



## Studies Linking Cancer to Medical Imaging Radiation 'Flawed'



Studies purporting to show a link between cancer and medical imaging radiation are flawed because of their reliance on an unproven statistical model, according to a report published in the journal *Technology in Cancer Research & Treatment*.

“Although radiation is known to cause cancer at high doses and high-dose rates, no data have ever unequivocally demonstrated the induction of cancer following exposure to low doses and dose rates,” authors of the report James Welsh, MS, MD, and Jeffrey Siegel, PhD, write.

The studies in question use the so-called “linear no-threshold” (LNT) model, in which the well-established cancer-causing effects of high doses of radiation are simply extrapolated downward in a straight line to low doses. The LNT model assumes there is no safe dose of radiation, no matter how small.

Although LNT is used by regulators around the world, the model “is of questionable validity, utility and applicability for estimation of cancer risks,” Drs. Welsh and Siegel write.

Studies purporting to show that radiation from x-rays, CT scans and other medical imaging causes cancer have other flaws besides the questionable LNT model. For example, two recent studies suggested possible increased cancer risks from low-radiation doses associated with paediatric CT scans. However, Drs. Welsh and Siegel say these cancers likely are due to the medical conditions that prompted the CT scans and have nothing to do with the radiation exposure.

As people focus on the purported risks of radiation in medical imaging, “the more significant and actual risks associated with not undergoing an imaging procedure or undergoing a more invasive exploratory surgery are generally being ignored,” Drs. Welsh and Siegel note in the journal report.

Dr. Welsh is a professor in the Department of Radiation Oncology of Loyola University Chicago Stritch School of Medicine. Dr. Siegel is president and CEO of Nuclear Physics Enterprises in Marlton, N.J.

Source: [Loyola University Health System](#)

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