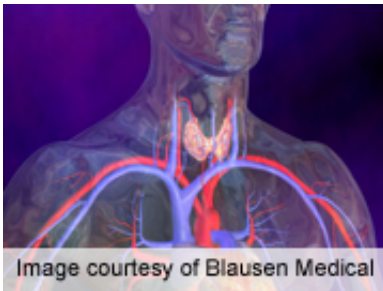


# Thyroid shield deemed essential during use of C-arm fluoroscopy

November 26 2013

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(HealthDay)—The best way for surgeons to reduce scattered radiation exposure to the thyroid is by wearing a shield tightly or wearing it loosely in combination with a bismuth masking reagent, according to a study published in the Nov. 15 issue of *Spine*.

Seung Yeol Lee, M.D., from the Seoul National University Bundang Hospital in South Korea, and colleagues used two photoluminescence dosimeters to measure the dose of radiation to the thyroid in a simulated surgeon during setup of a patient treated with C-arm fluoroscopy. A thyroid shield (either lead or lead-equivalent) in three different arrangements (worn tightly, worn loosely, and worn loosely with a [bismuth](#) masking [reagent](#)) was worn during measurement of radiation doses.

The researchers found that, for the lead-shield group, radiation doses when worn tightly were 1.91  $\mu\text{Sv}/\text{min}$ , 2.35  $\mu\text{Sv}/\text{min}$  when worn loosely, and 1.86  $\mu\text{Sv}/\text{min}$  when worn loosely with a bismuth masking reagent. There was significantly lower [radiation exposure](#) when wearing the shield tightly and wearing it loosely with a bismuth masking reagent, compared to wearing the shield loosely ( $P \leq 0.001$ ). For the lead-equivalent shield group, radiation doses were 1.79, 1.82, and 1.74  $\mu\text{Sv}/\text{min}$ , respectively. The lead-equivalent thyroid shield group received significantly lower scattered radiation doses, compared with the lead thyroid shield group ( $P \leq 0.001$ ). The unshielded group received a [radiation dose](#) of 16.32  $\mu\text{Sv}/\text{min}$ .

"The use of some form of thyroid shield is essential during the use of C-arm fluoroscopy," the authors write.

**More information:** [Abstract](#)  
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