

Patient Shielding for Procedures Using X-rays

Background:

With recent advances in imaging technology and a better understanding of radiation exposure risks, the use of patient shielding (e.g. “lead” aprons and garments) is no longer considered beneficial and in some cases may be disadvantageous. Shielding may obscure relevant anatomy resulting in suboptimal diagnosis or repeat imaging. Shielding may also interfere with the automatic exposure control in modern imaging systems, resulting in slightly increased patient radiation exposure. Any intended decrease in radiation exposure from shielding is negligible compared to the dose from radiation that is scattered within the patient’s body which shielding is ineffective at reducing.

Scope:

All procedures using x-rays (radiography, mammography, fluoroscopy, CT), and all patients (all ages including pregnant patients).

Guidelines:

The routine use of patient shielding (e.g. gonadal, fetal, thyroid) during x-ray based diagnostic and interventional imaging should be discontinued.

Patients may request the use of shielding provided that it does not interfere with imaging. However, the technologist should explain to the patient the potential disadvantages of shielding.

If shielding is used at the patient’s request, the technologist should ensure that the shield is kept outside of the primary x-ray beam.

Technologists should understand the importance of appropriate collimation for all studies (radiography, fluoroscopy, CT scan range).

Technologists should be educated on the rationale for discontinuance of shielding.

References:

American Association of Physicists in Medicine. AAPM Position Statement on the Use of Patient Gonadal and Fetal Shielding. 2019.
<https://www.aapm.org/org/policies/details.asp?id=468&type=PP>

American Association of Physicists in Medicine. Patient Gonadal and Fetal Shielding in Diagnostic Imaging FAQ. 2019.
https://www.aapm.org/org/policies/documents/CARES_FAQs_Patient_Shielding.pdf