shall be available if requested by the patient or caregiver when, in the clinician's best judgement, it will not interfere with obtaining a high-quality diagnostic image. This is described in the revised [Health Department Radiological Health Regulations](#) effective January 1, 2024.

When Operators Should Shield

Operators and other health care professionals shall still wear protective shielding when other protective barriers are not present. Eye protection (especially during fluoroscopy) and thyroid protection are also not included in either the AAPM or NCRP guidance.