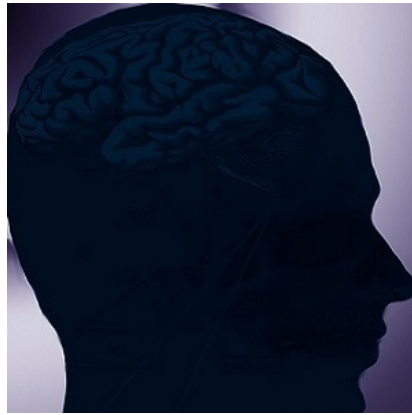




## Nuclear Cardiology Lab Slashes Radiation Dose by 60%



According to new research presented at ICNC 2017, a large nuclear cardiology laboratory has slashed its average radiation dose by 60% in eight years. The study is published in *Cardiovascular Imaging*.

**See Also:** [Prognostic Value of Non-invasive Cardiac Exams in CAD Patients](#)

Professor Randall Thompson, a cardiologist at the Mid America Heart Institute, Kansas City, Missouri, US talks about concerns within the medical community and the public regarding radiation from medical diagnostic tests as they could increase the risk of cancer. He explains that while only one in 1000 extra patients would develop cancer 20 years later from an individual nuclear cardiology test, the cumulative dose from multiple tests could be a concern. That is why medical societies have been advocating the use of minimum radiation doses whenever possible.

During this study, the investigators assessed the impact of modifying protocols and the introduction of new hardware and post processing software on radiation dose in a nuclear cardiology laboratory network in Kansas City. 18162 SPECT MPI studies were included which were performed at four of the Saint Luke's Mid America Heart Institute nuclear cardiology laboratories. Protocols were modified by performing stress-only tests where possible. Technetium tracers can be used instead of thallium at one-third of the radiation dose. In addition, small field of view cameras and new camera systems were also introduced as they are more sensitive and require less radiotracer injected into the body. The focus was to reduce the radiation dose whenever possible.

The average radiation dose fell from 17.9 mSv in 2009 to 7.2 mSv in 2016 and the median dose (the 50th percentile) dropped from 10.2 mSv to 2.5 mSv. Professor Thompson said: "There was a dramatic lowering of the radiation dose with all of these concerted efforts. The average dose fell by 60% and the median dropped by 75%."

In Europe and North America, the average background dose from radon underground and cosmic background sources is approximately 3 mSv a year. It is generally considered that doses above 10 mSv and below 3 mSv are higher and lower. The American Society of Nuclear Cardiology has also set a target of 9 mSv or less.

Prof. Thompson points out that back in 2009, most studies were in the high dose range but now tests have a radiation dose that is nearly a third of the target. He highlights the fact that the adoption of contemporary protocols and technologies could help lower radiation doses in nuclear cardiology and could help patients worldwide.

Source: [European Society of Cardiology](#)  
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