

Δ Longitudinal Radiation Exposure in Orthopaedic Surgeons and Residents

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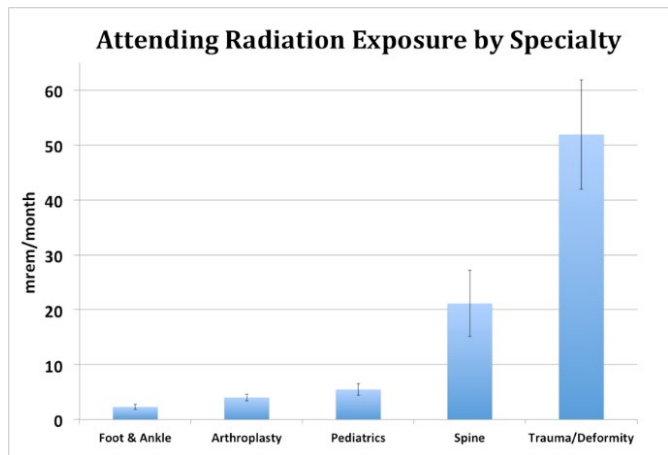
Purpose: The purpose of this study was to quantify the radiation exposure of orthopaedic surgeons and residents over a 12-month time period. We hypothesized that surgeons who subspecialize in spine or trauma would incur higher radiation exposure compared to those in other subspecialties.

Methods: Monthly radiation exposure was measured over the course of 12 months for 24 orthopaedic residents and 16 orthopaedic attendings. After each cycle the residents documented their case volume involving fluoroscopy, as well as their compliance with dosimeter wear, using a survey that was distributed after each rotation cycle. Radiation exposure was compared by subspecialty and level of training.

Results: The mean monthly radiation exposure among residents (12.4 mrem/month; range, 0-243 mrem/month) and attending surgeons (22.9 mrem/month; range, 0-355 mrem/month) were below the recommended threshold of 5000 mrem/year or 416 mrem/month. Senior residents rotating on trauma were exposed to the highest monthly radiation (78.7 mrem/month; range, 15.3-243.3 mrem/month) compared to all other specialty rotations (P <0.001) (Table 1). Similarly, attending surgeons who specialize in trauma or deformity surgery received the highest radiation exposure of their peers, and averaged 52.7 mrem/month (range, 0-355 mrem/month) (Fig. 1).

Conclusion: Our study suggests that orthopaedic surgeons, both in training and in practice, are experiencing radiation doses below the occupational thresholds. The results of this study further identify the groups within orthopaedic surgery that receive relatively higher radiation exposure, namely trauma and deformity surgeons.

Service	Overall Mean (mrem/month)	Junior Resident Mean (mrem/month)	Senior Resident Mean (mrem/month)	p-value
Arthroplasty	0.2	0.3	0.2	0.79
Hand	0.6	0.6	0.6	0.81
Foot & Ankle	0.6	0.7	0.4	0.76
Sports	0.7	0.8	0.5	0.80
Oncology	2.4	0.32	5.0	0.11
Pediatrics	3.9	5.2	0.5	0.26
Spine	6.7	0.9	15.4	0.29
Trauma/Deformity	26.9	15.6	78.7	<0.001



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The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.

POSTER ABSTRACTS