

Radiation Protection of Patients during Fluoroscopy

High skin dose from fluoroscopy can cause serious injury. Healing time is prolonged and may take more than a year.



Erythema



Desquamation



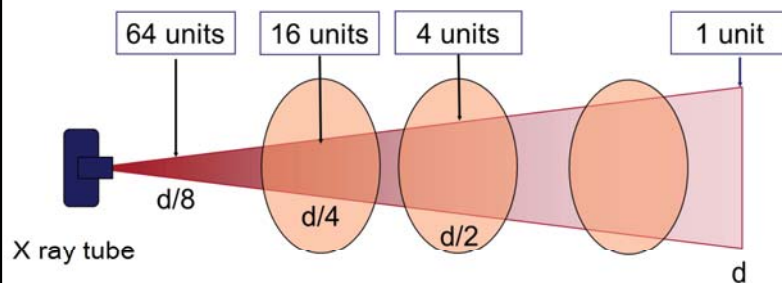
Ulceration



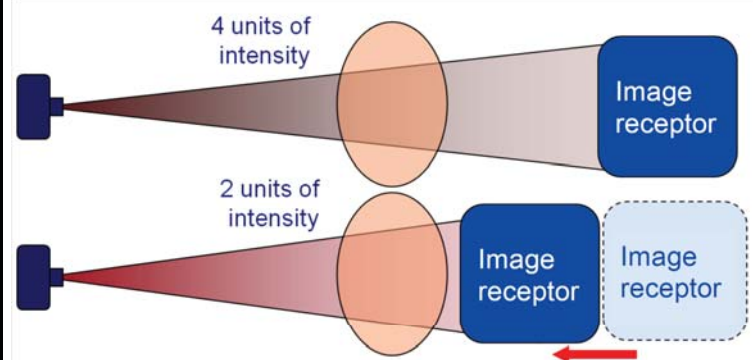
Ischemic necrosis

Methods for Reducing Skin Dose during Fluoroscopy

1. Maximize distance from X-ray tube to patient.

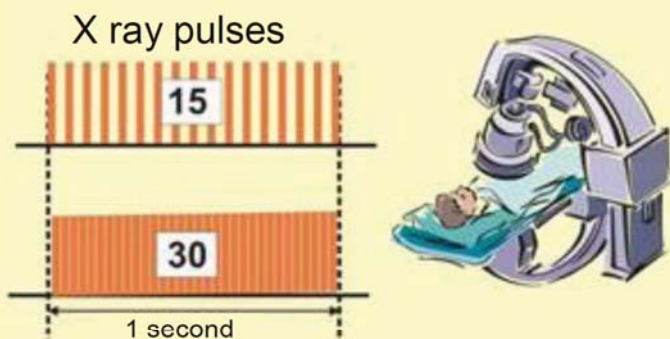


2. Keep image receptor close to patient.



3. Use pulsed fluoro with lowest frame rate possible without degrading image quality.

Pulsed fluoroscopy reduces exposure



4. Minimize number of frames and cine runs. Use last image hold whenever possible instead of cine runs.

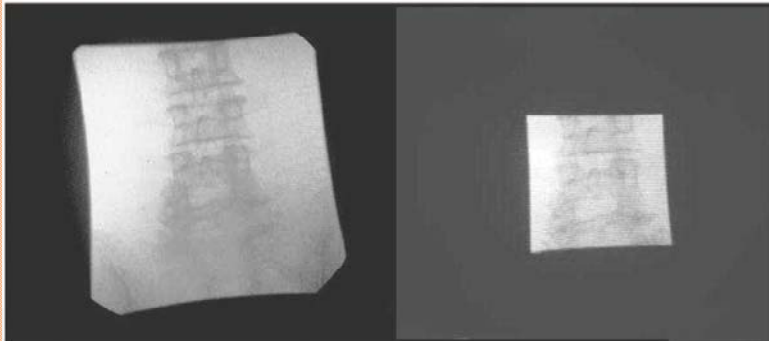


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Methods for Reducing Skin Dose during Fluoroscopy

5. Use collimation.

Smaller field size gives better image quality and reduces area of skin dose.



6. Avoid magnification.

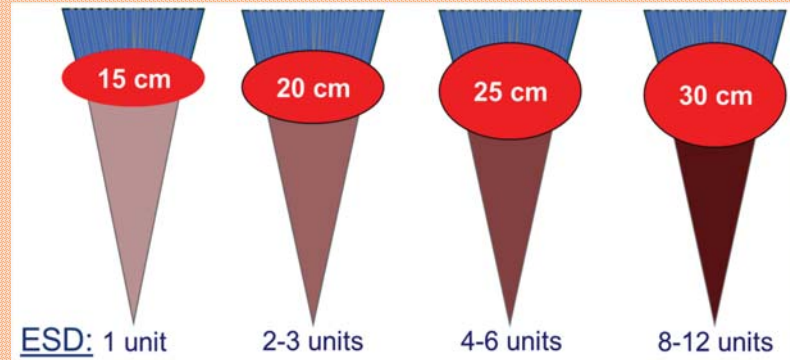
INTENSIFIER Field-of-view (FOV)	RELATIVE PATIENT ENTRANCE DOSE RATE FOR SOME UNITS
12" (32 cm)	100
9" (22 cm)	200
6" (16 cm)	300
4.5" (11 cm)	400

7. Minimize fluoro time.

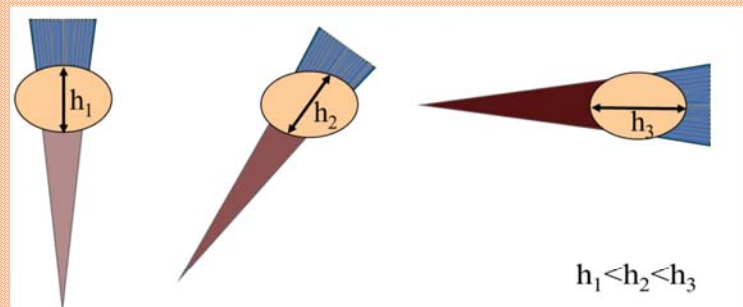
Record fluoro time or dose for each patient.



8. Thicker body (parts) mean higher skin dose.



9. Oblique projections can increase skin dose due to increased thickness.



10. Avoid overlapping projections on skin.

