

## **Reduction of Physician's Radiation Dose during Cardiac Catheterization Procedures Using Lead-Free Sterile Radiation Shields**

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**Abstract :** This study sought to evaluate the efficiency of lead-free sterile radiation shield (Radionex) in the reduction of physician's exposure dose during interventional cardiology procedures. Cardiac catheterization procedures are often associated with high radiation doses and high levels of secondary radiation emitted by the patient's body. This study compares physician exposure dose rate during cardiac catheterization procedures done through the femoral artery with sterile radiation shielding to same procedures made without the shielding. The mean operator radiation dose rate without using the shield was found to be 18.4 $\mu$ Sv/min compared to a mean dose rate of 5.1  $\mu$ Sv/min when using the shield, rendering a reduction of 72.5% of radiation received by the physician. Sterile radiation shielding is consequently an effective addition to a cardiac catheterization lab radiation protection system.

**Keywords :** cardiac catheterization, physician exposure dose, sterile radiation shielding, lead-free sterile radiation shields

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