

Surgeon's radiation exposure higher with 'freehand' technique

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Image courtesy of Blausen Medical

Relevant financial activities outside the submitted work were disclosed: board membership, consultancy, honoraria, grants.

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(HealthDay)—During pedicle screw placement with the freehand technique, radiation exposure for the surgeon is nearly 10 times higher than with the use of navigation, according to a study published in the June 1 issue of *Spine*.

Jimmy Villard, M.D., from Technische Universitat Munchen in Germany, and colleagues measured [radiation exposure](#) experienced by surgeons. Measurements were taken using digital dosimeters placed at the level of the eye, chest, and dominant forearm. Exposure was measured from the time of positioning of the patient to the end of the procedure both for navigated (intraoperative three-dimensional fluoroscopy-based) and non-navigated (two-dimensional fluoroscopy-guided) freehand posterior lumbar spine instrumentations.

The researchers found that accumulated [radiation dose](#) for the surgeon was significantly higher in the non-navigated group—up to 9.96 times higher. For the patient, the [radiation](#) dose was higher with the freehand technique—1,884.8 cGy cm² (non-navigated) versus 887 cGy cm² (navigated)—but was not statistically significant.

"Radiation exposure to the surgeon during pedicle screw placement with the freehand technique is up to 9.96 times greater than with the use of navigation," the authors write.

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