

ABSTRACTS

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REDUCTION OF SCATTER RADIATION DURING PERCUTANEOUS CORONARY INTERVENTIONS USING A STERILE, DISPOSABLE RADIATION-ABSORBING SHIELD

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PURPOSE: To evaluate the efficacy of a sterile, disposable radiation shield (RADPAD) in reducing scatter radiation during percutaneous coronary interventions. **METHODS:** The RADPAD is a sterile, disposable bismuth/barium-containing surgical drape with an opening that is placed around the area of sheath insertion and extended laterally to decrease scatter radiation. Radiation exposure for a single interventional cardiologist who had consistently high readings was measured over an 18-month period using collar thermoluminescent dosimeters. There was no special shielding used during the first 11 months (CONTROL). The next two months were considered a phase-in period, in which the use of the RADPAD was initiated, but not used consistently. During the final 5 months, the RADPAD was used routinely in all interventional cases (RADPAD). Procedural technique was otherwise the same during the two periods. To account for the difference in case volume and total fluoroscopic time, a time-adjusted dose (mrem/min) was calculated. **RESULTS:** Routine RADPAD use resulted in a 54% reduction in scatter radiation compared to control, despite similar monthly and per case fluoroscopic times.

	Fluoro time per mo. (min)	Fluoro time per case (min)	Time-adjusted dose (mrem/min)	
CONTROL	364.6	21.6	0.529	
RADPAD	348.0	22.6	0.243*	*p<0.05

CONCLUSIONS: Use of a sterile, disposable, radiation protection drape placed around the area of sheath insertion significantly reduces scatter radiation exposure to the primary operator during percutaneous coronary interventions. Given the radiation safety principle of ALARA (as low as reasonably achievable), RADPAD use has become the standard in our laboratory for all interventional procedures.